Pre-Vocational Education at Middle Stage
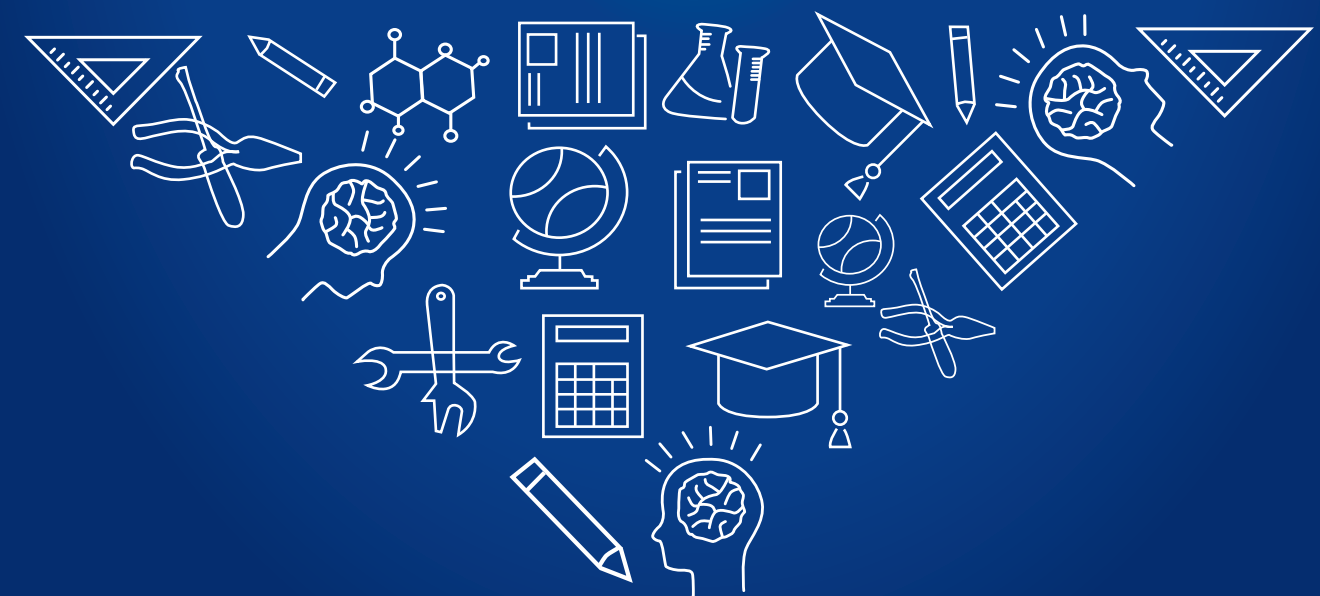
(Grades 6 to 8)

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एन सी ई आर टी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

23107 – Pre-vocational Education at Middle Stage

First Edition

March 2023 Bhadrapada 1944

PD 2T

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Printed on 80 GSM paper with NCERT watermark

FOREWORD

Vocational education is at the intersection of education and the world of work. Young people need to be aware of the wide range of opportunities available to them in the world of work. Vocational education facilitates the insertion of young people into the labour market and their career profession. The information about the various jobs and career opportunities in the world of work will help them to understand how their knowledge and skills can help in considering a suitable career or vocation.

The Ministry of Education, Government of India, as part of its initiative on vocationalisation of education, has taken several steps for providing vocational exposure at early ages and to prepare students for the various occupations through the vocational subjects from Grades 9–12. These vocational subjects are offered along with general education subjects, leading to certification by the respective Central or State Boards of Education. To further strengthen the efforts of vocationalisation of education in schools, the Ministry of Education is introducing pre-vocational education at the Middle Stage (Grades 6 to 8) under *Samagra Shiksha.* The present guidelines, which attempt to integrate productive activities into the teaching of various subjects at the Middle Stage, will be useful in helping students to connect education with employment. The document suggests that connecting skill-based activities with general academic subjects, like science, language, social science, and other subjects will be useful in providing opportunities to the children to explore the basic skill requirements for the various productive tasks in the world of work. The underlying idea behind suggesting such work-based activities is to make them an integral part of the teaching-learning process, rather than as an add-on to the existing scheme of studies of general education from Grades 6 to 8. It will not only bridge the gap between bookish knowledge and practical skills but will also expose students to vocations, helping them to decide their future career paths. These activities, *inter alia*, would also foster the development of soft skills, such as cooperation, teamwork, judicious use of raw materials, creativity, quality consciousness, aesthetic values, etc.

When students learn more about the soft and hard skills related to the various employment and career opportunities available in the world of work, they develop positive attitude towards work from an early age and make informed career choices. Advice and support regarding career opportunities need to be tailored to the specific skill needs of each student. Hence, career guidance and counselling is an enabler. Every school should have an embedded programme of pre-vocational and career education.

To ensure smooth implementation of pre-vocational education in schools and as a follow-up of the recommendations of National Education Policy, 2020 in the field of vocational education, guidelines and exemplar modules have been developed for Grades 6 to 8. Teachers need to prepare theme-wise activity plans and conduct activities for students. Students should be encouraged to handle tools, equipment, and materials to develop the ability to observe, understand patterns and designs, verify or falsify theories, manipulate, experiment, create and innovate.

Implementation of the pre-vocational education programme would require systemic changes in the teaching of subjects through the allocation of periods for conducting activities and by providing greater emphasis on practical activities. The curriculum load and the timetable will also have to be rationalised to provide enough time for students to participate actively. The pedagogy of pre-vocational education has been made a part of NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement), an initiative of the Department of School Education and Literacy, Ministry of Education, Government of India, to train teachers of students at the elementary and secondary stages so that they develop competencies for imparting holistic education and competency-based training. The effort of the Pandit Sundarlal Sharma Central Institute of Vocational Education (PSSCIVE), a constituent unit of NCERT, in the development of the guidelines is appreciated. The introduction of pre-vocational education programme from Grades 6 to 8 is no doubt an ambitious plan, but I am sure it can be delivered through a strong partnership and collaboration between the government, educational institutions, training providers, industry, employers, industry associations, and the career guidance and counselling community. I am sure these guidelines would be useful in apprising the stakeholders of school education about the importance of pre-vocational education and its relevance in helping students to make an informed choice for a vocation. This is an evolving area, hence, suggestions for further improvement in the document are welcome.

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ABOUT THE GUIDELINES

Pre-vocational is mainly designed to introduce students to the world of work and to prepare them for entry into vocational or technical education programmes. It includes guiding students to the various elements of the world of work, including counselling on career choices, training in general work skills and habits, and providing work experience. The pre-vocational education mainly focuses on activity-based teaching-learning. The desirable attitudes and values with respect to the appreciation of manual work and dignity of labour can be developed through activity-based learning, where discipline, persistence, and creativity are achieved through teamwork and cooperativeness. Through the activity-based learning process, students would be able to relate their knowledge of facts, concepts, and principles embedded in various disciplines to real life. The guidelines document covers the school processes for planning, designing, development and implementation of pre-vocational education programme. Students shall develop an understanding of life, occupations, and career options open to them. Craft and technology attract a greater number of students. Activities will also provide them an opportunity to go through planned and progressive learning experiences that can help them decide their career and learn how to use and manage technology. They would also be able to use simple tools, equipment, materials, and technology for doing productive work and applying problem-solving methods for troubleshooting. The general education teachers of languages, mathematics, science, social science, art, music, and work experience would be involved in the organisation of the skill-based activities in context to the themes or subjects.

Teachers will have to be trained in the use of teaching techniques that support activity-based learning, including hands-on learning, problem-solving, cooperative or team-based projects, activities requiring multiple forms of expressions, including project work that draws on knowledge and skills from several domains. The teaching-learning methodology shall be based on observation, manipulation, and practice. Students should visit organisations and industries to learn from people who are engaged in different occupations and gain insightful knowledge on the potential areas of employment.

The pre-vocational education modules on soft and hard skills will help children to explore the essential competencies needed for various occupations in the world of work and prepare themselves for making an informed choice for a career path. Students shall gain identity through work and feel useful and productive as work adds meaning and would enable them to construct knowledge. In Grades 1 to 5, students will learn their subjects through work i.e., integrating work in subject areas, and from Grades 6 to 8, their knowledge and skills will be enhanced for different vocations. This will lead to applied learning and a better understanding of the competence required in various occupations. The major objective of the pre-vocational education programme is to help students learn the various concepts, principles, and practices through work-based activities and realise the importance of various occupations.

Developing values and work ethics is also an area which will be inculcated with the awareness of strong link of different subjects with vocations, and practical experiences in the school. This document explains how the various elements of occupations can be linked with career options and paths to world of work. Approaches to organisation of activites, based on theme and sector, have been suggested in the document. The pre-vocational activities will be useful in making teachers and students understand the importance of integration of academic knowledge with work and develop an identity through practical learning experiences. It will also help students to understand the importance of pursuit of knowledge and skills needed for personal and professional development through lifelong learning.

The guidelines document has been divided into 4 parts — Part 1 consists of 5 Chapters: Chapter 1, which sets the context for Pre-vocational Education, provides a historical background of the various recommendations and suggestions on the need for promoting work-based education in India. It also explains the importance of work as a context for child development and learning, and the new curricular and pedagogical structure for school education recommended by National Education Policy (NEP) 2020. Chapter 2 deals with the Vocationalisation of Education under *Samagra Shiksha* at the Preparatory, Middle and Secondary stages. Chapter 3 describes the concept of Pre-vocational Education and its objectives. It covers the various aspects that need to be considered for developing an understanding of students on the importance of skills related to 'life' and 'work'. Chapter 4 provides relevant information on the planning, implementation, and monitoring of the various aspects of Pre-vocational Education programme by the States and Union Territories. It specifies the roles and responsibilities of the stakeholders for shaping and implementing the Pre-vocational Education programme in schools. It also highlights importance of awareness generation and publicity of the Pre-vocational Education programme through meetings, sensitisation, orientation and training programmes and the use of electronic and social media. Chapter 5 deals with the assessment and evaluation of students. Teachers may use different assessment tools and techniques for direct and indirect assessment and evaluation of students, based on performance indicators.

Part 2 of the guidelines document deals with the planning and organisation of activities. Exemplar activity plans have been provided for guiding the teachers for developing activity plans. Parts 3 and 4 provide sector-wise exemplar activity plans to impart soft skills and hard skills. Teachers can plan and organise activities based on the availability of local resources for developing an understanding of the students about the various tasks and competencies in different occupations and sectors, according to the local contexts.

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ACKNOWLEDGEMENTS

ABBREVIATIONS

ABL	Activity-based Learning
CWSN	Children with Special Needs
DIET	District Institute of Education and Training
DIKSHA	Digital Infrastructure for Knowledge Sharing
GoI	Government of India
ICT	Information and Communication Technology
ITI	Industrial Training Institute
JSS	Jan Shikshan Sansthan
MoE	Ministry of Education
MoSDE	Ministry of Skill Development and Entrepreneurship
NCERT	National Council of Educational Research and Training
NCF	National Curriculum Framework
NEP	National Education Policy
NGO	Non-government Organisation
NIOS	National Institute of Open Schooling
NISHTHA	Natinal Initiative for School Heads' and Teachers' Holistic Advancement
NOS	National Occupation Standards
NSDC	National Skill Development Corporation
NPSD & E	National Policy on Skill Development and Entrepreneurship
NSQC	National Skill Qualifications Committee
NSQF	National Skill Qualifications Framework
ODL	Open and Distance Learning
PMKVK	Pradhan Mantri Kaushal Vikas Kendra
PSSCIVE	Pandit Sundarlal Sharma Central Institute of Vocational Education
PwD	Persons with Disabilities
QP	Qualification Pack
SCERT	State Council of Educational Research and Training
SIP	Skill India Portal
SMC	School Management Committee
SS	*Samagra Shiksha*
SSC	Sector Skill Council
SWAYAM	Study Webs of Active Learning for Young Aspiring Minds
UT	Union Territory
UGC	University Grants Commission
VET	Vocational Education and Training

CONTENTS

Building the Context of Pre-vocational Education

1

INTRODUCTION

1.1 Background

The education system in India evolved from the Vedic days, when the focus was on the holistic development of an individual. The 'Gurukul' system of education was the epitome of Indian style of learning as it was a home for students or *shishyas* to learn and acquire knowledge, life skills and vocational skills. The Gurukuls, also known as home of the teachers or '*ashrams*', were the residential places of teaching and learning. Students (*Shishyas*) lived away from their homes for years until they achieved their 'goals of learning'. The Teacher (*Guru*) fostered a bond with students. The students were subjected to strict discipline and studied under the guidance of the teacher. The ancient Indian education was not merely theoretical but was also related to the realities of life (*Jeevan*) and work (*Karma*). Students would not only receive instructions related to domestic life but would also learn lessons on 'dignity of labour' through training in vocations (*Vyavsaya*) and glory of work through social service (*Shram Ki Garima*). Physical education was an integral part of the education system and children participated in games and recreational activities (*Krida*), exercises (*Vyaayaam*), archery (*Dhanurvidya*), and training of mind and body (*Yogasadhana*).

The Indian education system helped in preserving ancient culture and promoting cultural unity and infused a sense of responsibility and social values. Great Indian philosophers and thinkers, like Swami Vivekananda (1863-1902), Rabindra Nath Tagore (1861-1941), Aurobindo Ghosh (1872-1950), Mohandas Karamchand Gandhi (1869-1948), Bhimrao Ramji Ambedkar (1891-1956), and Sarvapalli Radhakrishnan (1888-1975) gave their views on the education system. Swami Vivekananda believed that education is the process by which

character is formed, strength of mind is increased, and intellect is sharpened, as a result of which one can stand on one's own feet (*Swami Vivekanand Collected Works,* Vol. S, P. 342). A noted Indian philosopher, academician and statesman, Dr. Radhakrishnan stated that the end product of education should be a free creative man, who can battle against historical circumstances and adversities of nature.

> "By education, I mean an all-round drawing out of the best in child and man—body, mind and spirit. Literacy is not the end of education nor even the beginning. It is only one of the means, whereby men and women can be educated. Literacy in itself is no education. I would, therefore, begin the child's education by teaching it a useful handicraft, enabling it to produce from the moment it begins its training… …….I hold that the highest development of the mind and the soul is possible under such a system of education. Only every handicraft has to be taught not merely mechanically as is done today but scientifically, i.e. the child should know the why and wherefore of every process,"
>
> Mahatma Gandhi
>
> (*The Collected Works of Mahatma Gandhi,* Vol.72, p.79).

The ideas and perceptions of various philosophers and thinkers and the recommendations of various committees and commissions not only shaped the national education system but also highlighted the need and importance of vocationalisation of education in enhancing an individual's employability and the nation's development and productivity.

The concept of integrating work with education through the Work Experience (WE) programme at the primary and upper primary stages of education was introduced as a follow-up of the recommendations of the Education Commission (1964-66) and the National Policy on Education, 1968. The Education Commission (1964-66) promulgated that "work-experience, which involves participation in some modern form of productive work under conditions approximating to those found in real life situation, should be introduced as an integral part of education at all stages. It will provide a much needed corrective to the extremely academic and bookish character of present school education." In lower grades, work-education may begin as simple handwork, the objective being to train children to make use of their hands and thereby help their intellectual and emotional growth. Such activities may include paper cutting, cardboard cutting and folding, clay modelling, indoor plantation in pots, kitchen gardening, cane and bamboo work, leather work, pottery, needle work, weaving, gardening, model making, etc. In the senior grades, it may take the form of learning a craft, which develops technical thinking and creative capacities among students.

The document on Curriculum for Ten Years School – A Framework (1976) developed by the National Council of Educational Research and Training (NCERT) included Work Experience (WE) as an integral component of the school curriculum and provided guidelines for implementation of the WE programme in the country. The primary objective of the WE was to provide an opportunity to students to learn about productive and marketable skills that may support their future employability. The WE was later renamed as Socially Useful Productive Work (SUPW). Ishwarbhai Patel Committee (1977) described SUPW
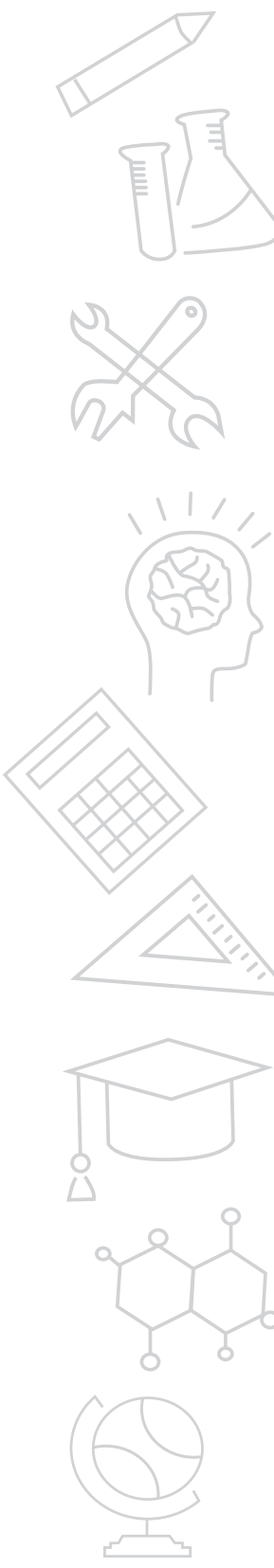
as "a purposive, meaningful manual work resulting in either goods or services, which are useful to the community". The Committee, while reviewing the ten-year School Curriculum Framework, 1975, observed that the curriculum should relate learning closely to SUPW and the socio-economic situation of the country and also make it available in such a way that working and learning can always be combined.

Realising that the education system in India is founded on the artificially instituted dichotomy between work and knowledge, the National Policy on Education (NEP) 1986 *inter alia* stated that "the introduction of systematic, well-planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganisation". Highlighting the need for introducing vocational education in schools, the policy document also mentioned that "vocational education will be a distinct stream, intended to prepare students for identified occupations spanning several areas of activity. These courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be made available after Grade VIII…". A Programme of Action (POA) was brought out in 1992 to translate the policy imperatives into concrete programmes. The proposal of Mahatma Gandhi for the introduction of Basic Education (*Nai Talim*) as a foundation for linking productive manual work with knowledge at the centre of the school curriculum itself got institutionalised by the recommendations of the policy.

1.2 Work as a Context for Learning and Development

Work education and vocational education are integral components of the school education system. Work pertaining to 'needs' of the individual, such as health, hygiene, clothing, cleanliness, etc., as a 'member of the family', such as cooperativeness, respect, empathy, responsibility, etc., and 'work in the community' or world of work is to be integrated with education to make it contextual for learning and development. According to the National Curriculum Framework (NCF) 2005, the need for introducing an interdisciplinary area of learning, integrating the major concerns of Health and Physical Education, Art Education, and Work Education has assumed greater significance. Therefore, tailor-made programmes to fit the dominant vocations of the area may be planned
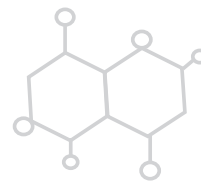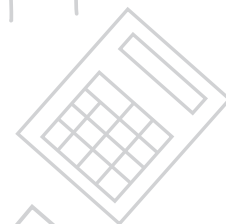
for this purpose (NCERT, 2000). Many skills can be taught through services that benefit the community as a whole, bringing the school close to its environment and helping students become aware of their commitments to the school and the community. Work education aims at restoring dignity and respect to all types of manual work, promoting self-reliance in meeting one's daily needs and those of one's family and community, increasing productivity through the development of proper work skills and values, and promoting commitment to the welfare of the society through a suitable programme of social work or community service. In the context of one's family, we must also take into account the world of work at home, especially those carried out by women. Children should be made aware that the work carried out at home by women is also a skilled work and that they should not hesitate to contribute towards the work carried out at home. It is important to sensitise boys on the value of carrying out household work as it is generally determined by gender roles. Moreover, post COVID-19 tasks such as cooking, sewing, cleaning, etc., are now regarded as important life skills.

A Centrally Sponsored Scheme of Pre-vocational Education (PVE) at the lower secondary stage was introduced in 1993-94, with the objectives to impart training in simple marketable skills to the students of Grades 9 and 10, develop vocational interests and facilitate students in making a choice of vocational course at the higher secondary level. Pre-vocational education is the education that is mainly designed to introduce pupils to the world of work and to prepare them for entry into vocational or technical education programmes. Pre-vocational education is currently offered in place of work education programme at the secondary stage, i.e., Grades 9 and 10. The skill training imparted through the pre-vocational course is not of the level that can be called vocational, yet it gives students sufficient insights to explore particular areas of the world of work. The courses offered under the pre-vocational programme are modular and each school offers at least 3-4 courses relevant to the local needs. Twenty per cent of the school time is made available for pre-vocational modules. Additional time should also be provided out of school hours for intensive practice or learning activities.

With the introduction of the revised Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education and National Skill Qualifications Framework (NSQF), vocational courses are now being offered from Grades 9 to 12, replacing the pre-vocational education programme in Grades 9 and 10. This has been discussed in detail in Chapter 2.

Highlighting the importance of work as an area of learning for children, whether in the home, the school, the society, or the workplace, the National Curriculum Framework 2005 states that children begin to absorb the concept of work, as early as at the age of two years. They imitate their elders and pretend to work like them. For example, it is not unusual to see very young children pretending to sweep the floor, holding meetings, building houses of various materials, and cooking. According to the report of the National Focus Group on Work Education (NCERT, 2007), "the issue of the relationship between the 'world of work' and the 'world of knowledge' in the emerging discourse stands either marginalised or trivialised as one of merely training students in vocational skills and preparation of workforce for the market" (footnote; pp.7; NCERT, 2007).

Work as an educational tool is used by many pedagogies. For example, the Montessori system integrates work concepts and skills from the very beginning. Cutting vegetables, cleaning classrooms, gardening, and washing clothes are all a part of the learning cycle. Beneficial work that is in keeping with the child's age and ability, and which contributes to the child's normal growth and development, when introduced into children's lives can serve to enable them to learn values, basic scientific concepts, skills, and creative expression.

Children gain identity through work and feel useful as work adds meaning and enables them to construct knowledge. For instance, during COVID – 19 pandemic period in 2020-2021, parents and teachers were working from home, which resulted in positive effects in the minds of children about the importance of working with hands. Children got exposure to the various activities done by the parents during their stay at home. They developed an understanding of the importance of food, hygiene, health, and physical activities. Working with parents and helping them in daily chores, children have learned to handle tools and equipment, overcome stress, etc. and demystify situations or things. They have also learned a variety of hard and soft skills, such as singing, dancing, playing instruments, etc. The guiding principles of the National Curriculum Framework 2005 highlighted the need to make education relevant and contextual, keeping in view the demands of the 21st century by:

1. ensuring that learning is shifted away from rote methods;
2. connecting knowledge to life outside the school;
3. enriching the curriculum to provide for the overall development of children, rather than remaining textbook centric,
4. making examinations more flexible and integrated into classroom life, and
5. nurturing an overriding identity informed by caring concerns within the democratic quality of the country.

Learning is the process of acquiring new knowledge, skills, values, and attitudes. Learning processes include memorising, acquiring knowledge and skills, making sense of the information, comprehending and reinterpreting knowledge. The social interactions and relationships, both internal and external to the learning environment, can have a marked influence on the way individuals construct meaning around new concepts and understand the nature of work. Logical and emotional learning enhances the ability of children to integrate thinking, feeling, and attitude. It helps children in recognising and managing their emotions, establishing a healthy relationship, setting positive goals, meeting personal and social needs and making ethical and responsible decisions in life and at workplace.

In vocational education, learning by doing or experiential learning is an important aspect, as on one side students learn through practice, and on the other, they reflect on their learning. Student-centred pedagogy, which supports the constructivist approach to teaching-learning i.e., learners construct their understandings through their actions and experiences in the world, is now being widely advocated. It uses a variety of different active learning methods within and outside the classroom setting. It also includes experiential learning, problem-based learning, peer group learning, and a variety of other pedagogical
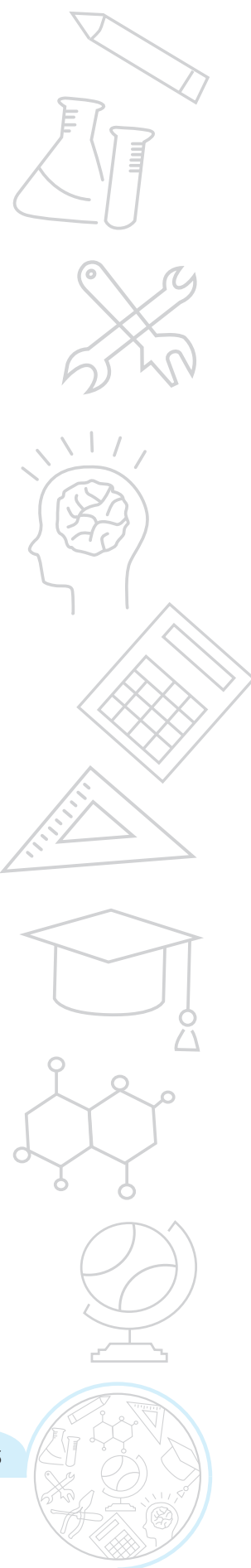
methods. Experiential learning, which focuses on the learning process for the individual, is the process of learning through individual experiences. It is more specifically defined as "learning through reflection on doing".

Weaving pedagogy with the various activities in vocations will allow students to link Head, Heart, and Hand (3H), thus building an environment of learning, which is stimulating and engaging. The head which houses the brain controls our thoughts, memory, speech, movement of arms and legs, and the functioning of many organs of the body. It is this connection between the 3H that will be useful in integrating new knowledge with prior knowledge and enables a child to critically reflect upon the learning. The curricular reform in vocational education at all stages of school education should aim at linking the 3 Hs, i.e., the Head, the Heart, and the Hand. Head is to be developed for creating a knowledgeable and intelligent workforce; the heart is to be moulded to prepare good citizens; and the hands are to be trained to prepare a skilled workforce for the world of work. Bridging the gap between, head, heart, and hand through experiential learning opportunities will allow the children to develop and apply knowledge and skills in the immediate context of real life, community, and the world of work.

Head	• What we know • Ideas, thoughts, concepts, thinking, etc.
Hand	• What we do • Action skills, abilities, etc.
Heart	• Who we are • Values, attitude, behaviour, faith, trust, sprituality, etc.
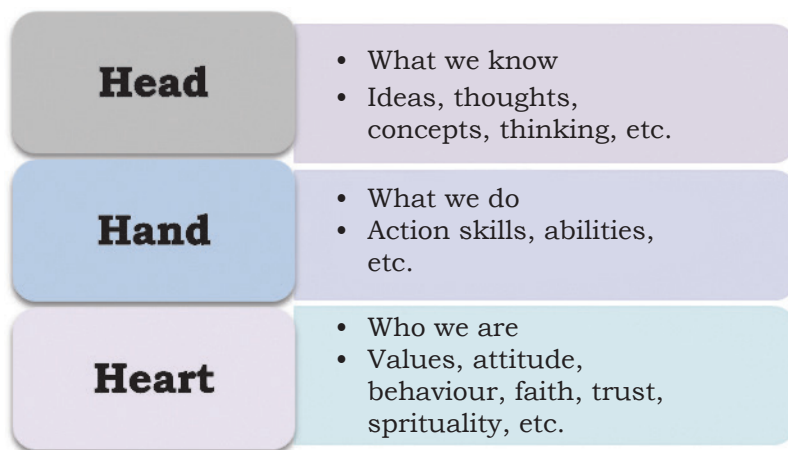
Figure 1: Linking Head, Hand and Heart for Holistic Development of Child

Critical reflection can lead to self-awareness, which is necessary for identifying strengths and weaknesses and reframing or building upon them, with underlying behaviours and values. Thus, holistic development of mind-heart body through engagement in activities would bring about transformational changes in the child's learning, behaviour, experiences, and performance.

1.3 Integrating Skilling with General Education

Vocational Education and Training in India is organised through the formal, informal, and non-formal sectors. VET delivery occurs in different forms, according to different target groups and the skill needs of the learners. Amongst the various Ministries, the Ministry of Skill Development and Entrepreneurship (MoSDE) and the Ministry of Education (MoE), the Government of India, are responsible for majority of the skill development schemes and programmes. VET provisions made through schools come under the purview of the Department of

School Education and Literacy (DSEL) and those for colleges and universities are under the Department of Higher Education (DHE), Ministry of Education. The VET provided through Polytechnics, Industrial Training Institutes (ITIs), Jan Shikshan Sansthans, National Institute for Entrepreneurship, and Small Business Development comes under the Ministry of Skill Development and Entrepreneurship.

Organisational unification of general education and vocational education is being done by integrating skilling with general education at various stages of school and higher education under the National Skill Qualifications Framework (NSQF) and creating common arrangements for funding, administration, regulation, and quality assurance.

The National Skill Development and Entrepreneurship Policy 2015 has identified skill-mismatch and lack of formal skill training and re-training as a significant issue for enhancing the employability of young people. It aims to align skill supply with demand, bridge existing skill gaps, promote industry engagement, operationalise a quality assurance framework, leverage technology and promote apprenticeship training. The main objective of the policy is to meet the challenge of skilling at scale with speed, standard (quality), and sustainability.

The National Education Policy (NEP) 2020 has recommended the replacement of 10+2 level with 5+3+3+4 curricular structure for school education (Table 1). Children will now spend 5 years in the Foundational stage, which will comprise 3 years of Pre-school education in Pre-schools or in Anganwadis, followed by Grades 1 and 2 (children aged 3–8 years). At this stage, the focus will be on teaching in play-based or activity-based methods and the development of language skills. The Preparatory Stage will be of 3 years (children aged 8 to 11 years in Grades 3 to 5), and the focus will be on the development of language and numeracy skills through activity and discovery-based learning. The Middle stage which will also be of 3 years (children aged 11 to 14 years in Grades 6 to 8), will focus on experiential learning in Science, Mathematics, Arts, Social Sciences and Humanities. The Secondary Stage (children aged 14 to 18 years in Grades 9 to 12) which will be of 4 years is to be restructured in such a way that
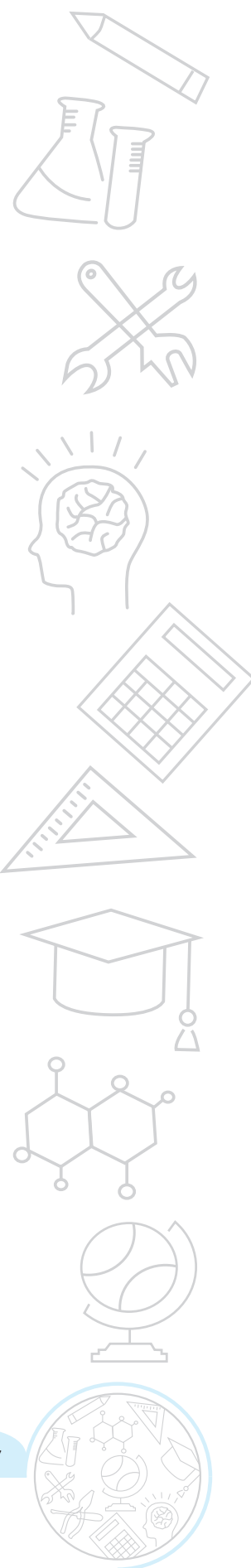
the students at this stage will have access to a variety of subject combinations, which they can choose as per their interests and abilities instead of being strictly divided into Arts, Science and Commerce streams. The division of these stages has been made in line with the kind of cognitive, psychomotor, and affective development that a child undergoes through early childhood, school years, and secondary stage. Thus, while the Foundational Stage (age 3-8 years) will focus on learning based on play and active discovery, the Preparatory Stage (8-11 years) will help children understand the importance of productive work through work education, the Middle Stage (11-14 years) shall provide vocational orientation, awareness, and exploration through Pre-vocational Education and activities during 10 bagless days and the Secondary Stage (14-18 years) will prepare children for a vocation through a combination of general and vocational subjects.

Table 1: Pre-2019 and proposed Post-2019 Structure of Education in India

Age	Current Structure (2019)	Grade	Proposed in National Education Policy 2020
17–18 16–17	Higher Secondary	12 11	Secondary Stage
15–16 14–15	Secondary	10 9	
13–14 12–13 11–12	Upper Primary	8 7 6	Middle Stage
10–11 9–10 8–9	Primary	5 4 3	Preparatory Stage
7–8 6–7 5–6 4–5 3–4	Pre-primary (Nursery, KinderGarten and Upper KinderGarten)	2 1	Foundational Stage

The NEP 2020 has envisaged that the VET in India should be systemically restructured in the formal and informal sector to bring about structural reforms needed for imparting quality skill training. It is to be imparted for the broader goals of improving school effectiveness, measured in terms of equal and diverse opportunity for vocational education to all and improving upon the 'learning outcomes'. The major goal is to improve learning outcomes. One of the recommendations of the National Education Policy 2020 is that by 2025, at least 50 per cent of learners through the school and higher education system shall have exposure to vocational education, for which a clear action plan with targets and timelines will be developed. This is in alignment with Sustainable Development Goal 4.0 and will help to realise the full potential of India's demographic dividend (MHRD 2020; pg. 44, para 16.5). To achieve this target, the government will also develop infrastructural support and innovative educational centres to bring back school dropouts into the mainstream. The policy has also focused on increasing

the gross enrolment ratio in higher education, including vocational education from 26.3 per cent in 2018 to 50 per cent by 2035.

The NEP 2020 aims to overcome the social status hierarchy associated with vocational education and envisages the integration of vocational education with mainstream education in all educational institutions in a phased manner (MHRD 2020; pg. 44, para 16.4). Beginning with vocational exposure at the early ages in the middle and secondary stage, quality vocational education will be integrated smoothly into higher education. It will have to be ensured that every child learns at least one vocation and is exposed to several more. It envisages that education should be made contextual and joyful, and every student will take a fun course during Grades 6–8 (Middle Stage). It will give them a survey and hands-on experience of a sample of important vocational crafts, such as carpentry, electric work, metalwork, gardening, pottery making, etc., as decided by the States and local communities and as mapped by local skilling needs. All students will participate in a 10-day bagless period, sometime during Grades 6–8, where they intern with local vocational experts, such as carpenters, gardeners, potters, artists, etc. Bagless days will be encouraged throughout the year for various types of enrichment activities involving arts, quizzes, sports, and vocational crafts. *Lok Vidya* (indigenous knowledge and skills) will be imparted by experts/artisans/craftspersons and others in schools through vocational education. Students will get hands-on experience/personal interaction with local technicians/ skilled artisans/ craftspersons about the vocations. The highlights of the recommendations of NEP 2020 with regard to the vocational education in school and higher education are given in Table 2.

Table 2: Some recommendations of NEP 2020 with regard to Vocational Education

Vocational education will be integrated with general education at all stages of education.
No rigid separation between curricular and extra-curricular activities and between vocational and academic streams.

Every child to learn at least one vocation and be exposed to several more.
Students will learn vocational crafts, such as, carpentry, electric work, metalwork, gardening, pottery making, etc., as decided by States and local communities during Grades 6–8.
School students to have 10 bagless days in a year during which they will be exposed to a vocation of their choice, i.e., informal internship.
Bachelor in Vocation (B.Voc.) programme offered by higher education institutions to be expanded under National Skill Qualifications Framework (NSQF).
A credit-based framework will facilitate mobility across 'general' and vocational education.
A National Higher Education Qualification Framework (NHEQF) will be formulated by the General Education Council (GEC) and it shall be in sync with the NSQF.

Thus, the main focus of the NEP 2020 is on fun-based courses, internship programmes and pre-vocational education from Grades 6–8 to provide vocational exposure. The onus lies on the teachers to identify vocational activities related to their subjects and prepare activity and lesson plans in a way that there is no hard separation between vocational education and general education. It will provide awareness about the various vocations in the world of work by engaging students in fun activities, bagless days, experiential learning and to make them aware about the opportunities available to them in the future. Pre-vocational education will sensitise children on the importance of vocational education. Pre-vocational education will act like a model for no hard separation as there will be integration of vocational activities with general education.
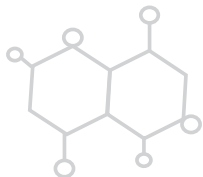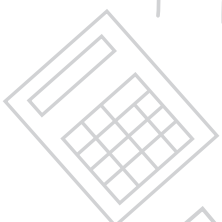
Vocationalisation of Education under *Samagra Shiksha*

2

Vocationalisation of education refers to the inclusion of those practical subjects or courses which shall generate among students some basic knowledge, skills, and disposition that prepare them to think of becoming skilled workers or entrepreneurs. It is being implemented under the *Samagra Shiksha* – an integrated scheme of school education, launched by the Government of India in 2018. The vision of the scheme is to ensure inclusive and equitable quality education from pre-school to senior secondary stage in accordance with the Sustainable Development Goals (SDG) for education. It is an overarching scheme for the school education sector, extending from pre-school to Grade 12; with the broader goal of improving school effectiveness measured in terms of equal opportunities for schooling and equitable learning outcomes. The term "vocationalisation of education", which covers pre-vocational education, vocational education, as well as all other forms of further education and professional development through vocational education and training has been used in this document.

The Ministry of Education, Government of India, as part of its initiative on promoting vocationalisation of secondary education, has taken up a number of steps. One of the steps is to introduce Pre-vocational education from Grades 6 to 8. It is being envisaged as a component of the scheme of vocationalisation of school education under *Samagra Shiksha.* Another initiative of the Ministry of Education is the introduction of vocational subjects from Grades 9 to 12 along with general education subjects, leading to certification by the respective Central or State Boards of Education.

2.1 Vocationalisation of Education at Foundational Stage

At the Foundational Stage i.e. Pre-primary to Grade 2, children need to be sensitised on '*Hamare Jivan Ke madadgar'* (our helpers), where we can talk about people working in different occupations like doctor, nurse, milkman,

cobbler, taxi driver etc., who are a part of a child's life. Also, we may call parents to talk about their professions and answer the questions children might have for them.

2.2 Vocationalisation of Education at Preparatory Stage

At the Preparatory Stage i.e., Grades 3 to 5, learning experiences would be developed around which children can be encouraged to ask questions, work collaboratively, and so on. For example, they can be encouraged to design and build their own educational toys – the designing and building process becomes a part of their active learning. The focus should be on activity-based learning, including hands-on learning, problem-solving, cooperative or team-based projects, communication, project work that enables an inter-disciplinary approach, visits to workplaces and observation of professionals, and so on. This approach enables a holistic experience, not only through enabling exposure to multi-disciplinary activities in the real world, but also through meaningful social engagement. Thus, as far as possible, keeping safety considerations in mind, the activities should be also authentic and reflective of real-life.

2.3 Vocationalisation of Education at Middle Stage

In the Middle stage i.e., Grades 6 to 8, children should be given the opportunity to expose themselves to a variety of occupations in the world of work which could be in the form of a Pre-vocational Education programme or internships during bagless days. Pre-vocational education is to be implemented in Grades 6 to 8, with an aim to provide opportunities to the students to orient themselves with the competencies (knowledge, skills, and attitude) required for the various occupations in a sector and help children to make informed choices while selecting their subjects for further education. The knowledge of various tasks performed by children in different occupations at the Middle Stage would be a stepping stone for gaining advanced knowledge and skills through vocational education at the Secondary Stage.
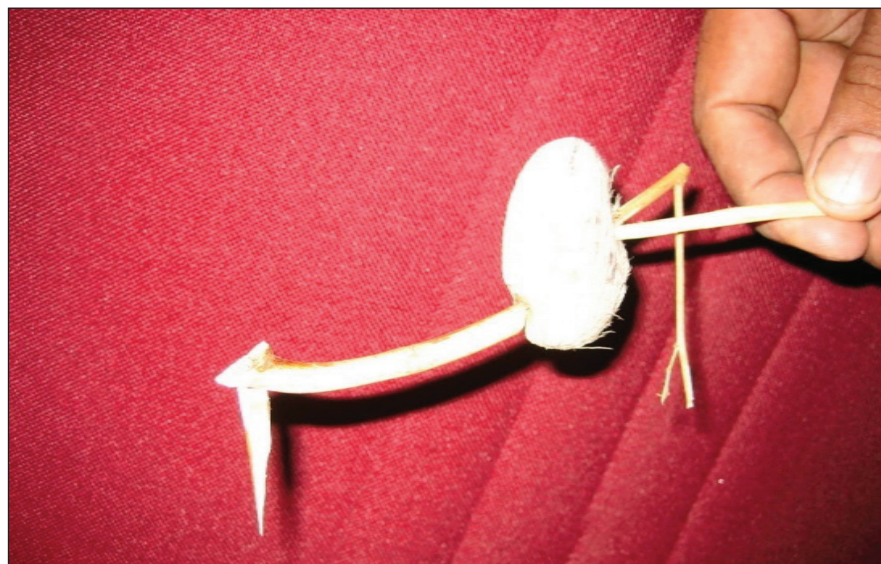
Pre-vocational education can be integrated with other subjects or activities that students can undertake in the classroom or outside school. Skill-based activities can be connected with academic areas, like science, social science, language, etc. thus reducing boundaries between areas of learning. The underlying idea behind such work-based activities is to make them as an integral part of the teaching-learning process rather than as an add-on to the existing scheme of studies of education from Grades 6 to 8. It will not only reduce the boundaries between the bookish knowledge and application of knowledge but will also expose children to the skill requirements in the work areas, thus helping them to decide their future career path. The other approach could be factual, wherein students learn through activities in various sectors and understand the importance of soft skills and hard skills in various occupations.

Pre-vocational activities, which can also be referred to as contributing to the "life-preparation" will build students' appreciation for work and life. These multi-skill activities, *inter alia*, would also foster the development of soft skills, such as aesthetic values, cooperation, teamwork, judicious use of raw materials, creativity, quality consciousness, etc. Students shall also visit organisations and interact with people engaged in different occupations for insightful knowledge and skills related to potential areas of future employment.

Pre-vocational education must be seen as an opportunity to be availed by all students to learn how to 'do' something (e.g., learn a craft, work in a farm or nursery next to the school, etc.), as opposed to acquiring skills for a vocation. In continuation with the Preparatory Stage, this should not be an option only for some students to take but a compulsory part of the curriculum. Indian Knowledge Systems or *Lok Vidya*, including tribal knowledge and traditional ways of learning, shall be covered at this stage.

2.4 Vocationalisation of Education at Secondary Stage

The Secondary Stage for students of Grades 9 to 12 is important, as it offers a choice of subjects to students, leading to the world of work or building a strong
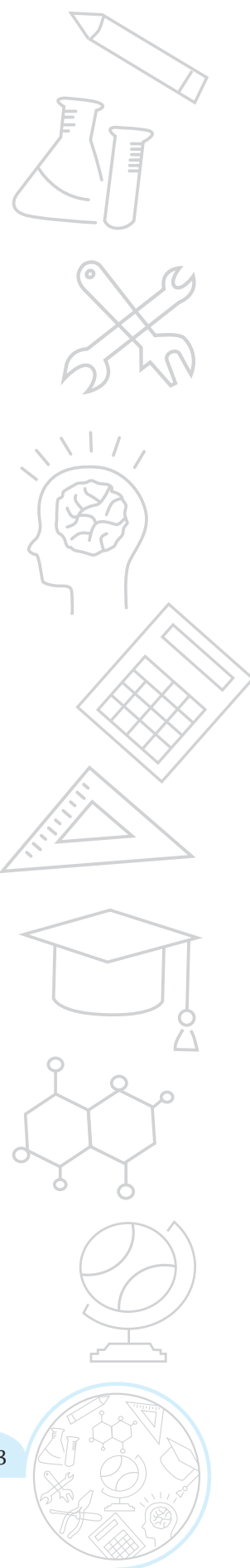
foundation for higher education. In order to realise the policy imperatives in school education, major interventions and strategies adopted in skill development at the Secondary Stage include: (i) integration of academic and vocational education, (ii) offering courses to match the skill demands of the economic and social sectors, (iii) implementing flexible curriculum design for linking qualifications with competence and employability, (iv) preparing competent teachers and trainers, (v) assessment of competency-based learning, and (vii) quality assurance. The intent is to make vocational subjects available to students, without streaming them into a rigidly narrow programme of vocational education.

At the Secondary Stage, every student will receive training in at least one vocation and more, if they are interested. The entire four-year period at the secondary stage can be used not just to expose students to different vocations but to help them to progressively build a considerable degree of expertise in their vocation of choice. Presently, at the secondary stage, a vocational subject is offered as an additional or compulsory subject along with the general education subjects to impart necessary employability and vocational skills.

The aim of introducing vocational education in schools is to prepare educated, employable, and competitive human resources for various sectors of the economy and the global market. Vocational courses are being offered in schools at the secondary stage as per the job roles approved by the National Skills Qualification Committee (NSQC) of the Ministry of Skill Development and Entrepreneurship. The learning outcome-based curricula of vocational courses are aligned to the National Occupation Standards (NOSs) for the job roles under the National Skills Qualifications Framework (NSQF), which was introduced in 2013. The NSQF is a competency-based framework that organises all qualifications according to a series of levels of knowledge, skills, and attitude. These levels, graded from 1 to 10, are defined in terms of learning outcomes which the learner must possess regardless of whether they are obtained through formal, non-formal, or informal learning. The names of the various sectors in which vocational subjects are being offered as per the job roles are given in Table 3.

Table 3: Sectors in which vocational subjects are offered from Grades 9 to 12

1. Agriculture	2. Apparel, Made-ups, and Home Furnishing	3. Automotive
4. Banking, Financial Services, and Insurance	5. Beauty and Wellness	6. Building and Construction
7. Electronics	8. Healthcare	9. Information Technology/ IT-enabled Services
10. Media and Entertainment	11. Organised Retail	12. Physical Education and Sports
13. Plumbing	14. Power Sector	15. Private Security
16. Telecommunication	17. Tourism and Hospitality	18. Transportation, Logistics, and Warehousing 19. Food production/ Processing.

The learning outcome-based curriculum of vocational subjects offered from Grades 9 to 10 has been divided into two parts: Part A is the core syllabus, which caters to the development of Employability Skills, and Part B comprises the syllabus for the vocational skills as per the job role. The employability skills curriculum has five components: (i) Communication skills, (ii) Information and Communication Technology skills, (iii) Self-management skills, (iv) Entrepreneurship skills, and (v) Green skills. The vocational curriculum is being transacted in the classroom, laboratory or workshop, and field. Field visits of students are organised in industry and actual work situations to enable them to understand and appreciate the real-time work requirements and make choices accordingly. Special training classes for teachers and students on entrepreneurship are conducted, besides giving necessary guidance to
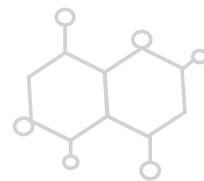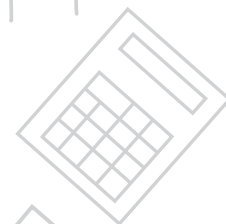
the students for setting up their own ventures. The industry and specialised organisations/institutions support the training in terms of skill training by providing resource persons or experts, assessors, and engaging vocational pass-outs for apprenticeship training.

A component of internship or on-the-job training is an integral part of the curriculum transaction. Students are required to complete a minimum of 80 hours of workplace learning or on-the-job learning. Building a strong linkage between vocational students of secondary schools with vocational students in Industrial Training Institutes (ITIs) and Polytechnics allows horizontal mobility of the students between various VET institutions and to mutually benefit from strengths in infrastructure and training.

While internal assessment and evaluation of vocational students in Grades 9 and 10 are done by the school, the Central or State Boards conduct the external assessments and evaluation of the students in collaboration with the concerned Sector Skill Councils (SSCs) in Grades 10 and 12. The Sector Skill Councils depute certified Assessors for conducting the practical assessment of students and certificates are issued by the State Boards and the Sector Skill Council is issued to the successful candidates.

The National Institute of Open Schooling (NIOS) runs vocational courses up to the higher secondary level through the open and distance learning mode. These courses are offered in Agriculture and Animal Husbandry, Business, and Commerce, Computer and Information Technology, Home Science and Hospitality, Health and Paramedical Sciences, etc. through the Accredited Vocational Institutes (AVIs). These are further supported by radio broadcasts, live two-way television interactions through SWAYAM (Study Webs of Active Learning for Young Aspiring Minds), PRABHA DTH (Direct to Home) channels, and audio streaming through the internet. The courses hosted on SWAYAM include video lectures, customised reading material that can be downloaded or printed, self-assessment tests and an online discussion forum for clearing the doubts of learners. Digital Infrastructure for Knowledge Sharing (DIKSHA) platform offers engaging learning material to teachers, students, and parents relevant to the prescribed school curriculum. The objective of this effort is to take the best teaching-learning resources to all stakeholders. This is done through an indigenously developed information and technology platform that facilitates hosting of all the courses, taught in classrooms from Grade 9 till post-graduation which can be accessed by anyone, anywhere and at any time.
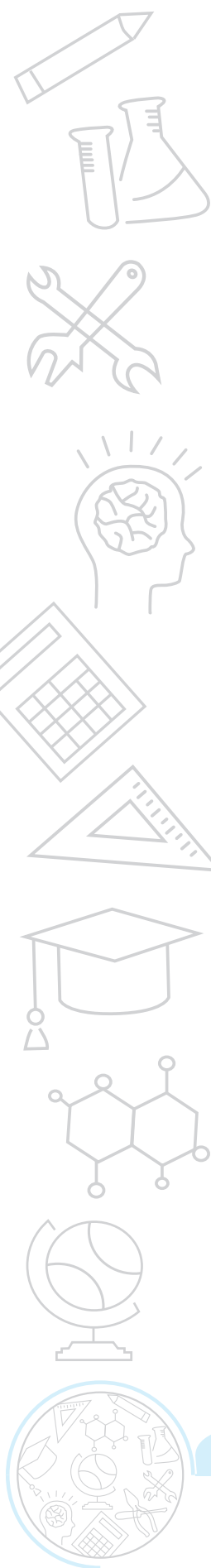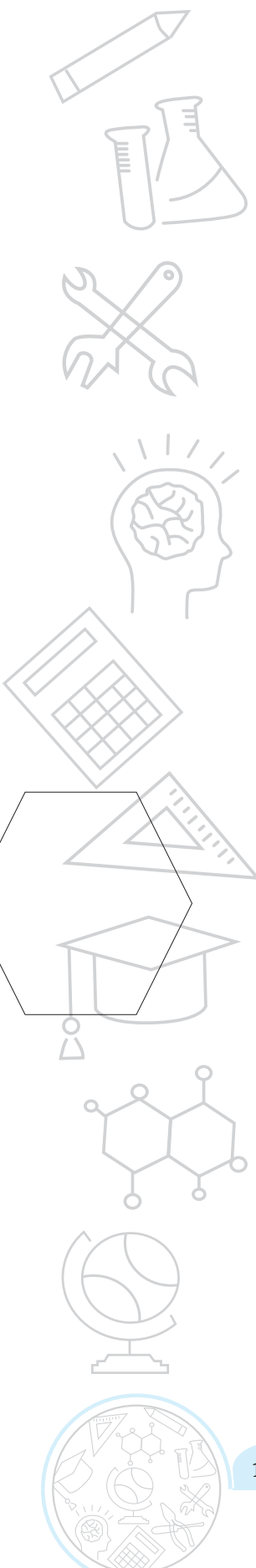
Objectives of Pre-vocational Education

3

The objectives of pre-vocational education are to: (i) develop vocational interest and aptitude; (ii) promote self-exploration of vocational preferences; and facilitate vocational preparedness with values and positive attitude for a better work culture and ethics. It will help children in understanding the importance of physical and mental activities in their all-round development. Students will acquire awareness about various vocational areas so that they can decide what they need to pursue at the secondary stage and beyond. The objecives of the pre-vocational education programme can be achieved throgh vocational orientation, vocational awareness and vocational exploration.

> Vocational orientation will help students in describing their abilities, motivation, interests, intelligence, and aptitudes, as well as their personality.

3.1 Vocational Orientation

Vocational orientation will help students in describing the 'self'. Awareness about 'self' will help children to understand their unique traits and their learning needs. Understanding about self will help them in making themselves aware of their interests, attitudes, strengths, and capabilities and take appropriate decisions regarding life, learning and career. It will enable them to develop confidence and begin a process of thinking-questioning-rethinking about their attitudes and actions to bring about the desired changes. The objectives of the pre-vocational education programme can be achieved through vocational orientation, vocational awareness and vocational exploration

The information collected by describing 'self' will be useful in relating their interests with the possibilities in the academic and professional world and also in finding their interest for a vocation. They will be able to identify factors that

enhance their self-respect, positive qualities, and authentic well-being. It is only when one can bring about a change in self that one can influence others by being a role model and a problem solver. However, developing oneself is a continuous life long process. This process includes many aspects, which bring about a change related to behaviour, thinking, and attitude in terms of knowledge or skills. For example, attitudinal skills (mindfulness) can be developed through a mindfulness exercise, such as meditation.

Children need to be made familiar with some terms which they would be using quite often. Teachers need to discuss the following terms with teachers and the children for better conceptual clarity and understanding.

Career: An occupation is undertaken for a significant period of a person's life and with opportunities for progress.

Interest: It is something that a person enjoys learning about or doing.

Job: The work one does to earn money.

Job activities: These are the tasks employees must complete for a business or organisation to operate successfully.

Job description: It is a formal account of an employee's roles and responsibilities.

Occupation: It is something that one spends one's time on, such as a job or a hobby.

Vocation: It is an occupation to which a person is specially drawn and for which one is trained, or qualified.

Vocational ability: It refers to what a person can do or has the potential to do in the future.

Vocational identity: It refers to how a person clearly relates and identifies one's career goals, interests and abilities in relation to the vocation.

Vocational interest: It refers to the activities or subjects that a person prefers.

Work: It refers to general efforts and activities done to accomplish a goal.

Self-expression activities, including making pictures or designs using various materials, may be taken up to express self and identify the abilities. They should be encouraged to participate in games and training programmes. Games and training programmes help students to identify the factors that enable them to develop capabilities and interests and they can write about their strengths and distinguishing qualities.

OBJECTIVES OF VOCATIONAL ORIENTATION

The students will be able to:

1. Differentiate between a career, a vocation, and a job or occupation.
2. Identify interests, skills, qualities, and personal values of self and others;
3. Understand how interests, strengths, and values influence decisions in life, learning, and career;
4. Identify factors that are helpful in developing capabilities and interests;
5. Explain how rules, regulations, laws, and safety practices are important in the workplace and protecting individual's rights.

6. Make students realise that developing an interest in a vocation/choice of vocation should not neccessarily be determined by socially constructed gender roles.
7. Identify and analyse those areas where there is a shortage of skills.
8. Motivate girls and transgender children to enhance their self-confidence as well as their skill sets.

3.2 Vocational Awareness

Vocational awareness will help students focus on developing interest in vocational education and make them aware of the various opportunities and plethora of choices that are available in the world of work.
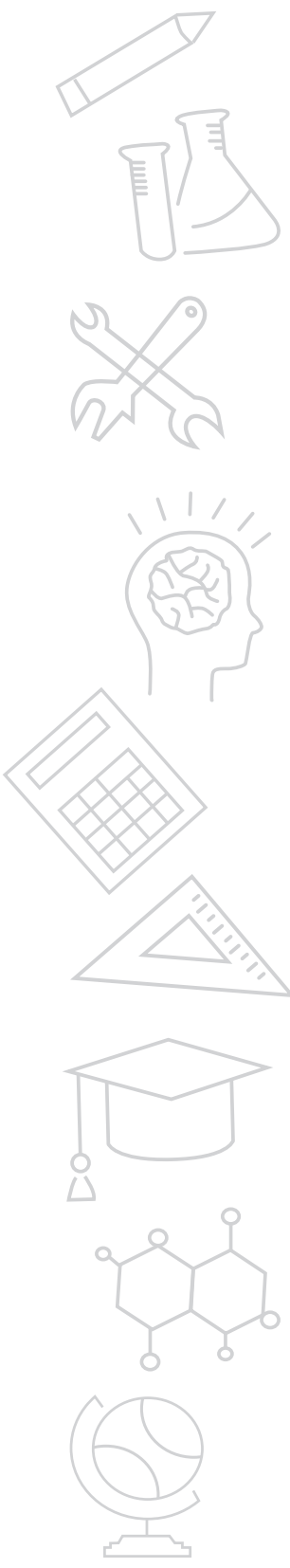
The productive work and services are related to the needs of the children and the community. Such work must not be performed mechanically, but must include planning, analysis, and detailed preparation at every stage so that it is educational in essence. Schools can work to (i) make students identify the productive activities and understand the process of planning and organising the productive work, (ii) allow students to explore ideas which they like, (iii) build the confidence to perform individual tasks and work on projects, and (iv) link classroom learning to the real world.
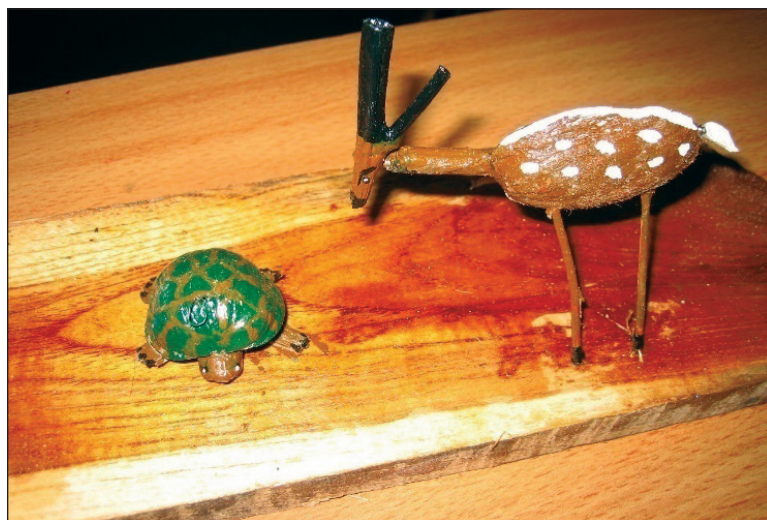
If teachers want their students to become more observant in their daily life, then they should create learning spaces to engage students with all their five senses and to become more mindful in their daily life. Teachers should create tasks that will allow students to pay attention to small details around them. Teachers have to motivate students to write down everything that they notice in the tasks that they are engaged on a daily basis and help them to design activities around the work.

Classroom teaching should focus on developing creativity in students and build long-term learning experiences in areas of self-expression, self-control,
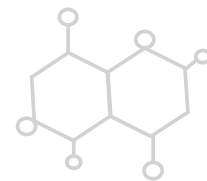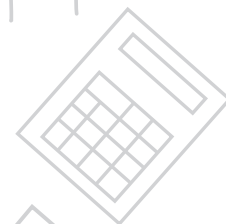
problem-solving, innovation, thus promoting effective learning. Teachers can identify games that need observation and concentration, like recognition of things in a room, identifying colours, playing with blocks of specific colours and shapes, etc. They can give the students options to make decisions for activities, like choosing colours while drawing or painting so that the child can learn how to think and choose. When designing learning experiences, teachers can plan and frame the curriculum and provide tools that give students options, voice, and choice in order to enable them to be creative. In order to develop creative ideas among students, teachers need to work on (i) fostering creative environment, (ii) encouraging hands-on learning and discussion, (iii) encouraging collaborative learning spaces, (iv) rewarding and recognising the performance of students for motivating them, (v) giving opportunities to students to make shared decisions, and (vi) inculcating values of fair play, honesty, courage, cooperation team-work, tolerance, respect, etc. through interaction with peers having diverse cultural and ethnic background and personality.

To bring about vocational awareness through practical exposure and experiences, teachers will conduct visits to industries and organisations. Activities at the workplace will help children to understand the importance of work, respect for manual work, values for self-reliance, cooperativeness, perseverance, helpfulness, tolerance, and work ethics. Children will discover how their interests and strengths can be utilised to pursue learning opportunities at the secondary stage and beyond schooling. They will use the knowledge to articulate their interests and abilities with the plethora of occupational choices in the world of work.

Objectives of Vocational Awareness

The students will be able to:

1. Identify the productive activities and understand the process of planning and organising productive work;
2. Develop basic skills to observe, manipulate and participate in work practice;
3. Use creative ideas for developing materials and methods;
4. Inculcate socially desirable values, such as self-reliance, helpfulness, cooperativeness, teamwork, perseverance and tolerance, etc. through work;
5. Collect the information directly from the industry or employers;
6. Develop respect for manual work and regard for workers; and
7. Relate the various soft skills with life and various occupations.

3.3 Vocational Exploration

Vocational exploration will help children to identify their place in the world of work and they can make a difference by becoming productive citizens of the country.

The decision of students in choosing subjects is influenced by their interests, attitudes, motivation, personality, and aptitude. Helping them to learn in a natural environment is a crucial strategy for promoting sustainability in education, as it would be useful in generating interest and curiosity in learning about diverse things. Interests are based on wants, motives, and basic needs. They indicate likes or dislikes for something. Interests help a person to realise one's goals. Pursuing one's interest is always satisfying. Thus, it is very crucial to know the interest of students and match the same with the various disciplines or career options available in the world of work.

Vocational Interest Inventory Test can be administered to understand the interests of students regarding work-related tasks that they would prefer to perform. Teachers should contribute by helping children to identify their personal traits and abilities and make them understand how decisions made during schooling have the potential to help in deciding future pathways. It can help teachers to understand the learning needs of students and develop a personalised learning plan for them.

Teachers should also provide information to students on connections between classroom learning and learning beyond school. They can motivate and inspire students to build on their strengths and overcome their weaknesses to meet their aspirations and fulfill their interests. Therefore, students should be able to identify their goals, and interests, capabilities, and values and explore the various vocational opportunities in the world of work.
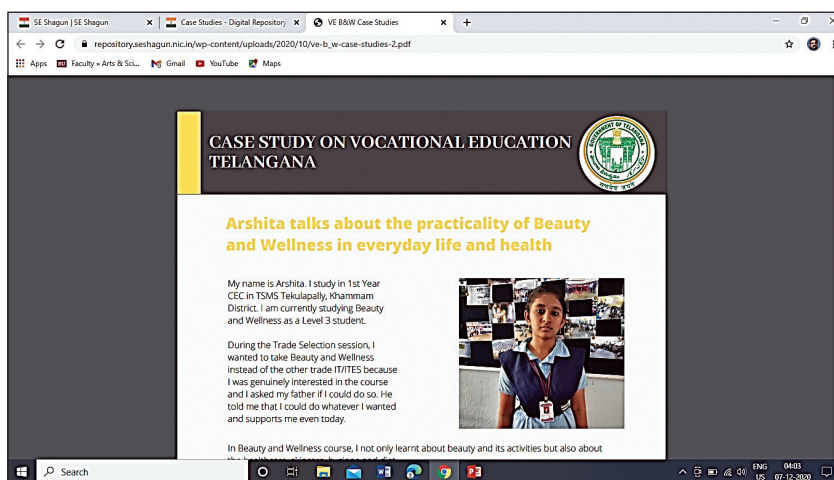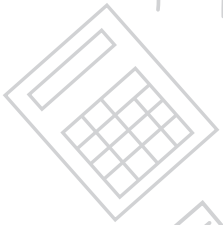
OBJECTIVES OF VOCATIONAL EXPLORATION

The students will be able to:

1. Explain how skill learning is a process that comes with doing and practicing;
2. Identify the soft and hard skills that people possess for accomplishing the tasks in various occupations;
3. Understand how knowledge, skills, and values are important in career-building process;
4. Understand the link between education and work;
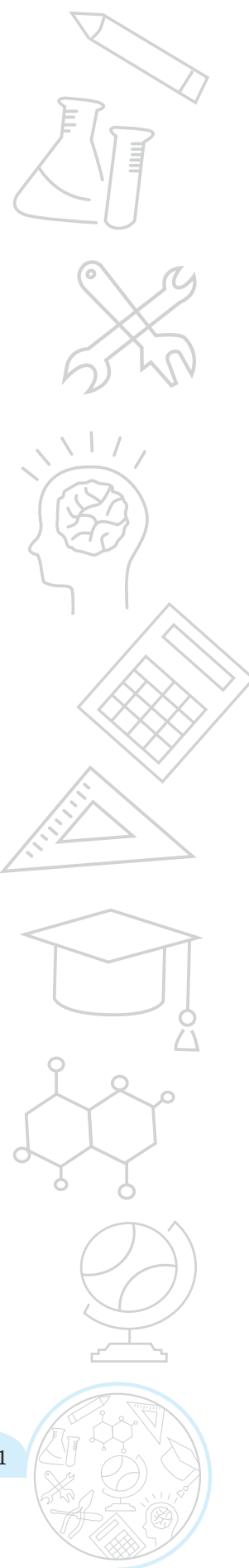
5. Evaluate career options with an understanding of the soft skills and hard skills required for various occupations; and

6. Develop a personalised career plan.
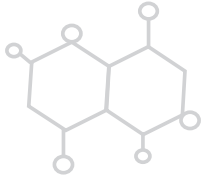
Planning and Implementation of Pre-vocational Education at Middle Stage

4

Careful planning and implementation precedes the success of any educational programme. Attention to details, cost-effectiveness and time bound schedules are the factors that add value to the success. Planning the implementation of pre-vocational education programme from Grades 6 to 8 at the State, District and Institutional level will involve development of short-term, medium-term, and long-term goals.

4.1 State Level

The States/UTs should develop the resource material for the implementation of the pre-vocational education programme, based on the national guidelines. State Councils of Educational Research and Training (SCERTs) can develop teaching-learning materials and support the Directorates of Education in implementation of Pre-vocational Education Programme. The existing infrastructure for the vocational courses in schools shall be utilised to conduct the pre-vocational activities. Schools will need to have classroom-cum-lab facility, with basic tools, equipment, and raw materials to be made available for students, which will help them to conduct the activities. The establishment of school complexes/clusters and the sharing of resources across complexes will be useful in supporting the pre-vocational education programme, especially for cutting across the curricular areas, such as art, science, social science, music, language, and physical education.

The States/UTs may constitute District Level Pre-vocational Committees (PVCs) for planning and implementation, including identifying the pre-vocational activities and the resources that would be required for effective implementation of the programme.

4.2 District Level

The District Education Officers (DEOs) should undertake extensive visits of places around the schools and identify themes and activities that could be taken up as part of the pre-vocational education programme.

4.3. School Level

The schools need to design, develop and implement strategies for ensuring successful implementation of the pre-vocational education programme. The implementation plan should include the roles and responsibilities of various stakeholders, capacity building plan of the teachers, networking with various organisations/agencies/institutions/industries/employers, field visits to be organised assessment and evaluation procedures, monitoring, and reporting. Training in the use of teaching techniques that supports hands-on learning, problem-solving, simulation, team-based activities, project work, etc. should be planned and executed at school level also.

4.3.1 Roles and Responsibilities

(a) Head of the School

The Head of the school will play a vital role in the implementation and monitoring of the pre-vocational education programme.. They will provide leadership for the planning and implementation,with a clear plan for achieving the objectives. The Head Master/Principal shall identify the Teacher Coordinator (TC) and set up a Local Resource Team (LRT) to make necessary arrangements for resources required for conducting the activities and facilitating the implementation of pre-vocational activities. The TC, in consultation with the LRT of the school, will prepare an Annual Plan for the activities to be organised throughout the year. The Annual Plan should be based on the availability of local resources and expertise.

The Head of the School will ensure the capacity building of teachers through their participation in training. The capacity building design should have the provision of regular hand-holding sessions, which will help teachers gain confidence in utilising vocational skills in the classrooms. Appropriate tools, such as questionnaires, should be utilised for obtaining feedback on the training programmes. A mid-term review exercise should be taken up by the Head of the institution to ensure the progress and performance of the teachers in the implementation of pre-vocational education programme.

(b) Teachers

Teachers as effective facilitators play a crucial role in ensuring the holistic development of students in not only providing knowledge and developing their skills, but also by nurturing the personal-social qualities among students. All the teachers of the school should participate in the pre-vocational education programme. Teachers teaching subjects, like languages, mathematics, science, social science, art, music, and work experience shall be involved in the organisation of the skill-based activities. Teachers are expected to play the role of a mentor, guide, and facilitator in enhancing students' learning. They

should develop the ability to identify the strengths, weaknesses and interests of children, including those with disabilities (*Divyangs*). Vocational guidance by the teachers will help students to choose suitable activities and courses according to their abilities and interests. Teachers should create an environment where the knowledge acquisition process is organically nurtured and cultivated. They would provide student support services, which include guidance to students, arrangement of learning materials, provision of continuous feedback on the performance, and organisation of exhibition-cum-sale of products prepared by students.

Training of the teachers and orientation of the key stakeholders is to be done by the States/UTs. In order to achieve the objectives of the pre-vocational education, both pre-service and in-service training of teachers should reflect changes in the curriculum content and methodology for incorporating pedagogy of skills development as an integral part of the training programme. The PSS Central Institute of Vocational Education (PSSCIVE), a constituent unit of the National Council of Educational Research and Training (NCERT) at Bhopal, shall act as the principal coordinating agency for organising teacher training programmes. The PSSCIVE will help the States/UTs in conducting trainings, with the help of established training institutes having the necessary experiences and expertise. While conducting the training programmes, all efforts shall be made by the States/UTs to involve the State Council of Educational Research and Training (SCERTs), District Institutes of Education and Training (DIETs), Teacher Training Institutions, Universities, etc. for meeting the requirements of teachers or skill trainers and in leveraging their capacities for achieving the goals and objectives of the pre-vocational education programme.

Teachers are expected to perform the following functions:

(i) Awareness generation

❒ Educate students, parents and other stakeholders regarding the importance of pre-vocational education.

❒ Plan and conduct meetings and seminars to connect with parents and other stakeholders for generating awareness on pre-vocational education.

(ii) Guidance

❒ Educate students about the changes in the world of work and how work and technology have changed over time.

❒ Talk about the relevance of the subject/theme or sector to the wider world of work.

❒ Talk about jobs related to the subject/theme or sector.

❒ Develop linkages with experts, institutions, industries and community for guidance and counselling of students by the experts or career counsellors.

❒ Invite former students, role models, or employers to talk to the children.

❒ Respond to questions and concerns raised by students about their future.

❒ Direct students to useful learning and career resources available in libraries, resource centers and internet.
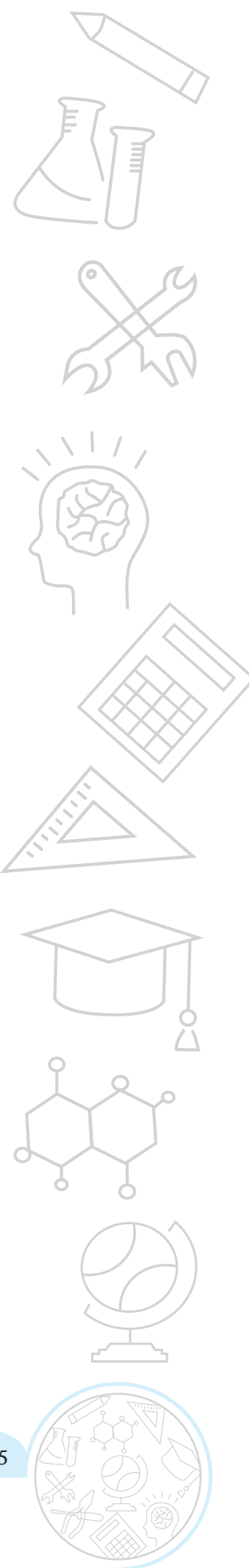
(iii) Planning and Organising Activities

❐ Prepare annual plan for activities, considering the resources, learning objectives/outcomes, learning styles, etc.

❐ Identify activities and prepare activity plans for conducting activities.

❐ Arrange materials and resources.

❐ Organise activities and relate them with real-life situations and occupations.

❐ Explain and demonstrate safety precautions needed for particular tasks or jobs.

❐ Impart knowledge and skills related to the subject/theme or sectors.

The various steps that the teachers can follow for organising the pre-vocational activities are given in figure 1.
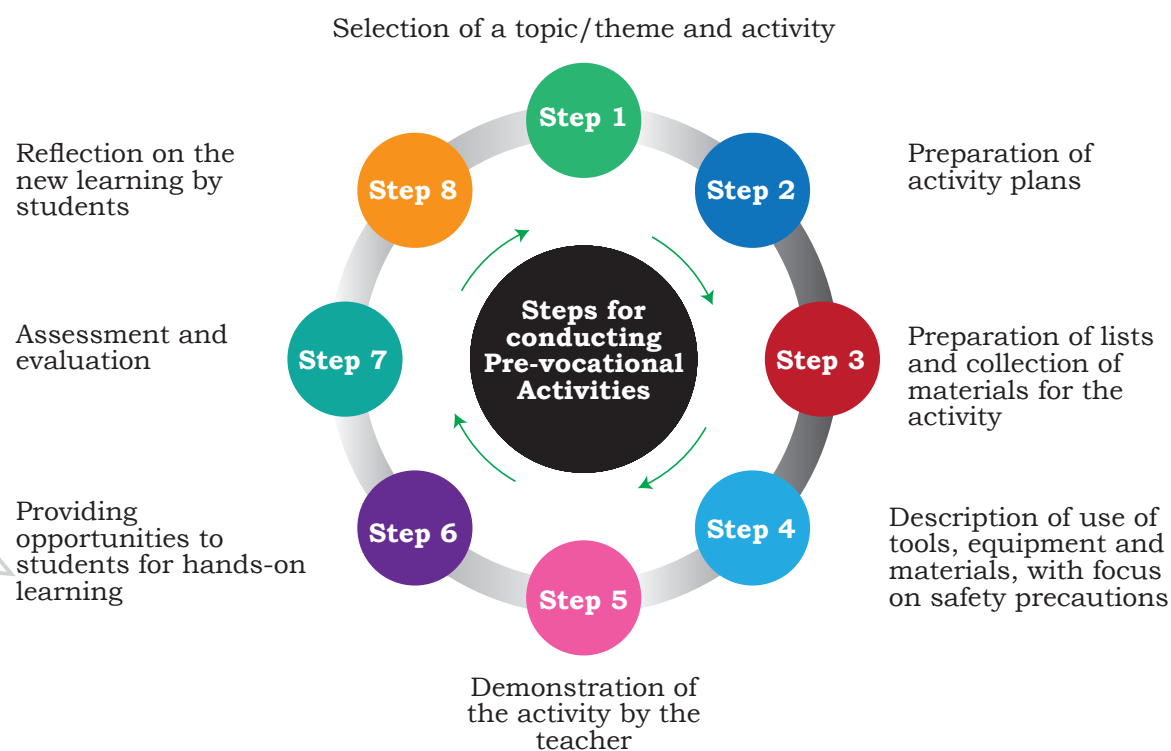
Selection of a topic/theme and activity

Reflection on the new learning by students

Assessment and evaluation

Providing opportunities to students for hands-on learning

Steps for conducting Pre-vocational Activities

Step 1
Step 2
Step 3
Step 4
Step 5
Step 6
Step 7
Step 8

Preparation of activity plans

Preparation of lists and collection of materials for the activity

Description of use of tools, equipment and materials, with focus on safety precautions

Demonstration of the activity by the teacher

Figure 1: An overview of the steps for conducting pre-vocational activities

❐ Link subjects to jobs and opportunities in industries.

❐ Explain the concept, importance, relevance in related areas and implications on personal, social, and vocational development.

❐ Describe how things work, especially with regard to the tasks being performed in an occupation.

❐ Encourage students to learn about the process, rather than just focusing on the product or outcome.

❐ Organise campaigns, excursions, field visits, and educational tours for students.

(iv) Assessment and Evaluation

- ❐ Design comprehensive assessment plans to achieve learning outcomes.
- ❐ Observe and evaluate students, maintain records of assignments, assessments, and attendance.
- ❐ Give clear and specific feedback during the performance of the students.
- ❐ Work on the points of improvement of the student's performance.

(v) Supervision

- ❐ Maintain effective communication with stakeholders for the purpose of planning and implementation of activities.
- ❐ Motivate and encourage students to support their learning.

(vi) Record-keeping and Monitoring

- ❐ Use Information and Communication Technology to prepare and submit the report.
- ❐ Provide feedback to students and the administration for improvement.

It may be noted that school heads and teachers can collectively play a critical role in creating enriched environment that can help students identify their strengths, interests and weaknesses. They can ensure that no biases or stereotypical ideas are introduced in relation to gender or the deriopaphical parameters. They should also motivate girls, boys and transgender students to consider skills that may be futuristic, humane, aspirational, sustainable, and unconventional.

4.3.2 Development of Annual Plan

The Teacher Coordinator (TC) with the help of the teachers and Local Resource Team (LRT) will develop an annual plan of the activities to be organised on various themes, considering both soft and hard skills. For example, students taught to frame a photograph to enable them to acquire knowledge in the mathematical concept of dimension, size, shape, moulding, glazing, aesthetics, teamwork, etc., through the application of skills of using a work table, hammer, wire cutters, pliers, screwdrivers, fitting tools, knives, wrenches, plexi cutter, manual glass cutter, and using files for various purposes, such as cutting, moulding, drilling, fitting, etc.

Soft skills	Hard skills
Cluster of productive personality traits that characterise one's relationships in a social milieu with other people.	Teachable abilities or skill sets that are easy to quantify and are specific to certain jobs or occupations.

The teacher, while planning activities, in order to integrate with other subject(s), must be aware of the stages of the child's development, interests, and learning needs. This will help teachers to choose activities appropriate to the development and learning needs of the children. Children will do the various pre-vocational activities planned under the annual work plan. They will use material and equipment in ways that best suit their personal curiosity
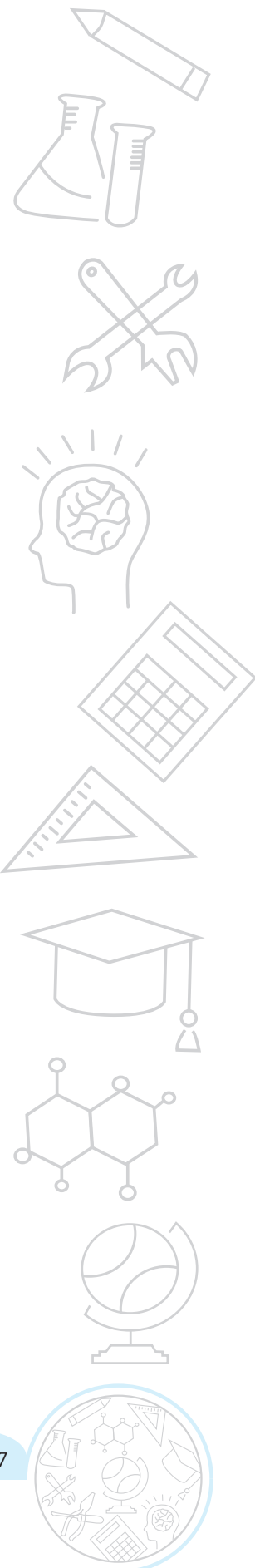
and understanding. Constructivist learning environments require students to utilise their prior knowledge and experiences to formulate new, related, and/or adaptive concepts in learning. While the students are performing the activities, teachers should encourage them to reflect, and connect with the activities and recall things that happened during the activity. The format for preparing an Annual Plan of Activities is given in Table 4.

Table 4: Format for preparing Annual Plan of Activities for Pre-vocational Education

Grades VI to VIII				
Month	*Theme/Sector*	*Week*	*Activity*	*Subject(s) to be integrated*
April				
May				

4.3.3 Teaching Resources

A teaching resource is a material that is designed to help facilitate knowledge and skill acquisition by the learners. Teachers must use teaching resources, such as textbooks, video films, audio programmes, multimedia, animations, posters, worksheets, lesson plans, etc. to support students' progress in learning. Grade-wise teaching resources are to be developed by the teachers suited to the needs of the learning styles of the learners. There are readymade teaching resources available, therefore, teachers can use the resources as they are modify/adapt them to the context or replace it with something more relevant, keeping in view the learning objectives or outcomes.

The various teaching aids that can be utilised for developing soft and hard skills are as follows:

(i) Printed Aids: Printed aids include words, pictures, diagrams, cartoons, etc. to convey information. It includes the following:

a) Textbooks

b) Study guides

c) Workbooks

d) Worksheets

e) Teacher's guide

f) Handouts

g) Wall charts

h) Educational posters

(ii) Auditory Aids: Auditory aids are useful in improving communication skills and enhancing interest in the content. It includes the following:

a) Tape Recorder

b) Radio

c) CD/DVD Player

Auditory aids have many advantages, including engaging auditory learners and using music as memorisation techniques.

(iii) Visual Aids : A visual aid is any object or picture that relates to the subject being taught. Posters, pictures, or even the object itself can be used as visual aid in teaching. These include the following:

a) Chalkboard/whiteboard
b) Bulletin-board
c) Projected aids, such as slides
d) Representations—charts, sketches, flash cards, posters, cartoons, pictures, etc.
e) Specimens
f) Magazines
g) Puppets
h) Felt board
i) Magnetic board
j) Flipcharts
k) Flashcards
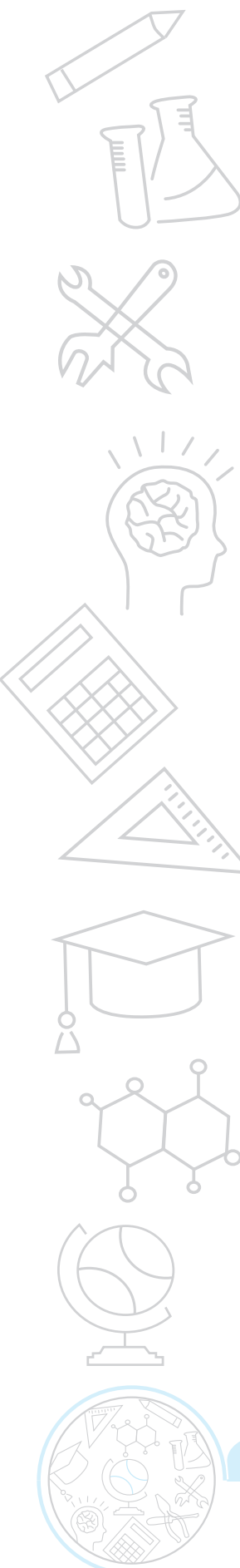
(iv) Audio-visual Aids : These aids include both pictures and sound, which influence the mind through the eyes and ears. These include the following.

a) Smart board
b) Television broadcasts
c) Sound motion pictures
d) Video films
e) Pre-recorded video lectures

Video Film
Produced by
PSS Central Institute of Vocational Education, Bhopal
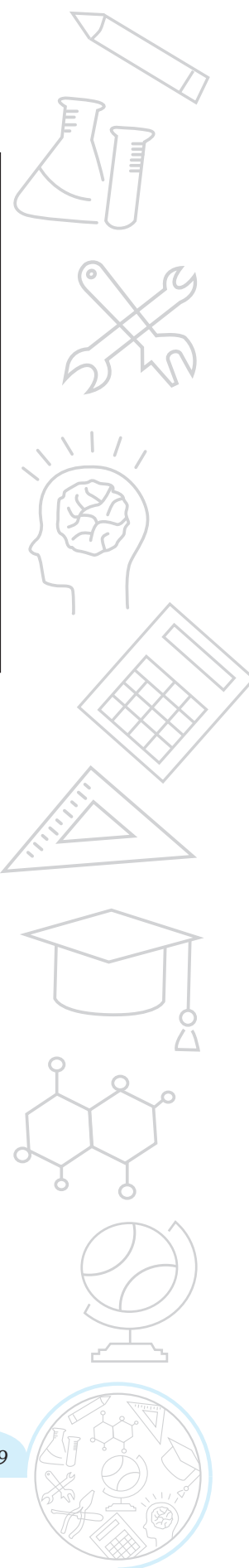
(v) Activity Aids : These aids involve direct participation of students and teachers and provide first-hand knowledge and skills. These include the following:

a) Educational tours/Excursions
b) Field visits
c) Collection of specimens
d) Preparation of models, charts, puppets, etc.
e) Dramatics
f) Demonstration
g) Role play
h) Conducting experiments
i) Crosswords
j) Puzzles
k) Playlets
l) Tableaux
m) Pantomime

(vi) Computer Aids : Computer mediated aids include computer applications that facilitate the delivery of instruction. Examples include electronic mail, fax, real-time computer conferencing, and World Wide Web applications. Computer applications for distance education are varied and include: (i) Computer-assisted instruction (CAI) – It uses the computer as a self-contained teaching machine to present individual lessons, and (ii) Computer-managed instruction (CMI) - It uses the computer to organise instruction and track student records and progress.

(vii) Web-based Resources : The World Wide Web (www) has opened a whole new avenue for distance learning courses and the access to remote resources. Teachers can locate relevant websites for students to conduct searches for information related to a specific topic. Bookmark files or web pages with links can be developed to provide quick access to appropriate sites for students.

(viii) Online teaching: Online teaching is the process of educating others on virtual platforms. It includes live classes, video conferencing, webinars, etc. using online tools. Making presentations through online platforms are one of the most common methods of online teaching. Slide presentations allow the presenter to incorporate visuals (images, videos, etc.), which makes it easier to deliver information and data while making the lesson more engaging. By incorporating an online whiteboard, a teacher can make the classes even more engaging. While preparing and delivering an online class, the teacher should:

❏ Prepare outline of the content of the lesson.
❏ Breakdown the main topic into sub-parts.
❏ Make use of graphic organisers, images, posters, videos, visuals, etc., for explanation.
❏ Set clear guidelines for online class etiquettes to be maintained by students throughout the session.

❒ Carry out discussions around a topic and encourage students to participate actively.

❒ Ask questions during and after the session and allow time for students to think and answer.

(ix) Podcasting: A podcast is a series of digital audio files that can be downloaded by the users on their mobile device for listening. It is a type of digital broadcast made available on the internet.

**(x) Mobile Aids:** Mobile devices can be used for teaching. They can be utilised for the following:

a) Listening to audio recordings.

b) Participating in surveys through polling tools.

c) Creating videos.

d) Chatting through online discussion forums.

e) Playing games designed for learning, including language games.

f) Reading e-newspapers.

(xi) Live chatting is a great way for real-time discussions on topics or lessons.

(xii) Models : Models can play an extremely useful role in teaching students a wide range of topics. They are, however, particularly useful in three specific roles - visual support materials for mass instruction, objects for manipulation for individualised learning, and as construction project. They can be used to demonstrate the interior structures of objects or systems with a clarity that is often not possible with two-dimensional representations.

(xiii) Social media : Social media is the social interaction among people in which they create, share or exchange information and ideas in virtual communities and networks. With the right content, social media can be a suitable choice for enhancing the knowledge of students. It can help connect students to information and generate a dialogue with their teacher and other students about a topic or a course. It can also help students and faculty build professional networks that connect them to other learning communities.
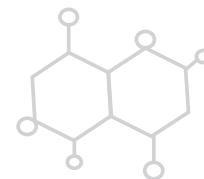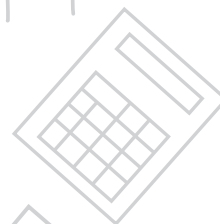
All teaching resources like textbooks, study guides, worksheets, etc. must be gender inclusive and gender sensitive including concerns of transgender children. With regard to social media children should be exposed to the achievements of those women who may not be well known but have honed their skills in vocations such as solar engineering and agriculture, bee-keeping, mushroom cultivation, animal husbandry, etc. These examples can be used as case studies so as to motivate girls to consider skills that are unconventional as well as local-specific.

4.3.4 Teaching-learning Strategies and Methods

Instructional planning emphasises on the whole range of planned activities used by the teachers for active engagement of students. It is one of the core abilities for effective delivery in the classroom, laboratory, workshop and other learning environments. For this, the teacher ought to know the subject matter to be taught, the learner characteristics and the strategies developing the skills and abilities in the learner. This requires the teacher to understand the process of human learning for interpreting correctly the learning outcomes to be accomplished by the students.

Teaching strategies that motivate children to identify their own interests and nurture their curiosity should be adopted by the teachers. Teachers have to adopt methods for facilitating children to discover or explore their personal potentialities and abilities for actualising them. They need to guide children to self-orientation and self-understanding. Personal potentialities can be differentiated into bodily, social, intellectual, and spiritual. Teachers have to educate children about the benefits of physical activities and develop their bodily potentialities taking into consideration the diversity of students.

Instructional planning involves setting objectives or goals, analysing the situation for external factors, identifying alternatives (choosing best alternative to accomplish the objectives) choosing alternative methods for teaching, formulating lesson plans, and implementing the lesson plans.

4.3.4.1 Concept and Types of Learning

Learning is defined as "any relatively permanent change in behaviour that occurs as a result of practice and experience". It is important for a teacher to understand the purpose and types of learning for teaching effectively. The important and common types of learning are explained here.

Learning from Observation

Learning from observation is a common and natural method of human learning. Observational learning (also known as vicarious or social learning) is a type of learning that occurs as a function of observing, retaining and replicating novel behaviours executed by others. Observational learning is a key learning method for children when acquiring basic tasks, such as language, but it is different from imitation in which the observer copies and reproduces the behaviour of the model.

Observations noted in a daily diary or journal help students to better understand how their own experiences contribute to the formation of their theories. Teachers have to make regular observation of the activities or tasks being performed by students and make note of the same for assessment and evaluation.

Learning by Doing

Learning by doing is the process, whereby students make sense of their experiences, especially those experiences in which they actively engage in making things and exploring the world. It is both a conceptual and applied aspect that can be applied to a wide variety of learning situations in which teachers seek to engage learners in more hands-on and creative modes of learning.

Learning by doing is more about planning, implementing, and analysing skills gained through applied learning methods. This process leads to the holistic development of students as they attain in-depth practical skills along with theoretical information. Most of our activities in our day-to-day life refer to
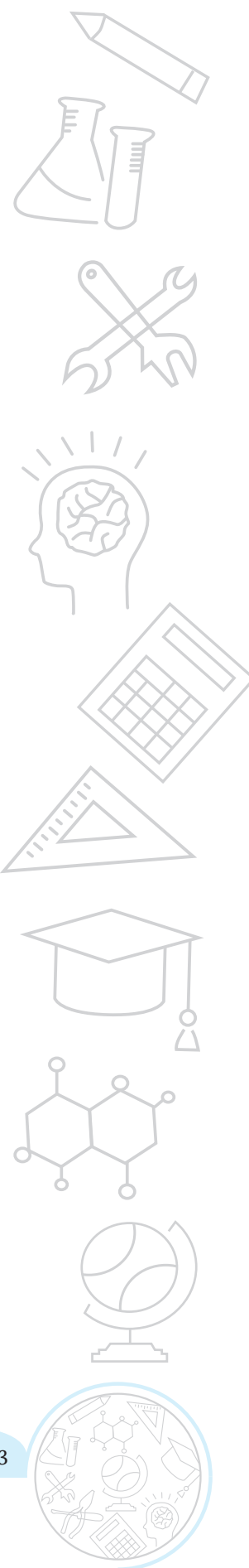
motor activities. These are a set of internal processes associated with practice or experience leading to relatively permanent changes in the capability for skilled behaviour. The individual has to learn them in order to maintain his regular life. For example, walking, running, skating, driving, climbing, etc. All these activities involve the muscular coordination. During the initial stage of motor learning i.e. 'Cognitive stage', the learner should develop an overall understanding of the skill. During the 'Associative stage' of motor learning, the learner begins to demonstrate a more refined movement through practice. In this stage, the learner is able to identify various stimuli that may occur and thus can focus on "how to do" moving on from the "what to do". In the last or final stage i.e. 'Autonomous stage', the motor skill becomes mostly automatic. A learner who reaches this stage can perform the skill in any environment with very little involvement of cognition.

It is also important to differentiate between learning and performance. Performance tends to improve after an individual practices a skill over a time. Sustained or consistent performance occurs when an individual is able to retain the skill(s) and does not change over a period.

There are 4 methods of teaching motor skills. These are part practice, whole practice, whole-part-whole practice, and progressive part method.

Part practice: In part practice, the movement is split into sub-routines and different parts. Each part is then learnt separately, and once each part is perfected, they are done together to re-create the whole skill. It allows skills to be broken down into manageable parts, making learning more achievable. Since, each part can be perfected individually, therefore there will be less mistakes in performing a skill. It is good for learning complex skills. However, it takes a long time to perfect each part then put it together.

Whole practice: In whole practice, the skills are learnt all in one go. In this case, the movement is often intricate and complicated, and cannot be split-up into different sub-routines easily. However, it is quicker than other practices to learn skills.

Whole-part-whole practice: In whole-part-whole practice, the skill is first performed as a whole, then is split-up into its sub-routines to be perfected. Thus, the skill is learnt as a whole first, so that the performer can actually do the

skill. Specific weak areas of the skill can be isolated by watching the performer perform the skill first. It takes a long time to learn the skill, then improve each individual part.

Progressive Part Method: In progressive part method, the first part of the skill is practiced and then other parts are added to it gradually. Linking of the sub-routines, or parts of a task together is done in an order when practicing. The first two parts are learned, the third part is added, that part is learned and added to the first two. In this method the learner can focus on one aspect of a skill and can correct weaknesses. Each part brings success in stages, therefore the motivation level increases. To provide an effective demonstration of information, ideas and procedures, a teacher should carefully plan, practice and demonstrate. He/she should make sure that every student is able to participate, practice and demonstrate.

Verbal learning

Verbal learning is associated with the memorisation and retention of words, signs, pictures, symbols, words, figures, sounds, etc. Verbal learning can be promoted by asking students to read books aloud. Students can make a list of new words every day along with their sounds and meanings.

Concept learning

It is the form of learning, which requires higher order mental processes, like thinking, reasoning. For example, when we see a dog and link it to the term 'dog', we learn that the word dog refers to a particular animal. Concept learning involves two processes, namely abstraction and generalisation.

Discrimination learning

Learning to differentiate between stimuli and showing an appropriate response to these stimuli is called discrimination learning. For example, sound horns of different vehicles like bus, car, ambulance, etc. have different pitch and thus generate appropriate response by the drivers.
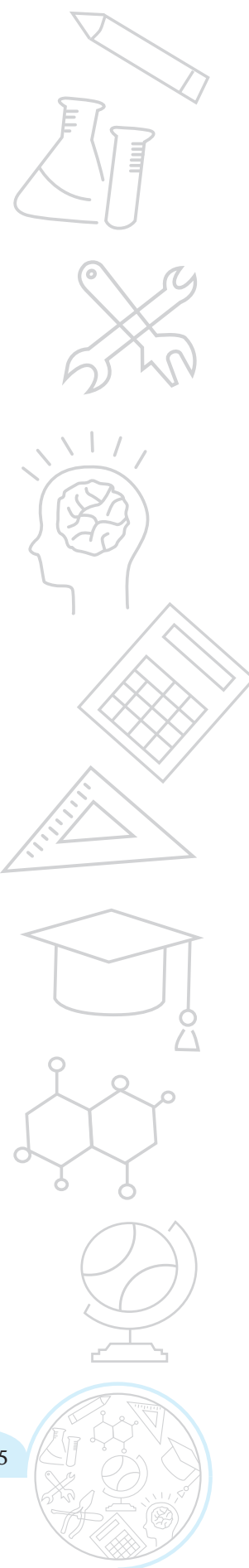
Learning of principles

A principle describes a relationship between two concepts. For example, he/she is a man/woman of principles and is honest to his/her work. Here it implies that the person is honest to his/her works or as a rule governing the behaviour. The related concepts are leadership principles and work ethics.

Individuals learn certain principles related to science, mathematics, etc. so as to manage their work effectively. These principles always show the relationship between two or more concepts, such as formulae, laws, associations, correlations, etc. For example, all internal combustion engines work on the same principle.

Problem solving

Problem solving approach to learning requires identification of a problem, determining the cause of the problem, identifying, prioritising, and selecting alternatives for a solution, and implementing a solution. It requires the use of cognitive abilities, such as thinking, reasoning, observation, imagination, generalisation, etc. The following steps can be adopted for teaching problem solving skills:

❐ **Identifying and defining the problem:** Problem arises out of felt need. The students should be able to identify and clearly define the problem.

❐ **Analysis of the problem:** The problem should be properly analysed, stating clearly the relationships between different concepts and the cause of the problem.

❐ **Formulating hypotheses or formulating alternative feasible solutions**: Possible or alternative solutions may be formulated, based on the nature of the problem.

❐ **Testing the hypotheses or selecting and implementing a feasible solution:** Each hypothesis is to be tested to solve the problem.

❐ **Verification of the result or concluding and presenting the solution:** The solution of the problem is to be verified a number of times to test the validity of the hypotheses.

Attitude learning

Attitude is a predisposition which determines and directs our behaviour. We develop different attitudes from our childhood about the people, objects and everything we know. Our behaviour may be positive or negative depending upon our attitudes. For example, behaviour of a salesman towards his/her customer and attitude of a skilled worker towards the maintenance of the workplace and tools.

Cooperative Learning

Cooperative or group learning involves a group of people who are of similar age or competencies and perform task(s) with an objective or a set of objectives to be achieved. This learning concept allows small groups of students to work together to help themselves and their team-mates to learn. Students may also be assigned to a group to work on long-term classroom goals. These groups

are called base groups. Students work together on common tasks or learning activities that are best handled through group work.


Collaborative Learning

Collaborative learning is a method of teaching and learning in which students' team together to explore a significant issue, question or create a meaningful project. Collaborative learning is useful for enhancing problem-solving, self-management skills and critical thinking skills. It helps in social interactions and thus supports diversity in learning, interpersonal relationships and development of oral communication skills.

E-learning

E-learning (or e-Learning) is the use of electronic media and information and communication technologies in education. E-learning is broadly inclusive of all forms of educational technology in learning and teaching. It is synchronous with technology-enhanced learning (TEL), computer-play-based instruction (CBI), computer-based training (CBT), computer-assisted instruction or computer-aided instruction (CAI), internet-based training (IBT), web-based training (WBT), online education, virtual education, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital educational collaboration.

E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes, such as audio or video tape, and computer-based learning, web-based learning. E-learning activities can be synchronous or asynchronous. Synchronous and asynchronous online discussions are designed to facilitate communication and knowledge-sharing among learners. Synchronous events take place in real time. Synchronous communication between two people requires that both the persons should be present at a given time. Examples of
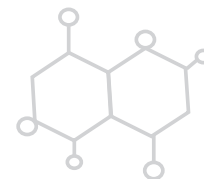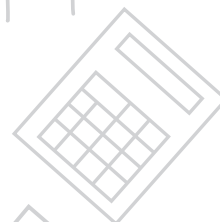
synchronous activities are chat conversations and audio or video conferencing. Learners can comment and exchange ideas about course activities or contribute to group learning by sharing their knowledge. Asynchronous events are time-independent. A self-paced course is an example of asynchronous e-learning because online learning takes place at any time. E-mail or discussion forums are examples of asynchronous communication tools.

Blog, which is a discussion or information site published on the World Wide Web consists of discrete entries ("posts") typically displayed in reverse chronological order. The contents and the purposes of blogs vary from links and commentary about other web sites to news about a company/person/idea, photos, poetry, mini-essays, project updates and even fictions. There are many ways teachers can use blogs, some of them include content-related blog, networking and personal knowledge sharing, instructional tips for learners, course announcements and readings, annotated links, etc. Learners can also take part in blogs for reflective writing, assignment submission, collaborative work, e-portfolios and sharing course-related resources.

4.3.4.2 Teaching Methods

Teaching is a process, which includes planning, implementation, evaluation and revision. The various teaching and training methods that can be utilised for organising pre-vocational activities are as follows:

Lectures

Teachers can use lectures to help students acquire knowledge of terms, basic facts, and simple concepts. Lectures can be easier for students to understand and follow if they have a handout that contains the outline of the lecture. Since lectures are a monologue, the content and pace are important aspects in developing an understanding of the content of the lecture. Visual tools, such as slide presentations and videos can enhance the utility of the lectures.

Presentations

In a presentation, the teacher introduces the main idea or theme and gives examples to illustrate each idea or theme. He/she reinforces the main points to make the presentation interesting through varied activities, asks questions

to check the understanding of the topic and also reply to the questions of the students.

Projects

Projects constitute an important learning mode, which can be assigned to an individual or a group of students. For project work, children may be required to work during school hours or at home. In school, students from diverse backgrounds with their unique experiences, personal characteristics, interests, and abilities contribute to the development of their personal-social qualities, when working in groups.

Project work is a useful approach, as besides being connected to real life, it involves making plans, doing technical work, evaluating available materials, estimating time frames making products, and so on. It will be useful in providing opportunities to the children to explore the basic skill requirements for the various productive tasks in the world of work. A teacher may identify theme-wise or chapter-wise projects from the textbooks and involve students in planning and designing the projects. Teachers should not assign a project with a completed project description. They should allow children to make choices for resources to be utilised for executing the project, and organise group discussion so that they generate their own ideas.

Demonstration

Demonstration method is useful in teaching a practical subject where the content can be understood by showing. It is a method based on presentation that shows how to perform an act or conduct a procedure. This method is known to be based on principles of 'seeing is believing' and 'learning by observing a teacher doing a task'.

The teacher or an experienced trainer demonstrates the task in a step-by-step manner, and then asks learners to practice the steps themselves. It is often followed by the activity under the close guidance of the instructor or an expert. This method has the advantage of greater impact on the learner in terms of adding to his/her existing level of knowledge and skills.

Problem Solving Method

In this method, a teacher raises a problem in front of the students and also guides them. Students then solve the problem, after gaining knowledge through self-study, self-learning, investigation, and exploration. The students are expected to understand the problem and relate it to the existing knowledge and real-life situations. They should be able to design the process of solving the problem. They should also, explain as to why a particular strategy has been selected, because systematic planning and explanation of each step will help the students in developing problem-solving skills.

Discovery Method

Discovery learning takes place in problem-solving situations where the learner draws on his own experience and prior knowledge. In this method, students find the solution to their problems from their own surrounding environment.
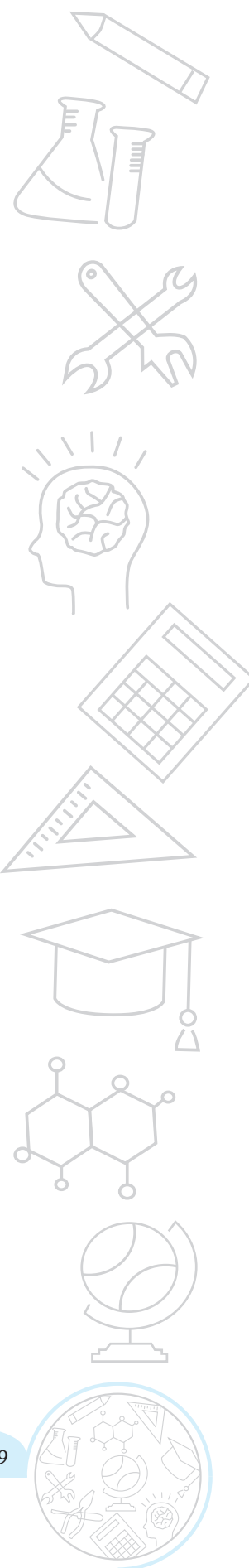
It is inquiry-based learning. It involves exploring and manipulating objects, questioning, and performing experiments. It encourages motivation, active involvement, and creativity among the learners.

Case Study Method

The case study method is a learning technique in which the student is given a particular problem, which is known as the 'case'. It is a brief story or scenario that presents a realistic situation for participants to discuss and analyse. Case studies give participants the opportunity to use newly acquired knowledge to discuss, analyse, and solve problems related to the topic. For example, a case might be an accident and then the students are asked to identify the reasons of the accident and the precautions that could have been taken by the drivers to avoid the accident. Depending on the size of the group, case studies can be discussed and analysed in pairs, small groups, or large groups. The goal of using case studies is to help participants generate possible answers to queries or solutions to issues that may arise in the course of their work. The case study method should include case studies of work done by women who have acquired the requisite skills and set up their own enterprises. For example, Farida Banu of Karnataka for setting up Vermi composting unit; the Nattika Vanitha Pushpa Krishi Samarakshana Samithi of Thrissur, an all-women organisation engaged in production of orchids; Kala Bisht of Dehradun for Beekeeping, etc.

Group Discussion

Knowledge is constructed meaningfully when ideas and experiences are shared with others through discussions. Group discussions help in learning through interaction in group setting.

Experiment

An experiment is a procedure carried out to support or refute a hypothesis. Experiments provide insight into cause-and-effect by demonstrating what

outcome occurs when a particular factor is manipulated. Laboratory/workshop or field experiments can be designed and conducted by the teachers to encourage children to investigate, observe, create, discuss, critically think, categorise, analyse, and draw conclusions.

Survey

The survey method is the technique of gathering data by asking questions to people who are thought to have desired information. A questionnaire is prepared and the respondents answer the list of questions, and the data collected through the questions are analysed for results. Surveys help to involve children to seek, collect and use the information to draw meaningful insights. In most of the exploration and survey activities, children seek information from people. Children may be encouraged to talk to people in their surroundings and collect data related to the problem or the task given. This will help them to acquire first-hand experience and learn more about the problems around them. Children may be encouraged to frame questions on their own for interviewing and use the data gathered to prepare a report. Interacting with people and interviewing them helps in developing skills of communication, framing and asking questions, recording the responses, preparing reports, etc.

Concept Mapping

Concept mapping is a process where concept maps, which are diagrammatic representations, show the meaningful relationship between concepts. It helps in developing conceptual understanding among students with inter-relations among the concepts. Teachers can use concept maps for assessing what the learners know about a topic in terms of the concepts involved.

Role-plays

Role-play takes place when two or more people act out roles in a simulated situation or scenario that resembles the real one. Role plays help children enact certain real-life and imaginary characters, which facilitate not only building up their confidence but also help them gain insights into the values, attitudes, and roles of such characters. Putting children in certain roles helps them learn better and internalise the contexts, which allow them to not only explore the subject matter in varied ways but also imbibe appropriate dispositions. For example; role play can be an effective medium to sensitise students about gender issues in various occupation.

Role-play exercises can be organised for the following:

a) Games, e.g., memory games for teaching symbols and signs.

b) Presentation, e.g., presenting the various tasks done by the people in different occupations.

c) Problem-solving in a given situation, e.g. dealing with an unsatisfied customer who comes back to the beauty salon and complains about the after-effects of the cream applied to her face or the situation can be on dealing with an angry customer in a retail store.
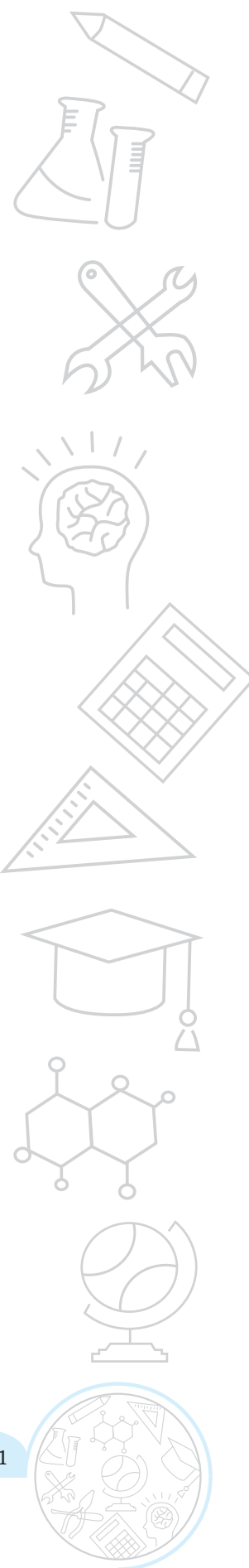
Brainstorming

It is a creative method of teaching under which a number of ideas are generated for the solution of a specific topic or a problem. This method effectively uses the brains of the participants to think and find solutions related to some selected problems or issues.

Debate

Debate is a process that involves formal discussion on a particular topic. In a debate, opposing arguments are put forward by two persons.

Think-Pair-Share

Think-Pair-Share is a collaborative learning strategy in which students work together to solve a problem or answer a question about an assigned reading. This technique requires students to think individually about a topic or answer to a question and share ideas with other students. This strategy helps students become active participants in learning and can include writing as a way of organising thoughts generated from discussions.

- ❐ **T**: (Think) Teachers begin by asking a specific question about the text. Students "think" about what they know or have learned about the topic.
- ❐ **P**: (Pair) Each student should be paired with another student or a small group.
- ❐ **S**: (Share) Students share their thinking with their partners. Teachers expand the "share" into a whole-class discussion.

Storytelling method

In this method, the teacher delivers the content in a story form to the students. This method increases the vocabulary of the student. It is useful in teaching languages and social studies.

Simulation

The term "simulation" basically means creating a learning environment that "simulates" the real world, allowing the learner to learn by doing. Simulations are a specific form of web-based training that immerse the learner in a real-world situation and respond in a dynamic way to his/her behaviour. Interactive simulations provide a way for students to become active participants in the learning process and learn from their mistakes. It is widely used in military training, pilot training, driving cars, and the health sector.

Game-based teaching

Games are contests in which the players operate under certain rules to achieve a specific objective or goal. Game-based learning can be used to improve student

engagement and retain attention. It also helps in reducing student anxiety and increases their involvement in learning complex concepts. It can provide a valuable supplement to traditional instructional methods that keep students engaged and deliver course content to a variety of learning styles.

Field Visits or Educational Tours

A Field Visit is considered as a powerful instructional strategy for providing exposure to the students on various tasks and activities to help them gain learning experiences outside the classroom. Visits are often considered as activities for joy and fun, but we need to plan and organise them in a manner that helps children to learn the concepts and be sensitised for the issues. Educational tours and visits to agriculture farms, dairy farms, retail stores/ malls, research organisations, specialised institutions, industry, hospitals, and other places should be organised by the school to expose students to the different occupations in the world of work. This exposure will help students gain knowledge and skills about the various occupations.

A field visit to an industry, such as an agriculture farm/horticulture farm/ nursery, veterinary hospitals, nursing home, retail shops/malls, beauty parlour/ salons, hotels, tourist places, warehouse, stock broker's office, restaurant, automobile service centres/workshops, call centres, childcare centres, tailor's shop, poultry farm, dairy farm, piggery farm, fish farm, computer centres, construction site, electrical service shops, mobile repair shop, gym and fitness centre, drama school, animation studio, etc., by students will help them to gain first-hand information of the workplace environment and the functioning of the industry/organisation.

The various benefits of field visits/ educational tours are as follows:

a) It helps to bridge the gap between theoretical knowledge and hands-on learning experience.

b) Students learn from actual hands-on experiences, rather than by simply reading or hearing about something.

c) Makes learning more effective as students will be able to gain ideas on the subject or specific topic.

d) Motivates students through increased interest and curiosity.

e) Adds variety to the regular classroom instructional programme and students tend to feel special and enjoy experiences.

f) Increases the interaction between student-student and student-teacher.

g) Makes students aware of the importance of learning activities in everyday life.

h) Makes learning more meaningful, contextual and memorable when compared to regular classroom instructions.

i) Gives students experiential learning experiences.
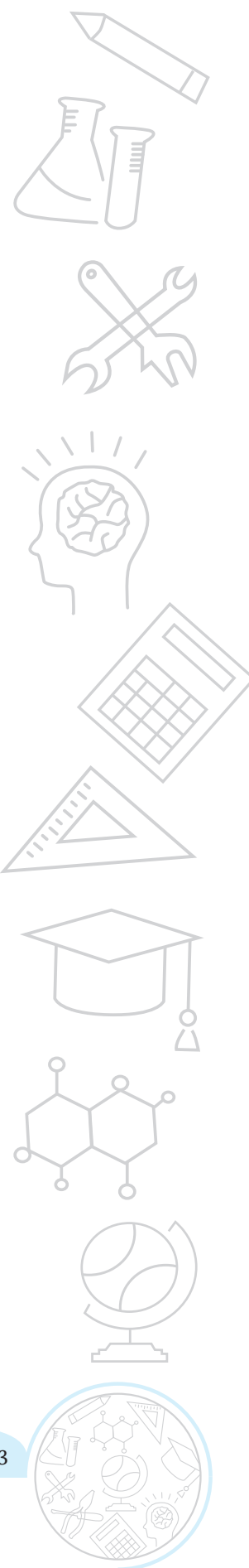
The various steps in organising a field visit or educational tour are as follows:

1.	**Planning:** At the beginning of the year itself, teachers may refer to the syllabus and textbook and identify the topics that can be integrated to field trips. Depending on the availability of time and resources, teachers will select a few places for field visits. After selection, a tentative schedule for the visit to the place is to be prepared by the teachers. Teachers will take necessary permission from the concerned authorities for conducting the visit.
2.	**Preparation:** This includes orientation of the students for the visit. It includes safety guidelines and instructions, necessary belongings to be carried, travel arrangements, and teaching-learning. Teachers can also prepare a questionnaire and observation sheet to be given to the students. Teachers also make sure that there should be female teachers with the girls' students.
3.	**Execution:** During the field visit, teachers should take proper care of the children. Make sure students follow the instructions. Teachers should ask students to prepare notes.
4.	**Follow up:** After returning from field visit, activities to consolidate experiences and reflections, group discussion, and presentations should be organised by the teachers. Teachers can assess the students based on their active participation in the process, notes and observation.

INTERNSHIPS

Internship is the short-term training or the period during which a person is an intern. Internships are shorter than apprenticeships. Internships can be arranged by the schools to acquaint young children with materials, tools, and standards relating to a range of occupations and to prepare them for choosing an occupational field. It will be a period (usually 10 days or two weeks) of unpaid work undertaken by school students to gain some insight into the world of work. The objective of the internship programme is to provide the opportunity to the students who come from diverse academic backgrounds, to enhance their educational experience through practical work assignments. Exposure and interactions gained during the internships will help students to understand various tasks performed by a person in the occupation. Students will also get an opportunity to apply what they have learned to a real working environment.

An internship mentor is to be assigned from the discipline or the sector of internship, who would be assigned a group of students who have opted for the internship. The internship mentor will decide the objectives of the internship for addressing the following:

❐ To bridge the gap between theory learned in the classroom and the practicum at the workplace.

❐ To make students understand theories, ideas, or concepts learned through the various subjects which are applied in the world of work.

❐ To equip students with skills. Skills may include writing, and speaking abilities, handling tools and equipment, handling situations, compiling,

organising, and analysing data and records, or budgets, improving teamwork, etc.

Internships can be arranged within or outside the schools for the various sectors or fields. Schools may also set up enterprises to train students as interns. A one or two-week internship programme can be developed by the schools for providing hands-on learning experience to students. Some examples of the places where internships can be organised are as follows:

EXAMPLE 1

Sector: Agriculture
Place: School Nutrition Garden
Objective: To provide children first-hand experience with nature, gardening practices, importance of organic farming, and eating healthy and nutritious food.

School Nutrition Garden is a place where herbs, fruits, and vegetables are grown in the school premises. The food grown in the garden can be used in the preparation of mid-day meals. Besides land nutrition garden can also be set up on the roof of the school building. Schools can grow plants on land or in small containers, such as cans, jars, discarded earthen pots, wooden boxes, ceramic sinks, food tins, bags, etc.,especially where land is not available.

Schools consult the various agriculture or horticulture departments and institutions, such as the Department of Agriculture/Horticulture, *Krishi Vigyan Kendra*, Food and Nutrition Board, State Agriculture Universities, etc., for setting up of School Nutrition Gardens.Organising a cooking competition for a mid-day meal can be one of the activities organised as part of pre-vocational education programme. The main objectives of organising a cooking competition are to motivate students to understand the use of locally available food resources and relate them to the culturally accepted food habits, promote community participation in the preparation of mid-day meals, and to learn how to associate in the competition. In addition, nutrition experts may also be associated with the cooking competition to explain the nutrient value of the various types of food.
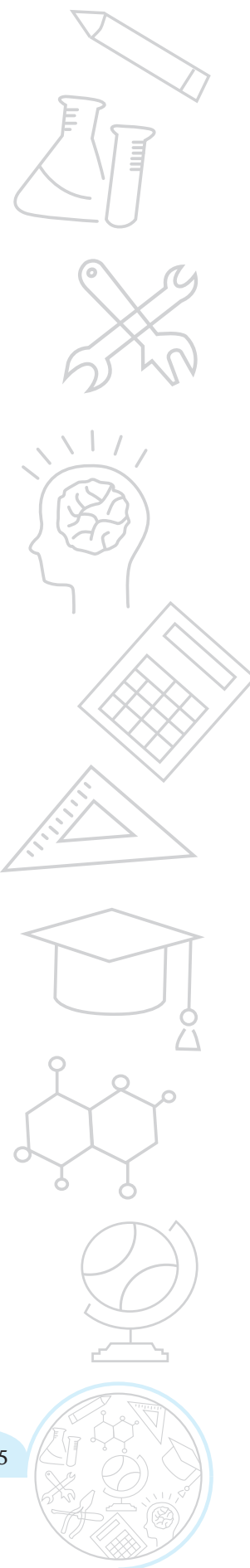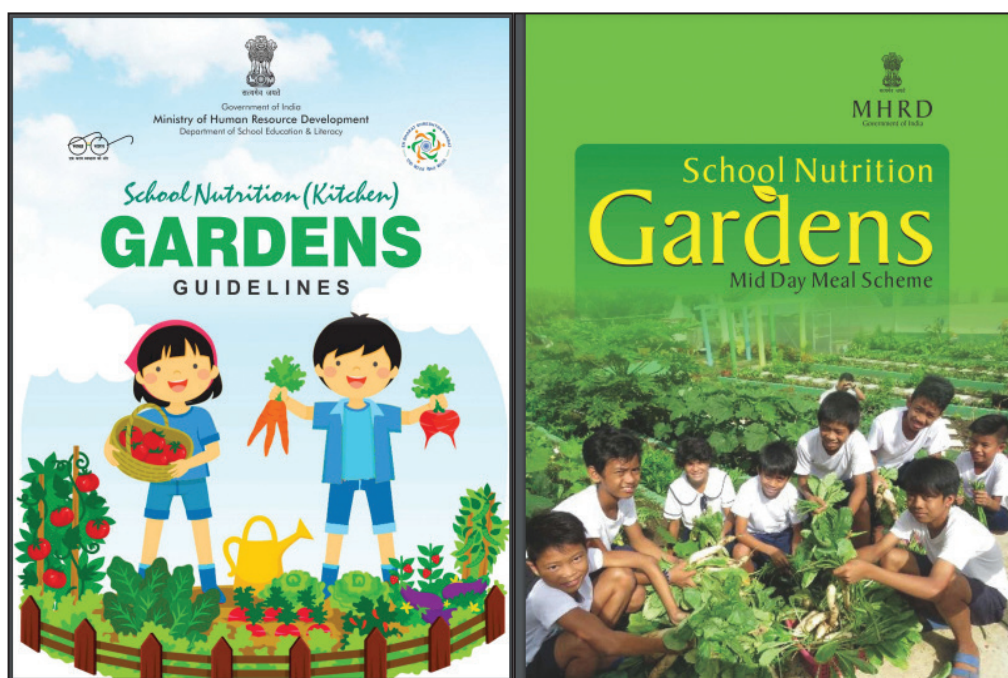
(For more details, please visit https://samagra.education.gov.in/docs/SNG_Guidelines.pdf

EXAMPLE 2

Sector: Physical Education and Sports
Place: Youth Club
Objective: To provide children first-hand experience with the importance of staying healthy and fit and expose them to the job opportunities in the physical education and sports sector.

Youth Club provides adequate opportunities for developing physical and personal qualities and life skills, such as sensitivity towards teamwork, problem-solving, creativity, etc. It is a forum through which students can reach out to influence, and engage their parents and neighbourhood communities. Yoga, drama, debate, musical arts and cultural activities are being conducted under the Youth Club. Children can participate in these activities and learn about the various career opportunities in physical education, sports and wellness.

EXAMPLE 3

1. **Sector: Media and Entertainment**
2. **Place: Photography Club**
3. **Objective:** To provide children first-hand experience with digital photography, equipment, and software used for digital photography. The career opportunities available in the media, entertainment, and other related sectors.

The photography club can organise sessions on photo shooting and discussions on various aspects of photography. Event shoot and exhibitions

can be an integral part of the activities of photography club. The members can explore the possible opportunities for photography projects in collaboration with various institutions and also organise photography competitions. Students will prepare portfolios that will showcase their observation skills and how well they can communicate ideas.
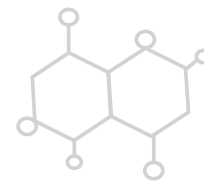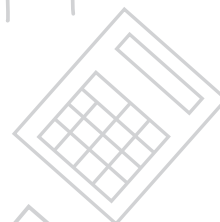
Enterprise Education through Production-cum-training Centres

Production-cum-Training Centres (PTCs) may be setup as a means of providing an educational experience, which links academic education with the world of work and facilitates the learning process. Students will not only gain relevant skills and attributes but also the necessary hands-on experience to use skills in producing goods and services. These centres can serve as centres for promoting Enterprise Education (EE), which is the provision of learning opportunities to help students develop the attitude, knowledge, and skills of the entrepreneur.

Production-cum-Training Centres should be used to develop pedagogical approach for training students on soft and hard skills that are required to change the mindset of the young people and develop a positive attitude for setting up an enterprise or business. It will be useful in preparing children to think like entrepreneurs.

4.3.4.3 Selection of Teaching Method

In selecting the teaching method, the teacher's analytical ability comes to play, considering the situation at hand. Teachers should teach, keeping in view the learning styles of the children. Learning styles are the ways in which students learn best. Each person has different learning preferences and styles that benefit them. The most widely accepted model of learning styles is called the VARK model, which stands for Visual (seeing), Auditory (hearing), Reading, and Kinaesthetic (learning by doing). Teachers have to ensure that the learning outcomes are

Visual

Graphics, Illustrations, Slide Presentations, Pictures, Videos, Models, Puppets

V

A

Auditory

Audio Programmes, Podcasts, Group Discussions, Oral Presentations

Reading

Textbooks, Reference Books, Journals, Magazines, Articles

R

K

Kinesthetic

Games, Hands-on Activities, Role Playing, Note Taking, Experiments
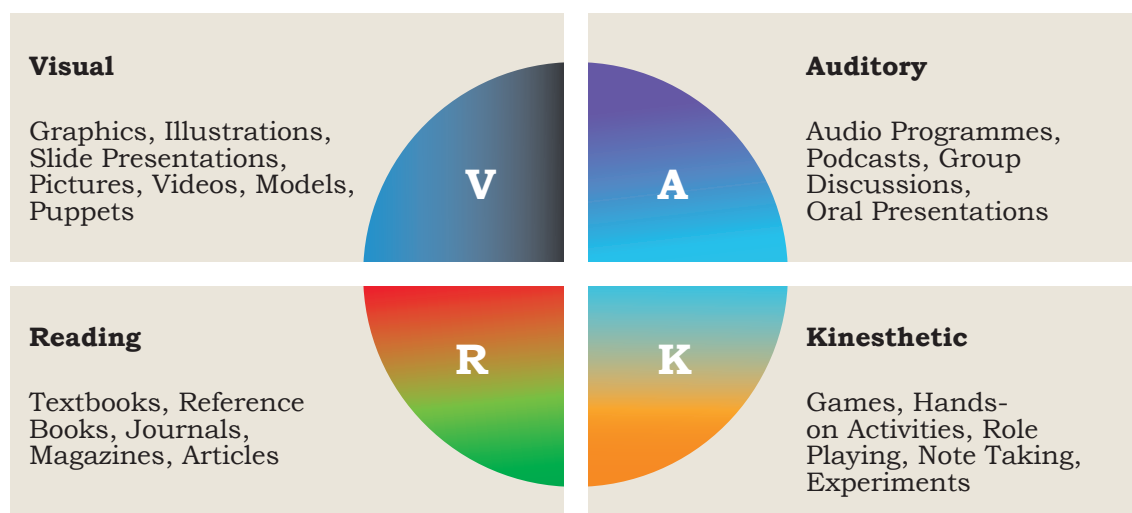
achieved at the end of the module. A learning outcome is a statement that describes the knowledge, skills, and values that the students shall be able to demonstrate at the end of a teaching or training session.

Visual	Auditory/Aural
Teaching tip Use chart, graphs and slide presentation	**Teaching tip** Use verbalisation
Reading/Writing	Kinesthetic
Teaching tip Use reading and writing techniques	**Teaching tip** Demonstrate skills

4.3.5 Organisation of Exhibition

Some tangible goods produced through pre-vocational education activities can be displayed or sold in exhibitions organised by the school. Income generated through the sale of products may be used for the purchase of materials for organising pre-vocational activities. Exhibitions, competitions, and creating corners to display products made by children can be included by the teachers in their activity plan.

4.3.6 Awareness Generation and Publicity

The State Department of Education through its zonal and district educational authorities should conduct awareness programmes for the officials, public, school teachers, and students regarding the importance of pre-vocational education. The Department of Education through the State Council of Educational Research and Training (SCERT) should prepare brochures and posters, indicating the salient features of pre-vocational education. The following departments and agencies may be approached for seeking assistance, services and development of human linkages with educational institutions.

❒ Municipal Corporation
❒ General Hospital
❒ Agriculture/Animal Husbandry Department
❒ District Industry centres
❒ Media Agencies
❒ Social Service Departments
❒ Local Industries
❒ Forest Department
❒ Agencies providing financial and insurance services
❒ Local governance agencies

Information, Communication, and Education (IEC) campaigns are to be organised to make community members aware of the goals and objectives of the pre-vocational education programme and the benefits that the students will derive

from it. Active participation of the community members and local experts will help in organising the activities with necessary resources and guidance. Capacity building of School Management Committee (SMC) School Management and Development Committee (SMDC) members about their roles and responsibilities is extremely critical towards ensuring their active and effective participation in planning, monitoring, and supervision of the pre-vocational activities.

4.3.6.1 Community Orientation

The school should organise awareness programmes in the community through exhibitions for popularising pre-vocational education. These awareness programmes will also help the schools in making provision of pre-vocational education activities as per the community needs. A mechanism for creating awareness and ensuring involvement with local people should be developed at all levels of implementation. For effective implementation of pre-vocational education programmes in schools' community support and participation is necessary. Professionals and learned members of the community may be involved as guest speakers for conducting the activities. The schools should establish a system of continuous support of government institutions, artisans and professionals, business enterprises, workshops, etc.

4.3.6.2 Parents Orientation

Parents are the primary educators of a child and they help build values in them. They also guide the children in the vocational choice and work values or ethics. Parents should be made aware of the pre-vocational education programme, including the principles, objectives, structure and how they can contribute to the development of the programme. This is required for ensuring cooperation from them. Special awareness generation programmes and briefing at the time of school functions and parents-teachers meetings may also be undertaken.

4.3.6.3 Teachers Orientation

Orientation of teachers on various aspects of the pre-vocational education programme should be done from time to time to apprise them of the latest development and strategies that should be adopted to bring about necessary improvement in the implementation of the pre-vocational education programme.

4.3.6.4 Students Orientation

Students also need orientation about career and vocational opportunities. Career talks, group guidance, and career conferences may be organised. Schools may invite local weavers, potters, craftspersons, entrepreneurs, and people engaged in different occupations so that students can interact with them and learn from their experiences. Entrepreneurs or employers need to inspire children and young people and give them the opportunity to learn about the importance of work and what it takes to be successful in the business or enterprise. The activities that could be undertaken by the entrepreneurs or employers include sharing of life and work experience, talks, marathons, or other activities that help children and young people to understand the skills needed to deal with business challenges. Children who meet employers from a young age can find
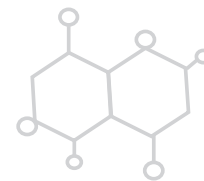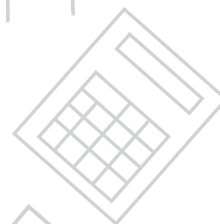
out about a wide range of jobs and understand how the subjects they learn at school connect to their future career development.

4.3.7 Recognition of Outstanding Contributions

The School, Headmaster, and teachers who significantly contributed to the development of the pre-vocational education programme in the particular academic session should be given due recognition by the schools and the States/UTs. The contribution made by the teachers should find a place of appreciation in the school magazine. Certain awards can also be instituted for recognising the efforts of the Headmaster and Teachers for their significant or innovative contribution in pre-vocational education.

4.3.8 Infrastructural Facilities

The existing facilities of the school should be utilized for conducting the pre-vocational activities. School classrooms are the most common place in which structured learning takes place with children involved in various activities. Labs or workshops set up in the schools for the vocational subjects should be utilized for conducting the activities. Sufficient space to permit organisation of activities for experiential learning should be made available. Collaborative partnerships with different institutions and the creation of experiential learning spaces for students will be useful in meeting the objectives of hands-on learning.

4.3.9 Time Allocation

The activities should be carried out as per the time allocated in the Annual Plan or Calendar. Additional time may be allocated by the school for activities that require a block period for field visits, educational tours, visit to the community for awareness programmes, industry/institution visits, internships, etc.

4.3.10 Monitoring and Evaluation

Monitoring and evaluation will be a built-in feature of the programme. Monitoring of programme implementation will be done at the District level. District Education Officers (DEOs) need to ensure that the data related to pre-vocational education is filled in by the concerned schools. An Online App for monitoring and tracking the activities and resolving issues related to the implementation of the pre-vocational education programme may be utilised by the States/UTs.

4.3.11 Guidance and Counselling

Guidance and counselling are to be provided to address aspiration, and to help them to make informed choices, right at the school level. It contributes to the clarification of options and pathways for young people towards their individual career goals. Career information services should be provided through "Career Guidance Call Centres". A school guidance programme should include all those activities which are carried out to render assistance to children in their educational, vocational, and personal development. The National Career Service (NCS) portal of the ministry of labour and employment is providing information related to career counselling vocational guidance information on skill development courses, apprenticeship training, internship opportunities,

etc. It provides on-ground counseling services through its network of model career centers all over India (www.ncs.gov.in).

4.3.12 Funding

Funds would be required for organising activities. Funds provided under the various programme of *samagra shiksha* can be utilised for organising the activities. States may submit a separate proposal to the Project Approval Board (PAB) of *Samagra Shiksha,* Ministry of Education, Government of India. for funding the pre-vocational education programme from Grades 6 to 8. Financial assistance under the *Samagra Shiksha* scheme for the implementation of the pre-vocational education programme may be povided after the approval of the Project Approval Board (PAB) of *Samagra Shiksha* on a case-to-case basis.
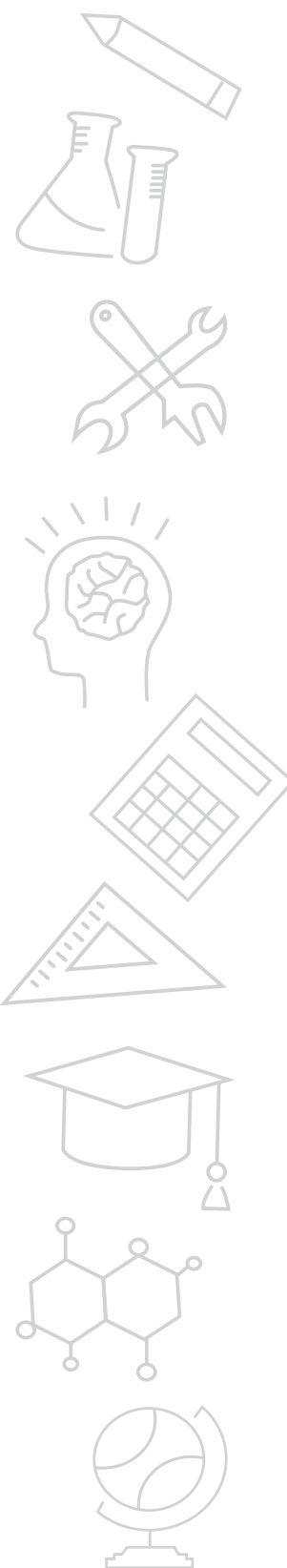
Funding

Financial assistance under the *Samagra Shiksha* scheme for pre-vocational education may be considered after the approval of the Project Approval Board of *Samagra Shiksha* on a case-to-case basis.

State-level Planning and Implementation

District-level Committees may be constituted for identifying the pre-vocational activities, local experts and preparing the list of tools, equipment, and raw materials.
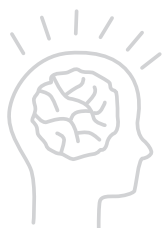
District-level Planning and Implementation

The core team of the District Education Officers (DEOs) should undertake an extensive visit of the places around the schools and identify the themes and the activities for pre-vocational education.
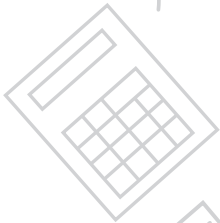
School-level Planning and Implementation

Identify the vocational coordinator and local resource team for planning and implementation.Prepare an Annual Plan for the pre-vocational activities.

Mobilisation of Community and Local Experts

Active participation of the community members will be helpful in organising the activities and generating necessary resources. Community mobilisation is a process that brings together local experts, government agencies, non-government organisation, etc.
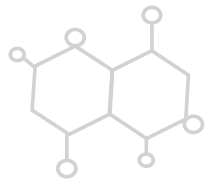
Monitoring and Evaluation

The monitoring and evaluation of the programme are to be done at the district level by a committee constituted by the State Department of Education.

Assessment

There will be no formal assessment of students. However, teachers may use techniques like observation, interviews, quiz, checklist, and portfolio to get feedback on the performance of students.

Teaching-learning

Teachers will connect skill-based activities with concepts, principles, and knowledge imparted through general academic subjects, like science, language, social science, mathematics, etc.

Teacher Training

Teachers of general academic subjects, like science, language, social science, mathematics, etc. are to be trained on skill-based activities for professional development.

Planning and Implementation of pre-vocational activites

1 2 3 4 5 6 7 8 9

Assessment and Evaluation

5

5.1 ASSESSMENT

Assessment is integral to teaching-learning and occurs continuously during teaching. It is the process of gathering information from multiple and diverse sources in order to develop a deeper understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences. The development of measurable student learning outcomes is the most crucial aspect of any assessment process. Teachers need to learn how to develop and administer student-centred assessment and promote self-assessment practices into activities organised in schools or outside the schools.

Assessment should help teachers to know how well each child can perform, track her/his progress and give feedback to ensure further improvement. Approaches to assessment that foster skill learning, which may include assessment linked to specific learning outcomes and using a variety of assessment strategies and tools for implementing both formative and summative assessment in diverse contexts. In no way, it is to be used to compare or rank children. It should focus on competency development, rather than content memorisation.

An integral component of assessment should be evaluating the ability of students to effectively work in a team that consists of all genders. It should also take into account the sensitivity of students towards the needs of all genders.

TYPES OF ASSESSMENT

1 — **Diagnostic assessment** often takes place at the beginning of a study in order to find a starting point, or baseline, for learning and to develop a suitable learning programme.

2 — **Formative assessment** or "assessment for learning" aims to identify aspects of learning as it is developing in order to deepen and shape subsequent learning.

3 — **Summative assessment** or "assessment of learning" aims to summarise learning that has taken place, in order to record, mark or certify achievements.

4 — **Direct assessment** – Students are asked to demonstrate what they know or can do with their knowledge. For example, projects, products, exhibits, performances, case studies, portfolios, role plays, interviews or oral exams.

5 — **Indirect assessment** – Students share their ideas about what they know or can do with their knowledge and experiences.

ASSESSMENT OF STUDENT'S PERFORMANCE

There will be no marks based examination of the students in pre-vocational education. Teachers may use tools and techniques, like observation, interviews, group discussion, quiz, checklist and portfolios to provide feedback on the performance of the students. Students should be made clear about what they are aiming to learn and which indicators and criteria will be used to evaluate their progress and to inform them about the future learning plan. Engaging students as active participants in assessment will help them to develop necessary capabilities in analysing their own learning and becoming self-directed learners.

Giving specific, qualitative and timely feedback to the students should be emphasised so that students get a chance to improve upon their competence.

The assessment tools that can be utilised for assessment and evaluation are given in table 5.1.

Table 5.1: List of assessment tools

Self-Report Activity/Diary/Logbook	Student portfolio
Checklist	Peer assessment
Project	Interview
Practical assignment	Field visit reports
Quiz	Presentations

SELF-REPORT ACTIVITY DIARY/LOGBOOK

Students can keep a daily or weekly activity Diary or Logbook to record reflections on their own learning. The records may be maintained under the following heads and should be checked daily for the assessment of the work done on weekly basis:

1. Name of the activity/ project
2. Objectives/purpose of the activity
3. Tools and equipment used
4. Raw materials used
5. Procedure adopted
6. Precautions followed during the procedure
7. Difficulty faced in conducting the activity
8. Learning outcome(s) of the activity
9. Cost calculation
10. Main learning experiences from the activity
11. Most important learnings after doing the activity or assignment

CHECKLISTS

Teachers will check the performance of the students using a checklist. Checklists with a 'Yes' or 'No' format in relation to student demonstration of activity may be used by the teacher. Some attitudes, such as the adoption of safety procedures should be observed by the teachers during the performance of activity. For example, if students are doing a role play, the teacher might develop a checklist to indicate whether or not they demonstrated specific skills or ideas that they were supposed to demonstrate.

Table 5.2: Checklist for observing the tasks done by students

Activity Title		
Objectives		
Name of Teacher		
Name of Student		
Student ID		
Date		
Yes	**No**	**Task**
		Identified the tools, equipment and material used for the task
		Made effective use of material provided
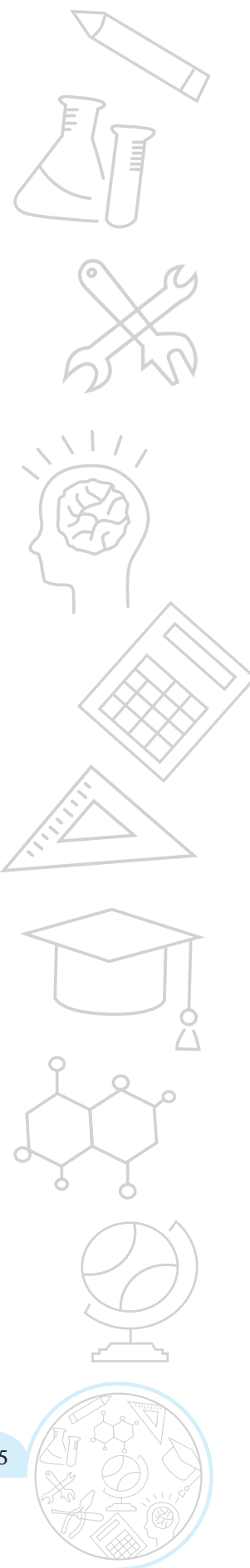
		Followed the standard operating procedure for accomplishing the task
		Utilized the time duration effectively
		Followed safety measures
		Finished the task on time

Table 5.3: Checklist for evaluation of the performance of students

Activity Title					
Objectives					
Name of Teacher					
Name of Student					
Student ID					
Date					
	Needs Improvement	**Fair**	**Good**	**Very Good**	**Excellent**
Learning Outcome 1					
Learning Outcome 2					
Comments:					
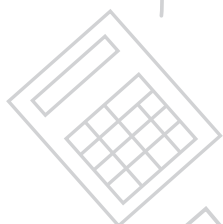
Quiz

Classify the following list of occupations under primary, secondary and tertiary sectors:

Occupation	Sector
Fashion Designer	
Kisaan Drone Operator	
Potter	
Bamboo Basket Weaver	
Courier Delivery Girl/Boy	
Home Loan Executive	
Florist	
Chef	
Beautician	
Tourist Guide	
Fitness Trainer	
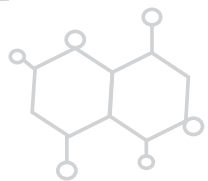
Doctor	
Security Guard	
Automotive Service Technician	

Categorise the following activity/product/service according to sectors— for example, Agriculture, Automotive, etc.

Activity/Product/Service	Sector
Cultivation of Flowers	
Transportation of Goods	
Fishing	
Solar Panel Installation	
Web Developer	
Lac Production	
Automobile Production	
Algorithm Developer	
Textile Production	
Fashion Designing	
Mobile Network Services	
Nursing	
Animation	
Sale of Goods	
IOT Technology Trainer	
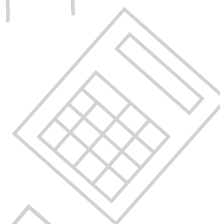
STUDENT PORTFOLIO

A portfolio is a purposeful collection of a person's work that exhibits his/her efforts, progress, and achievements. Teachers will explain to students what is involved in developing a portfolio. Students will prepare a portfolio of activities done throughout the year by them. The collection in the portfolio should include evidence of students' self-reflection. It may include worksheets, projects, creative writings and drawings, assignments, tests, craftwork, observations by teacher, self-assessment sheet, etc. It should provide adequate feedback to the teacher for evaluation of the performance of the student.
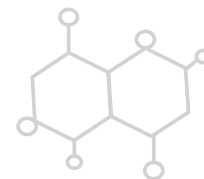
PEER ASSESSMENT

Peer assessment involves students in assessing each other's work. It is a student-centred approach of assessment that allows students to improve through gainful insights on their knowledge, skills and attitude.

Interview/Assessment

Using an interview for assessing and mentoring students is one of the important ways to assess students. It helps student to express themselves creatively. Teachers can use interviews to assess whatever the students activities match the core skills and knowledge required for the job role.

Diary/Logbook

The indicators for the evaluation of diary or logbook can be as follows:
- ❐ Detail and systematic record-keeping.
- ❐ Care and neatness in maintaining the diary or logbook.
- ❐ Regularity in maintaining the diary or logbook.

Project

Project-based assessment helps a teacher to assess higher order knowledge and skills of students. The assessment may include the following:
- ❐ What new content did the students learn while working on the project?
- ❐ How did the work and actions contribute to the team's success?
- ❐ What was the difficult part of working in a team?
- ❐ What was the best part working in team?
- ❐ What new skills did the student learn?

Field Visits

The indicators for the assessment of during and after field visits can be as follows:
- ❐ Interest and inquisitiveness demonstrated by the students
- ❐ Understanding of the concepts and principles of activities
- ❐ Making relevant and probing queries
- ❐ Discipline and orderly behaviour during the visit

Practical Work Assessment

- ❐ Practical work or assignment refers to tasks assigned to students by their teachers to be completed outside the class. The evaluation of the practical work can be done on the basis of conceptual understanding, content organisations, clear conclusion and creativity.

5.2 Evaluation

Student's evaluation is a process of collecting, analysing and interpreting evidence to judge the level of achievement acquired by the individual learner or a group of learners in cognitive, psychomotor and affective domains.

Evaluation should be based on a detailed plan and predetermined indicators. It should be comprehensive and continuous (each activity, project and unit must

be evaluated during the process). Both cognitive and non-cognitive learning are to be evaluated. The evaluation should be according to the learning experiences and objectives of teaching.

EVALUATION ON THE BASIS OF PROCESS AND PRODUCT

The basis of evaluation should be both the process and product, and the evaluation criteria may include the following:

- ❒ Use of tools and materials
- ❒ Resource utilisation
- ❒ Clarity and neatness in work
- ❒ Imagination and creativity
- ❒ Regularity and punctuality
- ❒ Orderliness
- ❒ Team spirit and cooperativeness
- ❒ Patience and tolerance
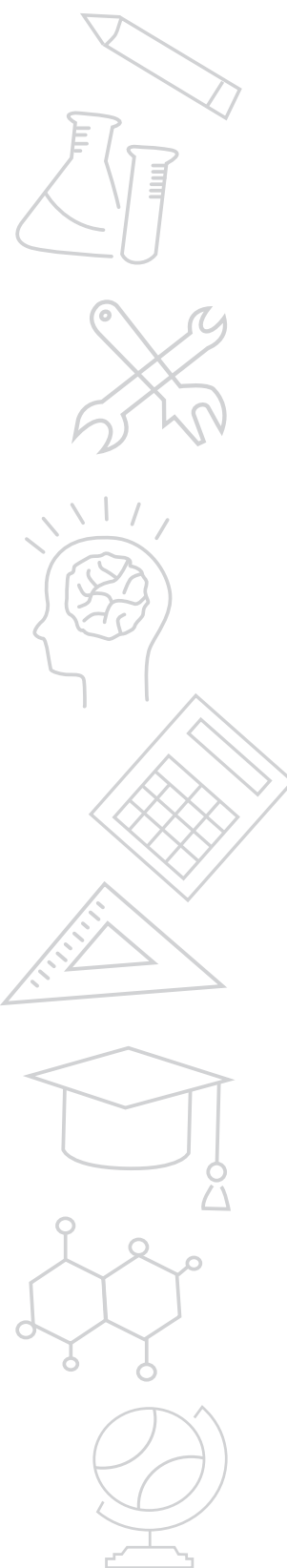
Organisation of Activities

Approaches to Organising Activities

6

6.1 Multi-field/Theme-based Approach

The multi-field or theme-based approach to pre-vocational education will include congnitive and psychomotor skills development by integrating general education subjects with pre-vocational activities. Pre-vocational education can develop the knowledge and skills for identifying, selecting, observing, manipulating, and participating in various tasks related to work. The tasks can be planned, incidental and coordinated. Teachers can contribute by organizing activities, leading to the development of soft skills, such as communication skills, time management skills, Information and Communication Technology skills, interpersonal skills, negotiation, problem-solving, etc., and vocation-specific skills. They can organize activities from the discipline or around a theme by developing lesson plans on the topics taken from the textbooks. The selection of activities should consider the availability of the necessary physical and human resources in the school or community.

The steps to be followed for conducting the activities are as follows:

03 Explanation of the related concepts and contextualisation

02 Work through examples and demonstration

04 Asking students to demonstrate their understanding and skills

01 Introduction of the activity plan

05 Assessing the performance of students

Steps for conducting Activities
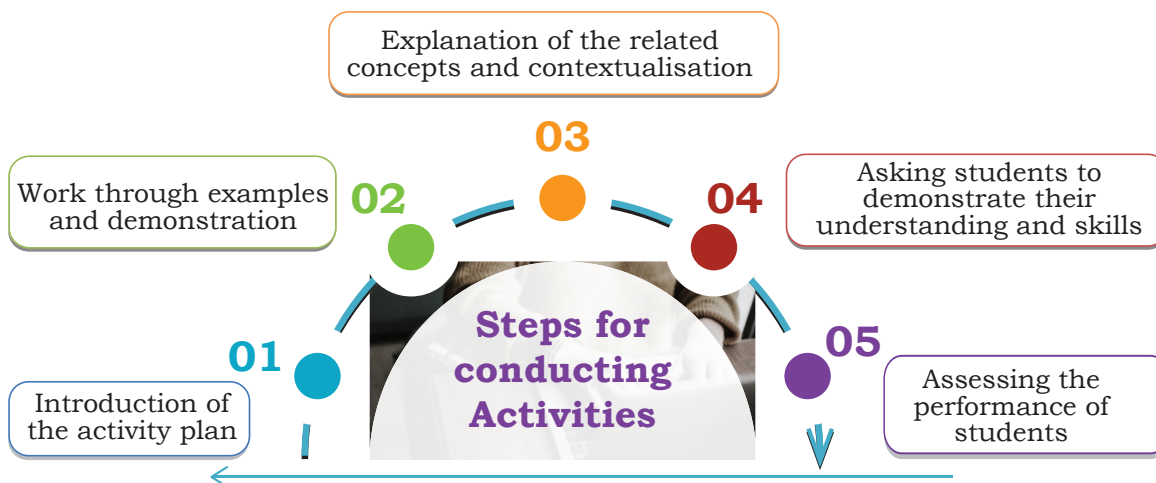
Motor skills, which could be gross or fine, should be given greater emphasis, so that children get an opportunity to learn while they do. Gross motor skills are those that involve control and coordination of larger muscles required for performing various activities, such as running, climbing, jumping, crawling, and skipping, whereas, fine motor skills involve the five muscles required for performing activities, like writing, painting, and cutting. The gradual learning of motor skills enhances the child's development and the sense of independence. Development of motor skills, however, depends on the extent to the opportunity provided to practice the skills.

Teachers should identify themes related to the various subjects and prepare activity plans for organising various activities. Theme-based "Activity Plans" can be developed on various themes or topics by the teachers, keeping in view the stage of the child's development. The theme is the over-arching umbrella under which different subjects are studied and can be connected with each other. Theme-based activity plans will be helpful in teaching a range of skills and content by integrating curriculum areas around a theme or topic, as given in the figure below.

6.1.1. Language

Learning a language means using it for a wide variety of purposes. Listening and reading are called 'receptive' skills because when we listen and read something, we receive the words in a language, understand it and decode the meaning. Speaking and writing are called 'productive skills' because we use language to produce a message through speech or written text.

Listening, speaking, reading, and writing can be enhanced by organising pre-vocational activities, such as role-play. For example, in a scenario of a restaurant, students can greet customer, take orders for meal, etc. Teachers can develop activity plans to: (a) Encourage learners to work in pairs and small groups and let them go beyond the textbook, (b) Build on the exercises given in the textbook and design more activities based on terms used in different vocations, (c) Promote reading habits through story reading, choral reading, shared reading, etc., and (d) Use pictures or drawings from different sources to read, explain, and discuss. Teachers can also ask students to compare and contrast practices in occupations and facilitate discussion on the language skills required for a range of occupations.

Developing Communication Skills

(i) Listening –Listening helps to understand what others are saying. It also helps to speak clearly to other people. Learning how to pronounce words properly, how to use intonation, and where to place stress in words and sentences comes with attentive listening and speaking. The teacher may ask children to listen to the story and answer some questions.

(ii) Speaking – Students are to be encouraged to participate in activities, like role-play, group discussion, debate, etc. The various activities that the teachers can use for developing the speaking abilities of students are as follows:

a) **Role-play:** Role plays can be conducted for different scenarios where students can express themselves in a variety of ways. Students will be able to shed their inhibitions and develop self-confidence while taking on the role of a character and speaking the dialogues.

b) **Discussion:** Discussion on the organisation of events, socio-cultural issues, education, work, career goals, or something that is relevant to the student's lives will help in developing speaking skills.

c) **Picture Stories:** Picture stories can be used with all students, particularly those with limited literacy skills. Learners can interpret a story based on picture sequences. Students work collaboratively to put the story in the correct order. Once they have done so, they stand in a circle and tell the story.

d) **Information-gap Activities:** Information-gap activities can be used to identify the gaps in specific language points and assignments may be given to identify the gap information in the picture. These activities can be organised for developing communication skills for rewarding, questioning, giving or following clear instructions, etc.

e) **Groupings:** Finding connections among other students is a concept of groupings. In creating groups, teachers and learners need to negotiate what they will discuss. Grouping activities will help students to understand the various functions, such as planning, process and execution.

f) **Mingling Activities:** A mingling activity involves learners to mingle around and gather information from other students in the class on a given topic.

g) **Surveys:** Students can prepare questions on various topics, such as likes and dislikes for certain activities or social and cultural issues, health issues,
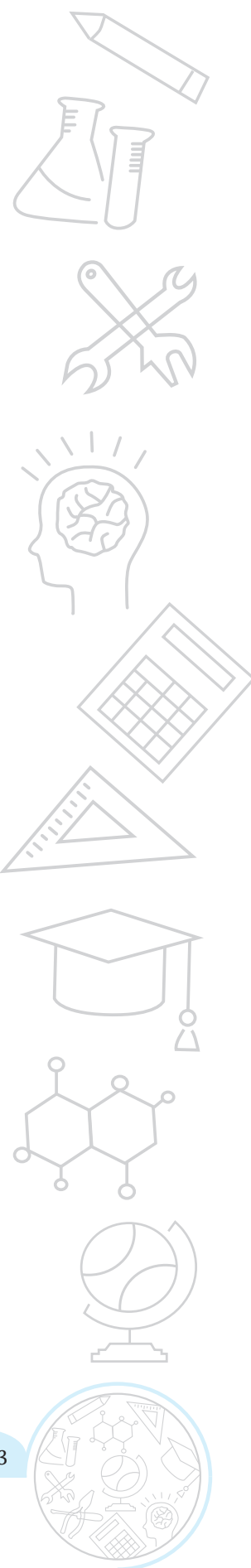
etc., and conduct a survey by interviewing each other and compiling and presenting the information.

(iii) Reading – It is the process of looking at a series of written symbols and getting meaning from them. The teacher may do a loud reading of the text with proper pronunciation. The teacher should speak loudly, clearly, and with pauses. The teachers will then ask students to read the text loudly and clearly with pauses at appropriate places.

(iv) Writing –Teachers may ask students to write about their feelings and keep a record in their diary. The various activities that the teachers can use for developing the writing abilities of students are as follows:

a) **Creative writing:** Teachers can use different pictures and ask students to build a story around the pictures. It will help students to build their imaginative capacity and cognitive skills. Different situations in life can be narrated by the teachers to the students for developing their writing ability. The situations may include coping with stress, a surprise visit of a friend on birthday, forgotten heroes of Indian history, etc.

b) **Letters:** Teachers may ask students to write a letter thanking someone, asking for information, complaining about certain issues, and preparing job applications.

c) **Diary:** Students may be asked to maintain a diary of activities that they have participated in school and outside the school.

d) **Instructions:** Teachers may ask students to write the recipe of a meal or instructions for cooking a meal, changing a wheel, repairing a household gadget, etc.

e) **Editing:** The teacher may give manuscripts of books or articles written for the school magazine for editing, which may include grammar, spelling, punctuation, etc.

6.1.2. Mathematics

Mathematics is a world of symbols and their interrelations. It is also known as science which is related to measurements, calculation, discovering a relationship, etc. Activities in mathematics may involve the use of concrete materials, models, charts, patterns, pictures, posters, games, puzzles, and experiments.

Teachers can make contextual connections by making mathematical problems to be solved by students in scenarios related to various vocations. Teachers can plan activity that will help children to understand the use of mathematics in solving day-to-day problems or problems faced by people in various occupations.

Students can be taken to a construction site and learn how measurement is being done by the carpenters and plumbers. They can also reflect upon their learnings and individual decisions about the practice adopted by the skilled people at the construction site. The various other aspect related to mathematics that the students can learn includes applying mathematical concepts in contexts, practical skills techniques, processes, diagrams, 3D models, scale drawings, use of various tools and equipment, etc.

Teachers can develop activity plan to help students to:

- ❐ Use the different type of measurement scales;
- ❐ Develop the ability to calculate percentage in real-life situations;
- ❐ Convert units and use them in different contexts;
- ❐ Mathematical skills for interpreting and analysing data; and
- ❐ Identify calculation errors.

Example

Activity: Visit a grocery shop to study the importance of numeracy skills.
Objective: To teach about the importance of numeracy skills in marketing.

Source: Mathematics - Textbook for Grade VI; Chapter 1; pg. 14, NCERT, 2009)

6.1.3. Science

Pre-vocational activities will bring about an integration of pure science with applied science. While the pure science will address why and what is to be done, the applied sciences will explain how it is to be done or whether it should be done or not. The science curriculum can be organised around the following themes that are cross-disciplinary in nature:

1. Food
2. Materials
3. World of the Living
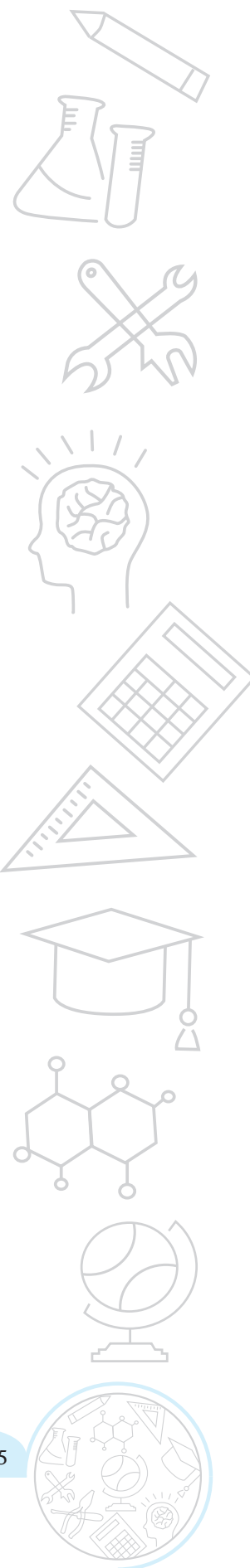
4. How Things Work
5. Moving Things, People, and Ideas
6. Natural Phenomena
7. Natural Resources
8. Computer literacy
9. Artificial Intelligence

Teachers can plan activities that will help children to understand the application of knowledge of science in a range of occupations. In order to demonstrate the application of science and to make the transfer of knowledge and skills easier, agricultural activities can be organised in the school and agriculture farms. Teachers can take students to Polyhouse or Greenhouse to learn about the application of science in growing plants under controlled environment conditions. The students will develop vocabulary and scientific inquiry skills related to the occupation or sectors. They will be able to reflect upon how technology can be used to reduce use of water, fertilizers, and chemicals in plants.

Activity 1: Preparing sprouts

Objective: To teach about the importance of science through an activity related to food processing.

(Source: Science - Textbook for Grade 6; Chapter 1; pg. 4, NCERT, 2006)

Children should be engaged in learning the principles of science through familiar experiences and working with hands to design simple technological units. Scientific concepts are to be arrived at mainly from activities and experiments done by the students. They should be encouraged to learn through observation, inquiry, and experimentation with material and work practice.

Teachers can take students to plant nursery and teach them about plants, nursery practices, etc. They can adopt 5 E's Learning Cycle Model of teaching for explaining the concept and practices. It has been explained below.

Engage: Take the children around the nursery and show the various tools, equipment, materials, and chemicals used in the nursery. Ask students to record their observations.

Explore: Encourage children to ask questions about the various aspects related to plant cultivation, propagation, and plant protection practices. Also, encourage students to explore new ideas about nursery practices.

Explain: Explain children about the application of scientific concepts and laws in raising plants through seeds and vegetative propagation.

Expand: Ask children to perform various activities in the nursery. Children will reflect upon what, why, how, and when of doing the tasks.

Evaluate: Children will reflect on their understanding by explaining what they learned through the activity. The teacher will ask the questions to check the understanding of the children.

Activity 2: Study of the layout of a plant nursery

Objective: To teach students about the various aspects of a layout of a plant nursery.

Teachers will ask students to study the map of the village given below. The teacher will then organise a visit to the nearby plant nursery and explain the various sections of the nursery and their importance. The teacher will then ask students to prepare a layout of the nursery based on their observations during the visit.
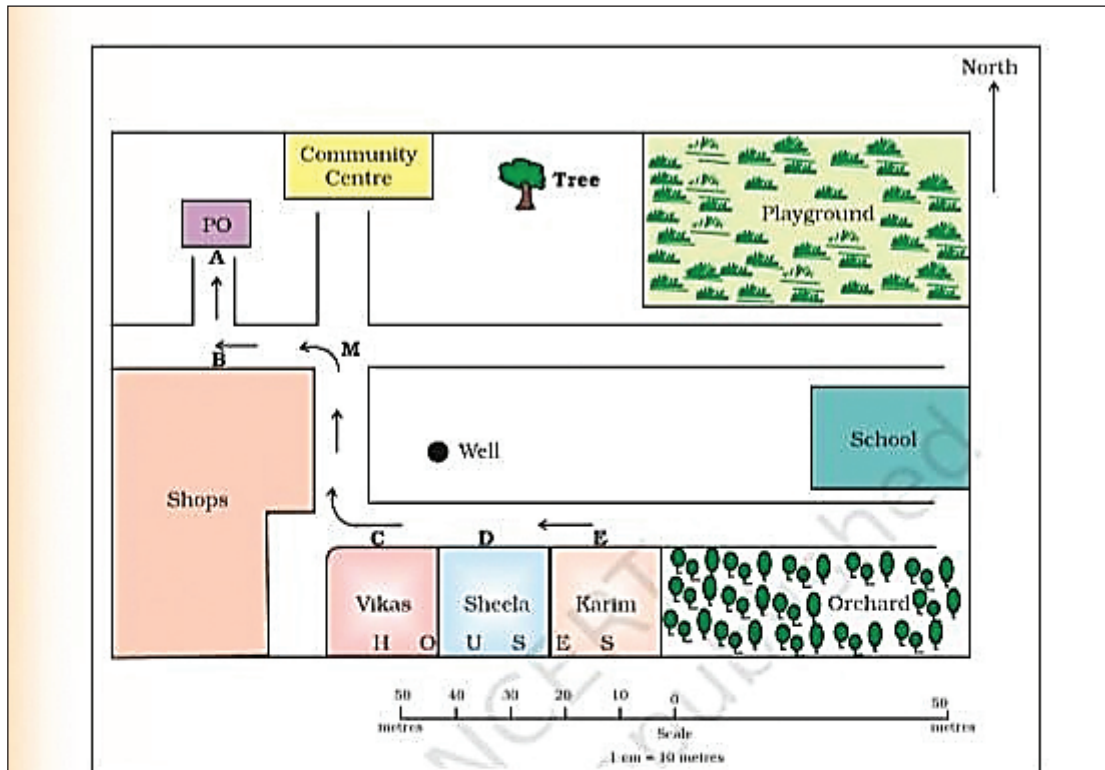
Figure 4.1 : Map of a village

Figure 4.2 (a) : Cardinal Directions

directions, North, South, East and West (Figure 4.2 (a)). They are called **cardinal points**. Other four intermediate directions are north-east (NE), south-east(SE), south-west (SW) and north-west (NW). We can locate any place more accurately with the help of these intermediate directions.

Find out the following directions from the Figure 4.1: (a) The direction of the Community Centre, the playground from Vikas's house (b) the direction of school from shops.

We can find out the direction of a place with the

(Source: The Earth: Our Habitat – (Textbook for Grade VI; Chapter 4; pg. 3, NCERT, 2006)

6.1.4. Social Science

Social science is the integrated study of multiple fields, including history, geography, and political science. Social studies help students understand the specialized processes and approaches of certain academic disciplines and the connection of ideas, information, issues, and perspectives across the disciplines. The various skills that can be imparted through the pre-vocational activities for social science are as follows.

Communication and Interpersonal skills: Communication and interpersonal skills are among the most important basic social skills that students should learn. Besides, good speaking, writing, and reading skills, students should be able to compile, analyse and translate information.

Observational skills: Social studies students should be good observant, a skill that will help them to be creative.

Reading and interpreting tables, charts and graphs: Students of social science should be able to tabulate data and make charts and graphs in order to make conclusions and summarise the information.

Visits to museums and other place of historical interests should be organised to integrate learning inside and outside the school. Students may be asked to explore the local surroundings and observe the activities of artisans engaged in different crafts, using local materials. These handicrafts may be displayed in a corner of the school and developed into a museum.

During the summer break, students may be asked to make models or charts of historical monuments.

Exemplar Activities for Social Sciences

Activity: Interaction with Craftsperson

Objectives: To make students aware of India's rich craft traditions and identify the linkages between our identity, heritage and local crafts.

The existence of unique crafts is India's great strength. Hand skills are useful in many professions, such as architecture, engineering, design, and fashion. Craft is one of the few activities that is a direct result of the natural environment in which it is practiced. The existence of the natural materials—stone, wood, metal, clay, cotton, cane and bamboo, silk, lac, etc. provide impetus to most traditional crafts. This harmonious balance between human and nature, economic growth and environmental balance, not requiring huge inputs of artificial energy, infrastructure or investment, is what makes craft viable even today.

Procedure

❒ The teacher may introduce students to various crafts items, such as pots and objects of terracotta. Teacher can also draw madhubani painting, a bamboo basket, a *duree*, a Rajasthani puppet, or an ikat textile.

❒ Using the map of India the teacher may ask students to find out the places from where these items come from, followed by discussion on various aspects of the items e.g. material required to make a particular craft item, how it is made, etc.
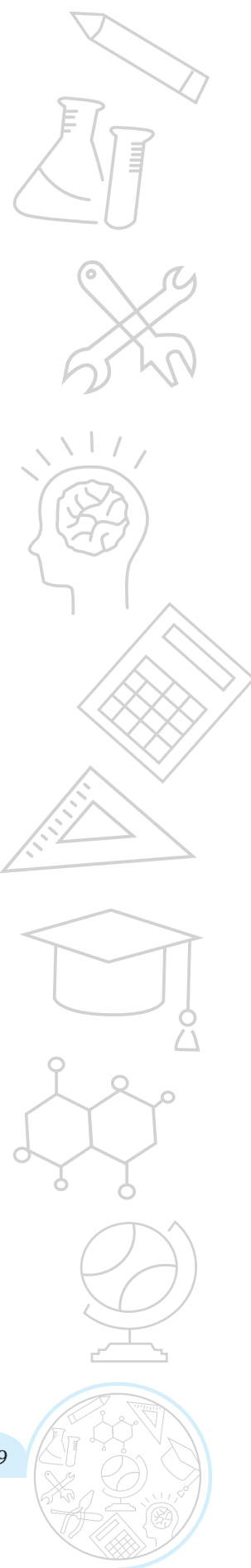
□ The teacher may discuss with students what they already studied in their history and geography classes.

□ She may help students in finding out craft(s) of the village, city or region, where they are living.

□ Once students find out about the craft(s) practiced in that particular area or region, the teacher may ask students to locate a craftsperson skilled in a particular craft.

In order to give students an opportunity to experience the feel of clay, a workshop with a potter may be organised. In the workshop the potter may demonstrate the art of pottery by crafting some pots and other things and describes the whole procedure.

After observing the activities of potter, students may be given clay to make some figures and objects on their own. It can be a bird, a basket, an animal, a pot, a human figurine or anything about which they learnt in their chapter on Harappan civilization. First they may make the objects in the desired form, then, they can decorate it further by pinching, incising and applique (for eyes and nose). They can also paint the objects once they are dry.
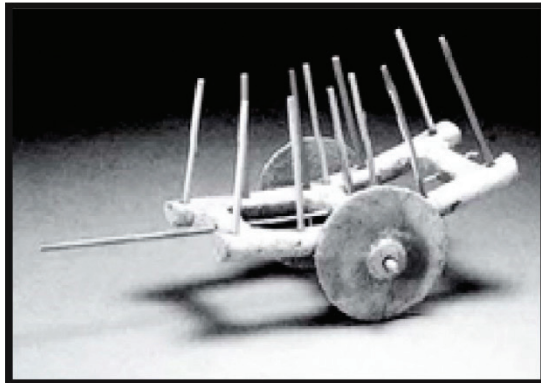
Some objects/figures from Harappan civilization which could be tried/made by students

The schools do not have kiln to burn the objects on fire and it is also not feasible to take students to show this so air dried objects can be taken as finished one. If possible the teacher can show this process through a video.

Once they finish painting the objects, it may be displayed in classroom or school premises.

Reflection Questions: Students can conduct an interview of a potter by asking questions, such as:

a) How long have you been practicing the craft?

b) How did you learn the craft?

c) Do you live with other crafts persons practicing the same craft?

d) Would you like your children to learn the craft skills?

e) Where do you sell your products?

f) How much money do you usually earn in a day?

g) Are there any myths or legends associated with the craft?

After the interview, students can write the step-by-step process involved in making the craft.

The primary objective of this activity is to enhance the student's skills and creativity. So students' efforts, interest, creativity and ability to handle materials should be kept in mind while assessing them.

Activity: Role-play on Journalist in the Making

The role-play activity for journalists is designed to help students develop an interest in becoming media person and recognize the important role of media in society as a knowledge desseminator. This is recognized as an important career worldwide, and journalists form an important segment of the media, which is considered one of the four pillars of democratic government in any country.

Through this activity, students learn to develop interview questions and convert gathered information into a story that is understandable to the common person. They also gain an understanding of the role of journalists, who provide information to newspapers, television, and Internet-based media.

The activity also helps students understand that journalists gather information from various sources, prioritize it, and present it to the people through various media, such as print and digital media. They come to appreciate that the media industry is predominantly run by private companies, but the government also has its agencies, such as All India Radio, Doordarshan and Press Information Bureau. Furthermore, they learn that the media industry requires techically knowledgeable persons such as camera persons, transportation staff, and studio workers, and that journalists need the skills to work in teams and curiosity to gather information that is important for people.

Many journalists start their careers as news reporters and then move on to work in media offices. Through this activity, students gain insight into the process and skills required to become a journalist and understand how they can contribute to the media industry. The role play activity for journalists is an effective tool for nurturing students' interest in journalism and fostering an appreciation for the important role that media plays in society.

Activity

1. Students require pen and paper for script writing and a camera-like device for the activity.
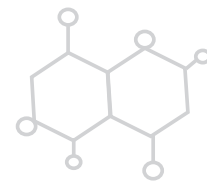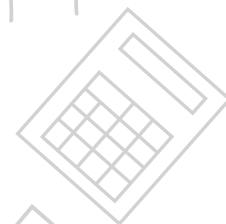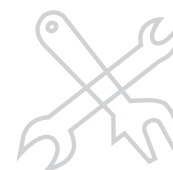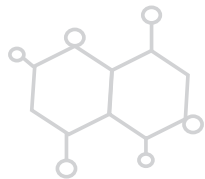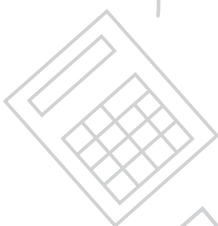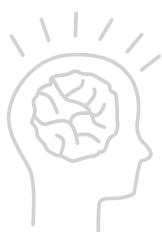
2. The teacher introduces the concept of journalism, important terms and concepts, and shows a 10-minute video on tthe work of a journalist.

3. If video resources are not available, the teacher suggests four to five important news issues related to social science textbooks.

4. The teacher assigns students to form groups of not more than five members and decides on the nature of work each member will undertake.

5. The teacher guides students to develop a script that includes step-by-step activities, details of questions to be asked, and tentative answers developed by the interviewees.

6. The teacher reviews and suggests improvements to each script and presents a rubric.

7. Students take two periods to perform the role play, and each group performs their tasks for 5-10 minutes.

8. After the interviews are over, each group or individual fills up the rubric prepared by the teacher.

9. Evaluation can be attempted, in which one or two groups may be formed specifically for evaluation.

10. Rubrics generally integrate the details of learning outcomes and expected activities.

6.2 Sector-based Approach

The demand for Science, Technology, Engineering, Arts and Mathematics (STEAM) skills is growing, particularly for sectors, such as engineering, construction, manufacturing, and energy. Similarly, principles and techniques of arts and aesthetics are being used in photography and the designing of products. Integrating knowledge and practices through pre-vocational education that are usually considered essential for the employees in different sectors for the development of vocational competence would be useful for the students in understanding the importance of vocational education. It will also help them to understand that vocational education offers skilled-based courses through which one gains skills and experience directly linked to a sector or a career.

One of the objectives of pre-vocational education is to introduce students to the soft skills that are required in the various occupations and how these soft skills help them in their life too. Teachers should explain the importance of soft skills, like teamwork, leadership, communication, and critical thinking. Cross-sectoral skills, often referred to as "generic skills" or "soft skills", are a broad set of skills, behaviours, and personal qualities that enable people to effectively understand their environment, work collaboratively with others and achieve their goals. Soft skills are equally important as the vocational or technical skills, they are vital for various jobs in 21st century.

List of Soft Skills for 21st Century

1. Communication skills	5. Planning and organizational skills	9. Teamwork
2. Interpersonal skills	6. Critical thinking	10. Creative thinking
3. Decision-making skills	7. Multicultural sensitivity	11. Investigation and research skills
4. Problem Solving	8. Adaptability and flexibility	

Sector-specific skills are those skills that are in huge demand by potential employers. For example, in Information Technology and IT-enabled Services (IT-ITeS), computer skills and knowhow, data mining, software languages, technical documenting, software testing, coding, cybersecurity, etc. are some of the sector-specific skills, which the potential employers in the IT-ITeS sector expect from the skilled people. Similarly, in the Hospitality sector, skilled people are required to deal with customers, inventory maintenance, front desk operations, administrative jobs, etc. with very effective communication skills.

Some of the activities in different sectors that could be organised to demonstrate and explain to the students about the various tasks that are performed in different occupations have been included in Part 3 of the Guideline document. The sectors which have been covered are as follows.

Agriculture	Automotive	Beauty and Wellness
Banking, Financial Services, and Insurance	Construction	Food Processing Sector
Electrical and Electronics	Handicrafts and Art	Healthcare
Information Technology and IT-enabled Services	Media and Entertainment	Plumbing
Private Security	Retail	Textile and Apparel Sector
Tourism and Hospitality		
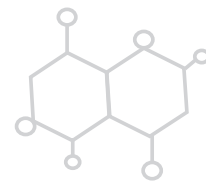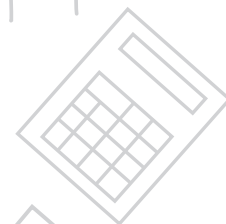
EXEMPLAR ACTIVITIES FOR IMPARTING SOFT SKILLS

7

Activity Plan 1

1.	Grade/ Class	7
2.	Skills to be Practiced	Communication Skills - Speaking
3.	Title of Activity	Practicing Good Manners in Conversation
4.	Learning Outcome	Students will be able to demonstrate good manners during verbal communication
5.	Material Required	Notebook, Pen
6.	Time Required	60 minutes
7.	Relevant Knowledge	Communication is a two-way process through which information or message is exchanged between individuals using language, symbols, signs or behaviour. Speaking, listening, reading and writing are communication skills.

8.	**Procedure**	**Role Play** Role playing takes place in small groups, where each actor is given a specific character or role to take on for the assigned period. Role-plays can be organised in several ways, which depends on the number of students in the group. To prepare for role-playing, divide students into several smaller groups, each with approximately the number of students required to act out each scenario. For example, for a group of 4–6 learners, a single role-play with a facilitator, who would be also providing the feedback and input from the group can be organised. Teachers will organise the role play on various aspects of communication. While performing the role play, the teachers will observe the following: **Step 1:** The student looks at the person that he/she is talking to. **Step 2:** Greets the other student with a smile or greeting, such as Namaskar, Good Morning/Good Afternoon/Good Evening. **Step 3:** Respects the person by adding a suitable title for addressing him or her formally, for example, he is Mr. Varun or she is Ms Varsha. **Step 4:** Listens carefully to the other person's name. **Step 5:** Introduces self and ask the other person's name. For example, I am Varun/May I know your name please/What is your good name? Some words that one can use in conversations are as follows: • **Thank You:** For example, when someone has given something or some information to you. • **Welcome:** For example, when someone says, "Thank you," say "you're welcome" in response. • **Please:** For example, when you are asking for something from someone. • **May I:** For example, may I know your name please. • **Excuse Me:** For example, excuse me, can you please tell me this address. • **I am sorry:** For example, I am sorry, I did not get your name or I am sorry, I have sent the message by mistake.
		Do's • Be thoughtful when you are speaking. • Be cheerful when you are listening. • Be generous to people and animals while communicating with them. • Respect other's privacy. • Be a good listener.
		Don't • Do not interrupt when someone else is talking. • Do not argue about things that are not important. • Do not point your finger or stare. • Do not chew a chewing gum or tobacco/betel while conversing. • Do not smoke while conversing.
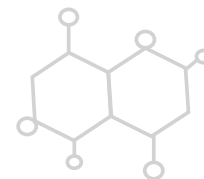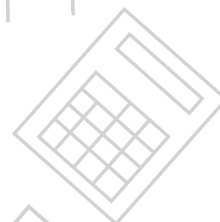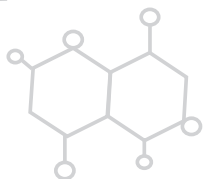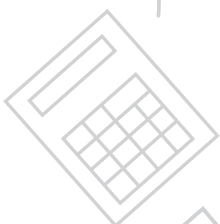
9.	**Reflection Questions**	The teacher will observe the students and make notes of the observations. The teacher will ask the students on how the activity has helped them to understand the importance of communication skills. Students may be asked the following reflection questions after the activity.
		1. Do you consider listening to be a skill?
		2. If someone is speaking to you, what should you do.
		3. What good manners one should demonstrate while speaking to other people?

10.	**Learning Resources**	S. No.	Title	Source/ Author	Link
		1.	Communication Skills – An Overview (Video)	PSS Central Institute of Vocational Education, Bhopal	https://www.youtube.com/watch?v=rsC7f1Ck7bw
		2.	Employability Skills (textbook for Grade IX)	PSS Central Institute of Vocational Education, Bhopal	http://psscive.ac.in/publications/textbooks
		3.	Employability Skills (textbook for Grade X)	PSS Central Institute of Vocational Education, Bhopal	http://psscive.ac.in/publications/textbooks
		4.	Employability Skills (textbook for Grade XI)	PSS Central Institute of Vocational Education, Bhopal	http://psscive.ac.in/publications/textbooks
		5.	Employability Skills (textbook for Grade XII)	PSS Central Institute of Vocational Education, Bhopal	http://psscive.ac.in/publications/textbooks

ACTIVITY PLAN 2

1.	**Grade/Class**	6
2.	**Skills to be Practiced**	Trust Building Skill
3.	**Title of Activity**	Importance of Trust Building
4.	**Learning Outcomes**	Students will demonstrate the trustworthy behaviour in social interactions.

5.	**Material Required**	Scarf/handkerchief/piece of cloth
6.	**Time Required**	60 Minutes
7.	**Relevant Knowledge**	Building trust starts with being trustworthy. You can build trust in your relationships if you are prepared to make the effort, as it requires making a commitment with trustworthy behaviour. When you get this message across, you will find that building trust and respect with others comes naturally. Teamwork is required in every sphere of life ranging from sports, education, work, society, etc. The most effective teamwork happens when individual team members harmonise their efforts and work towards a common goal.
8.	**Procedure**	**Step 1:** Divide the student's into groups. **Step 2:** Identify one person from each group to be blindfolded. **Step 3:** Call the identified person in front of the class on each side of the teacher's table from two groups. **Step 4:** Blindfold both persons. **Step 5:** Draw 3-4 rectangles on the floor. **Step 6:** The team members are now suppose to guide their blindfolded person to reach the end of the classroom, without stepping on any of the rectangles. **Step 7:** Repeat the activity after informing the group to plan and re-execute the activity this time.
9.	**Reflection Question**	The teacher will observe the students and make notes of the observations. S/he may discuss the following: (i) What qualities one should have in order to gain trust? (ii) What has been the learning from this activity?
10.	**Learning Resources**	Training and Resource material- Health and wellness of school going children, National Council of Edcational Research and Training (NCERT), New Delhi. http://ncert.nic.in/pdf/announcement/Training_Resource_Material_english.pdf.
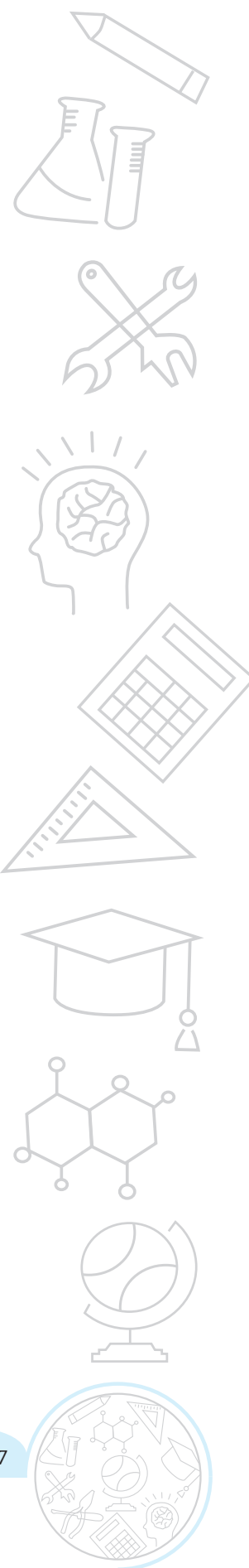
ACTIVITY PLAN 3

1.	**Grade/Class**	8
2.	**Skill to be Practiced**	Creativity and Aesthetic Skill
3.	**Title of Activity**	Decoration: Flower Arrangement
4.	**Objectives**	Students will able to identify different flowers; and prepare aesthetically pleasing floral decorations.
5.	**Material Required**	Fresh flowers, Cello tape, Thread, Needle, Wrapping Paper, Thin wire, Stick and Glue

6.	**Time Required**	60 Minutes
7.	**Relevant Knowledge**	When we listen to music, read poetry, and look at pictures or natural scene, we experience something distinctly immediate, emotional, and contemplative, which leads us to describe this in the words, such as 'beautiful', 'excellent', 'inspiring', 'wandering' and so on. Philosophy uses the word 'aesthetic' to describe such experiences. Art appreciation provides the most complex and profound form of aesthetic experience, in which we remain detached from the real world and get fully engaged in imagination, which is different from everyday life. The ability to respond to beauty and the opportunity to appreciate art are important components of wellness. Developing aesthetic values in students will help them to discover new ways to interact and engage with the people and the nature around them. Flowers make us feel happy and refreshing. Flowers are used on all important occasions and various functions. Floral decorations, such as bouquets and garlands are prepared to make the environment aesthetically pleasing.
8.	**Procedure**	**Step 1:** The teacher will describe the common flowers and other materials used for making garlands and bouquets. **Step 2:** Explain the selection of flowers as per the floral decoration. **Step 3:** Demonstrate the various types of floral decoration and prepare small bouquets by using the material. **Step 4:** Ask students to prepare a floral decoration by using the given material.
9.	**Reflection Questions**	The teacher will observe and evaluate the process of flower arrangement and prepare notes. The teacher will ask the students on how the activity helped them to understand the ways of flower arrangements. 1. Do you consider flower arrangement is a skill? If yes, then how. 2. Where do we use flower arrangement skill?
10.	**Learning Resources**	1. Creative & Aesthetic Development (NCERT) https://youtu.be/amxQaIbeyLU

ACTIVITY PLAN 4

1.	**Grade/Class**	8
2.	**Skill to be Practiced**	Conflict Management Skills
3.	**Title of Activity**	Roleplay on Conflict Management

4.	**Learning Outcomes**	Students will be able to identify the conflicting actions and demonstrate the ways in which conflicts are resolved.
5.	**Material Required**	Pen and Notebook
6.	**Time Required**	60 Minutes
7.	**Relevant Knowledge**	Peace education has some inherent qualities, values, and skills that should be acquired by the learners. In order to develop a culture of peace, attitudinal change is expected in students which include respect, trust, honesty, humility, generosity, empathy, justice, etc. In addition, students are expected to acquire conversational skills, such as listening, openness, decisiveness, tolerance, objective reasoning, and consistency. Conflicts occur daily in school. Conflicts are more likely to occur when we gather large number of people in one place. Different students have competitive needs and preferences that create conflict. It is especially important for schools to teach effective conflict resolution methods to minimize potential problems arising from these competing interests. Using school or classroom incidents and developing conflict management skills will help students in professional and personal life. Understanding peace education will develop teamwork and cooperativeness skills and respect for other individual and culture.
8.	**Procedure**	**Step 1:** Take a story of any conflict in which two parties are involved. For example, touching personal material, beating using abusive language, howling without any reason, etc. **Step 2:** Divide the class into two groups: Party A: Did some action; Party B: Have a problem with this action. **Step 2:** Ask students to perform the story by raising voice as usually we find in conflict. **Step 3:** After the performance. Ask students to give their opinion about who did the mistake. **Step 5**: Change the role of both groups and do the same activity. **Step 6:** Ask students to share their opinion about who did the mistake. **Step 7:** Teacher have to divide the student in to two groups. One who changed the answer after role shift and others who have not changed the answer. **Questions for the groups** 1. What kind of emotions do they have after the first activity and what kind of emotion do they have when the role is changed? 2. What do you think changing the roles made them change their answer?
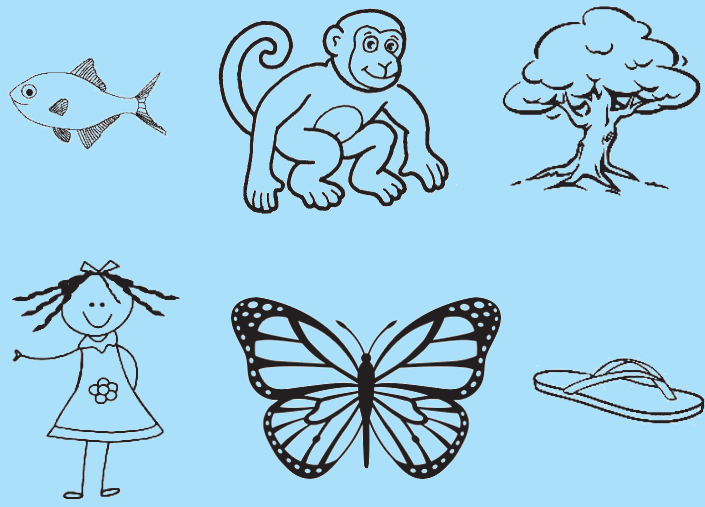
		3. How the conflict started?
		4. What action the two parties should take in order to resolve the conflict?
9.	**Reflection Questions**	The teacher will observe and evaluate the process of the activity and prepare notes. The teacher will ask the students on how the activity helped them to understand the reasons for conflicts and the ways in which one can manage the conflict. 1. What role do emotions play in a conflict? 2. What is the importance of communication in conflict resolution? 3. Suggest alternative ways in which conflicts can be resolved.
10.	**Learning Resources**	1. Peace Education and Conflict Resolution https://libres.uncg.edu/ir/uncg/f/A_Askerov_Peace_2010.pdf

ACTIVITY PLAN 5

1.	**Grade/Class**	8
2.	**Skill to be Practiced**	Logical Thinking Skills
3.	**Title of Activity**	Guessing the Image.
4.	**Learning Outcomes**	Students will able to form logical questions in their daily life.
5.	**Material Required**	10 Picture cards, Pen and Notebook
6.	**Time Required**	60 minutes
7.	**Relevant Knowledge**	Logical thinking helps students in analysing the situation with the help of knowledge that they possess. Logical thinking required to look at the problem objectively and consider all aspect of problem, by which students can make rational decisions.
8.	**Procedure**	**Step 1:** Divide students into 5 groups. **Step 2:** Teacher should give the following instructions. 1. Every group will get 2 cards but the cards will not be shown to the groups. 2. Teacher will show the cards on behalf of each group to the others. 3. The group member has to ask questions to the other group members to know which card teacher has shown to the other group on behalf of them.

9.	**Procedure**	4. The group members have to answer in YES or NO only.

4. The group members have to answer in YES or NO only.
5. The groups will get 10 questions to ask per picture card.

Step 3: The group has to discuss and form questions in order to know the image that the teacher has shown on behalf of them.

- If group take 10 questions to guess the correct image, then they will get 1 mark, if they take 9 questions to guess the correct image then 2 marks, if they take 8 questions to guess the correct image then 3 marks, likewise if they answer correctly 1 question then they will get 10 marks,
- At the end of the session every group will tell their score.
- Teacher will open the discussion for sharing the experience and the importance of logical questioning.

Examples of Picture Cards

9.	**Reflection Questions**	The teacher will observe the students and make notes of the observations. The teacher will ask the students on how the activity has helped them to understand the importance of logical thinking.

The teacher will observe the students and make notes of the observations. The teacher will ask the students on how the activity has helped them to understand the importance of logical thinking.

1. Do you think logical thinking is a skill? Why?
2. How does this activity help you to understand the logical reasoning and framing logical questions?
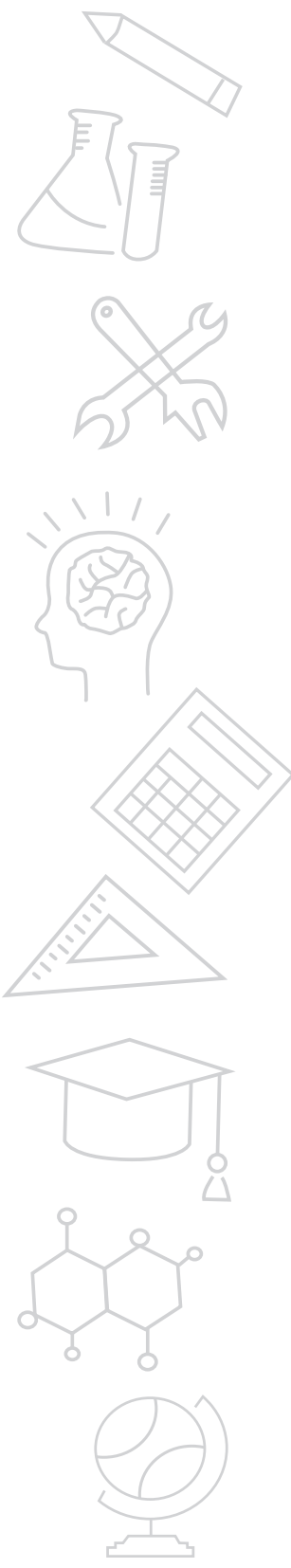
ACTIVITY PLAN 6

1.	**Grade/Class**	8
2.	**Skill to be Practiced**	Team Work Skills
3.	**Title of Activity**	Building A Tower

4.	**Learning Outcomes**	Students will able to demonstrate good teamwork, solve problems in order to achieve the objective, and critically reflect on the action of group work and cooperation.
5.	**Material Required**	Large Card sheets, Glue Stick or Glue bottle, Crayons, Straws and Double Sided Foam Tape.
6.	**Time Required**	60 Minutes
7.	**Relevant Knowledge**	Teamwork teaches communication and social skills to the students. It also teaches respect towards other, confidence and develop sense of responsibility. The importance of teamwork lies in the nature of functioning as a democratic society.
8.	**Procedure**	**Step 1:** The teacher will divide students into groups of 6 students each. **Step 2:** Teacher will give the following instructions: **Instruction** 1. Each group have to build a tower by using the material given to them (Card sheet, glue bottle, crayons, straws, Double sided foam tape) 2. Students should make the tower as high as they can using the given resources and tower should be aesthetically pleasing. 3. All material must be used. 4. Team members have to plan their tower on paper and then they can start building the tower. 5. There will be only 30 minutes to build the tower. **Step 3:** Teacher will observe how students are building a tower.
9.	**Reflection Questions**	The teacher will observe the students and make notes of the observations. The teacher will ask the students on how the activity has helped them to understand the importance of team work. The teacher will ask the following questions: 1. Did you use the resources properly? Which resources did you use more and which ones did you not use? 2. Did you actively participate in planning? If yes how? if no why? 3. If you get a chance to change your tower what changes you will make? 4. What values did you inculcate while performing the activity?
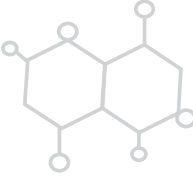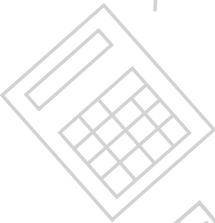
EXEMPLAR ACTIVITIES FOR IMPARTING HARD SKILLS

8

1. SECTOR: AGRICULTURE

The Agriculture sector comprises establishments primarily engaged in growing crops and raising animals on a farm or in their natural habitats. The agriculture in India has occupied almost 43 per cent of India's geographical area and it is the primary source of livelihood for about 58 per cent of India's population. Agriculture is still the only largest contributor to India's Gross Domestic Product (GDP). The Ministry of Agriculture and Farmers Welfare, Government of India is the apex body for formulation and administration of the rules and regulations related to agriculture in India. The Indian government has also set up the Ministry of Food Processing Industries to stimulate the agriculture sector and make it more lucrative. The Indian food processing industry accounts for 32 per cent of the country's total food market. It is one of the largest industries

in India and is ranked fifth in terms of production, consumption, export, and expected growth. The agriculture sector in India is expected to generate better momentum in the next few years due to increased investment in agricultural infrastructure, such as irrigation facilities, warehousing and cold storage. A farmer who raises only crops is responsible for preparing land for planting, taking care of the crops and performing harvesting and threshing. Some farmers sell their crops at the market, while others have contracts with processing companies or other agencies. Farmers who rear livestock, such as cattle, sheep, and goats breed and raise their animals for products and services.

Agribusiness, which encompasses business related to agriculture includes activities and methods used for modern food production, including farming, seed supply, agrichemicals, livestock care, food processing, and sale of agriculture products.

Major Agencies/Organisations in Agriculture and Allied Activities Sector

1. Department of Agriculture and Farmers Welfare (DAFW)
2. Indian Council of Agricultural Research (ICAR)
3. National Dairy Development Board (NDDB)
4. National Horticulture Board (NHB)
5. National Oilseeds and Vegetable Oils Development Board (NOVOD)
6. Agriculture Skill Council of India (ASCI)

Suggestive Pre-vocational Activities
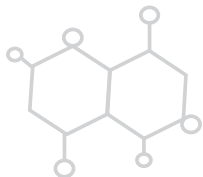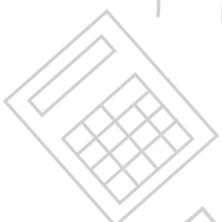
1. Identifying Careers in Agriculture and Allied Sectors
2. Collecting Soil Sample for Soil Testing
3. Cultivating Mushrooms
4. Floral Arrangements
5. Preparing healthy meals
6. Measuring Soil pH.
7. Using urine based fertilizer for farming
8. Preparation and Application of Organic Manure
9. Preparation and Application of Vermicompost
10. Propagating Plants for Nursery
11. Raising Seedlings in Nursery
12. Raising Seedlings in Pots
13. Rearing Fish in an Aquarium or Pond
14. School Garden or Nursery Preparation
15. Use of Personal Protective Equipment
16. Visit to a Dairy Farm
17. Visit to Agriculture-based Industries

18. Visit to an Agriculture College
19. Visit to an Agriculture Farm
20. Visit to an Organic Agriculture Farm
21. Visit to Dairy-based Industries.

Exemplar Activity Plan

1.	Grade/Class	8
2.	Sector/Area	Agriculture and Allied Activities
3.	Theme/Subject	Science
4.	Title of Activity	Multiplication of Plants
5.	Learning Outcomes	Students will be able to: • Differentiate between sexual and asexual reproduction in plants. • Prepare cuttings of plants, with a 45-degree angle at the cut. • Grow rose using stem cuttings. • Relate certain aspects of science, technology, engineering and mathematics with the activity.
6.	Material Required	1. Rose plant 2. Budding knife 3. Secateurs 4. Pots with holes 5. Soil 6. Sand 7. Vermicompost 8. Watering can with water 9. Garden tools 10. Rooting hormone
7.	Time Required	3 hours
8.	Relevant Knowledge	Plant multiplication is also referred to as plant propagation. There are two ways to multiply the plants i.e., sexual method and asexual or vegetative method. In sexual method, the plants are multiplied by seeds. The vegetative propagation of plants can be done by cutting, layering, division, budding, and grafting. The process of plant propagation includes the use of different types of media, use of different parts of plants, preparation of potting mixture and different techniques of plant multiplication. Plants, which are multiplied through stem cuttings include rose, bougainvillea, grape, citrus, etc.
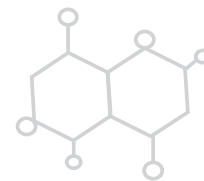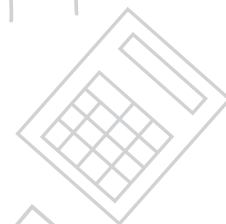
9.	**Procedure**	**Step 1:** A selected healthy rose stem, is to be cut 6–8 inches (15–20 cm) long. The stem of the rose is to be cut above the first set of leaves at a 45-degree angle. **Step 2:** Put the rose cuttings directly into the water. **Step 3:** Remove all of the leaves except the ones at the top. **Step 4:** Dip the end of the rose cuttings into a rooting hormone and keep the cuttings in a shady place. **Step 5:** Prepare the soil bed or a pot/container (with a hole at the bottom) for the rose cuttings. Soil, sand and vermicompost mix can be used for preparing the substrate for growing the cuttings. **Step 6:** Create holes in the soil with a stick or pencil for the cuttings. **Step 7:** Place the cuttings into the soil. **Step 8:** Place the containers in a shady place and keep the soil moist by regular watering using a water can.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to do activities at home. 1. What is the difference between sexual and asexual reproduction? 2. What are the alternatives to rooting hormone available in the market? 3. What are the materials that you can use to make homemade rooting hormone? 4. What are those plants, other than rose, which can be multiplied through stem cutting? 5. Why is the stem cut at an angle of 45-degrees? 6. Why are secateurs used for cutting stem? 7. What is the ratio of soil: sand: vermicompost used for preparing substrate for growing the plants?
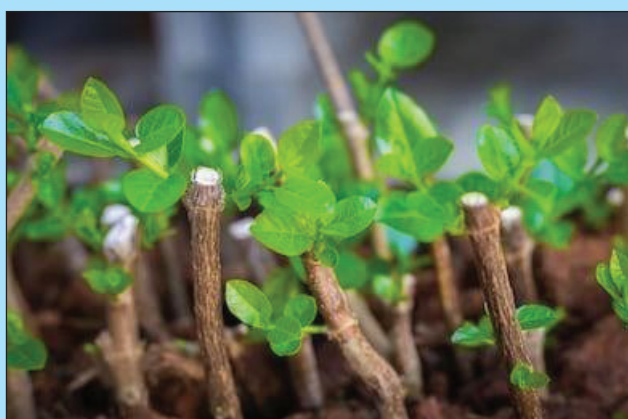
11.	**Learning Resources**	**Further Readings** **Books** 8. Textbook on *Gardener,* NCERT, New Delhi http://psscive.ac.in/publications/textbooks 9. *Plant Propagation,* NCERT, New Delhi https://ncert.nic.in/vocational/pdf/kegr103.pdf **Videos** 1. *Artificial Vegetative Propagation,* CBSE, New Delhi https://www.youtube.com/watch?v=4fUCA7YpsSg
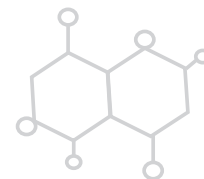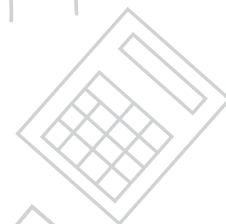
2. SECTOR: AUTOMOTIVE

The Automobile industry is a significant driver of economic growth and technological development. In India, it is leading in many segments- primarily in two-wheelers, cars, and tractors. India has four large auto manufacturing hubs: Delhi-Gurgaon-Faridabad in the North, Mumbai-Pune-Nashik-Aurangabad in the West, Chennai- Bengaluru-Hosur in the South, and Jamshedpur-Kolkata in the East. The auto-components industry accounts for 2.3 per cent of India's Gross Domestic Product (GDP) and employs as many as 1.5 million people directly or indirectly.

MAJOR AGENCIES

1. Automotive Component Manufacturers of India (ACMI)
2. Automotive Components Manufacturers Association of India (ACMAI)
3. Automotive Research Association of India (ARAI)
4. Society of Indian Automobile Manufacturers (SIAM)

SUGGESTIVE PRE-VOCATIONAL ACTIVITIES

1. Changing and Cleaning Spark Plug
2. Changing Engine Oil
3. Changing Tyre
4. Use of Oil and Coolants
5. Safety and Maintenance of Four-wheeler
6. Safety and Maintenance of Three-wheeler

7. Safety and Maintenance of Two-wheeler
8. Safety Rules in the Workplace
9. Safety Rules for Driving Four-wheeler
10. Safety Rules for Driving Three-wheeler
11. Safety Rules for Driving Two-wheeler
12. Safety Rules while Travelling in a Bus
13. Safety Rules while Travelling in a Car
14. Traffic Signals and Signs
15. Visit to an Automobile Parts Sales Depot/Shop
16. Visit to an Automobile Service and Maintenance Workshop
17. Visit to an Automobile Showroom.

Exemplar Activity Plan

1.	Grade/Class	8
2.	Sector/Area	Automotive
3.	Theme/Subject	Science and Technology
4.	Title of Activity	Changing Car Tyres
5.	Learning Outcomes	Students will be able to: • Demonstrate the safe use of tools and equipment for changing a car tyre. • Change the car tyre as per the manufacturer's specification.
6.	Material Required	1. **Car's Owner Manual:** The owner manual of a car usually comes with specifications that are useful while changing the tyre. Read the manual carefully. 2. **Lug Wrench:** A lug wrench is a double-sided or X-shaped, nut socket, or L-shaped. These are used to loosen and then tighten the lug nuts on the wheel. 3. **Spare Tyre:** It is used to replace the flat tyre. 4. **Jack:** A jack is used to lift the vehicle by a few inches so that the tyre can be replaced easily. 5. **A Working Flashlight:** It is useful when working at night or in a place with less light. 6. **Two Small Flat Wooden Boards:** Flat wooden pieces of approximately 2×6 inches are helpful to secure the jack in position. 7. **Gloves:** To protect hands against possible cuts, gloves can be used.

		8. **Mat:** A small mat or a plastic sheet in the car is helpful for placing your knee while changing the tyre.
7.	**Time Required**	2 hours
8.	**Relevant Knowledge**	You need to change the tyre when it is worn out or it gets flattened due to a puncture or a hole in the tyre. Tyres come with tread wear indicators. The easiest way to find these indicators is to look for a triangular arrowhead on the sidewall. You will find rubber bridges between treads parallel to the marker. If the tyre tread has worn out to the level of the bridges, it is time you need to change the tyre.
9.	**Procedure**	**Step 1: Look for a Safe Place** It is critical to get off the road in a safe manner when you realise that your car has a flat tyre. Find a safe spot where you can park your car, put your car in first gear, apply the hand brake, get off, and change the tyre. Park the car away from the main road. **Step 2: Switch the Parking Lights On** Switch the parking or hazard lights on for alerting other vehicles. Other car drivers will notice the blinking lights from a distance and you can change the tyre safely. You can also place a triangle reflector at some distance from the car for additional warning to alert the passing vehicles. **Step 3: Park by Engaging the Hand-break** Park the car by pulling the hand-break to its highest position. This will ensure that the car remains locked in one place while you are applying force to change the tyre. **Step 4: Secure the Wheel Wedges** Secure the wheel wedges behind the good tyres to ensure additional safety. These are useful, especially on an inclined road. **Step 5: Remove Wheel Covers** Most of the car tyres are covered with wheel covers. These need to be removed before you can proceed to change the flat tyre. Refer to the owner's manual to get an idea about how this is done. Note that different car models may have different settings for wheel covers. **Step 6: Loosen the Lug Nuts Halfway** The lug nuts need to be loosened only halfway before you lift the car with a jack because if you lift the car first, the tyre will keep rotating. Use the lug wrench to loosen the lug nuts. Ensure that you are using the correct size of the wrench. **Step 7: Secure the Jack with Wooden Boards** Locate the jacking point under your car. This is where the jack is supposed to be connected to the vehicle. Place

the wooden boards under the jacking point and keep the jack on them. Next, connect the jack to the jacking point and lift the car till you see a small gap between the ground and the tyre.

Step 8: Remove the Lug Nuts Completely
Unscrew the lug nuts completely with the help of a wrench and remove all the lug nuts.
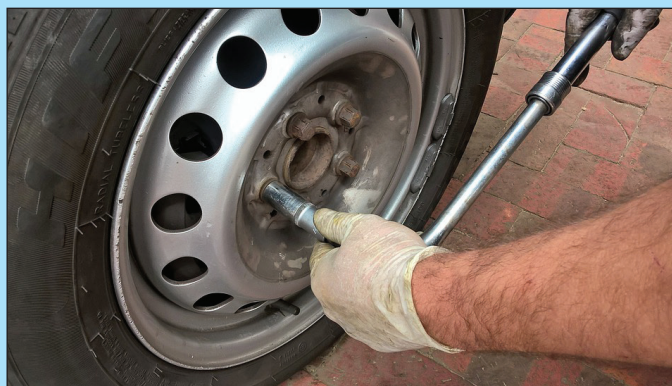
Step 9: Replace the Flat Tyre
Remove the flat-tyre from its frame and replace it with a spare tyre.

Step 10: Screw Lug Nuts and Replace Wheel Cover
Screw the lug nuts halfway and proceed to lower the vehicle. Remove the jack and wooden boards after the tyre touches the ground firmly. Now screw the lug nuts tightly and replace the wheel cover. To ensure that a lug nut is tight enough to drive a car safely, use your feet. This will add extra force to the wrench and the nut will screw in position. Keep all the tools safely in the car and you can resume driving after checking the tyre pressure. If you do not have a tool, visit the nearest garage and get the tyre checked. The flat tyre should also be repaired as soon as possible.
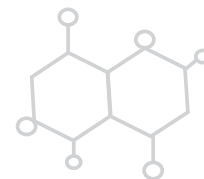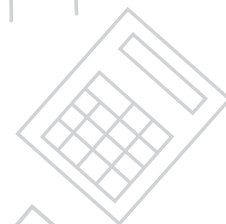
10.	**Assessment**	Teacher may ask the following reflection questions.
		1. Why are tyres made of rubber?
		2. Where does the rubber come from?
		3. Why are there grooves or treads in a tyre?
		4. Where do you place the jack for lifting the car?
		5. Why should you never put any part of your body under the vehicle during or after raising the vehicle with the jack?
		6. Why should the tyres be rotated according to the guidelines of the manufacturer?
		7. Which tool is used for changing tyres and how does it work?
		8. Why is a triangle reflector kept at some distance from the car for additional warning to alert the passing vehicles?
		9. How can we make use of discarded tyres for decorating our gardens or for any other purpose?
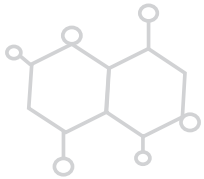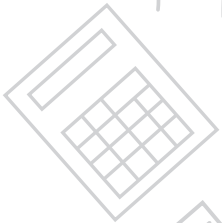
3. SECTOR: BANKING, FINANCIAL SERVICES AND INSURANCE

India has a diversified financial sector undergoing rapid expansion, both in terms of strong growth of existing financial services firms and new entities entering the market. The sector comprises commercial banks, insurance companies, non-banking financial companies, co-operatives, pension funds, mutual funds, and other smaller financial entities. The Government of India has introduced several reforms to liberalise, regulate and enhance Banking and Insurance industry.

The Government and Reserve Bank of India (RBI) have taken various measures to facilitate easy access to finance for Micro, Small, and Medium Enterprises (MSMEs). These measures include launching Credit Guarantee Fund Scheme for Micro and Small Enterprises, issuing guidelines to banks regarding collateral requirements, and setting up a Micro Units Development and Refinance Agency (MUDRA).

The Indian banking system consists of public sector banks, private sector banks, foreign banks, regional rural banks, urban cooperative banks, and rural cooperative banks. The digital payment system in India has evolved with India's Immediate Payment Service (IMPS). IMPS offers an inter-bank electronic fund transfer service through mobile phones and the service is available even during bank holidays. The insurance industry of India consists of insurance companies which are in the life insurance business or in non-life insurance business.

Major Agencies

1. Association of Mutual Funds in India (AMFI)
2. Indian Banks Association (IBA)
3. Institute for Development and Research in Banking Technology (IDRBT)
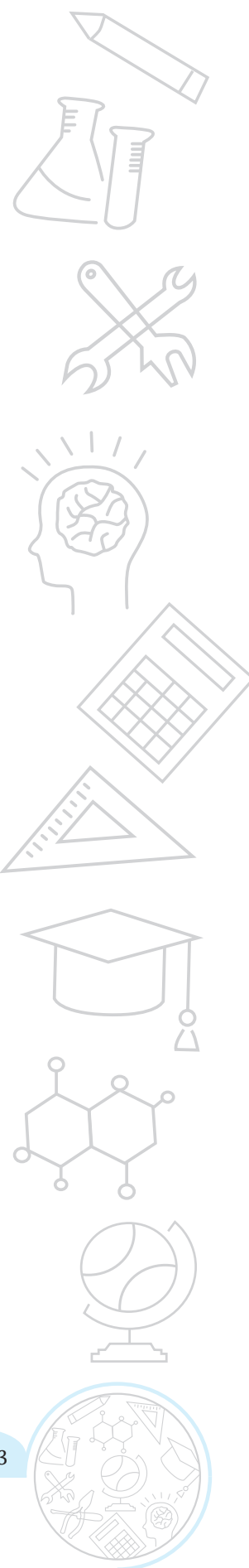
4. Insurance Regulatory and Development Authority (IRDA)
5. Reserve Bank of India (RBI)
6. Securities and Exchange Board of India(SEBI)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Bank Products and Services
2. Basic Business Plan
3. Book-keeping
4. Calculating Simple Interest
5. Consumer Protection
6. Filling up Form for Insurance.
7. Insurance Products and Services
8. Investing Options
9. Money Deposits or Saving Schemes
10. Opening a Bank Account
11. Protecting your Identity
12. Money Saving Options
13. Withdrawing Money from Saving Account
14. Cybersecurity

EXEMPLAR ACTIVITY PLAN

1.	**Grade/Class**	8
2.	**Sector/Area**	Banking, Financial Services, and Insurance
3.	**Theme/Subject**	Finance
4.	**Title of Activity**	Money transaction
5.	**Learning Outcomes**	Students will be able to: • Differentiate between saving and investing. • Describe the importance of saving and investing money. • Identify the roles and functions of various bank personnel in financial and non-financial transactions.
6.	**Material Required**	1. Notebook 2. Pen 3. Piggy bank 4. Fake currency notes 5. Various forms used in bank for depositing cash and cash transactions

7.	Time Required	2 hours
8.	Relevant Knowledge	Both saving and investing money are important in life, but they have a different meaning. Saving money is the process of keeping cash in safe accounts or securities that can be accessed or sold in a very short time. Investing money is the process of using money to buy an asset, which has the probability of generating safe and acceptable return on investment over time. Benjamin Franklin once said that "A penny saved is a penny earned". It is important to save money and make safe investments in life. Cash transaction is referred to as a transaction, which involves an immediate outflow of cash towards the purchase of any goods, services, or assets. Cash transaction can be consumer-oriented or business-oriented. A Cashier in the bank performs the following functions for facilitating money transactions: • Cheque cashing, money depositing and transfers, saving deposits and cash withdrawals. • Manage transactions with customers using cash registers. • Collect payments in cash or credit. • Resolve customer complaints, guide them and provide relevant information. • Issue negotiable items (cashier cheques, drafts, etc.) • Promote financial products of the bank. • Tracking transactions on balance sheets and reporting any discrepancies. • Batching and processing proof work. **Activity 1: Saving Money** **Step 1:** Begin the session by asking students what they know about saving money. Ask if anyone is saving money or putting it in a piggy bank. **Step 2:** Tell students why they should be learning about saving and investing money. **Step 3:** Explain reasons for saving money, such as purchasing books, toys, bags, shorts, etc. **Step 4:** Divide the class into groups and assign them the reasons identified by the students for saving money. **Step 5:** Now ask each group to imagine if they did not have any savings, what would they do? **Step 6:** Show a short video of how money is deposited in the bank or through an Automatic Teller Machine (ATM). **Step 7:** Tell students that one should save money for the future and contingencies.

| 9. | **Procedure** | **Activity 2: Role Play of Cashier** |
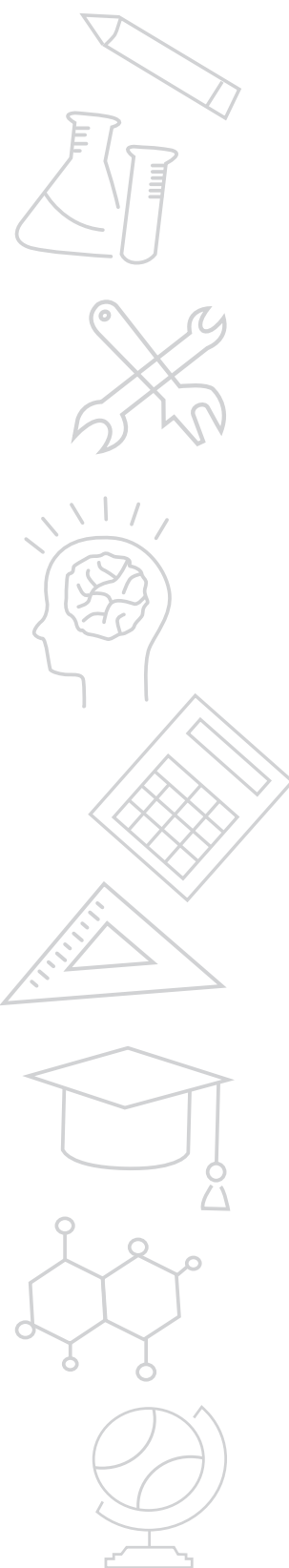
Activity 2: Role Play of Cashier

Role play exercise give students an opportunity to assume the role of a person or a professional in a particular scenario. It is useful in making students understand the role and responsibilities of a person or professional and to deal effectively with a given situation. The five steps to be adopted for conducting the role play for making children understand the roles and responsibilities of a cashier in a bank are as follows:

Step 1: Identify the Situation and Describe the Scenario

Describe the situation to the children. For example, people working in the Bank and the customers entering the Bank for various purpose, such as cash deposit, fixed deposit, enquiries, hiring a bank locker, etc.

Step 2: Assign Roles

Once the scene is described, identify the various fictional characters involved in the scenario. Some of these may be people who have to deal with the situation when it actually happens (for example, Cashier). Others will represent people who are supportive or hostile, depending on the scenario (for example, a supportive or an angry Customer). Once you have identified these roles, allocate them to the children involved in your exercise.

Ask children to use their imagination to put themselves inside the minds of the people that they are representing. This involves trying to understand their duties, responsibilities and feelings.

Step 3: Act Out the Scenario

Each child will assume his/her role, and act out the situation, trying different approaches where necessary.

Step 4: Discuss What is Learned

When the role-play is over, discuss what children have learned from each other's experience.

Organise a visit to the Bank and explain the functions of the materials and equipment being used by the Bank personnel, especially for cash transactions.

Pre-vocational Education at Middle Stage

10.	**Assessment**	The teacher may ask questions to the students or encourage students to perform the activities at home and watch videos. 1. How does a Barcode Scanner work? 2. How does an Automated Teller Machine (ATM) work? 3. How does a Currency Counting Machine work?
11.	**Learning Resources**	**Textbooks** 1. Business Services https://ncert.nic.in/textbook/pdf/kebs104.pdf
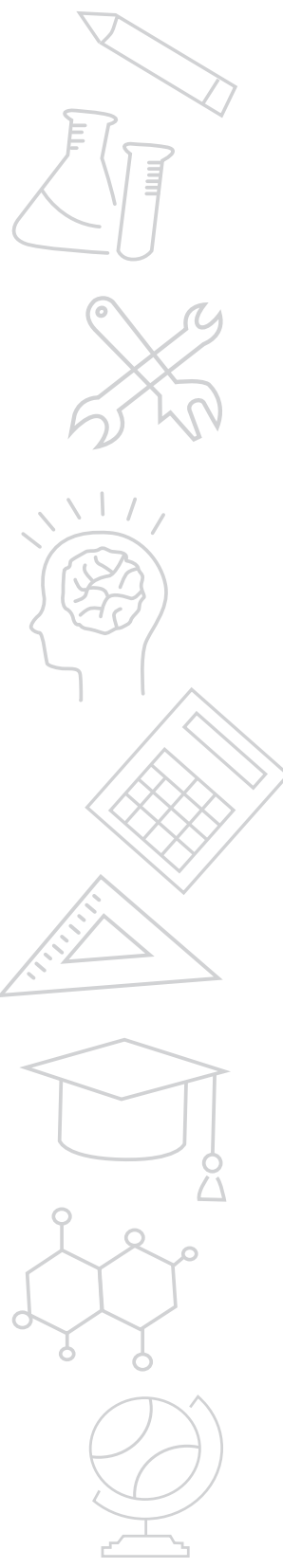
4. SECTOR: BEAUTY AND WELLNESS

The Beauty and Wellness sector is growing at a fast pace and is an important industry in India. The rapid growth of the Beauty and Wellness Industry, along with the entry of many small and large companies has led to a huge demand for trained personnel or beauty specialists, such as Beauticians, Beauty Therapists, Special Effects Make-up Artists, etc. The major sub-segments of Beauty and wellness sector are Beauty Centres or Salons, Hair Salons, Product and Counter Sales, Fitness and Slimming, Rejuvenation centres, Alternative Therapy Centres, and Unisex Salons. The beauty and salon segment include skin, hair and nail care services. The fitness and slimming segment include service providers involved in the fields of physical exercises, yoga, other mind-body exercises, weight-loss and slimming. Wellness is about adopting a healthy lifestyle and maintaining one's wellbeing both physically and mentally.

MAJOR AGENCIES

1. Beauty and Wellness Sector Skill Council (B&WSSC)
2. National Accreditation Board for Hospitals and Healthcare Providers.

Suggestive Titles for Developing Activity Plans

1. Basic Manicure Services
2. Basic Nail Services
3. Basic Pedicure Services
4. Colour Mixing
5. Hair Styling
6. Haircare
7. Hair Treatments
8. Make-up Services
9. Mehndi Art
10. Nail Art

Pre-vocational Education at Middle Stage

11. Nail Tipping
12. Skincare
13. Sunburn Prevention and Treatment

Exemplar Activity Plan

1.	Grade/Class	8
2.	Sector/Area	Beauty and Wellness
3.	Theme/Subject	Art
4.	Title of Activity	Nail Art
5.	Learning Outcomes	Students will be able to: • Use various techniques to make nail art. • Describe how nail art is useful in enhancing beauty of a person. • Relate the activity with income and career opportunities. • Demonstrate the various safety aspects of using chemical while using chemicals for nail art.
6.	Material Required	1. Nail polish/nail varnish 2. Glitters 3. Nail art pens 4. Nail Dotter, also known as "dotting tools" 5. Nail art brushes 6. Stationery tape/stickers 7. Thin, colored striping tape 8. Sponges (for gradient effects) 9. Nail stickers
7.	Time Required	1 hour
8.	Relevant Knowledge	Nail art is the art of drawing or painting different types of patterns on the nails. It is a creative way to paint, decorate, enhance, and embellish nails. It is a type of artwork that can be done on fingernails and toenails. Nail polish, or nail varnish, is a lacquer applied to human fingernails or toenails to decorate the nail. The different options available for nail include the following: • Glitters • Nail art pens • Stamping • Water decals • Water marbling
9.	Procedure	**Step 1:** Apply a base coat on the nails of a hand. **Step 2:** Now apply 2 coats of each different coloured nail polish on the nails. **Step 3:** Let the nail polish dry completely.
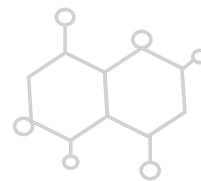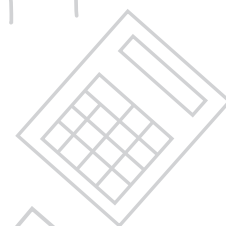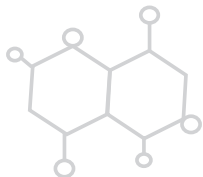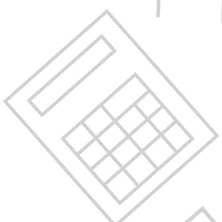
		Step 4: Apply a layer of quick-dry topcoat as this will help in removing the acrylic paint without disturbing the nail colour. **Step 5:** Take a white acrylic colour and mix some water in it. **Step 6:** With this mix, draw some spikes on your nails. **Step 7:** Use a thin brush to outline the spikes with a black nail colour. **Step 8:** Make any pattern on the nails. Children can be as creative as they can in making different designs. **Step 9:** Randomly place small white acrylic dots in the remaining area. **Step 10:** Clean up around the nails using a nail polish remover. **Step 11:** Now apply a layer of topcoat.
10.	**Assessment**	The teacher may ask questions or encourage students to perform the activities, such as the following: 1. What is the difference between the nail polish and nail gel? 2. What is the chemical composition of a nail polish remover? 3. How can learning about nail technology enhance income and career opportunities? **Suggestive Activities:** Students can be asked to make geometrical designs on the nails. They can also calculate the cost and profit or making various forms of nail art.
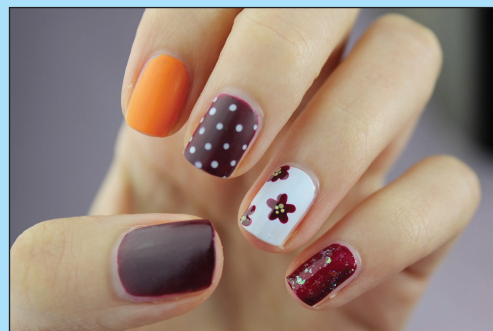
5. SECTOR: CONSTRUCTION

The construction industry is the second largest industry in India after agriculture. Infrastructure plays a huge role in propelling other industries. There are mainly three segments in the construction industry (i) real estate construction which includes residential and commercial construction; (ii) infrastructure building, which includes roads, railways, power, etc., and (iii) industrial construction that consists of oil and gas refineries, pipelines, textiles, etc. The government, therefore, focuses on the development of infrastructure and construction services through focused policies, large budget allocation to the infrastructure sector, smart cities mission, etc. There is increasing use of environment-friendly technologies in construction, including the construction of green buildings.
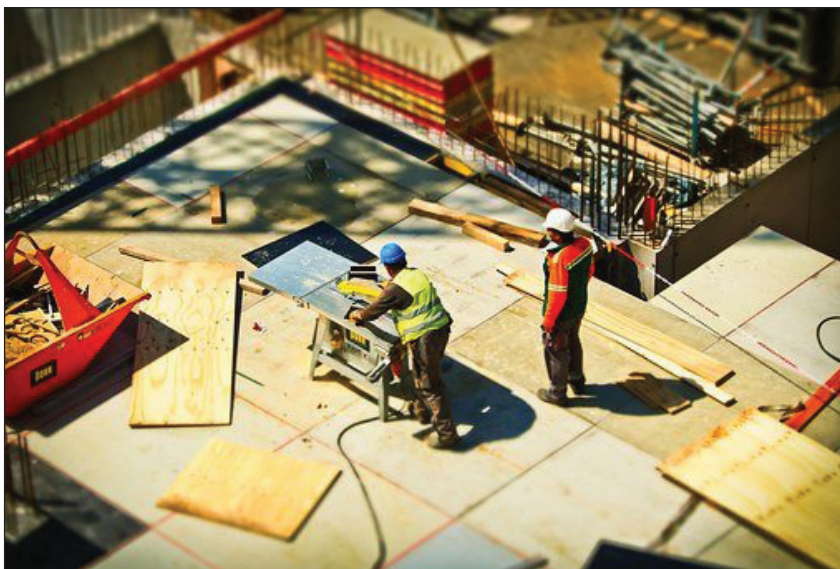
MAJOR AGENCIES

- ❐ Builders' Association of India (BAI)
- ❐ Confederation of Real Estate Developers Association of India (CREDAI)
- ❐ Construction Federation of India (CFI)
- ❐ Construction Skill Development Council of India (CSDCI)
- ❐ National Highways Builders Federation (NHBF)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Digging and Piling
2. Masonry Work
3. Measuring and Marking the Plot Area
4. Painting of Walls
5. Scaffolding
6. Carpentry
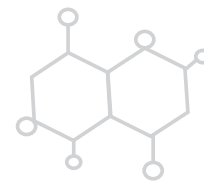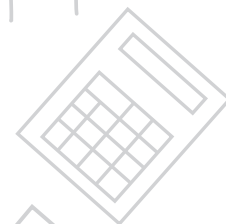
7. Plumbing
8. Energy Star Windows
9. Solar Panels

EXEMPLAR ACTIVITY PLAN

1.	**Grade/Class**	8
2.	**Sector/Area**	Construction Sector
3.	**Theme/Subject**	Science
4.	**Title of Activity**	Cement Crafts
5.	**Learning Outcomes**	Students will be able to: • Draw figures and shapes. • Identify the various textures. • Develop hand eye co-ordination and manual dexterity through craft work. • Develop creativity skills.
6.	**Material Required**	1. Concrete or cement 2. Sand 3. Primary Containers (bottom half of plastic bottles or jars) 4. Cardboard - to make the secondary containers 5. Rubber Gloves 6. Bucket or Pan for mixing cement with water 7. Metal Stick for mixing 8. Scissor 9. Cutter 10. Transparency pen 11. Transparent tapes 12. Water
7.	**Time Required**	2 hours
8.	**Relevant Knowledge**	Cement and concrete crafts like planters, and other concrete decorative craft have become very popular these years. A 3:1 ratio of sand to cement is necessary for most cement crafts. Demold time is 24 hours, but it takes 2 days for the cement to reach its final colour. This will dry to a light-medium grey.
9.	**Procedure**	**Step 1:** Take plastic bottles or jars with patterns on them. **Step 2:** Cut off the bottom half of the plastic bottle or jar with the cutter. **Step 3:** Place the cut-off part of plastic bottle or jar upside down on a piece of cardboard and trace around the edge of its circle using a pen.

		Step 4: Draw another smaller circle inside the first one and draw some stripes around it. **Step 5:** Wear rubber gloves. **Step 6:** Cut out the cardboard using a scissor. **Step 7:** Now measure the length of the cut-off plastic bottle and cut a long strip (half an inch shorter than the cut-off plastic bottle's length) out of the cardboard. **Step 8:** Wrap the long strip around the first cardboard cutout and use transparent tape while wrapping it. **Step 9:** Use transparent tape to wrap the bottom of the cardboard container as well. The cardboard inner container should be half an inch shorter than the primary container. **Step 10:** Measure 1-part cement and 3-parts sand. **Step 11:** Mix the concrete with water. Do not add too much water and try keeping the mixture thick. You need to add sand if you are using white cement. **Step 12:** Make sure the mixture is not too thick nor too thin. Now that you have the cement/concrete mixed, start filling the primary containers with them. **Step 13:** Do not fill the primary container fully. Keep space for the secondary container. **Step 14:** After filling 2/3 of the primary container, put the secondary container right in the middle of it and push it in gently. **Step 15:** Place something heavy on top of it or else the secondary container will be pressed up. **Step 16:** Allow the cement/concrete mixture to dry overnight. It is better if you let it dry for at least 24 hours. **Step 17:** Now carefully remove the containers. The secondary container can be removed easily but you will have to work hard and carefully with the primary container. First, take off the secondary container and then the primary container. **Step 18:** The planters are ready for planting the plants.
10.	**Assessment**	Teacher may ask the following reflection questions or encourage students to perform the activities 1. What is the composition of Portland cement? 2. What are the physical properties of cement? 3. What are the chemical properties of cement? 4. What is the chemical process of hydration? 5. What is the difference between mortar and concrete? 6. What is the setting time for mortar? 7. What are the materials and technologies used to make concrete?

Suggestive Activities

Students can be asked to make craft using plastic bottles and other materials.

Students can measure the size of the pots and other crafts/handicrafts that they have prepared using various measuring instruments for learning about measurement and units. They can also do cost calculation.

6. SECTOR: FOOD PROCESSING

Major industries constituting the food processing industry are grains, sugar, edible oils, beverages, and dairy products. The Ministry of Food Processing Industries has been implementing several schemes under the umbrella of the 'Pradhan Mantri Kisan Sampada Yojana'.

MAJOR AGENCIES

1. Agriculture and Processed Foods Export Development Authority (APEDA)
2. All India Food Processors Association (AIFPA)
3. Confederation of Indian Food Trade and Industry (CIFTI)
4. Food Safety and Standards Authority of India(FSSAI)
5. Marine Products Export Development Authority (MPEDA)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Arranging and Managing Kitchen and Utensils
2. Culinary Art
3. Making Bakery Products
4. Making Milk Products
5. Preparation of Nutritious Snacks and Healthy Food
6. Preparing Dishes using Recipes
7. Preparation of Fruit Chat

EXEMPLAR ACTIVITY PLAN

1.	**Grade/Class**	6
2.	**Sector/Area**	Food Processing
3.	**Theme/ Subject**	Science
4.	**Title of Activity**	Preparing Jam
5.	**Learning Outcomes**	Students will be able to: • Identify the various tools, equipment and materials used in food processing. • Describe the importance of personal hygiene and sanitation in food processing. • State the methods of cleaning and sanitisation for maintaining hygiene at workplace. • Identify the roles and responsibilities of a jam, jelly and ketchup processing technician.
6.	**Material Required**	1. Fruit Washer 2. Peelers 3. Fruit Pulper 4. Juice Extractor 5. Filter mesh 6. Pasteuriser 7. Steam Jacketed Kettles 8. Packaging Machines 9. Protective Gloves 10. Head Caps 11. Lab Coat 12. Safety Goggles 13. Safety Boots 14. Masks 15. Sanitiser 16. Food Safety Manual 17. Stove 18. Sugar 19. Apples (local fruits can be used – remember to check for sugar proportions) 20. Lemon juice 21. Spices (optional like star anise, cinnamon, cardamom) 22. Glass Jars 23. Water
7.	**Time Required**	2 hours

		Food processing is any method used to turn fresh foods into food products. For example, jam, jelly and marmalade are the products prepared through fruit pulp.

8.	**Relevant Knowledge**	
		
		    Food processing includes traditional (heat treatment, fermentation, pickling, canning, smoking, drying, curing) and modern methods (pasteurisation, ultra-heat treatment, high pressure processing, or modified atmosphere packaging).
		    Jam is a product made by boiling fruit pulp with a sufficient quantity of sugar to a reasonably thick consistency, firm enough to hold the fruit tissues in position. Apple, sapota, papaya, plums, mango, grapes, jackfruit, pineapple, banana, guava, and pears are used for the preparation of jam. Teachers should discuss the various tasks to be performed by the following middle-level skilled persons in food processing:
		
		  1. Butter and Ghee Processing Operator
		  2. Cottage Cheese Maker
		  3. Craft Baker
		  4. Fruit Pulp Processing Technician
		  5. Ice Cream Processing Technician
		  6. Jam, Jelly, and Ketchup Processing Technician
		  7. Meat and Poultry Processor
		  8. Milk Powder Manufacturing Technician
		  9. Plant Biscuit Production Technician
		 10. Pulse Processing Technician
		 11. Squash and Juice Processing Technician
		 12. Traditional Snack Maker
		 13. Convenience Food Maker

9.	**Procedure**	The procedure for making apple jam is as follows: **Step 1:** Wash and peel the apples. **Step 2:** Cut apples into small pieces. **Step 3:** Put apples in the pot with the water. Turn on the stove and cover the pot for five minutes. **Step 4:** Keep stirring till the apples are soft. Mash them. **Step5:** Add sugar and spices (cinnamon is recommended).

		Step 6: Check the consistency of the jam. The jam should be holding together. **Step 7:** Turn off the stove and add lemon juice. **Step 8:** Cool the jam and then store it in glass jars. Store in refrigerator.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various activities related to food processing at home with the guidance of parents or watching videos. 1. What is heat transfer? 2. How does heat affect food? 3. What are the three types of heat transfer? 4. How does food dehydration takes place? 5. What is food technology? 6. What are the advantages of food processing?

7. SECTOR: ELECTRICAL AND ELECTRONICS

The Electronic System Design and Manufacturing industry includes electronic hardware products and components relating to information technology, office automation, telecommunication, consumer electronics, aviation, aerospace, defense, solar photovoltaic, nano-electronics, and medical electronics. The Electronic sector is split into six product segments, namely Consumer Electronics, Industrial Electronics, Computers, Communication, and Broadcasting Equipment, Strategic Electronics, and Electronic Components.

The industry also includes design-related activities, such as product designing, chip designing, board designing, and embedded systems. The Digital India programme has been transforming the country into a digitally empowered society and knowledge economy since its launch in July 2015. Industrial electronics is expected to grow at a considerable pace with the new plans and schemes by the Government. The Government of India attributes high priority to electronics hardware manufacturing, as it is one of the crucial pillars of Make in India, Digital India, and Start-up India programmes.

MAJOR AGENCIES

1. Electronics Industries Association of India (EIAI)
2. Telecom Equipment Manufacturers Association (TEMA)
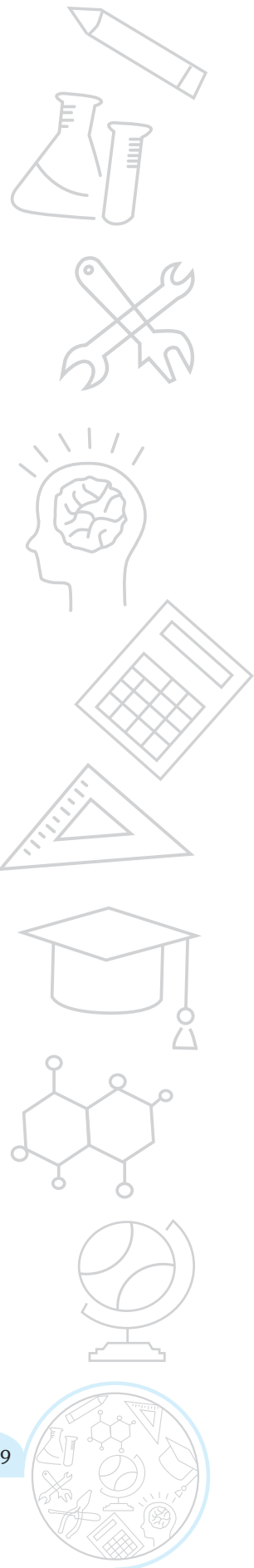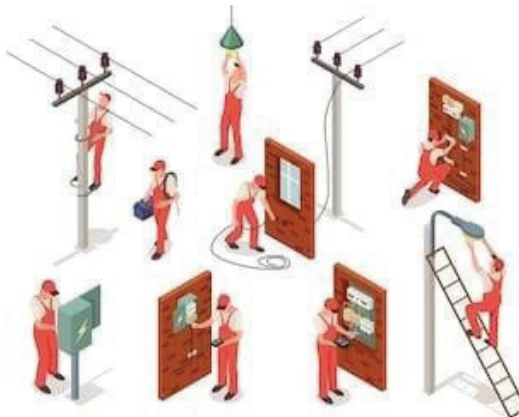
Suggestive Titles for Developing Activity Plans

1. Cabling for TV and Set-top Box
2. Changing Switches and Plugs
3. Changing Tube Light and LED Bulb
4. Repairing Electrical and Electronic Gadgets
5. Cleaning and Maintaining Water Filter

Exemplar Activity Plan

1.	Grade/Class	7
2.	Sector/Area	Electrical and Electronics
3.	Theme/Subject	Science
4.	Title of Activity	Electric Current and its Effect
5.	Learning Outcomes	Students will be able to: • Identify the various tools, equipment and materials used in repairing of iron. • Demonstrate basic knowledge of repairing an iron.
6.	Material Required	1. Screwdriver 2. Iron 3. Wire
7.	Time Required	2 hours
8.	Relevant Knowledge	Small electrical appliances in houses are handheld or semi-portable machines. They are generally used on small platforms, countertops, and tabletops. These include vacuum cleaners, coffee makers, kettles, juicers, electric heaters, fans, microwave oven, toaster, hot plates, tabletop lamps for lighting, iron or steamer, etc. Larger appliances at home include washing machines, refrigerator, air conditioners, etc. Consumer electronics include television, music system, video games, camcorders, mobiles, telephones, etc. A clothing iron, also called a flat iron, is a heated surface used to remove wrinkles from fabric. Irons typically used at home can be heated between 250 degrees Fahrenheit and 360 degrees Fahrenheit. The main parts of electric iron include: heating element, base plate/base (sole plate), iron ballast, cover, holder, terminal and connecting cables. The heating element is installed between the base plate with iron ballast. The heat generated by the heating element and delivered to the plate is essentially made of metal that will soon become too hot. If the iron does not heat, check the electrical cord and the thermostat. In case the iron produces too much or too little heat, test the adjust thermostat.

9.	**Procedure**	**Step 1:** Keep the iron on a flat table. **Step 2:** Use a screwdriver to remove the back panel and then remove the cord inside it. **Step 3:** Pass the wire through the back panel hole. **Step 4:** Connect both wires of the chord correctly in the same way as the old ones were connected. **Step 5:** Screw the panel back. **Step 6:** Plug in the iron to check if it is working properly. Note: Perform the activity under the supervision of an electrician
10.	**Assessment**	Teacher may ask the following reflection questions. 1. What is electricity? 2. How does an iron work? 3. How does electricity convert to heat in an electric iron? 4. How has technology in clothing iron changed over the years?
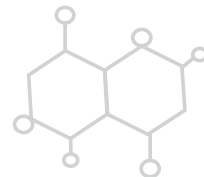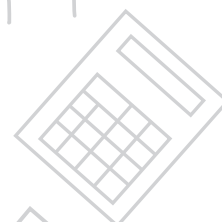
8. SECTOR: HANDICRAFT AND ART

Handicrafts can be defined as products which are produced either completely by hand or with the help of tools. Handicrafts are unique expressions and represent a culture, tradition and heritage of a country. Handicrafts are made from various type of raw materials and these products can be utilitarian, aesthetic, artistic, creative, culturally attached, decorative, functional, traditional, religiously, and socially symbolic, and significant.

MAJOR AGENCIES

1. Export Promotion Council for Handicrafts (EPCH)
2. Handicrafts and Carpet Sector Skill Council (HCSSC)
3. Khadi and Village Industries Commission (KVIC)
4. Tribal Cooperative Marketing Development Federation of India (TRIFED)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Bookbinding
2. Paper Machie
3. Screen Printing
4. Terracotta Work
5. Toys and Doll Making
6. Umbrella Assembling
7. Making Birds Nest
8. Making Clay/Cement Pots
9. Making Bamboo Basket

EXEMPLAR ACTIVITY PLAN

1.	**Grade/Class**	8
2.	**Sector/Area**	Handicrafts and Art
3.	**Theme/Subject**	Art and Craft
4.	**Title of Activity**	Bookbinding
5.	**Learning Outcomes**	Students will be able to: • Develop their fine motor skills through simple book binding. • Demonstrate the tools and materials used in binding books. • Appreciate the craftsmanship of a well-made book.
6.	**Material Required**	1. Glue (white glue) 2. Stapler 3. Paper sheets 4. Cutter 5. Scissors 6. Stiff cardboard sheets 7. Needle and thread
7.	**Time Required**	3 hours
8.	**Relevant Knowledge**	Bookbinding is a process of joining together several folios (mostly paper) within cover to form a codex or book, as opposed to a roll. Students need to understand the process of bookbinding and OHB be able to perform activities skillfully.
9.	**Procedure**	**Step 1:** Stack your paper neatly. Make sure the edges of the paper are matched properly. **Step 2:** Fold each stack in half, keeping the paper as lined up as possible. **Step 3:** Unfold the paper and turn over making sure you keep the paper nice and straight.

		Step 4: Glue the binding onto the folios. Hold the folios tightly together and make sure they are all lined up. Clip the folios together using giant paper clips or bull dog clips. When papers are nicely aligned apply glue to the spines of the folios. You can use white glue for this purpose. **Step 5:** Mark and cut out the stiff cardboard sheets. **Step 6:** Make the book spine. Put the papers in the middle of the two stiff cardboard which you have cut. Take another stiff cardboard and mark on it to make the spine. Cut the spine, so that the thickness of the covers and the paper together are of the same length as the height of the book covers. **Step 7:** Mark and cut the material. **Step 8:** Glue the cover board and spine in. Place the book covers and the spine on the reverse of your chosen fabric or leather and mark out so that there is a border of about one inch (25 mm) all around. Cut out the material. **Step 9:** Glue the paper into the covers. **Step 10:** Glue the lining in place.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various activities related to bookbinding at home with the guidance of parents or watching videos. 1. How do you make hardcover? 2. What type of glue is used for bookbinding? 3. What are the different methods of bookbinding? 4. How much time does it take for the glue to dry? 5. How will this skill help you to reduce environmental issues? 6. How will this skill help you to earn money? 7. Draw a picture or collage for cover page.

9. SECTOR: HEALTHCARE

The healthcare sector consists of businesses that provide medical services, manufacture medical equipment or drugs, provide medical insurance, or facilitate the provision of healthcare to patients. Healthcare comprises hospitals, medical devices, clinical trials, telemedicine, medical tourism, health insurance, and medical equipment. India's healthcare industry is one of the fastest-growing sectors. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a large proportion of the population.
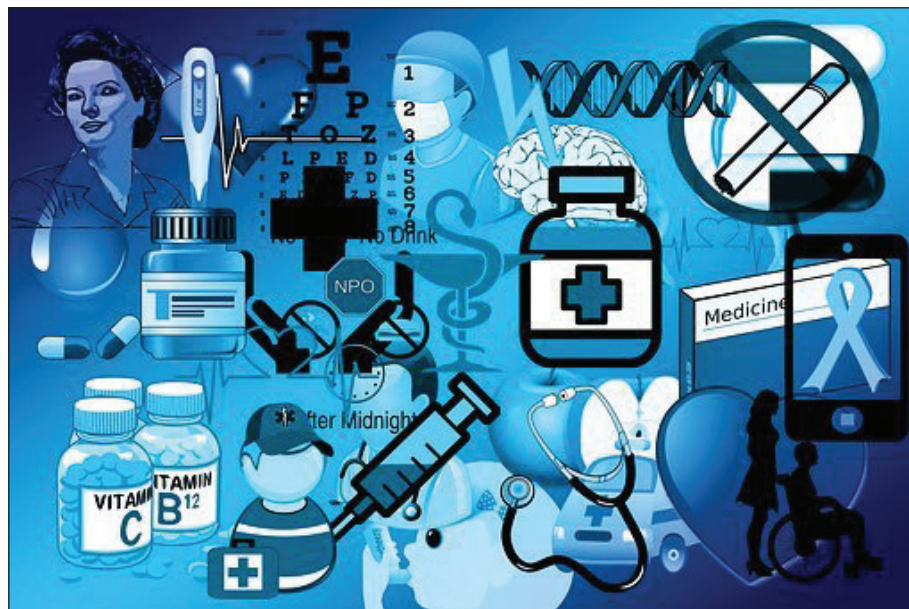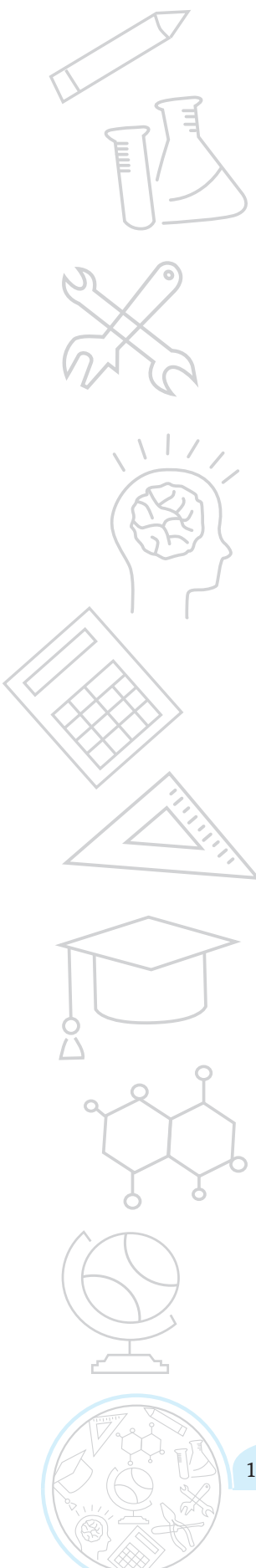
MAJOR AGENCIES

1. National Health Authority (NHA)
2. Association of Healthcare Providers (India)
3. Healthcare Federation of India (HFI)
4. Dental Council of India
5. Pharmacy Council of India (PCI)
6. Indian Allied Health Association (IAHA)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Wound Dressing and Bandaging
2. Hand Washing and Sanitation
3. Health and Nutrition
4. Health and Wellness
5. Health Status Indicators
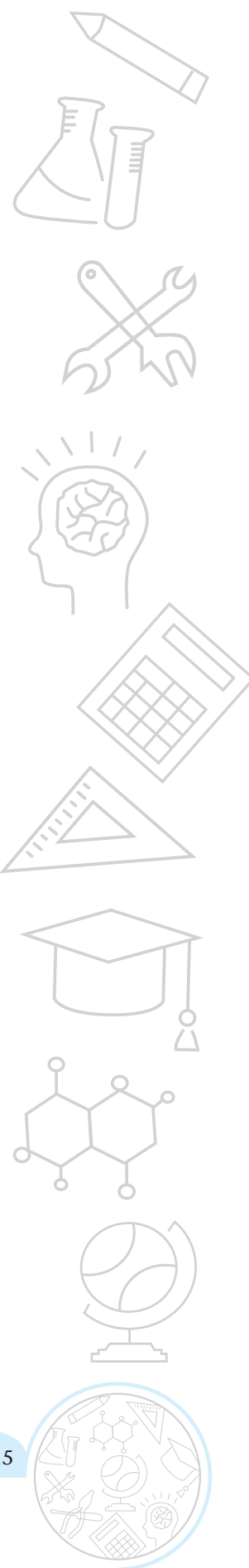
6. Hospital Care Protocols
7. Maintaining Mental Health
8. Maintaining Physical Health
9. Measuring Blood Pressure
10. Measuring Body Temperature
11. Measuring Oxygen Levels in the Body
12. Preparation of First Aid Box/Kit
13. Preparation of Oral Rehydration Solution.
14. Splinting
15. Use of Personal Protective Equipment
16. Vaccination Procedures
17. Meditation
18. Yoga
19. IoT (Internet of Things) based Healthcare

EXEMPLAR ACTIVITY PLAN

1.	**Grade/Class**	8
2.	**Sector/Area**	Healthcare
3.	**Theme/Subject**	Science
4.	**Title of Activity**	Wound Dressing/Bandaging
5.	**Learning Outcomes**	Students will be able to: • Describe the importance of wound care. • Identify the articles required for wound dressing. • Demonstrate the procedure of bandaging and wound care.
6.	**Material Required**	1. Roller cotton bandage (all size) 2. Cotton gauze pieces 3. Sterile cotton pads 4. Cotton swab 5. Antibiotic ointment 6. Antiseptic solution 7. Artery forceps 8. Thumb forceps 9. Scissors 10. Kidney tray paper bag 11. Small bowl 12. Towel 13. Gloves 14. Waste bag 15. Tourniquet 16. Soap 17. Water

7.	**Time Required**	2 hours
8.	**Relevant Knowledge**	Any abnormal opening in the skin is a wound. Dressing is done to protect the wound from infection caused by microorganisms. Sterilising and covering wound is important to prevent infection and inflammation. A dressing is a sterile pad or bandage applied to wound to promote healing and protect the skin from further harm. Dressings are designed to be in direct contact with the wound, which is different from a bandage that holds the dressing in place. Hydrocolloid dressings are used on burns, light to moderately draining wounds, necrotic wounds, under compression wraps, pressure ulcers and venous ulcers. Hydrogel dressing is used for wounds with little to no excess fluid, painful wounds, necrotic wounds, pressure ulcers, second degree or higher burns and infected wounds. Alginate dressings are used for moderate to high amounts of wound drainage, venous ulcers, packing wounds and pressure ulcers in stage III or IV. A collagen dressing is used for chronic or stalled wounds, ulcers, bed sores, transplant sites, surgical wounds, second degree or higher burns and wounds with large surface areas.
9.	**Procedure**	**Step 1:** Wash hands to prevent cross infection. **Step 2:** Provide patient a comfortable position. **Step 3:** Wear gloves before starting the procedure. **Step 4:** Inspect the wound. Prepare the dressing according to the size of the wound. **Step 5:** Wash the site with clean boiled and slightly warm water. **Step 6:** Remove any dirt or other foreign matter. **Step 7:** Wash the wound with antiseptic lotion. **Step 8:** Use cotton swab to cleanse and dry the wound. **Step 9:** After cleaning, dry the wound. **Step 10:** Apply ointment or antiseptic over the wound and cover with sterile cotton pad. **Step 11:** Apply the sterile cotton bandage around the wound. **Step 12:** Remove the gloves and discard all waste in the dustbin. **Step 13:** Wash your hands thoroughly after the entire dressing process.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various activities related to bandaging at home with the guidance of parents or by watching videos.

1. How do wounds heal?
2. What are the four phases of wound healing?
3. What is the use of an antiseptic solution?
4. Why are different types of dressings used for wounds?
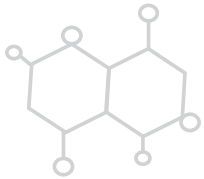
10. SECTOR: INFORMATION TECHNOLOGY AND IT-ENABLED SERVICES

Information Technology (IT) and IT enabled services are playing an important role in India today and has transformed India's image as a land of innovative entrepreneurs. India is now one of the biggest IT capitals of the modern world and all the major players in the ITes sector are present in the country. Online retailing, cloud computing, and e-commerce are the major driving forces behind the rapidly increasing growth of the ITes industry.

MAJOR AGENCIES

1. National Association of Software and Services Companies (NASSCOM)
2. Sector Skill Council – NASSCOM
3. Electronic and Computer Software Export Promotion Council (ECSEP)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Artificial Intelligence
2. Coding
3. Cybersecurity
4. Data Entry
5. E-waste Disposal
6. Internet Basics
7. Online Transactions and Security
8. Password Protection
9. Privacy and Personal Information

EXEMPLAR ACTIVITY PLAN

1.	Grade/Class	7
2.	Sector/Area	IT & ITeS
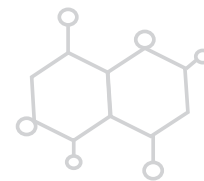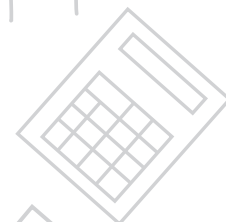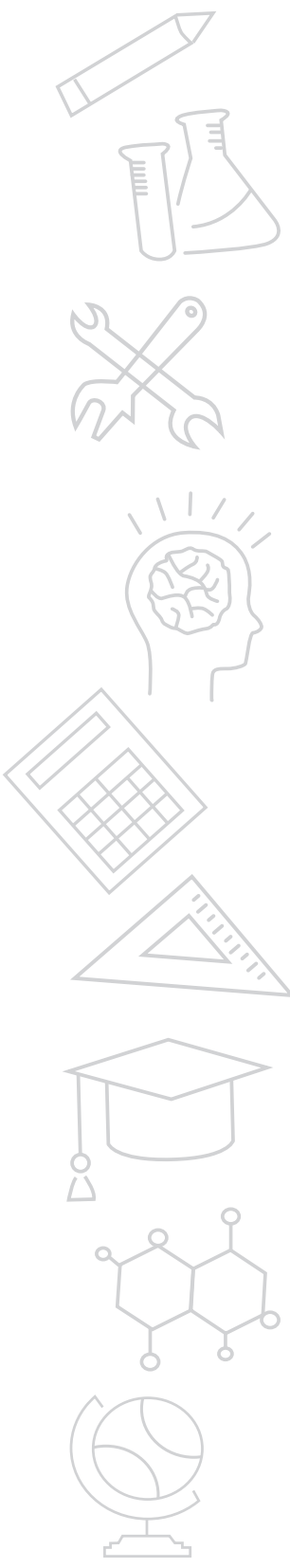
3.	**Theme/Subject**	Mathematics
4.	**Title of Activity**	Data Handling
5.	**Learning Outcomes**	Students will be able to: • Create, format, and edit documents using Word Processing application software. • Create, format, edit, and develop a workbook by using Spreadsheet Software. • Edit images/photos by using open software applications for photo editing. • Create and customize slides for presentation by using open software applications for slide presentations. • Differentiate between use of word processing application and a software spreadsheet.
6.	**Material Required**	1. Laptop with Spreadsheet 2. Grade Attendance Register
7.	**Time Required**	2 hours
8.	**Relevant Knowledge**	The IT and ITeS sector enables the way the world functions today. It has many sub-sectors under it, such as Engineering Research and Development, Business Process Management, IT Services, Software Development, etc. IT-ITes has been applied in managing businesses, wholesale markets, taxes, etc. Businesses, storekeepers today work with store management software and do data entry for the products they have in their shop, how much they are being bought for, how much they are being sold for, etc.
9.	**Procedure**	**Step 1:** Collect the class attendance register. **Step 2:** Open a spreadsheet application on the laptop or desktop. **Step 3:** Prepare a spreadsheet with the column headings – Name of Student, Days Present in the School Year, Total Number of Days in the School Year, Attendance, etc. See the example below.

Name of Student	Yearly Attendance	Total Number of Days	April 2020 Attendance	May 2020 Attendance
Vinay	163	180	20	12

10.	**Assessment**	Teacher may ask the following reflection questions and encourage students and spreadsheet application to perform various activities related to word processing at home with the guidance of parents or watching videos.

Teacher may ask the following reflection questions and encourage students and spreadsheet application to perform various activities related to word processing at home with the guidance of parents or watching videos.

1. Why should you maintain proper entry of data through the use of various data entry software?
2. Which software is used for data entry?
3. How are data entry and analysis useful for businesses?
4. What are some of the formulas available in Excel to analyse the data?
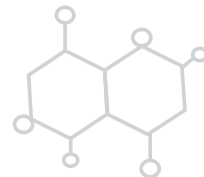
11. SECTOR: MEDIA AND ENTERTAINMENT

Media and Entertainment Industry has multiple segments, which include Radio, Movies/Cinema, Music Television, Internet, Publishing, Advertising, and Gaming. The Government of India is establishing Cements of Excellence for promoting Animation. Visual Effects, Gaming and Comic (AVEGC) sector. It has supported the growth of the Media and Entertainment Industry by taking various initiatives, such as digitisation of the cable distribution to greater institutional funding in cable and Direct to Home (DTH) satellite platforms. India is the second largest television market in the world.

MAJOR AGENCIES

1. Indian Motion Picture Producers' Association (IMPPA)
2. Newspapers Association of India (NAI)
3. Film and Television Producers Guild of India (FTPGI)
4. Indian Newspaper Society (INS)
5. Media and Entertainment Skills Council (MESC)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Creating a Brochure
2. Creating a Greeting Card
3. Digital Photography
4. Digital Storytelling
5. Framing the News
6. Photojournalism
7. Using an App for Creating Designs

Exemplar Activity Plan

1.	**Grade/Class**	8
2.	**Sector/Area**	Media and Entertainment
3.	**Theme/Subject**	Digital Photography (Travel, Sports, Flower, Wildlife, Forest, Urban life, etc.)
4.	**Title of Activity**	Digital Photography
5.	**Learning Outcomes**	Students will be able to: • Demonstrate excellence in photography. • Capture creative images. • Explain the exposure triangle.
6.	**Material Required**	1. Digital SLR (single-lens reflex) Camera 2. Camera Bag 3. Memory Card Reader 4. Cleaning Kit 5. Tripod
7.	**Time Required**	2 hours
8.	**Relevant Knowledge**	Digital photography uses camera containing arrays of electronic photo detectors to produce images focused by a lens, as opposed to an exposure on photographic film. The captured images are digitised and stored as a computer file ready for further digital processing, viewing, electronic publishing, or digital printing.
9.	**Procedure**	**Step 1:** Turn on the camera. **Step 2:** Use the rule of thirds. **Step 3:** Avoid camera shake. **Step 4:** Adjust Exposure Triangle (shutter speed and aperture) according to the light available **Step 5:** Use a polarising filter. **Step 6:** Adjust zoom and create a sense of depth. **Step 7:** Click the picture.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various activities related to the digital photography at home with the guidance of parents watching videos. 1. What is the purpose of digital photography? 2. How will you use digital photography as a career? 3. Write down the areas where you can do digital photography. 4. What is Exposure Triangle? 5. What is the role of memory card in digital photography? **Suggestive Activity** Arrange exhibition of the photos in the school campus.
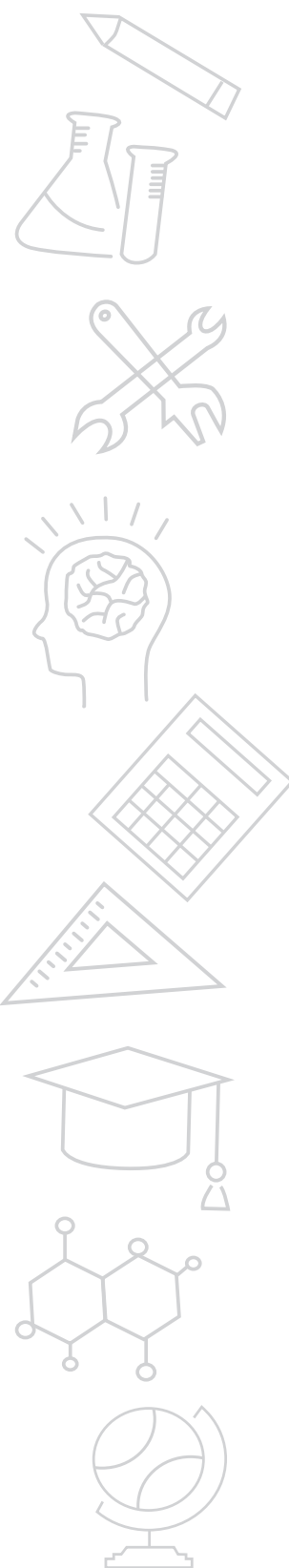
12. SECTOR: PLUMBING

Plumbing is any system that uses pipes, valves, plumbing fixtures, tanks, and other apparatuses to convey fluids. It encompasses a wide range of professionals and generally includes skilled persons who installs or repairs pipes in both residential and commercial settings. Typical residential tasks for plumbing can include fixing leaking pipes, installing sinks and toilets, and repairing or replacing water heaters and water conditioning equipment. On the commercial side, plumbing tasks can include residential-type plumbing jobs, mechanical services, sprinkler system installations and repairs, steam fitting and pipe services, and lawn sprinkler system maintenance. Plumbers install and repair pipes that supply water and gas as well as carry waste away from homes and businesses. They also install plumbing fixtures, such as bathtubs, sinks, and toilets, and appliances, including dishwashers and washing machines. To work in this occupation, an individual needs to learn soft skills and plumbing skills.

MAJOR AGENCIES

1. All India Sanitaryware Manufacturers Association (AISMA)
2. Association of Architects, Builders, Interior Designers and Allied Business (ABID)
3. Indian Council of Sanitaryware Manufacturers (INCOSAMA)
4. Indian Institute of Plumbing (IIP)
5. Indian Plumbing Association (IPA)
6. Indian Plumbing Skill Council (IPSC)
7. International Association of Plumbing and Mechanical Officials (IAPMO)

Suggestive Titles for Developing Activity Plans

1. Measuring length and diameter of pipes.
2. Identifying plumbing tools and equipment.
3. Identifying and specifying plumbing fixtures.
4. Changing Taps
5. Changing Tap Washer
6. Plumbing work
7. Use of Personal Protective Equipment

Exemplar Activity Plan

1.	Grade/Class	8
2.	Sector/Area	Plumbing
3.	Theme/Subject	Science
4.	Title of Activity	Fixing a Leaking Tap
5.	Learning Outcomes	Students will be able to: • Identify the reason for leaking tap. • Fix leaking tap skillfully. • Identify and handle the tools properly.
6.	Material Required	• 12mm (1/2") washers (these are most commonly used inside the home) • O-ring • Jumper valve • Reseating kit (if necessary) • Wrench /spanner or tap spanner set • Multi-grips (if necessary) • Screwdriver • Tap lubricant • Cloth
7.	Time Required	2 hours
8.	Relevant Knowledge	A leaking tap is one of the annoying plumbing problems that are generally encounter in bathroom. You can fix the leaking tap by changing the spindle or washer of the tap. If that also does not work, then you need to change the tap. Before getting started, make sure you turn off your water supply at the mains. If you live in a house, your water main will be out on the street or in the front yard. If you live in a flat or townhouse, the mains tap will probably be inside the bathroom or laundry.
9.	Procedure	**STEP 1:** Using a spanner, take off the tap's cover to remove the handle. You will probably find this under the hot or cold sign.

		STEP 2: Undo the screw and remove the handle. If the tap has a metal cover, unscrew it by hand, or use a wrench or tap spanner. **STEP 3:** Unscrew the tap bonnet, and completely remove the headgear. You should see a large body washer, O-ring, and jumper valve. The jumper valve should fall out.
		STEP 4: Replace the body washer, the O-ring, and the jumper valve with new parts. Apply a tap lubricant to the spindle and valve for better sealing and smoother tap operation. **STEP 5:** Refit the bonnet and spindle. Be careful not to over-tighten the nuts. **STEP 6:** Put the tap back together, turn it off, and turn the water main back on. Check the tap to make sure it's no longer leaking. You can step back and admire a proper job, knowing you're not wasting a drop.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various activities related to the plumbing related tasks at home with the guidance of parents or watching videos. 1. What will you do if there is a leaking tap in your school? 2. How would you fix a tap that leaks even after the washer of the spindle has been replaced? 3. What happens if a tap leaks continuously? **Suggestive Activity** Create awareness campaign about on the topic 'save the water'.

13. SECTOR: PRIVATE SECURITY

The private security sector has emerged into a major industry under the employment of a large body of manpower, both skilled and unskilled. It serves as a link between the government and the security needs of the industry. The Ministry of Home Affairs (MHA) is the nodal ministry in supervising the provisions of the Private Security Agencies Regulation Act (PSARA). The role of the state governments and union territories is mentioned in the PSAR Act. Today the scope of a PSG (Private Security Guard) has expanded considerably to include prevention of industrial espionage, high-value asset protection, facility management, management of electronic security systems, and emergency response. A PSG is required to operate and manage equipment used in security, such as X-Ray machines, metal detectors, dog squads, ERT, Bodyguarding, bomb and explosive detection, Close Circuit TV (CCTV) surveillance, etc.

MAJOR AGENCIES

1. Central Association of Private Security Industry (CAPSI)
2. Security Association of India (SAI)
3. Fire and Security Association of India (FSAI)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Cybersecurity
2. Emergency Preparedness
3. First Aid
4. Privacy and Personal Information
5. Use of Personal Protective Equipment
6. Using a Fire Extinguisher
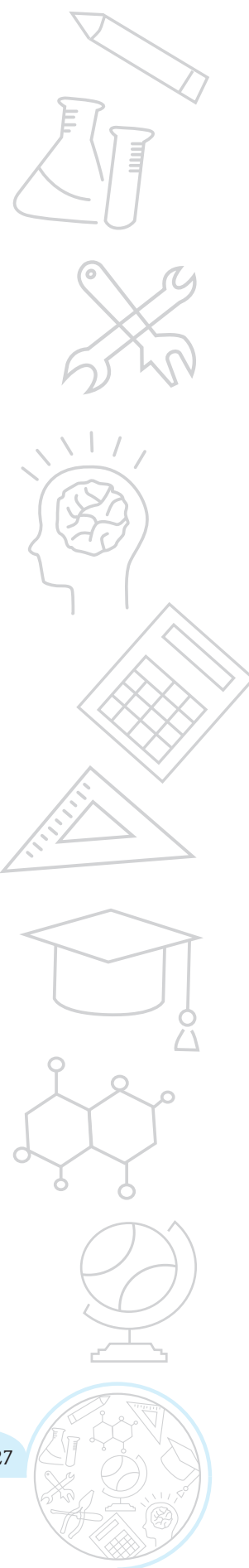
7. Visit to a Fire Station.
8. Visit to a Police Station.
9. Visit to a Private Security Agency

Exemplar Activity Plan

1.	**Grade/Class**	8
2.	**Sector/Area**	Private Security
3.	**Theme/Subject**	Science
4.	**Title of Activity**	How to use a fire extinguisher
5.	**Learning Outcomes**	Students will be able to: • Identify different types of fire extinguishers. • Demonstrate the procedure for extinguishing fire using a fire extinguisher. • Prevent fire damage by conducting surveys and inspections for hazards and enforcing codes.
6.	**Material Required**	1. Paper/Agricultural waste 2. Large Iron Tray 3. Fire Extinguisher 4. Match Box 5. Water 6. Personal Protective Equipment
7.	**Time Required**	2 hours
8.	**Relevant Knowledge**	In order to extinguish fire, you should be able to use appropriate fire extinguisher which depends on the type of fire. A fire extinguisher is a storage container for an extinguishing agent, such as water or chemical. It is designed to put out small fires. An extinguisher is labeled according to whether the fire on which it is to be used occurs in wood or cloth, inflammable liquids, electrical, or metal sources. Using the wrong type of extinguisher on a fire can make the fire worse.
		Step 1: Before operating the fire extinguisher, make sure that you have identified the right type of five extinguisher. **Step 2:** Face the fire and keep your back to the clear exit you earlier identified. You should stay between six and eight feet away from the flames as you prepare to operate the fire extinguisher. **Step 3:** Fire safety has a long-standing acronym "PASS" to help you recall the steps involved in operating your fire extinguisher. When extinguishing a fire, you should: **P:** Pull the pin on the fire extinguisher.

9.	**Procedure**	**A:** Aim the extinguisher nozzle on the hose low, toward the base of the fire. **S:** Squeeze the handle or lever to discharge the chemical. **S:** Sweep the nozzle back and forth. Keep the fire extinguisher aimed at the base of the fire and move it from side to side until the flames are extinguished. **Step 4:** After the flames appear to be out, continue to watch the fire area to make sure it does not reignite. If the fire does start up again, repeat the PASS process. **Step 5:** Call the fire department in case of wild fire. **Step 6:** Get back to a safe place.
10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various activities that are safe to do at home such as preparing sign boards, posters, etc. 1. What are the elements of fire? 2. What are the different types of fire extinguishers? 3. What does the acronym PASS implies? 4. What are the safety measures taken during the fire extinguishing? 5. What precaution must be taken before using the fire extinguisher? **Suggestive Activity** Prepare a chart of PASS process and present it in front of the class
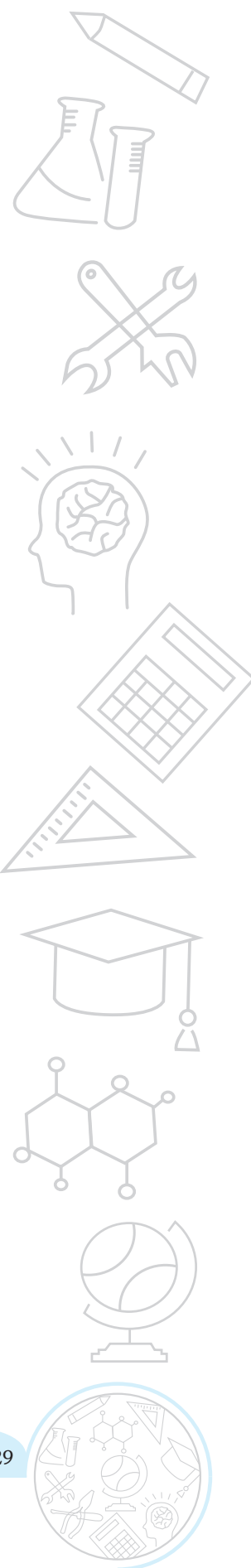
14. SECTOR: RETAIL

The Indian retail industry has emerged as one of the most dynamic and fast-paced industries due to the entry of several new players. It accounts for over 10 per cent of the country's Gross Domestic Product (GDP) and around 8 per cent of employment. India is the world's fifth-largest global destination in the retail space. India is expected to become the world's fastest-growing e-commerce market, driven by robust investment in the sector and a rapid increase in the number of internet users. Various agencies have high expectations about the growth of Indian e-commerce markets. E-commerce is expanding steadily in the country. Customers have the ever-increasing choice of products at the lowest rates. E-commerce is probably creating the biggest revolution in the retail industry, and this trend would continue in the years to come.

MAJOR AGENCIES

1. Retailers Association of India (RAI)
2. Retailers Association Skill Council of India (RASCI)

Suggestive Titles for Activity Plans

1. Identification of Manufacturers of Men's Wear and Clothing
2. Identification of Manufacturers of Women's Wear and Clothing
3. Grocery Budgeting and Shopping
4. Packaging of Products
5. Stock Management
6. Role-play on the Sale of Retail Products
7. Role-play on Role of a Store Manager
8. Role-play on Role of a Sales Associate
9. Supply Chain of Commodity.

Exemplar Activity Plan

1.	**Grade/Class**	7
2.	**Sector/Area**	Retail
3.	**Theme/Subject**	Social Science
4.	**Title of Activity**	Maintaining a Store
5.	**Learning Outcomes**	Students will be able to: • Perform tasks related to generating business for their employer. • Demonstrate how to sell products to customers. • Describe how to maintain a clean, organised, and comfortable retail store space. • Showcase attentiveness to customers in order to provide answers to the questions and queries.
6.	**Material Required**	1. Notebook 2. Pen 3. Scale 4. Laptop with Spreadsheet Application
7.	**Time Required**	3 hours
8.	**Relevant Knowledge**	The Indian Retail Sector is one of the fastest-growing in the world. There are several skilled persons who work in a retail store. Store Operations Assistant is one such person works in department stores, supermarkets, hypermarkets, etc., and is involved in-store operation and management. Their work includes back-end operations, merchandising, logistics and distribution, marketing and procurement/purchase.
9.	**Procedure**	**Step 1:** Write down a list of five categories of household consumables, such as soaps, lentils, spices, millets, etc. **Step 2:** At your home, find at least three items belonging to each category. **Step 3:** In a notebook or laptop, prepare a chart with four columns. **Step 4:** Enter data into your table (in notebook or laptop). For a laptop, use a spreadsheet application like Libre Office Spreadsheet.

Item	Category	Number of Items procured at the Beginning of the Month	Number of Items left at the End of the Month
Soap	Rose	5	2
	Sandalwood	3	1
	Jasmine	3	0

10.	**Assessment**	Teacher may ask the following reflection questions and encourage students to perform various tasks at home related to the retail store.
		1. What kind of tasks happen in a retail store?
		2. What kind of people are involved to perform these tasks in the store?
		Suggestive Activity
		Prepare a monthly chart of grocery items that your family uses regularly.

15. SECTOR: TEXTILE AND APPAREL

The Textile and Apparel sector can be broadly divided into two segments - (i) yarn and fibre and (ii) processed fabrics and apparel. India is the world's second-largest exporter of textiles and clothing. Increased penetration of organised retail, favourable demographics, and rising income level is likely to drive demand for textiles. The Ministry of Textiles is encouraging investment through increasing focus on schemes such as Technology Up-gradation Fund Scheme (TUFS). The various job opportunities in this sector include Machine operator, Merchandiser, Quality control Inspector, Textile sales Representative, Purchasing Agent, Fastman, Designer, etc.

Major Agencies/Organisations in Textile and Apparel Sector
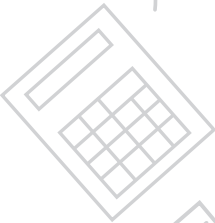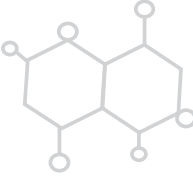
1. Apparel Export Promotion Council (AEPC)
2. Confederation of Indian Textile Industry (CITI)
3. Indian Technical Textile Association (ITTA)
4. Khadi and Village Industries Commission (KVIC)
5. Textile Association of India (TAI)
6. Cotton Textiles Export Promotion Council (TEXPROCIL)
7. Apparel Made-ups and Home Furnishing Sector Skill Council (AMHSSC)

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Block Printing
2. Computer-Aided Designing
3. Cutting
4. Embroidery
5. Hand Stitching
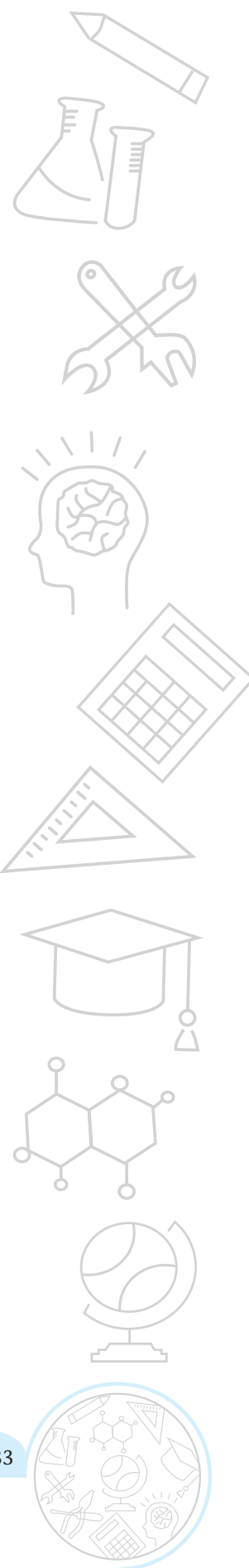
6. Machine Stitching
7. Screen Printing
8. Sewing Machine Cleaning and Maintenance.
9. Simple Hand Embroidery
10. Tie and Dye
11. Use of Personal Protective Equipment
12. Weaving

1.	**Grade/Class**	8
2.	**Sector/Area**	Apparels, Made-ups and Home Furnishing
3.	**Theme/Subject**	Social Science
4.	**Title of Activity**	Crafts and Industries
5.	**Learning Outcomes**	Students will be able to: • Identify different types of textiles and textile crafts of India, such as *Bandhanna*, Block-printing, Indigo printing, Kalamkari, Kantha, etc. • Describe how Batik is made.
6.	**Material Required**	1. Aluminum vessels and tub. 2. Oil brushes of various sizes and shapes. Stiff brushes (for pushing wax into the fabric) 3. Cloth to be dyed – Natural fabrics like cotton, linen, silk, etc. 4. Colours for dyeing 5. Water dyes and dye bath–colour (in the form of powder) are used for dyeing. The dye bath is used to immerse the batik. 6. Electronic wax pot– to heat the wax and melt the wax. 7. White wax and paraffin wax. The batik wax is available as a mixture of paraffin and bee wax. 8. Frames– Different sizes of frames are used according to the length of the fabric. A masking tape is used to prevent the fabric from tearing. 9. Hand gloves 10. Heater/stove gas 11. Table 12. Salt 13. Tub and mug 14. Wooden frame 15. Muslin cloth
7.	**Time Required**	3 hours

8.	**Relevant Knowledge**	Batik is an art that dates back 1,500 years. It is a traditional form of resist printing on cotton fabrics using wax. In India, religious tapestries show the use of this technique using home-grown cotton fabric and dye-yielding plants and stones like indigo.
9.	**Procedure**	**BATIK PRINTING** To make Batik, selected areas of the cloth are blocked out by brushing or drawing hot wax over them, and the cloth is then dyed. The parts covered in wax resist the dye and retain the original colour. This process of waxing and dyeing can be repeated to create more elaborate and colourful designs. After the final dyeing, the wax is removed and the cloth is ready for wearing or display. **Melting the Wax** **Step 1:** Add one part of yellow wax and 2 parts of paraffin wax to the electric wax pot. **Step 2:** Under teacher supervision, melt the wax. *If an electric wax pot is not available, use a double boiler.* **Design** **Step 1:** Stretch out the cloth to be dyed on a flat table. **Step 2:** Trace the design on the cloth. **Step 3:** Apply wax on the cloth with the help of a brush except for the places where we want the cloth to be dyed. **Dyeing** **Step 1:** Create the dye in the dye tub **Step 2:** Dye the cloth with the colour of your choice and then dry it completely. Cold naphthol dyes can be used for dyeing. **Step 3:** Now apply wax at places where you have dyed and does not want the second colour. (optional) **Step 4:** Colour with second dye. (optional) **Removing the Wax** **Step 1**: After dyeing in all desired colours, remove wax from the cloth by immersing it in hot water. *A variation in Batik dyeing is through cracking the applied wax before putting the cloth into the dye.* **Preparation of Cracks** **Step 1:** Apply wax on the cloth as desired. **Step 2:** Put cracks with the help of pins or back of the brush or by crushing the cloth along or breadth. **Step 3:** Put the cloth in cold water. **Step 4:** Dye the cloth in any particular colour you want.

		Step 5: Dry the cloth. **Step 6:** Remove the wax by putting the dyed cloth in warm water.
10.	**Assessment**	Teacher may ask the following reflection questions or encourage students to do activities at home or after watching videos. 1. How much time does Batik Printing take to dry? 2. Find out the names of any three persons in your neighbourhood or famous personalities who work in the textile business. **Suggestive Activity** Make a handkerchief by yourself and display in your classroom.

16. SECTOR: TOURISM AND HOSPITALITY

The Tourism and Hospitality industry in India is one of the largest service industries. Tourism is an integral pillar of the 'Make in India' programme. It has significant potential considering the rich cultural and historical heritage, variety in ecology, terrains and places of natural beauty spread across the country. The World Heritage List has 36 sites inscribed which include 28 cultural, 7 natural, and 1 mixed category site. There are 3686 monuments/sites under the protection of the Archaeological Survey of India (ASI).

MAJOR AGENCIES

1. State Department of Tourism
2. Hotel Association of India
3. Federation of Hotel and Restaurant Associations of India

SUGGESTIVE TITLES FOR DEVELOPING ACTIVITY PLANS

1. Customer Service
2. Making Beds
3. Reception Duties
4. Talking on the Phone

EXEMPLAR ACTIVITY PLAN

1.	Grade/Class	7
2.	Sector/Area	Tourism and Hospitality
3.	Theme/Subject	Social Science

4.	**Title of Activity**	Heritage Tour
5.	**Learning Outcomes**	Students will be able to: • Describe concepts and types of tourism. • Understand the components of the Tourism Industry. • Explain the role and importance of tour guides in the tourism industry. • Identify heritage tourism resources in the country. • Demonstrate the duties and responsibilities of a Heritage Tour Guide
6.	**Material Required**	1. Pens 2. Notebooks 3. Charts and maps of various places
7.	**Time Required**	3 hours
8.	**Relevant Knowledge**	The Tourism and Hospitality Industry is one of the largest service industries in India as well as in the world. It provides direct and indirect employment to many people associated with this industry and includes activities like transportation, accommodation, places of tourist interests, planning of events, etc. It includes government tourism departments, immigration and customs services, travel agencies, airlines, tour operators, hotels, etc., and many associated service industries such as airline catering or laundry services, guides, interpreters, tourism promotion and sales, etc.
9.	**Procedure**	**Role Play** **Step 1:** Get into a group of five and assign the various roles to each other – visitor, tour guide, hotel, transportation, and restaurant. • Actor 1– Client/Visitor • Actor 2– Heritage Tour Guide • Actor 3– Hotel Booking Agent • Actor 4– Transportation Booking Agent • Actor 5– Restaurant Reservation Agent **Step 2:** Write a script on how the demands of a visitor (who is planning to visit your city) are fulfilled by the heritage tour guide. **Step 3:** The heritage tour guide must cater to the demands of the visitor, such as preparing a customised travel plan, arranging Hotel and taxi, etc. **Step 4:** The heritage tour guide must interact with multiple agents (hotel, transportation, restaurant, etc.) to arrange for the vacation of the visitor. They must keep in mind the budget of the visitor and their own profit when negotiating. **Step 5:** Perform the role play in front of the class

10.	**Assessment**	Teacher may ask the following reflection questions or encourage students to do activities at home or after watching videos.
		1. What is the importance of a Tour Guide?
		2. How can a tour guide attract the visitors using different marketing strategies?
		3. Which are the famous tourist spots near you?
		4. How does transport affect tour industry?
		5. How is internet used for tour business?
		Suggestive Activity
		Create your tour pamphlet
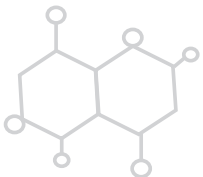
Further Readings

Ministry of Human Resource Development. (1986). National Policy on Education. Department of Education, Government of India, New Delhi.

https://www.education.gov.in/sites/upload _ files/mhrd/files/document-reports/NPE86-mod92.pdf.

Ministry of Human Resource Development. (1992). Programme of Action. Department of Education, MHRD, New Delhi. https://www.education.gov.in/sites/ upload_files/mhrd/files/document-reports/POA_1992.pdf.

National Council of Educational Research and Training. (1975). The Curriculum for the Ten-Year School – A Framework, New Delhi.

National Council of Educational Research and Training. (2000). National Curriculum Framework for School Education, NCERT, New Delhi.

National Council of Educational Research and Training. (2005). National Curriculum Framework, NCERT, New Delhi.

National Council of Educational Research and Training. (2007). Position Paper 3.7. National Focus Group on Work and Education, NCERT, New Delhi. https://ncert.nic.in/pdf/focus-group/workeducation.pdf.

PSS Central Institute of Vocational Education. (2003). Guidelines for Implementation of Work Education Programme in Schools. PSSCIVE, Bhopal, Pp. 122.
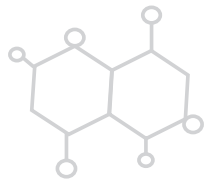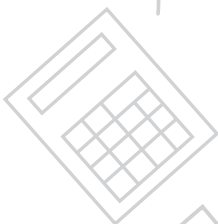
Glossary

Active learning is the learning driven primarily by the learner, with the teachers or an instructor acting as a facilitator.

Activity is a combination of process and actions that result in a certain set of products or services.

Assessment criteria are the standards used to guide learning and to assess learner's achievement and/or to evaluate and certify competence.

Basic skills are the skills and competences needed to function in contemporary society, including listening, speaking, reading, writing and mathematics.

Capacity-building encompasses the human, scientific, technological, organisational, institutional and resource capabilities.

Career education is the educational programme that gives students informed guidance, counselling and instruction to enable them to make a suitable career choice and to help them prepare for it.

Career path is the sequence and variety of occupations which a person undertakes throughout a lifetime or the progression up an orderly hierarchy within an organisation or profession.

Domain-specific knowledge refers to knowledge that is encapsulated within a particular domain of learning, such as mathematics, history, and literature.

Employability skills are skills, which enable people to gain, keep and progress in employment. These skills include work readiness and work habits, interpersonal skills learning to learn skills, critical thinking, adaptability skills, etc.

Hard skills are technical and job-specific abilities that are applicable in tasks performed in companies, occupations and sectors. They describe special attributes for performing an occupation in practice.

Information and Communication Technology skills are the skills needed to use efficiently the elementary functions of information and communication technologies, such as word, data processing, Internet and e-mail.

In-service training is the training provided to employees as part of their continuing professional development.
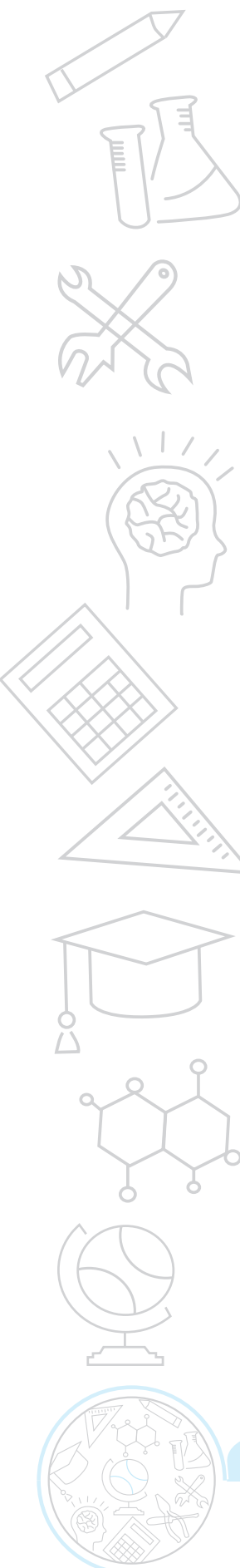
Internship is the short-term training or the period during which a person is an intern. Internships are shorter than apprenticeships. Durations for internships usually vary between four weeks and six months, while apprenticeships usually vary between one and four years, depending on the trade.

Job is a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self-employment. Jobs are classified by occupation with respect to the type of work performed, or to be performed.

Kinesthetic learning is the learning in which learners undertake a physical activity, rather than watching a demonstration or listening to a lecture.

Learner achievements are the set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal.
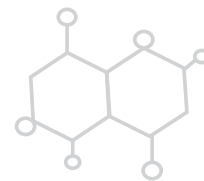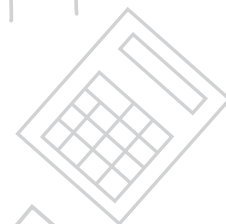
Learning outcomes are the set of knowledge, skills and/or competencies an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal.

Life skills are the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life (WHO, 1994).

Pre-vocational education is the education which is mainly designed to introduce participants to the world of work and to prepare them to enter into vocational or technical education programmes.

Soft skills are non-job specific skills that are related to individual ability to operate effectively in the workplace. These include personal competences (confidence, discipline, self-management) and social competences (teamwork, communication, emotional intelligence).

Technical skills comprise those skills that are required to perform specialized tasks related to specific field.

Technology-Enabled Learning is an application of some form of digital technology to teaching and/or learning in an educational context.

Vocational awareness helps learners to explore ideas regarding the vocational education.

Vocational exploration helps learners to identify their place in the world and they can make a difference by becoming productive citizens of the country.

Vocational orientation is the information and education provided to enable learners to learn about working life and the variety of choices available to them in the world of work.

Vocationalisation refers to efforts by schools to include in their curriculum those practical subjects which are likely to generate among students some basic knowledge, skills and dispositions that might prepare them to think of becoming skilled workers or to enter manual operations.

Work based learning is an educational approach that provide opportunities to students to achieve employment- related competencies in the workplace and help them connect school experiences to real-life work activities.

Work integrated learning are the activities that integrate academic learning with its application in the workplace. These may take place in real or simulated conditions.

Work is any activity that not only leads to the production and consumption of goods or services, but also goes beyond production for economic value.

Overview of Skill Development Programmes in India

Vocational Education under *Samagra Shiksha*

The Government is implementing the scheme of Vocationalisation of School Education under the *Samagra Shiksha* - an integrated scheme for school education. The scheme covers Government and Government aided schools. The scheme has a provision for providing exposure to vocational education to students of Grades 6 to 8 with an aim to provide opportunities to the students to orient themselves with the skills required for the various occupations in a sector and to equip them to make informed choices while selecting their subjects in higher classes. Under the vocational education component of *Samagra Shiksha,* vocational courses are taught to the students from Grades 9 to 12 under the National Skill Qualifications Framework (NSQF). The curriculum of vocational courses comprises employability skills and vocational skills. The curriculum of employability skills consists of Communication Skills, Self-Management Skills, Information and Communication Technology Skills, Entrepreneurship Skills and Green Skills.

❒ **For more information about the *Samagra Shiksha* visit the following website**
https://samagra.education.gov.in/vocational.html

❒ **For more information on vocational education in schools, visit the following website**
https://psscive.ac.in

Pradhan Mantri Kaushal Vikas Yojana

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is a skill certification scheme that aims to encourage the young population of the country to take up training that is industry-relevant and builds skills in them. The scheme contains many specialised components, such as the National Skills Qualifications Framework (NSQF), Recognition of Prior Learning (RPL), Kaushal, and Rozgar Melas.

❒ **For more information on PMKVY visit the following website**
http://pmkvyofficial.org/

Deen Dayal Upadhyaya Grameen Kaushalya Yojana

Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) is a skill development scheme uniquely focused on rural youth between the ages of 15 and 35 years from poor families.

❒ **For more information about the DDU-GKY visit the following website**
http://ddugky.gov.in/
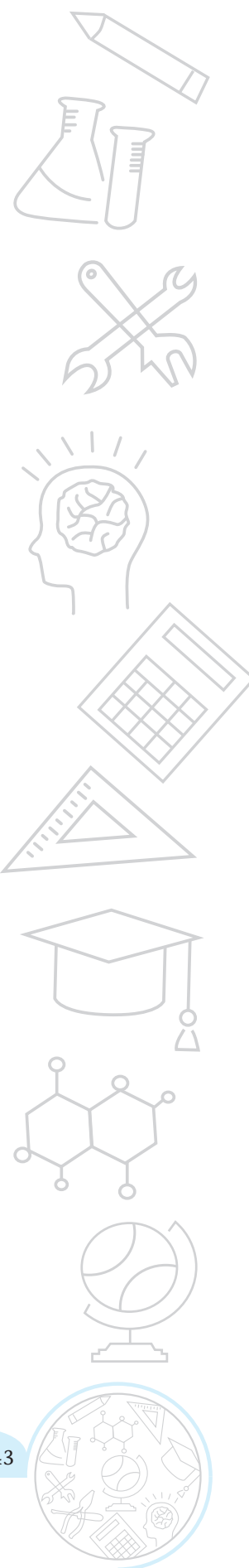
Craftsmen Training Scheme

The Directorate General of Training (DGT) imparts training under Craftsmen Training Scheme (CTS) through a network of Industrial Training Institutes (ITIs) across the country. These ITIs deliver post-school technical as well as vocational training courses of six months, one year and two-year durations.

❒ **For more information about the list of CTS courses visit the following website**
https://dgt.gov.in/cts_details

❒ **To locate your nearest ITI visit the following website**
https://ncvtmis.gov.in/Pages/ITI/Search.aspx?AspxAutoDetectCookieSupport=1

Pradhan Mantri 'YUVA' Yojana

Pradhan Mantri YUVA (Yuva Udyamita Vikas Abhiyan) Yojana is a Centrally Sponsored Scheme on entrepreneurship education and training being implemented by the Ministry of Skill Development and Entrepreneurship, Government of India. The scheme aims at creating an enabling ecosystem for entrepreneurship development through entrepreneurship education and training, advocacy and easy access to entrepreneurship support network. The scheme aims at the development and education of entrepreneurship to all citizens free of cost through Massive Open Online Courses (MOOCs) and e-Learning systems.

Vocational Training Programme for Women
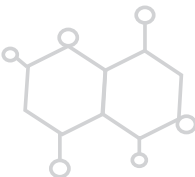
To enhance the skill training facilities for women in India, the National Skill Training Institutes (NSTIs) have been set up exclusively for Women. The efforts are made to continually revise job roles taking into account market demand and are cognizant of industry requirements for female professionals.

❒ **For more information about the Vocational Training Programme for Women visit the following website**
https://www.msde.gov.in/en/schemes-initiatives/schemes-initiatives-through-DGT/vocational-training-programme-for-women

Skill Loan Scheme

Under this scheme, loan ranging from Rs.5000 to Rs. 1.5 lakhs are provided for those seeking to attend skill development programmes. The idea behind the scheme is to remove financial hurdles for people who want to upgrade their skills and learn new skills.

❒ **For more information about the Skill Loan Scheme visit the following website**
https://nsdcindia.org/vidya-kaushal

National Apprenticeship Promotion Scheme (NAPS)

National Apprenticeship Promotion Scheme (NAPS) was launched in August 2016 by Government of India to promote Apprenticeship in the country by providing financial incentives technology and advocacy support. It consists of

Basic Training and On-the-Job Training/Practical Training at the workplace in the industry. Basic training consists of theoretical and practical/lab instructions portion of every Apprenticeship Programme syllabi relating to a particular trade in which on-the-job-training is to be imparted. The basic training is an essential component of apprenticeship training for those who have not undergone any institutional training/skill training before taking up on-the-job-training/practical training. Basic Training is imparted to the fresher apprentices for acquiring a reasonable ability to handle Instruments/Machineries/Equipment independently prior to being moved to Shop Floor/Work Area for practical training/On-Job Training

❏ **For more information about the NAPS visit the following website**
https://apprenticeshipindia.org/

Loan Scheme for Persons with Disabilities (Divyangs)

The National Handicapped Finance and Development Corporation (NHFDC) under the Ministry of Social Justice and Empowerment, Government of India extends loan to the Persons with Disabilities for upgradation of their entrepreneurial skill for proper and efficient management of self-employment ventures and also for pursuing professional/technical education leading to vocational rehabilitation/self-employment. There is also a scheme for pursuing Vocational Studies, under which a loan amount of up to Rs. 2.0 lakh is given to students with disabilities for pursuing vocational/skill training courses.

❏ **For more information about the Loan Scheme for Persons with Disabilities visit the following website**
http://nhfdc.nic.in/schemes/DIVYANGJAN%20SWAVALAMBAN%20YOJANA.pdf

Aatamanirbhar Skilled Employee Employer Mapping (ASEEM)

The Ministry of Skill Development and Entrepreneurship (MSDE) has launched 'Aatamanirbhar Skilled Employee Employer Mapping (ASEEM)' portal to help skilled people find sustainable livelihood opportunities.

❏ **For more information about the ASEEM visit the following website**
https://smis.nsdcindia.org/

Recognition of Prior Learning (RPL)

Recognition of Prior Learning (RPL), refers to an assessment process used to evaluate a person's existing skill sets, knowledge and experience gained either by formal, non-formal or informal learning. Recognition of Prior Learning is a component of Pradhan Mantri Kaushal Vikas Yojana (PMKVY) Scheme in which individuals with prior learning experience or skills are assessed and certified. The objective is to enable a large number of Indian youths to take up industry-relevant skill training that will help them in securing a better livelihood. So far, more than 6 lakh individuals have been RPL certified under PMKVY Scheme.

❏ **For more information about the Recognition of Prior Learning visit the following website**
http://pmkvyofficial.org/
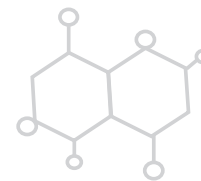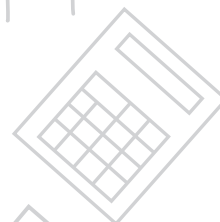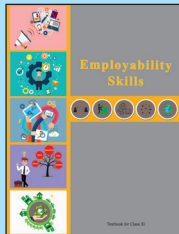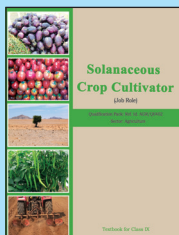
List of Resource Materials for Vocational Courses published by the National Council of Educational Research and Training for Grades 9 and 10

- ❐ *Bans Kala* (Hindi)
- ❐ Basic Bookkeeping
- ❐ Basic Office Practice
- ❐ *Batik*
- ❐ Beekeeping
- ❐ Beginning with Visual Basic
- ❐ Biofertilizers
- ❐ Blood Bank Operation
- ❐ Gharelu *Vidyut Upkarno Ki Marammat Avum Anurakshan* (Hindi)
- ❐ *Gudiya Nirman* (Hindi)
- ❐ Internet Café
- ❐ *Jave-urvarak* (Hindi)
- ❐ *Kastha Kala* (Hindi).
- ❐ Mushroom Cultivation
- ❐ *Mushroom-Ki-Kheti* (Hindi)
- ❐ Plumbing
- ❐ Preparation of Bread and Other Yeast Leavened Products
- ❐ Preservation of Fruits and Vegetables by Drying and Dehydration
- ❐ Preservation of Fruits and Vegetables using Salt
- ❐ Production of Cosmetics
- ❐ Repair and Maintenance of Power Thresher
- ❐ Repair and Maintenance of Tillage and Sowing Equipment
- ❐ Soft Toys
- ❐ Textile Care and Design
- ❐ Tie and Dye
- ❐ Typewriting
- ❐ Vermiculture
- ❐ Wood Craft
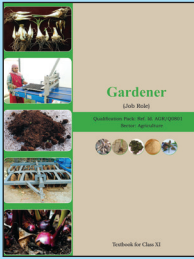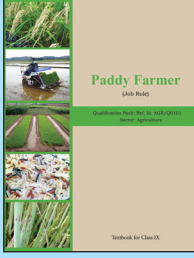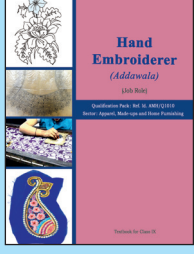
LIST OF VOCATIONAL TEXTBOOKS PUBLISHED BY THE NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING FOR GRADES 9 TO 12 UNDER *SAMAGRA SHIKSHA*

S. No.	Sector	Title	Grade	URL Address	
1.	Common for all Sectors	Employability Skills	9	http://psscive.ac.in/publications/textbooks	
2.		Employability Skills	10	http://psscive.ac.in/publications/textbooks	
3.		Employability Skills	11	http://psscive.ac.in/publications/textbooks	
4.		Employability Skills	12	http://psscive.ac.in/publications/textbooks	
5.	Agriculture	Solanaceous Crop Cultivator	9	http://psscive.ac.in/publications/textbooks	
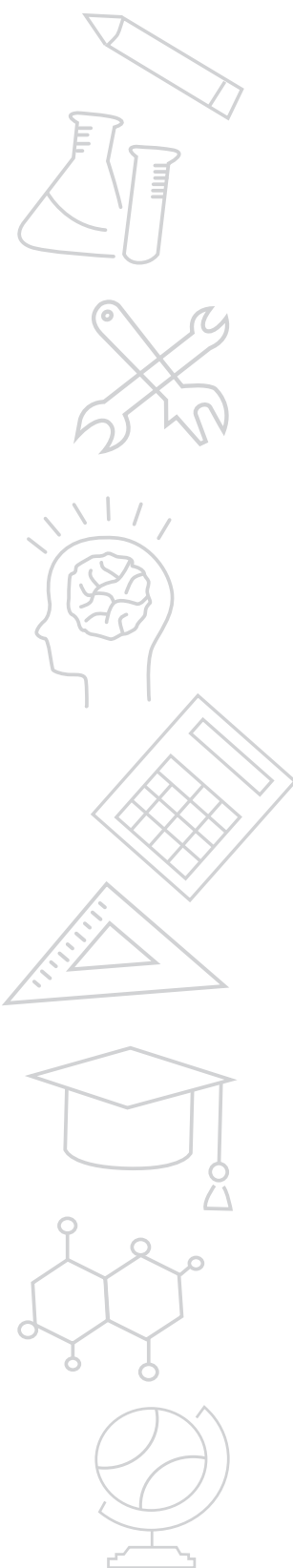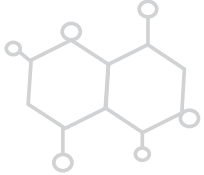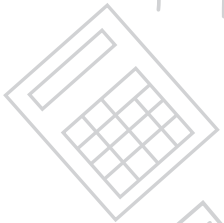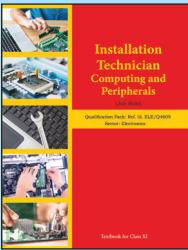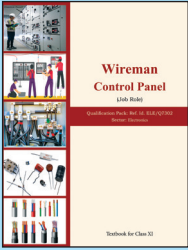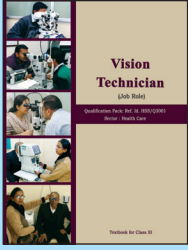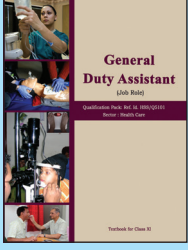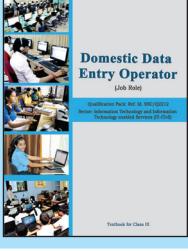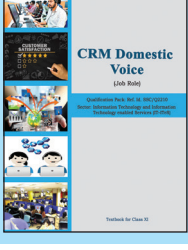
6.		Animal Health Worker	9	http://psscive.ac.in/publications/textbooks	
7.		Animal Health Worker	10	http://psscive.ac.in/publications/textbooks	
8.		Dairy Farmer	11	http://psscive.ac.in/publications/textbooks	
9.		Dairy Farmer	12	http://psscive.ac.in/publications/textbooks	
10.		Floriculturist (Open Cultivation)	11	http://psscive.ac.in/publications/textbooks	
11.		Floriculturist (Open Cultivation)	12	http://psscive.ac.in/publications/textbooks	

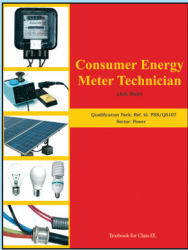|				
12.		Floriculturist (Protected Cultivation)	11	http://psscive.ac.in/publications/textbooks
13.		Gardener	11	http://psscive.ac.in/publications/textbooks
14.		Microirrigation Technician	11	http://psscive.ac.in/publications/textbooks
15.		Paddy Farmer	9	http://psscive.ac.in/publications/textbooks
16.		Paddy Farmer	10	http://psscive.ac.in/publications/textbooks
17.	Apparels, Made ups and Home Furnishing	Hand Embroiderer (Addawala)	9	http://psscive.ac.in/publications/textbooks
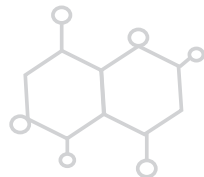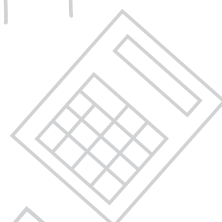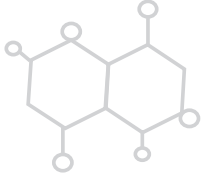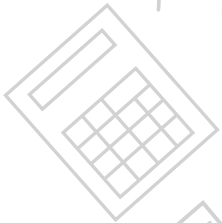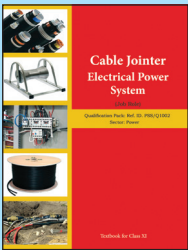
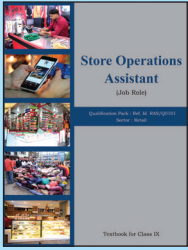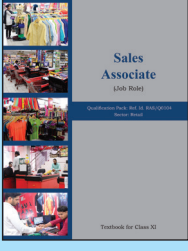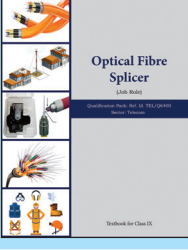|					
18.		Hand Embroiderer	9	http://psscive.ac.in/publications/textbooks	
19.		Sewing Machine Operator	9	http://psscive.ac.in/publications/textbooks	
20.	Automotive	Automotive Service Technician	9	http://psscive.ac.in/publications/textbooks	
21.		Automotive Service Technician	11	http://psscive.ac.in/publications/textbooks	
22.	Beauty and Wellness	Assistant Beauty Therapist	9	http://psscive.ac.in/publications/textbooks	
23.		Beauty Therapist	11	http://psscive.ac.in/publications/textbooks	

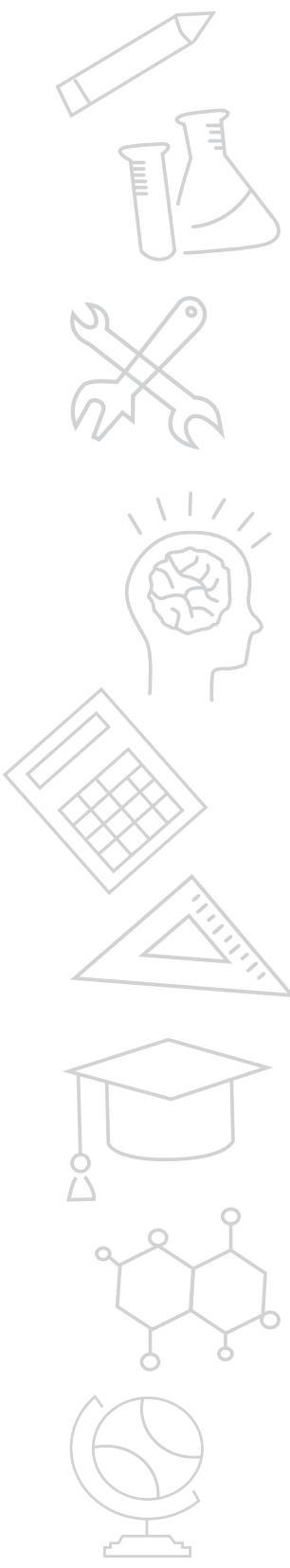|				
24.	Electronics	Installation Technician Computing and Peripherals	11	http://psscive.ac.in/publications/textbooks
25.		Wireman Control Panel	11	http://psscive.ac.in/publications/textbooks
26.	Health Care	Vision Technician	11	http://psscive.ac.in/publications/textbooks
27.		General Duty Assistant	11	http://psscive.ac.in/publications/textbooks
28.	IT/ITeS	Domestic Data Entry Operator	9	http://psscive.ac.in/publications/textbooks
29.		CRM Domestic Voice	11	http://psscive.ac.in/publications/textbooks
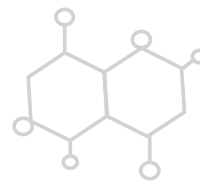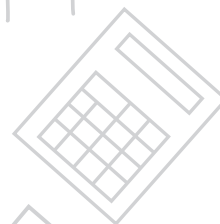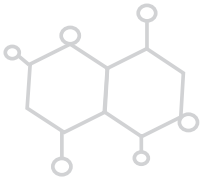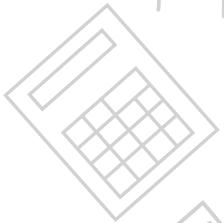
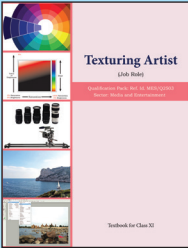|					
30.	Plumbing	Plumber	9	http://psscive.ac.in/publications/textbooks	
31.		Plumber General	9	http://psscive.ac.in/publications/textbooks	
32.		Plumber General	10	http://psscive.ac.in/publications/textbooks	
33.		Plumber General II	11	http://psscive.ac.in/publications/textbooks	
34.	Private Security	Unarmed Security Guard	9	http://psscive.ac.in/publications/textbooks	
35.	Power	Distribution Lineman	11	http://psscive.ac.in/publications/textbooks	

|					
36.		Cable Jointer - Electrical Power System	11	http://psscive.ac.in/publications/textbooks	
37.		Consumer Energy Meter Technician	9	http://psscive.ac.in/publications/textbooks	
38.	Retail	Cashier	9	http://psscive.ac.in/publications/textbooks	
39.		Store Operations Assistant	9	http://psscive.ac.in/publications/textbooks	
40.		Sales Associate	11	http://psscive.ac.in/publications/textbooks	
41.	Telecom	Optical Fibre Splicer	9	http://psscive.ac.in/publications/textbooks	
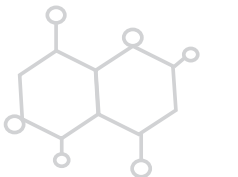
42.		Food and Beverage Service Trainee	9	http://psscive.ac.in/publications/textbooks	
43.	Tourism and Hospitality	Housekeeping Attendant Manual Cleaning	9	http://psscive.ac.in/publications/textbooks	
44.		Customer Service Executive	11	http://psscive.ac.in/publications/textbooks	
45.	Construc-tion	Assistant Mason	9	http://psscive.ac.in/publications/textbooks	
46.		Assistant Mason	10	http://psscive.ac.in/publications/textbooks	
47.		General Mason	11	http://psscive.ac.in/publications/textbooks	

| 48. | Media and Entertain-ment | Texturing Artist | 11 | http://psscive.ac.in/publications/textbooks | |
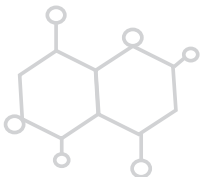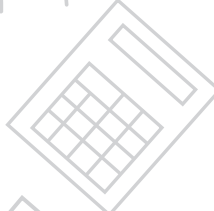
List of Pre-vocational activities offered from Grades 6 to 8 by Central Board of Secondary Education affiliated Schools

1. Artificial Intelligence
2. Beauty and Wellness
3. Design Thinking
4. Financial Literacy
5. Handicrafts
6. Information Technology
7. Marketing/Commercial Application
8. Mass Media
9. Travel and Tourism

(Source: http://cbseacademic.nic.in/web_material/Circulars/2020/25_Circular_2020.pdf)

ANNEXURE V

List of video films on Pre-vocational activities developed by PSS Central Institute of Vocational Education, Bhopal

S. No.	Title of Video Film	Grade
1.	ब्लॉक प्रिंटिंग	6
2.	वस्त्रों पर लगे दाग धब्बे छुड़ाना	8
3.	केश सौंदर्य उपकरणों का परिचय	8
4.	टाई एंड डाई द्वारा वस्त्रों को सजाना	7
5.	हस्त कशीदाकारी – लूप स्टिचेस	8
6.	घर पर बनाएहर्बल शैम्पू	8
7.	हस्त कशीदाकारी – फ्लैट स्टिचेस	7
8.	Seed Germination	6