

Section A

Name of the school	1.G.H.S. Jawaharpur, S.A.S.Nagar 2.G.M.S. Baironpur ,S.A.S.Nagar
Name of the teachers	Ashish Sharma (writer), Smt. Amardeep Kaur (Editor)
Class	7 th
Subject	Science
Name of the chapter	Physical And Chemical Changes
No. of periods required to teach the chapter	09

B1 Concepts to be covered:

- Physical changes
- Features of physical changes
- Chemical changes
- Features of chemical changes
- Importance of chemical changes in our life
- Process of burning of Magnesium Ribbon
- Process of rusting of iron
- Galvanization
- Crystallisation

B2 Usefulness in daily life

Students will be able to

- Identify changes in the surroundings.
- Classify changes into physical and chemical changes depending on their properties.
- Explain the concept of rusting.
- Know ways of protecting things from rusting.
- Comprehend how medicines, detergents and plastic ware are manufactured in industries?

- Understand ill effects of crackers and air pollution and sound pollution.
- Understand that concept of unhealthy stale food.
- Realize the economic loss due to rusting.
- Understand the reason behind discolouring of certain vegetables and fruits after cutting them.
- Paint household objects which are vulnerable to rusting.
- Justify the usage of alloy (stainless steel) over iron in utensils and others.
- Career options in automobile industry, equipment industry, galvanizing industry etc.

B3 Life Skills

- **Observation skills will be developed**
- **Writing skills**
- **Public speaking**
- **Team work**
- **Research aptitude**
- **Painting**
- **Galvanization**
- **Creativity**

B4 Vocabulary

S.No.	Word in English	Meaning in Punjabi	Pronunciation in English	Transliteration in Punjabi
1	Physical			
2	change			
3	Volume			
4	Rusting			
5	Ash			
6	Litmus paper			
7	Magnesium			
8	Magnesium Hydroxide			
9	Sand paper			
10	Test Tube			
11	Grease			
12	Paint			
13	Detergent			
14	Ozone			

15	UV radiations			
16	Crystallisation			
17	Galvanization			
18	Alloy			

Section C: Prerequisites or Previous Knowledge

Teacher will perform an activity in the class to develop the curiosity among the students.

Teacher will put ice cubes in a Petri dish and will ask the students what is the state of matter? Students will respond --solid. He will distribute few pieces to students to taste. After few minutes teacher will again ask the students -- what are they observing now?

Students may respond-- water and ice. Then teacher will ask --- what happened to ice? I had brought the ice to class, now it is water.

Students may say- the ice changed into water. Then teacher will ask few students to come forward and taste the water. He will ask if there is any change in taste. Students may respond no.

Teacher will explain what change is and ask the following questions to ignite their thought process.

Q1) what does change means? (oral skill)

Q2) Write examples of changes you have seen in your daily life?(creative thinking and writing)




Section D. Period Wise breakup of each chapter


Period	What to be covered
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1.	previous knowledge testing , introduction to the topic- physical and chemical changes , career options , exploring writing and thinking skills and demonstration of activities tearing of paper, crushing of chalk
2.	Activity- Heating of Hack saw blade, properties of physical changes and recapitulation of physical changes, Introducing the chemical changes
3	Activity –Burning of Magnesium Ribbon, related to chemical changes and acid base testing
4	Activity –Change in colour of copper sulphate solution and Activity- Lime water turns milky on mixing Vinegar and Baking soda, galvanization concept and its applications in daily life
5	Recapitulation of properties of chemical changes and its comparison with physical changes, concept of rusting of iron, its effect on economics
6	Activity -Concept of crystallization
7	Presentation by students of activities performed during the teaching learning process. Inputs by the classmates.
8	Visit to ICT Lab to show videos related to activities.
9	Revision, assessment with the help of evaluation tools.

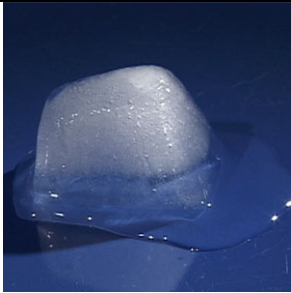
breakup of periods



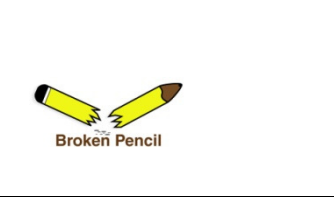



Sub Section E.1 Minute to minute break up of period 1st (Duration:40 min)

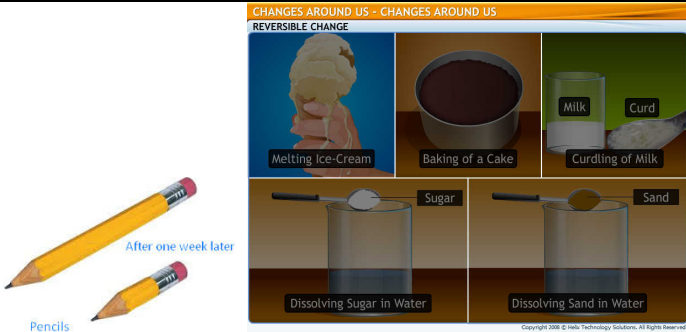
Entry behavior of teacher	10 min	<p><u>Previous knowledge questions will be asked by the teacher.(Annexure GA1)</u></p> <p>Teacher will put ice cubes in a Petri dish and will ask the students what is the state of matter? Students will respond --solid. He will distribute few pieces to students to taste. After few minutes teacher will again ask the students -- what are they observing now? Students may respond-- water and ice. Then teacher will ask --- what happened to ice? I had brought the ice to class, now it is water.</p> <p>Students may say- the ice changed into water. Then teacher will ask few students to come forward and taste the water. He will ask if there is any change in taste. Students may respond no. Teacher will explain what change is and ask the following questions to ignite their thought process.</p> <p>Q1) what does change means? (oral skill)</p> <p>Teacher will welcome all the responses of the students without discouraging them and list them on black board.</p>
Introduction to topic	10min	<ul style="list-style-type: none"> Teacher will start the topic by introducing changes happening around us in daily life and then come specifically to physical changes. Teacher will show few images and ask the students what they observed in images. (Annexure GA2) <div style="display: flex; justify-content: space-around; align-items: center;">    </div>
Career options	5 min	<p>Food industry(preserved food), automobile industry, pharmaceuticals, Salt industry, Furniture industry, alloy making, paint industry, shipping and aviation, best out of waste model making, mining industry (ore extraction).</p> <p>https://www.youtube.com/watch?v=pZB0QPBgUHS</p>

To explore writing and thinking	5 min	<p>Teacher will ask the students to Write or draw at least two examples of changes you have seen in your daily life and in your surroundings. (Annexure GA3)</p> <ul style="list-style-type: none"> Teacher will prompt the slow learners to take initiative.
Explanation of the topic by the teacher	10 min	<ul style="list-style-type: none"> Discussion of different properties of physical changes observed in our daily life. Activity - Tearing of paper (Annexure GA4) Activity- Crushing of chalk (Annexure GA5) Teacher will perform the above activities with the help of students. <div style="text-align: center;">  </div> <ul style="list-style-type: none">
Home Assignment	3 min	<ul style="list-style-type: none"> Perform the activity - melting of ice and water boiling under the supervision of parents. (Annexure GA6)

Annexure Name	GA1
Name of the activity	Melting of ice into water (physical change)
Specify the topic and its convergence (inter discipline)	State of matter and physical change
Type of the activity(individual activity/ group activity / home activity etc.)	Group/ individual
Material required for the activity	Ice, tray
Any specific preparations required in the class room for performing the activity	

Details of the activity and detailed instructions to carry it out	Take some ice in a glass or plastic tumbler. Melt a small portion of ice by placing the tumbler in the sun. You have now a mixture of ice and water. Now place the tumbler in a freezing mixture (ice plus common salt).
Pictures describing the activity, if any	
Any precautions to be kept in mind	.-----
Explanation of the outcomes of the activity	
Objective assessment of the learning	In physical change, there is change in shape, reversible, temporary. No change in taste
Annexure Name	GA2
Name of the activity	Pictures related to physical changes
Specify the topic and its convergence (inter discipline)	Properties of physical changes and daily life
Type of the activity(individual activity/ group activity / home activity etc.)	Group
Material required for the activity	Images
Any specific preparations required in the class room for performing the activity	Computer or Flash cards
Details of the activity and detailed instructions to carry it out	Teacher will show few images and ask the students what they observed in images.

Pictures describing the activity, if any	  
Any precautions to be kept in mind	.-----
Explanation of the outcomes of the activity	Students will be able to identify the changes occurring in the images
Objective assessment of the learning	In physical change, there is change in shape, reversibility, temporary but the properties remain same.
Annexure Name	GA3
Name of the activity	Write or draw at least two examples of changes you have seen in your daily life and in your surroundings
Specify the topic and its convergence (inter discipline)	Changes around us and drawing
Type of the activity(individual activity/ group activity / home activity etc.)	individual
Material required for the activity	Paper , pencil, pen and colors if required
Any specific preparations required in the class room for preforming the activity	-----
Details of the activity and detailed instructions to carry it out	Teacher will ask the students to Write or draw at least two examples of changes you have seen in your daily life and in your surroundings. If necessary he or she can prompt the slow learners with few images.
Pictures describing the activity, if any	  

	
Any precautions to be kept in mind	-----
Explanation of the outcomes of the activity	Student will cite some examples of changes around them. Some examples can be given by teacher to ignite their thought process.
Objective assessment of the learning	Changes around us are of many types. Some are reversible and some are nonreversible. Some are desirable while other are undesirable. Some give new substance and in some the substance remains the same.

Annexure Name	GA4
Name of the activity	Tearing of paper
Specify the topic and its convergence (inter discipline)	Science and math
Type of the activity(individual activity/ group activity / home activity etc.)	Individual/ group
Material required for the activity	Sheet of paper
Any specific preparations required in the class room for performing the activity	
Details of the activity and detailed instructions to carry it out	Cut a piece of paper in four square pieces. Cut each square piece further into four square pieces. Lay these pieces on the floor or a table so that the pieces acquire the shape of the original piece of paper .
Pictures describing the activity, if any	

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