

Topic 4: Preservation of Environment

Key Concept	Things, cultivated plots, garden, park and playing ground around us have to be preserved
Learning Objectives	
General Objectives	To preserve one's environment
Specific Objectives	Children are able (1) to describe why one's environment has to be preserved (2) to tell how the environment is preserved (3) to preserve things and plants in one's school compound very well
Activities Involved	<ul style="list-style-type: none">- discussion- questioning- observation- group work assignment- whole class discussion
Teaching/Learning Materials	<ul style="list-style-type: none">- picture charts, your school compound, and school garden
Teaching Periods	3 periods (90 minutes)

Before Getting Started

Background Information for Teachers

There are four parts of natural surrounding on the earth where we are living. These are aerosphere, landmass, hydrosphere, and biosphere. They are necessary for human society. Unpolluted air and water, and fertile soil are essentially needs for human beings to survive healthily and for the existence of the society. Moreover, green, lush and pleasant natural surroundings, wild life and plants also have to exist for the pleasure of humans. It is necessary for them not be deteriorated and lost because of humans. Therefore, it is important to preserve the natural environment. It also a great burden appropriate to carry out.

Therefore, it has to train the children to have the will to preserve natural surroundings from the age of childhood. It is necessary to have interest, charity, and will to preserve the locality and environment where one is living.

Lesson Planner

	<u>Period One</u>	<u>Period Two</u>	<u>Period Three</u>
Specific Objectives	To describe why one's environment has to be preserved	To tell how the environment is preserved	To preserve things and plants in one's school compound very well
Introduction (Evocation)	Making the classroom clean and tidy Asking questions and discussion after the activity	Going to the school compound or school garden and cleaning there Discussion after the activity	By showing pictures, let them think and discuss what is good to do.
Main activities to be carried out	Cleaning, arranging desks and chairs, making charts on the wall neat and tidy by the group Discussing again on the activities Making to know practically that it is necessary for the students to maintain the classroom, the most nearest surrounding for them	Making to know practically it has to keep the things of school own from being damaged such as picking trash in the school compound, arranging broken chairs and desks orderly Discussing again in class Making to know practically how to keep things from damage	By observing the illustrations, let them present and discuss how to preserve Positive discussion on the presentations by the whole class
Reinforcement of the lesson (Conclusion)	The place where one is existing has to be preserved	The environment of the place where one is existing has to be preserved	It has to preserve one's things, school-owned things, and state-owned things.
Assessment points	Collaboration	Collaboration	Whole class discussion

Teaching/Learning Procedure

Period One

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Organize the children groups. Have them observe in their classroom in order to know if it is neat and tidy or not. Ask them to carry out cleaning dusts, sweeping, arranging chairs and desks in order, and putting charts neatly on the wall.</p> <p>After that, ask the following questions to the whole class.</p> <ol style="list-style-type: none"> (1) What happened after sweeping the classroom? (2) What happened after cleaning dirt? (3) What happened to the picture charts and calendars that are not in order? (4) What do you feel because of the tidiness and cleanliness as a result of doing like that? (5) Do you have any idea to keep your classroom later? (6) What do you think will happen if not keeping clean like this? (7) What do you think will happen if dusts are inhaled? <p>In case of inhaling dusts, it is likely to suffer sneezing, coughing, and respiratory difficulties. Gas or smokes come out from factory and car can occur the air pollution.</p> <p>Let them know that there are not only visible diseased germs but also a many invisible germs in the natural surrounding. Teacher has to explain as follows: e.g. There are many germs that cannot be seen with naked eyes on the dirty hands. It is possible to defect the</p>	<p>30 min.</p>	<p>Classroom of the children</p>	<p>Teacher has to assign duties. Supervise in order for them to be able to do systematically. Take care for the children not to be harmful.</p> <p>Ask them to wash their hands cleanly and rinse out the mouth after the activities.</p> <p>Ask the questions regarding activities in accord with the situation of classroom.</p> <p>Make the children know how to keep their surrounding clean and tidy.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p><i>In this period, put the emphasis on the air pollution in discussion.</i></p> </div>

<p>health due to the reach of diseased germs into the body if eating food with those hands.</p> <p>Though uncleanness of dirty hands is visible, there can be diseased germs invisible with naked eyes even on the clean hands. It is possible to see them only under the microscope. Tell them that it has to keep hands clean with care.</p> <p>(8) What do you think will happen if not keeping desks, chairs, and charts orderly like this?</p> <p>(9) If that so, how will you decide to keep your classroom?</p> <p>(10) When you get home after school, how will you decide to keep the things around you?</p>			
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Period Two

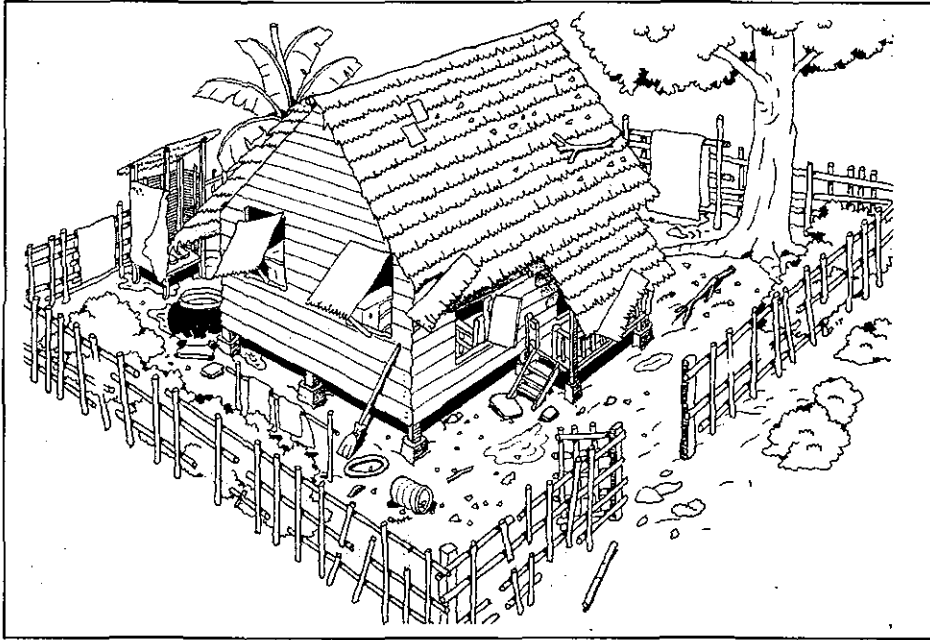
Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Ask the children, "Is it necessary to be clean?" "Why?"</p> <p>Let the children who want to say discuss.</p> <ul style="list-style-type: none"> - suffering from disease - visible and invisible germs enter the body <p>Assign the duties by groups.</p> <p>Picking trash, rearranging the disordered things, keeping things in the school compound orderly if it is in the school compound</p> <p>Ask them to do practically in order to use cleanly and prevent from damaging the water pipe or water tap.</p> <p>If it is in school, they have to carry out pulling out weeds, cleaning trash and watering plants by group.</p>	30 min.	School compound or school garden	<p>Brainstorm the children with the questions mentioned in the first column. Ask them to tell the discussing points as far as they remember.</p> <p>Tell them in advance to be cautious not to disturb other classrooms while observing in the school compound.</p> <p>Children will get the good practice and knowledge on the management of garden in making green and lush and in keep on growing without damage by means of practical doing.</p> <p>After doing the activities, ask them to wash their hands.</p>

<p>In the class, have them discuss by group what they have done. Teacher asks the following questions and lets them answer by group in turns.</p> <p>(1) What changes are there in the school compound or school garden through doing like this by the children?</p> <p>(2) Do you like the cleanness like this?</p> <p>(3) Let the children decide if it is appropriate to preserve the school compound or school garden where they go daily.</p>			<p>Keeping things away from damage when getting back home.</p> <p>Have the children get the good practice through practical doing of keeping one's surrounding clean, pleasant, and free from damage.</p>
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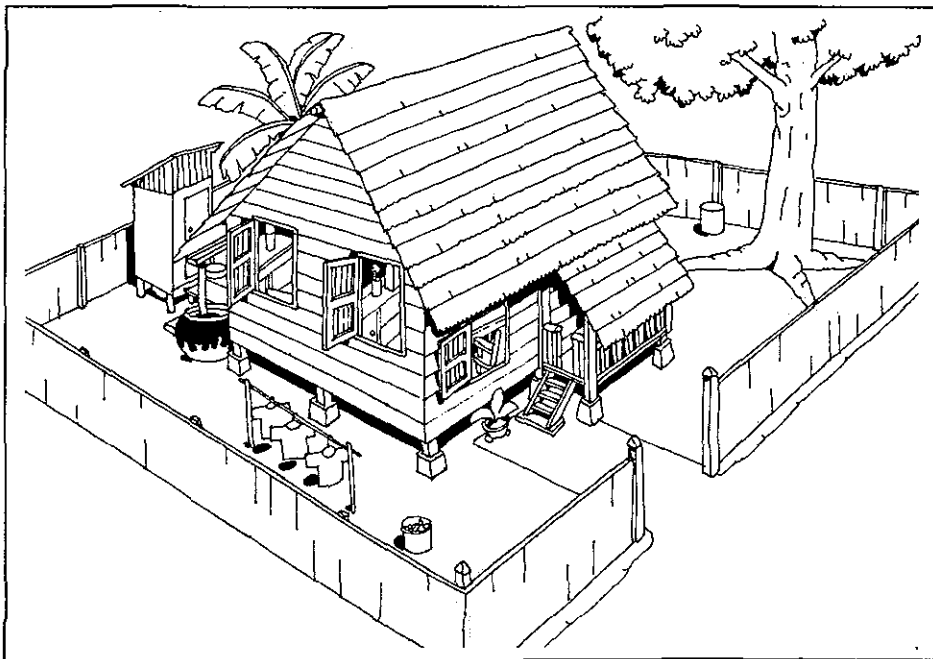
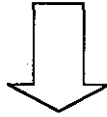
Period Three

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Take the children to the place where drain or dirty water can be found in the school compound or near the school and ask them if it is good or not. Have them think what should be done for the water not to be dirty. After that, go back to the class.</p> <p>Have each group look at each of the pictures showing untidiness and uncleanness and ask the following questions. Let them discuss by group.</p> <p>(a) What picture is it? What do you find in the picture? Is it good for happening like this? Do you like it?</p> <p>(b) What should be done?</p> <p>Finally, let them look at the pictures showing tidiness and cleanness and ask if they like or not.</p>	30 min.	Picture charts (show the pictures No. 1- No. 8)	<p>If the school is close to a river or creek according to the condition of the region, take the children to the river or creek.</p> <p>Care should be taken for the children to be free from danger.</p> <p>Teacher has to prepare picture charts in advance. These have to be large enough for the children to see easily.</p> <p>It will be low cost by using the back of old calendar.</p> <p>Have them know practically that state-owned materials should be kept away from damage.</p> <p>Let them realize to suggest not damaging those things in case of finding the person who is going to damage.</p> <p>By asking them to discuss what they think are there in water; what creatures they think in water; if they</p>

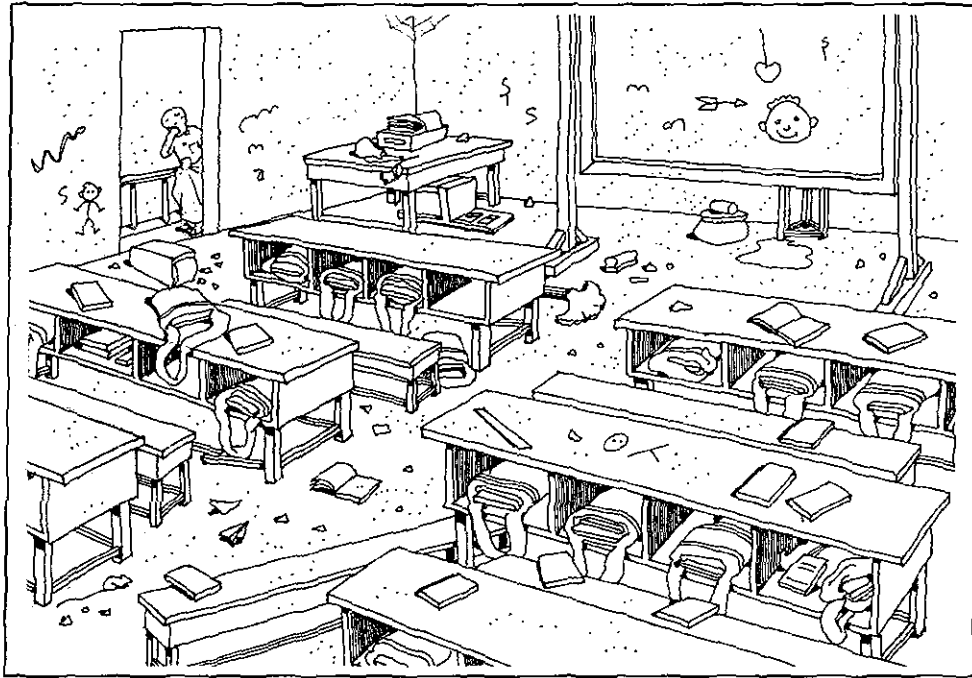
			<p>will enjoy to live in the dirty water; if the dirty water has foul smelling or not; if it is possible for man and animals to contract diseases through observing the picture showing dirtiness due to the waste materials in the water of creek; discuss make the children know practically that it has to keep systematically not occurring water pollution because of the evil consequences of it.</p>
<p>Have them decide how they should do (if it is appropriate to preserve things) Teacher concludes by telling, "OK class, if it is appropriate to keep, it has to be carried out as the practical doing."</p> <div data-bbox="227 1129 546 1276" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><i>In this period, the issue of water pollution has to be focused in discussion.</i></p> </div>			



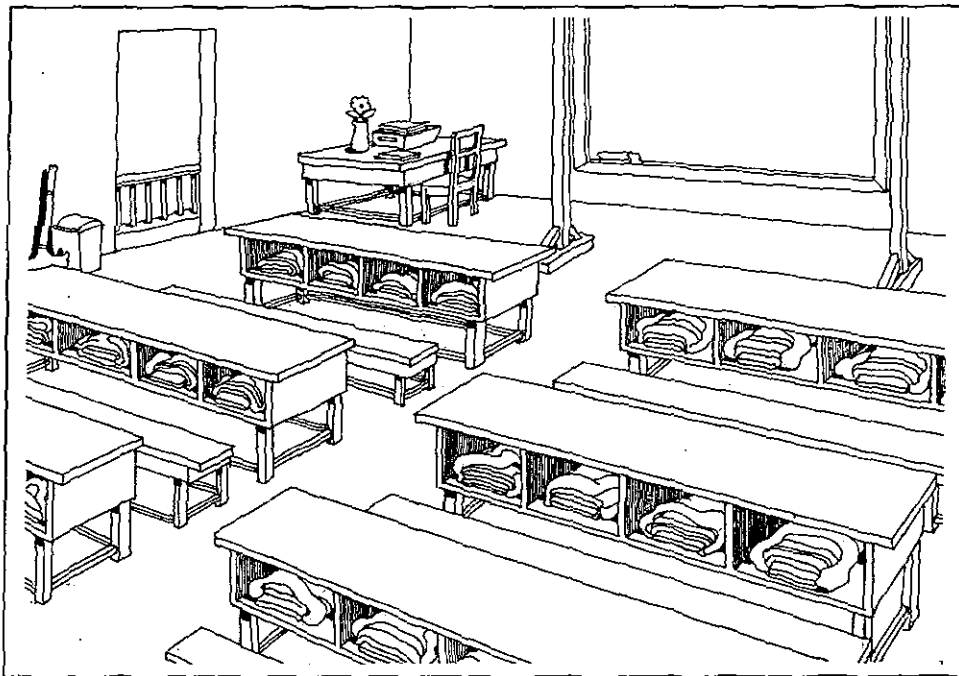
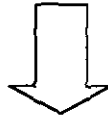
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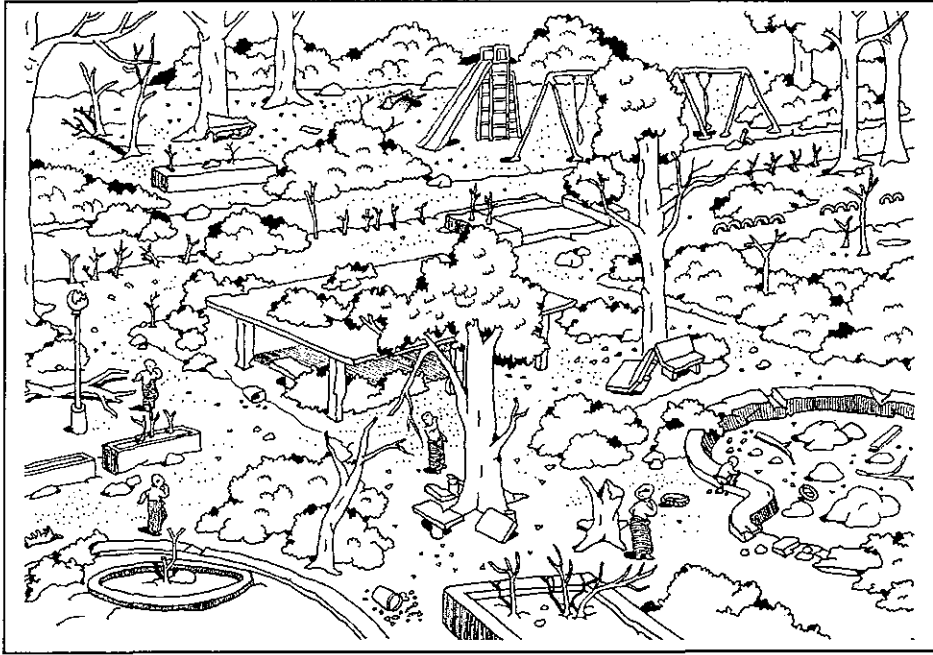
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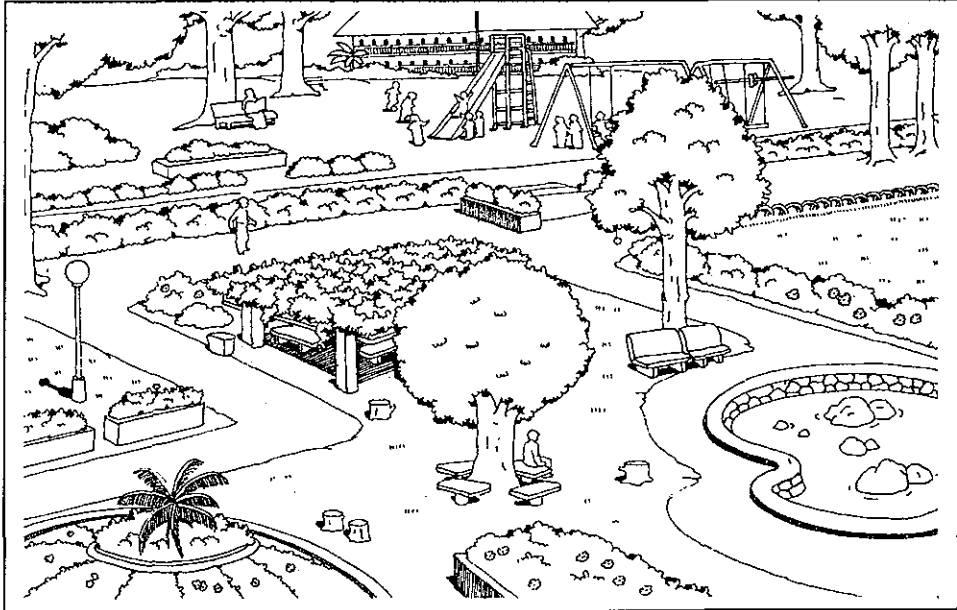
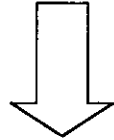
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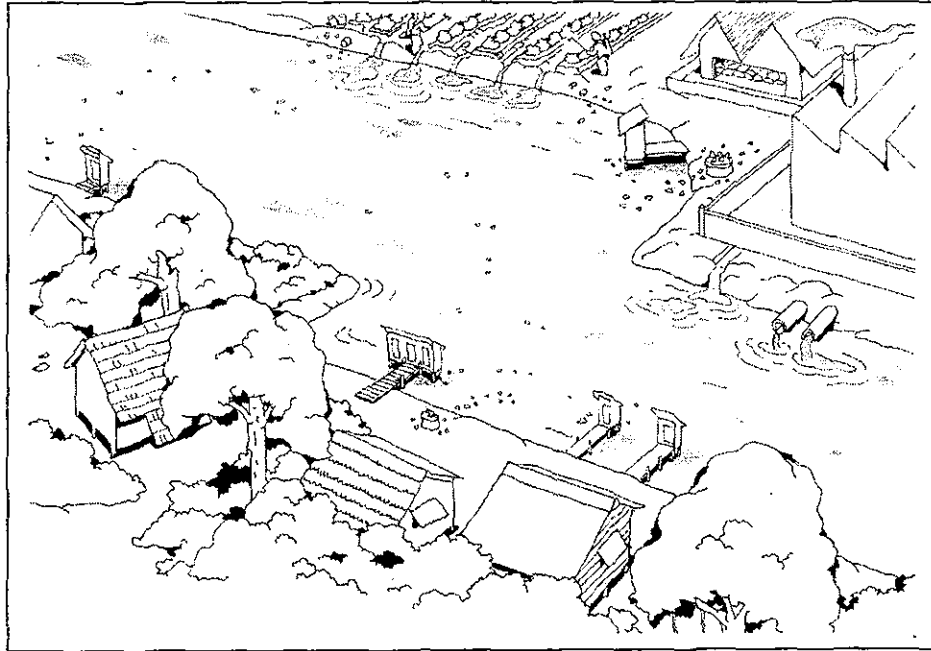
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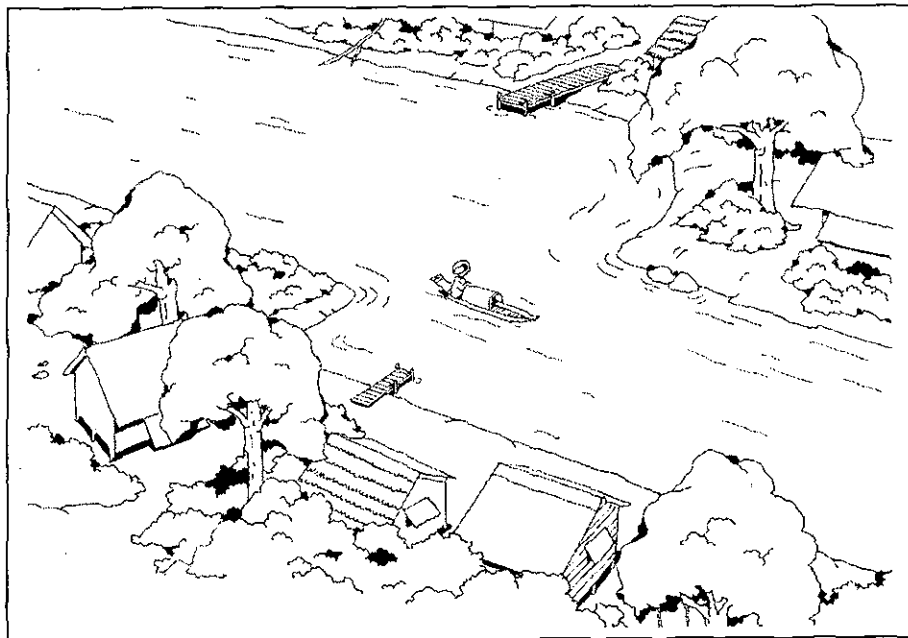
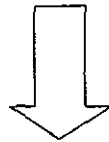
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No.7



No.8

Assessment

It is possible to make assessment through observing children if they all participate or not while carrying out activities, having them carry out the activities contained in the textbook, and asking to answer the questions.

Topic 5: Studying the Liquids around One's Environment

Key Concept	There are different liquids including water in our environment
Learning Objectives General Objectives	To know the physical properties of the liquid and be able to describe them.
Specific Objectives	Children are able (1) to tell that liquids have color, scent and taste (2) to know practically that liquid has no definite form (3) to differentiate the usefulness of liquids
Activities Involved	<ul style="list-style-type: none">- group work- observation- group discussion- games- prediction
Teaching/Learning Materials	<ul style="list-style-type: none">- various juices- indigo- water- betel leaf- Soap acacia- different shaped cups- water bowl- a piece of white cloth
Teaching Periods	5 periods (150 minutes)

Before Getting Started

Background Information for Teachers

The major requirement of living things is water. In scientific term, it is contained in the group of liquid. In this chapter, children will be introduced with the term of liquid. There are various kinds of liquids in our environment. Some are obtained from the nature and some are man-made liquids (various liquors, various oils, gasoline, soap water, fish sauce etc.) Man takes those various kinds of liquids in various ways. Therefore, those liquids are very useful for man. The color, scent, taste and usefulness of liquids are different. As the children are grade two students, some liquids that are familiar

with them and used in daily life will be studied. It has to be studied more detail in senior grades.

Lesson Planner

	<u>Period One</u>	<u>Period Two</u>	<u>Period Three</u>
Specific Objectives	Be able to guess that liquids have different color, scent and taste	Be able to know and tell that liquids have different color, scent, and taste through observation	Be able to identify the usefulness of various liquids
Introduction (Evocation)	Questioning the whole class - What do you do before the school starts?	Giving assignment relating to the prior lesson of the previous period	Discussion among the groups
Development	Asking to draw a table of the colors, scents, and taste of different liquids that children want to drink.	Differentiate among the colors, scents and tastes of liquids after making liquids practically and drawing tables	Asking to draw a table of colors, scents, tastes and usefulness of other liquids (not including juices).
Conclusion	Liquids have different color, scent and taste.	Make a comparison between the table of guessing and the table of practical doing. Reading the table of practical doing and teacher has to explain.	Reading of tables
Assessment points	Reading tables	Observing table Observation of the children if they all participate or not.	Observation of table

	<u>Period Four</u>	<u>Period Five</u>
Specific Objectives	Be able to know that liquids have no definite shape by means of practical doing	Be able to make practically colored liquids through using flowers and leaves around school.
Introduction (Evocation)	Asking questions to the whole class How did you bring the drinking water from your home to school.	Teacher explains the procedure of experiment

Development	Asking the findings of children through pouring water into various containers such as bottles, cup, saucer etc.	Going outside the classroom and making to get liquids with various colorful leaves
Conclusion	Liquid has no definite shape.	The water gets colored when some substances are mixed.
Assessment points	Listening to the answers of children.	Observing if all the children participate and they are able to tell

Teaching/Learning Procedure

Period One

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed				
<p>Teacher introduces the lesson with the following questions.</p> <p>What do you do before the school starts?</p> <p>What do you want to do after playing?</p> <p>If the answer contains, want to drink water , teacher continues to ask,</p> <p>Why do you want to drink water?</p> <p>And let the children respond, as they like.</p> <p>What else do you want to drink besides water?</p> <p>Teacher writes whatever the students answer on the blackboard.</p> <p>Teacher tells that these drinks are called liquid and that there are different kinds.</p> <p>Teacher asks students how to differentiate one liquid to another, and let them respond.</p>	10 min.		<p>Some children may answer that they play.</p> <p>Teacher has to lead if they do not say, 'want to drink water.'</p>				
<p>Teacher draws the following table on the blackboard. Let each group of students guess which liquid is</p>	10 min.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Liquid</td> <td>Color &</td> <td>Scen t</td> <td>taste</td> </tr> </table>	Liquid	Color &	Scen t	taste
Liquid	Color &	Scen t	taste				

<p>transparent and which is sour, and fill in the color/transparency, scent, and taste of the liquids that had been listed on the blackboard.</p> <table border="1" data-bbox="183 383 644 640"> <thead> <tr> <th>Liquid</th> <th>color& transparency</th> <th>scent</th> <th>taste</th> </tr> </thead> <tbody> <tr> <td>lime juice, tamarind juice, orange drink, milk others</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Teacher asks the students to bring juice essences, lime, tamarind, etc. to make various juices according to groups.</p>	Liquid	color& transparency	scent	taste	lime juice, tamarind juice, orange drink, milk others						<table border="1" data-bbox="1054 199 1374 394"> <tr> <td></td> <td>transp arency</td> <td></td> <td></td> </tr> <tr> <td>Lime juice</td> <td></td> <td>sweet</td> <td>sour</td> </tr> <tr> <td>milk</td> <td>white</td> <td>sweet</td> <td>rich</td> </tr> </table> <p>Teacher has to inspect the tables of the children.</p>		transp arency			Lime juice		sweet	sour	milk	white	sweet	rich
Liquid	color& transparency	scent	taste																				
lime juice, tamarind juice, orange drink, milk others																							
	transp arency																						
Lime juice		sweet	sour																				
milk	white	sweet	rich																				
<p>Quiz of the day: Is there water inside your body? Answer of the quiz About 3/4 of your weight is water inside your body. Therefore, it is necessary to drink sufficient water everyday.</p>			<p>It is good for man, youth and children to drink 6 (one liter bottle) bottles of water a day.</p>																				

Period Two

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Quiz of the day Which drink is transparent and sour?</p>			<p>Teacher writes this sentence on the blackboard and encourages the children to find out the results.</p>
<p>Put the juice essences that were asked to bring in the previous period on the table in front of the class and then distributed to each group. Let the students take some essences and pour drinking water into cups to make juices and make lime, tamarind juices.</p>	10 min.	various essences of juice, lime, tamarind, jaggery, milk	<p>It is recommended to use transparent glasses. If not available, plastic cups could be used.</p>
<p>Then, let the children taste the color/transparency, scent and taste of various drinks themselves by each group. Let the groups make another table in the same way it was done in the previous period collectively. And let them find out which are transparent</p>	10 min.	plastic cups or glasses, spoon	

and which are sour and make those names circled in the table. This time the filling out the table should be down based on their observation.

Name of juice	Color & transparency	Scent	Taste

After that, the table is compared with the table of guessing made in the previous period.

The representative of the groups will read out the table in front of the class and tell which is transparent and which is sour. The remaining groups match with their table and supplement as necessary.

If few groups are there, every group has to read out.

Teacher tells that juices inside the bottle contain more or less dyes and hand-made limejuice, tamarind juice are fresh and suitable for health. Teacher also tells that there are liquid which is harmful to drink. Students must not taste the liquid without asking adults nearby. For the next period, ask them to study, enquire and note down other liquids used at one's home.

10 min.

medicine, pesticide, machine oil

Teacher shows samples of liquid that students should not taste, and tell them that these are harmful.

Period Three

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
The children have to tell one another within the group about the name of liquids used at home and their use that they were asked to acquire in the previous period. If sample liquids are brought, they can be put inside different cups and can be observed and think about use as well as how they are obtained. For example, ground nut oil, sesame oil, rice juice, vinegar, tamarind juice, jaggery juice, soap acacia juice, soap water etc.	10 min.	ground nut oil, sesame oil, rice juice, vinegar, tamarind juice, jaggery juice, soap acacia juice, soap water	Teacher can add some variety of liquids used in one's region.
Let them compile with a table the	10 min.		It is possible to ask each

color/transparency, scent and usefulness of the liquids as well how it is obtained.							group two items to bring a little. It is also possible to study and enquire at home other than to ask them to bring the liquids.
Name of liquid	Color & transparency	Scent	Usefulness	how it is obtained			
A representative from a group reads out the table. Teacher records on the blackboard. The remaining groups have to supplement as necessary. Teacher supplements when necessary. Ask them to bring drinking water for the next lesson.					10 min.		
Quiz of the day: Can oil be used for washing? Answer of the quiz Yes, oil is used to wash iron materials which should not go rusty. Also soap is made from oil. To remove oil, water is not sufficient.							

Period Four

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
Question of the day: Can you measure the size of water?			This question introduces the lesson topic to children.
Put the drinking water that the students have brought on their desks. Then teacher begins by asking a question, How did you bring water from home to school? Let the children tell the various methods on how they have brought it. Then, ask, In what container is drinking water put in the class? How do you drink when you drink water? Then ask students questions such as: Can you get round-shaped water? Can you get long-sized water? What shape does water have? and let them answer freely.	5 min.	Various sizes of drinking water bottles, glasses, various shapes and sizes of drinking water cups, bowl, coffee cups etc.	What are to be prepared are readily available bottles, water cups and glasses.
Let them compare the shapes and sizes	5 min.		Let children ask what

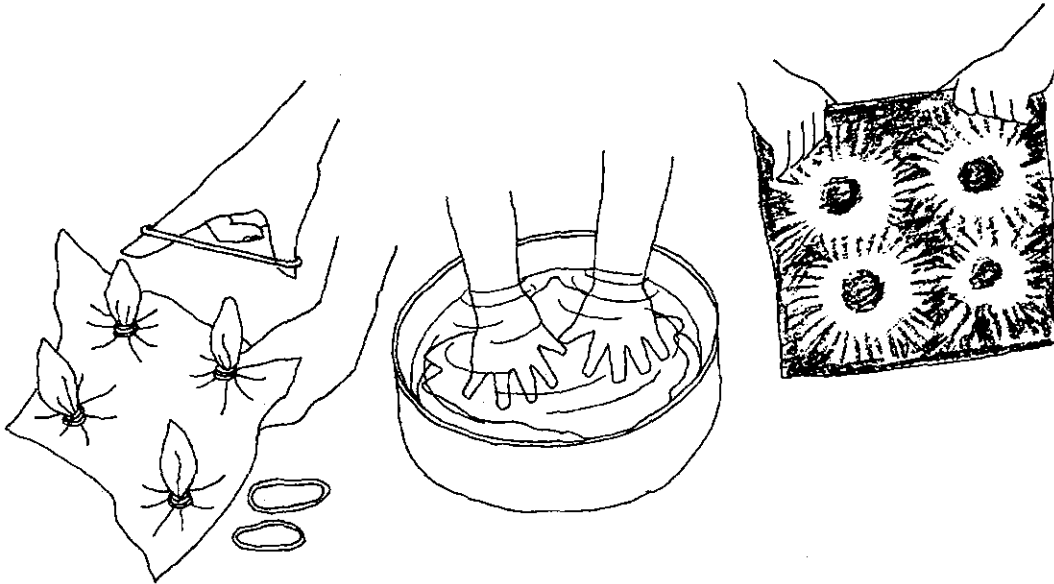
<p>of the containers prepared. Then, let them pour water into the different shapes and sizes of bottles, and into 5 different shaped glasses and into a small bowl on the table in front of the class. Ask, Are the shapes of water different? Does water have a shape? Let the children tell their findings. Teacher tells that all liquids do not always have definite shapes; they differ in shape according to the container they are put in. Since the water has no definite shape, it can be circulated even inside one s body and also underground water can be obtained from the well.</p>			<p>they like. After that, do practically to verify.</p>
<p>Let the children guess by groups, which containers can hold the quantity of water the most from among the 5 different glasses. And they discuss how to prove that the particular container hold water the most and they carry it out.</p>	10 min.		<p>Let the students find out how to prove that the particular glass can hold the water the most.</p>
<p>Then, ask children to divide the water into the number of the members of the group equally. How can the water be distributed equally? Let the children do practically and present how they did the task.</p>	10 min.		<p>Teacher has to tell, after the students have expressed their opinions, the methods of finding out the largest quantity glass and of dividing the water into several servings equally, for confirmation.</p>
<p>Answer of the quiz Water does not have permanent shape or size. So size cannot be measured but quantity and weight can be measured using container.</p>			

Period Five

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Teacher and children go out of the classroom, pluck the leaves and flowers (e.g. hibiscus flower, betel</p>	5 min.		

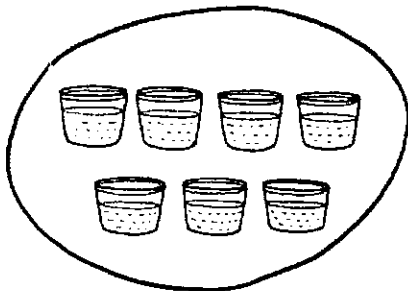
leaf, bougainvillea) and come back into the classroom. Ask, What colors can be obtained from what kinds of flowers and leaves.			
By grinding those flowers and leaves, mixing with water and squeezing out, or by dipping in hot water make to get colored liquids. After that, put into a cup and place a tissue paper inside as shown in the figure, and ask, what has happened to the tissue.	10 min.	Leaves and flowers available in one's region such as betel leaf, morinda leaves, bougainville a etc.	Greenish liquids can be obtained by grinding and squeezing out he betel leaf and morinda leaves.
Then, put colored liquid into the bowl. A piece of white cloth is tied with rubber rings as shown in the figure and dips it into the liquid. Then, take it back, remove the rubber rings and keep it dry. What happens to the white cloth? Let the children do by themselves within the group. Let the children tell their findings on liquid as far as they remember.	10 min.		(figure)
In conclusion, teacher has to motivate the children to recognize the followings; (1) There are variety of liquids in our environment including water. (2) Their color/transparency, scent, taste and usefulness, how to obtain it are different. These features indicate what they are. (3) Some liquids can be mixed and colored. (4) Liquids do not have definite shape; They take the shape of the container they are put in.	5 min.		If the children forget the teacher has to lead. e.g. sugar solution, lime juice, tamarind juice, jaggery solution
Quiz of the day: Please name 3 kinds of liquid inside your body and their colors. Answer of the quiz: blood, sweat, mouth water, urine, lymph and others The good blood is bright red color and bad blood is not. Urine has different color and odor depending on the health condition of each			

person and can tell sickness from examining the substances contained in urine.
Color of the liquid has its meaning.

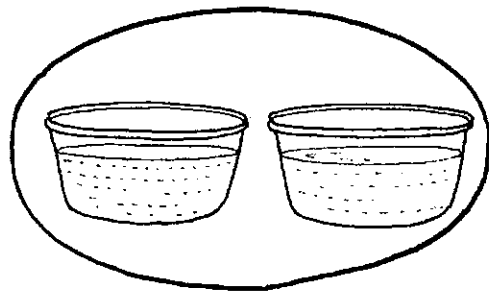


Assessment

1. Describe two kinds of liquids each, which are similar in color, but serve different purpose. (individually)
Which group can tell most about the liquids that are similar in color but serve different purpose? (by group)
2. Describe two kinds of liquids each, which are similar in taste but not in kind
3. Fill the 2 bottles of different shapes with water. The water in which bottle is greater. How will you do it in practical? (Give the cups with similar shapes)
4. Give two big cups filled with water to one group and five or six small cups filled with water to another group. Water of which group is more? How can it be verified practically? (Put two similar shaped and sized bottles or cans or water bowls together with other bottles or cans or water bowls with different shape and size in front of the class. Put a plastic funnel too.)



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 သိချင်လား ?
 သိချင်ရင် လက်တွေ့ စုတ်ကြည့်ရအောင်

Reference

There are various kinds of liquids such as soap water, oil, lotion or suspension or elixir of medicine, paint emulsion, liquid of insecticide, gasoline, kerosene etc. contained in liquid group. Some liquids are dangerous in case of drinking. Therefore, children have to take care of the color and scent of liquid first before drinking a liquid. It has to be asked to adults whether the liquid should be drunk or not. It is necessary to give the parents through children the knowledge that dangerous liquids must be labeled on the container and kept out of reach of children. Moreover, it is necessary for the children to know the followings.

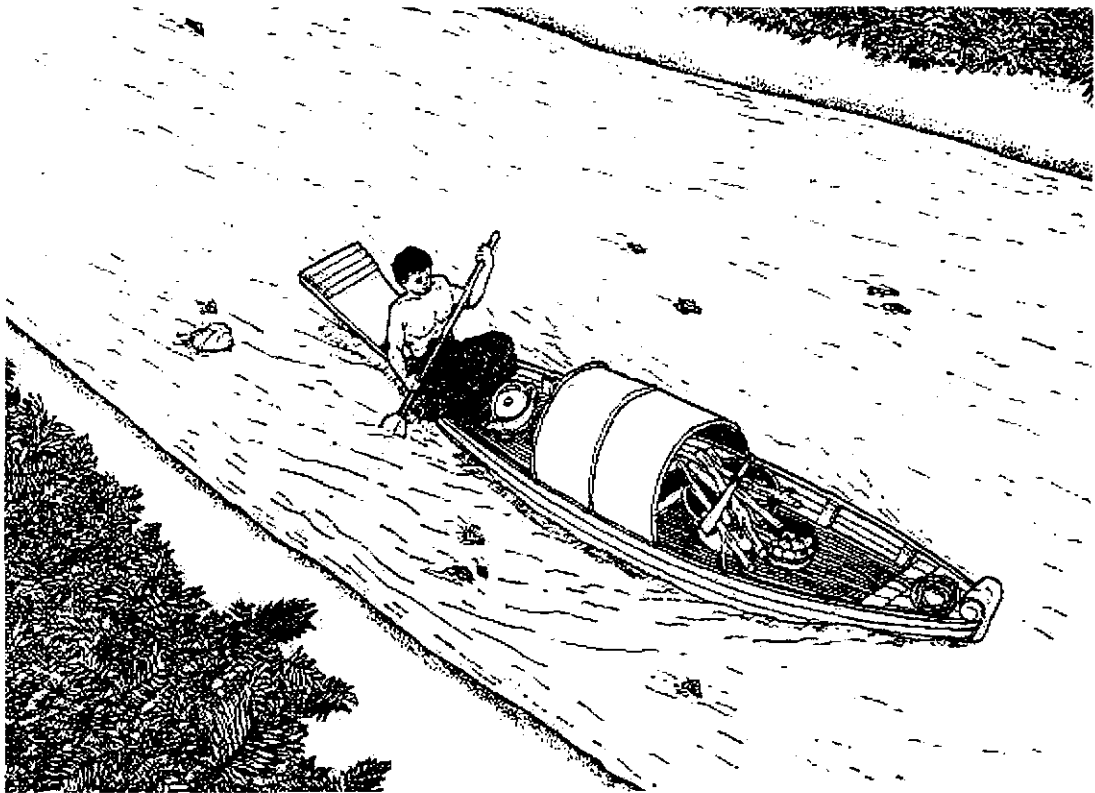
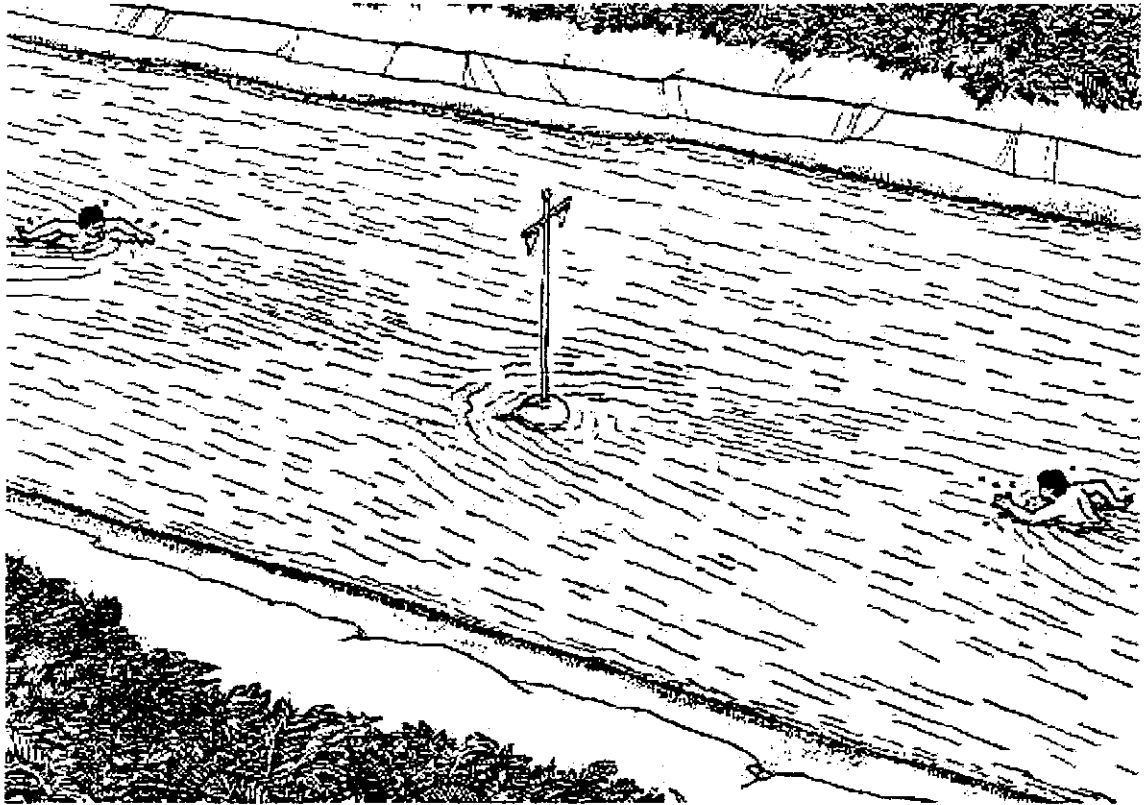
The blood in the animal body is also a kind of liquid and it circulates throughout the body. In the animal body, liquids like water and blood contain and the water drunk daily is excreted outside body as urine and sweat. Therefore, liquids including water are very important for humans and animals for their survival.

Topic 6: Mobility of Objects in Water

Key Concept	Objects are able to move due to the flow of water.
Learning Objectives	
 General Objectives	To understand that light objects float on water and to know that light objects are able to move away along with the current of water but heavy objects are not.
 Specific Objectives	Children are able (1) to show practically that water flow from the height to the low (2) to tell light objects can float on water and heavy objects can sink in water (3) to differentiate the objects which can easily flow along with the current of water and those which cannot
Activities Involved	<ul style="list-style-type: none"> - story telling - group discussion - prediction - group work - demonstration - observation
Teaching/Learning Materials	realia such as flowers, leaves, stones, sand, pencil, eraser, plastic sheet, straws etc.
Teaching Periods	5 periods + 1 period for assessment (180 minutes)

Before Getting Started

Background Information for Teachers	<p>The flowing water current has force. This force of water can be applied in the activities for a living, which are beneficial to human beings such as drifting bamboo rafts, drifting earthen pots putting on bamboo rafts, drifting wood rafts, putting drift-net in water for fishing etc.</p> <p>Furthermore, water current can carry away gradually the topsoil, sand, stones, gravels, garbage etc. from upper part to lower part of the stream. Therefore, children have to learn that things which cannot move by themselves but which can move from place to place by means of the force of water current.</p>
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Lesson Planner

	<u>Period One</u>	<u>Period Two</u>
Specific Objectives	Be able to tell light objects can float on water and heavy objects can sink in water.	
Introduction (Evocation)	Story telling	Teacher explains the procedure
Development (Reflection)	Let them guess the objects that can float on water and those that cannot.	Carrying out the experiment in order to differentiate between the objects that can float on water and those that cannot.
Conclusion (Realization)	Making a table of guess	Making a table
Assessment points	Observation of children to know all children take parts in collectively or not	Observation of children to know all children take parts collectively in experiment

	<u>Period Three</u>	<u>Period Four</u>	<u>Period Five</u>
Specific Objectives	Be able to differentiate the objects that can easily float along with the current of water and those, which cannot.		Be able to show practically that water flow from the high to the low and the current has force of water.
Introduction (Evocation)	Teacher explains the procedure of the practical doing.		Take the children to the stream or gutter where water is flowing and observe how the water flows.
Development (Reflection)	Carrying out the experiments		Give the children a problem to solve.
Conclusion (Realization)	Asking the outlooks of the children		Recitation of poem
Assessment points	Observation of children to know all children take parts collectively in experiment	Listening to the answer of children	Listening to the children's answers and observing the gesture of children in reciting vowel

Teaching/Learning Procedure

Period One

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed

<p>Story telling Teacher introduces the lesson by telling the story of “Hlay Nan Dar Htit” (In the Bigotry Manner).</p> <p>Divide the children into two groups. One is the group of children who think Maung Ni will get the knife back and the other group who thinks that he would not get it back. Continue asking question of why each group thought so and let children answer. Remind children of the existence of leaf in the story an let them compare a leaf and a knife.</p> <table border="1" data-bbox="203 782 646 934"> <thead> <tr> <th></th> <th>Leaf</th> <th>Knife</th> </tr> </thead> <tbody> <tr> <td>Possibility of floating and flowing on water</td> <td></td> <td></td> </tr> <tr> <td>Weight</td> <td></td> <td></td> </tr> </tbody> </table> <p>Let the children tell the comparison and let them tell the reason for the leaf to float and the knife to sink..</p>		Leaf	Knife	Possibility of floating and flowing on water			Weight			10 min.		<table border="1" data-bbox="1047 374 1318 487"> <thead> <tr> <th>Leaf</th> <th>Knife</th> </tr> </thead> <tbody> <tr> <td>Float</td> <td>Sink</td> </tr> <tr> <td>Light</td> <td>Heavy</td> </tr> </tbody> </table>	Leaf	Knife	Float	Sink	Light	Heavy									
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<p>Divide the students into groups. Ask them to make a guess and list the objects that can float and flow on water and those that can sink in water by themselves. The list may include those objects which he/she has seen before.</p> <table border="1" data-bbox="203 1342 678 1537"> <thead> <tr> <th>Sr.</th> <th>Objects that is predicted to float on water</th> <th>Objects that is predicted to sink in water</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.</td> <td>-</td> <td>-</td> </tr> <tr> <td>3.</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>“Are all the objects in the left column to say that they float on water, light in weight?”</p>	Sr.	Objects that is predicted to float on water	Objects that is predicted to sink in water	1.	-	-	2.	-	-	3.	-	-	10 min.		<p>It is the table of prediction so that it includes the word ‘is predicted to’.</p> <table border="1" data-bbox="1047 1229 1414 1560"> <thead> <tr> <th>Sr.</th> <th>Objects that is predicted to float on water</th> <th>Objects that is predicted to sink in water</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>paper</td> <td>stone</td> </tr> <tr> <td>2.</td> <td>wood block</td> <td>iron block</td> </tr> <tr> <td>3.</td> <td>plastic cup</td> <td>aluminum cup</td> </tr> </tbody> </table>	Sr.	Objects that is predicted to float on water	Objects that is predicted to sink in water	1.	paper	stone	2.	wood block	iron block	3.	plastic cup	aluminum cup
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<p>After compiling the list each representative of the groups has to read out the results to the class. Teacher asks them to keep one’s list group-wise.</p>	10 min.		<p>Ask the children to bring the things required for the experiment in the next period.</p>																								

Lay Nan Dar Htit (In The Bigotry Manner)

Once upon a time, there was man named Maung Ni who went down stream along the Ayeyarwaddy from the upper, Mandalay to the lower, Yangon. The fallen leaves

were floating besides the Maung Ni s boat along with the flow of water. When the boat reached at a place, the chopper-knife slipped and fell down from the hand of Maung Ni to the water while he was trying to cut a fish for curry. Since he was not free to pick up the knife, he made a mark on the side of the boat where the knife fell down. In the evening, he went down into the water from the place of where he marked on the side of boat.

Children! Do you think Maung Ni will get back his knife?

Period Two

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed												
Fill each bowl with water in each group. Then let the children go outside the class to collect things.	15 min.	objects outside the classroom such as bowl, bucket, flowers, leaves, plastic cup, iron pieces, stones, straws etc. and objects in the classroom													
<p>When they get back to classroom, ask them put the things they want into the water bowl slowly, one by one. Note down the objects that float on water and those that sink in water and list them.</p> <table border="1"> <thead> <tr> <th>Sr.</th> <th>Objects that float on water</th> <th>Objects that sink in water</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.</td> <td>-</td> <td>-</td> </tr> <tr> <td>3.</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>After that, compare with the table of prediction drawn in the previous period. Then, one representative of each group reads out the above table to the class and the remaining groups supplement when necessary.</p>	Sr.	Objects that float on water	Objects that sink in water	1.	-	-	2.	-	-	3.	-	-	15 min.		Teacher draws a table on the blackboard. Teacher complements what necessary.
Sr.	Objects that float on water	Objects that sink in water													
1.	-	-													
2.	-	-													
3.	-	-													

Period Three & Four

Learning Activities	Duration (Min.)	Teaching/ Learning	Points to be noticed
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		Materials							
<p>Distribute a bowl and a stick to each group. After filling each bowl with water in every group, put leaf, flower and plastic cup into the water. Then, ask children to move them without touching them, and let them experiment themselves.</p> <p>Ask them What did you do to make plastic cup, leaf and flower move without touching it?</p> <p>Have the children answer why the leaf, flower and the plastic cup moved. Teacher tells the children that the flow of water can carry things on water.</p>	10 min.								
<p>Then, teacher asks the children to put stone and metal piece into the water bowl. Let them stir water with stick and see whether they move in the same way as plastic cups did earlier. Teacher then asks, Which objects can easily move along with the flow of water and which cannot according to the table of the previous period?</p> <p>Have the whole class answer.</p> <p>Make a table of prediction on the various kinds of objects whether they move along the flow of water or not, on the blackboard.</p>	15 min.		<table border="1"> <thead> <tr> <th>Objects that can move along with the flow of water easily</th> <th>Objects that cannot move along with the flow of water easily</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Objects that can move along with the flow of water easily	Objects that cannot move along with the flow of water easily				
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<p>Let the children draw a blank table as below, to know which objects to experiment.</p> <table border="1"> <thead> <tr> <th>Objects that moved along with the flow of water easily</th> <th>Objects that did not move along with the flow of water easily</th> <th>Objects that moved with more quantity of water</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Objects that moved along with the flow of water easily	Objects that did not move along with the flow of water easily	Objects that moved with more quantity of water				5 min.		
Objects that moved along with the flow of water easily	Objects that did not move along with the flow of water easily	Objects that moved with more quantity of water							
<p>After that, have the children go outside the classroom to make an experiment.</p> <p>Hold a slat of giant bamboo or plastic</p>	10 min.	Plastic sheet or linoleum or the slat of giant	Teacher has to tell the procedure in advance. Care should be taken not to be harmful with the pieces						

<p>sheet or linoleum in a slightly sloped position and pour little water continuously.</p> <p>After the children have seen the water flow from the high to the low, each child from one group has to put each kind of object into the flowing water, one by one.</p> <p>When the object does not move easily, let more water pour from the top to increase the force of flowing water.</p> <p>Have them note the objects that float and travel on water and those do not float and travel on water.</p> <p>Let the children compare their own results with the predicted chart on the blackboard.</p>		<p>bamboo, Available objects such as flowers, straws, leaves, pieces of paper, plastic cup, wood block, stone, gravel, pieces of iron, chalk etc.</p>	<p>of iron. The plastic sheet is so soft that it is not easy to use in experiment. It is suitable to use a slat of giant bamboo or trough. Do not raise it too much high. It is necessary for teacher to test in advance before doing with children. If there is a gutter at school, it is possible to experiment there.</p>
<p>Children present the results of the experiment to the whole class.</p> <p>Ask children What is the reason of why some objects can move along with water easily and some cannot easily?</p> <p>Let the children respond as they like, and after that teacher explains the principle.</p>	<p>10 min.</p>		
<p>As a summary, Water flows from the high to the low.</p> <p>Objects that float on water move along with the flow of water easily.</p> <p>Objects that sink in water do not move along with the flow of water easily. But it is possible to move easily in case of forceful current of water.</p> <p>Therefore, ask the children, What kind of work does the man do by means of applying the force of water flow based on the mobility of objects by the force of water or movement of water.</p> <p>Ask them whether children have seen such an example in river, lake or the sea? Let children tell their experience of seeing plastic bag, bottles on water and ask them how they had reached</p>			<p>Teacher gives guidance for the children to be able to see those points.</p>

them there. And how about pebbles? Where are they from?			
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Period Five

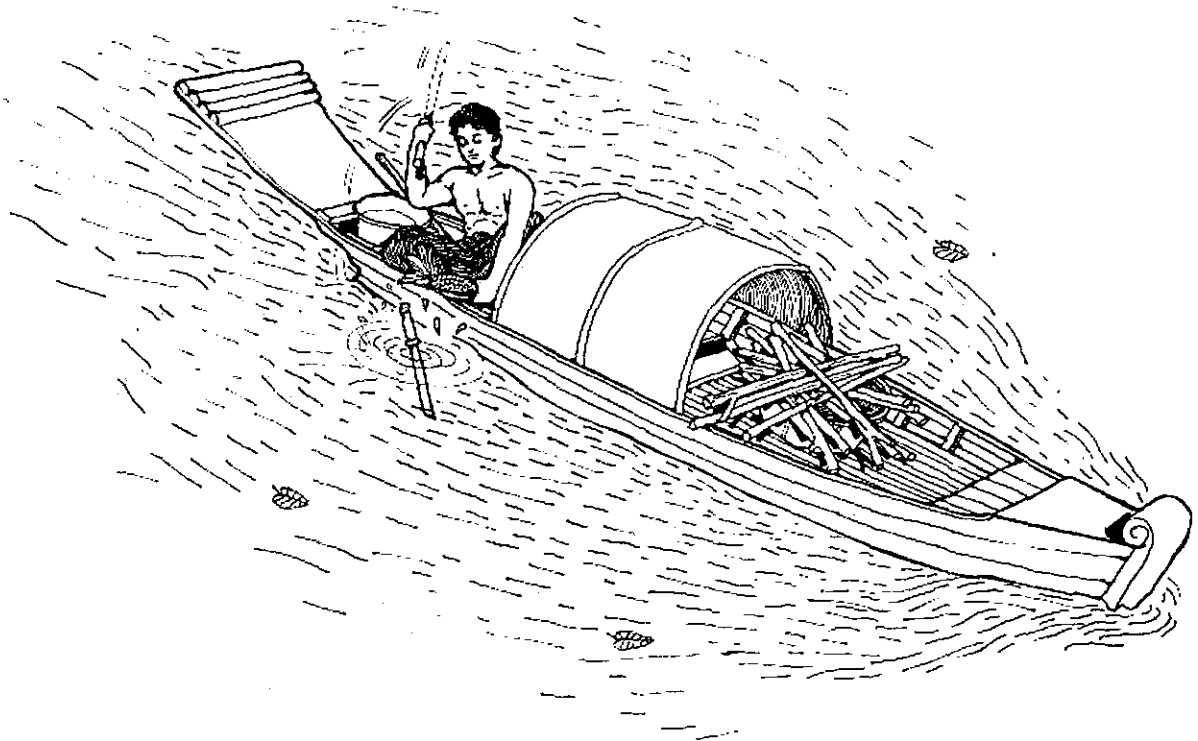
Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Take the children to the gutter in which water is flowing or stream inside the school compound or outside school and let them observe carefully. Then, tell children, Let s think to solve a problem and draw a picture on the ground.</p> <p>Let say, there is a big creek with flowing water here. A flag post is set up in the middle of the creek and let a man at 100 ft distance from the upper part the creek and another man at equal distance from the lower part of the creek swim and take the flag post at the same time.</p> <p>Who will get the flag post first? Why? Let the children think and answer. Then, continue to ask each child, If you were in this situation, where would you take the place of upper creek or lower creek? Why?</p> <p>After that, conclude the lesson by singing the following rhyme.</p> <p>Let s play the game of rowing boat <i>Come my friends!</i> <i>Let s play the game of rowing boat</i> <i>In the stream of water</i> <i>Let s row the boat</i> <i>(Yee Lay Lay . Yee Lay Lay..)²</i> <i>Let s row the boat in the water flowing stream</i> <i>Row Row the boat</i> <i>Will down the stream</i> <i>Row! Row! Row! Row!</i> <i>Will down the stream</i> <i>(Yee Lay Lay . Yee Lay Lay)</i> <i>In the water flowing stream</i> <i>Let s row the boat.</i></p>	30 min.		<p>In case of no gutter near school, tell the problem by drawing a picture on the blackboard in classroom.</p> <p>It is possible to use water flowing creek instead of river.</p> <p><u>Remark: Outline is drawn for the teacher.</u></p> <p>Organize the children who will take the place of upper creek into one group and the other children who want lower creek into another one. Only after that, ask each group why respectively.</p> <p>While singing rhyme, do the action of rowing. Teacher has to demonstrate and sing with stress and intonation.</p>

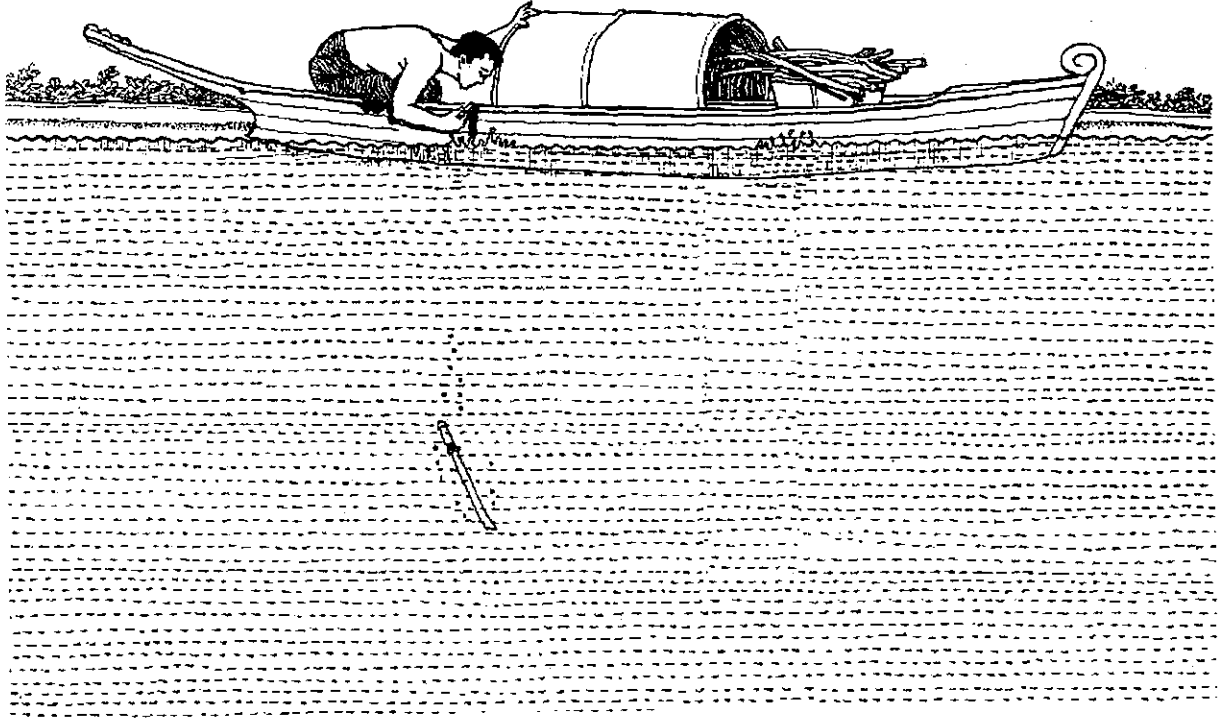
Assessment

1. What will you do to know if a cork floats on the water or not? What will you do to know if a cork floats on the cooking oil?
2. Tell what fruits among the described fruits (E.g. Regional products such as banana, tomato, ladyfingers, etc.) float on water or sink in water, or are easy to carry away or not. In case of getting exact answer, what will you do?
3. Which one will easily be carried away along with the current of water, light object or heavy one? Why?
4. Which one will be easy to row, rowing along the current or against the current? Why?

Reference

A paper boat is longer to float on water than a sheet of paper. It can be found that aluminum pot, aluminum cup, metal pot, metal cup, iron pot, and earthen pot can float on water when they are put onto the water. Similarly, large ships that are structured with iron float on water though pieces of iron easily sink in water when it is put onto the water. Air occupy inside those things that why they can float on water. Only when water takes up the place of air, they sink into water.





Topic 7: Air Present in Our Environment

Key Concept	Air is present in our environment.
Learning Objectives	
General Objectives	To know the places where air is present and some properties of air
Specific Objectives	Children are able <ol style="list-style-type: none"> (1) To describe that animals have to breathe air for living (2) To show the presence of air around us by practical doing (3) To know and tell that air is present in the hole under the ground (4) To tell that some matters can be shaken or moved by wind
Activities Involved	<ul style="list-style-type: none"> - story telling - practical doing - observation - reciting poem - group discussion
Teaching/Learning Materials	- plastic bags, balloons, soap, juice, water, bowl, straw
Teaching Periods	6 periods (180 minutes)

Lesson Planner

	<u>Period One</u>	<u>Period Two</u>	<u>Period Three</u>
Specific Objectives	Be able to describe that animals have to breathe air for living	Be able to show the presence of air around us by practical doing	Be able to show the presence of air around us by practical doing
Introduction (Evocation)	Story telling	Asking the condition of bag after giving plastic bags	Asking the places where air can exist
Main activities to be carried out	Practical doing by the whole class 1. Doing and asking how the feeling is when the nostrils are closed. 2. Doing breathing exercises	Practical doing by the whole class 1. Blowing air into the plastic bag in order to make it distended. 2. Take out the air around the environment 3. Deflating the plastic bag	Practical doing Blowing into the water, soap water, and juice with a straw
Reinforcement of the lesson (Conclusion)	Tell that animals inhale air to live	Explain that air is a gas and that it exists around one' environment.	It is possible for the aquatic animals due to the oxygen saturated in water.

Assessment points	Observation on the children if they all participate or not.
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	Period Four	Period Five
Specific Objectives	Be able to know and tell that air is present in the hole under the ground	Be able to tell that some matters can be shaken or moved by wind
Introduction (Evocation)	Asking the places where air can exist	Taking outside the classroom and observing on the movement of leaves in the environment
Main activities to be carried out	Practical doing Practical doing to proof the existence of air in the empty cap	Observation on moving leaves and plastic bags being blown by wind Asking the reason of happening like that
Reinforcement of the lesson (Conclusion)	Explanation on the possibility for the animals inhabiting in the hole under the ground to survive because of the existence of air (E.g. Snake, frog, rat)	Explanation on wind and consequences of wind blowing Reciting poem
Assessment points	Observation on the children if they all participate or not.	

Before Getting Started

Background Information for Teachers

In the chapter of "Living things", it has already been taught that air is the major for the living things to survive. However, it is impossible to see and hold the air. Experiments should be carried out in order for the children to see obviously and accept the idea of presence of air around us. The existence of air can be shown through using playable things of children (e.g. balloon, ball). Air exists in the empty cup as well as in the holes under the ground. Therefore, the creatures that inhabit inside the hole under the ground can survive. It also helps the tree for growing. Air moves from one place to another. This moving air is wind. Wind can make the materials shake or move. (E.g. Leaves are shaking; pieces of cotton are moving)

Therefore, flowing water has force as well as wind has force. If the force is weak, it can make light objects move. Even big objects can be moved by the strong wind. It is necessary to know differently the air and wind.

Teaching/Learning Procedure

Period One

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Introduction Teacher will introduce the lesson by telling a story related with air. Teacher asks children how they will feel and what will happen if they close their nose with an index finger and thumb.</p>	10 min.		Let the children know by listening to the story that it cannot survive without air.
<p>Practical doing (the whole class) Teacher and children will do together the breathing exercise. Teacher explains that breathing exercise aided health and asks what we breathe. Tell them that air mixed with smoke from tobacco and car is not clean and it can injure the health.</p>	5 min.		All children will do practically. Let all children participate. Make children know that man and animals always breathe air.
<p>Practical doing (the whole class) Teacher and children place an index finger in front of the nose and breathe out. Let all children close their lips, bulge their cheeks, and let them press the bulged cheeks with an index finger and thumb. Then, ask them to place their palms before the mouth. Tell them what comes out.</p>	5 min.		By doing practically, all children will know how to breathe in and breathe out. Let them know what comes out from the mouth (air).
<p>In this way, have the children know practically that human breathe air through nose. What do other animals breathe for survival? How do they breathe? Tell as far as you know. Let them tell two kinds each by each group. Teacher supplements if necessary. Finally, teacher tells them that animals breathe air for living.</p>	10 min.		Give the children time to think. (Animals live on land – breathe through noses Fish – breathe with gills Earthworm – breathe through skin)

<p>Ask the children to release the distended ball or plastic bag by placing near by the cheeks or putting the palm before it. Ask them what kind of feeling they got.</p>			
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Story

Once upon a time, there was a girl named Phyu Phway. She was a second grade student like you. Father, mother and Phyu Phway lived together. She was the one and only daughter. She loved father and mother very much. Since she had no elder brother, sister and younger brother, sister to love her parents reared for her a little dog. The little dog was given the name Baw Phyu.

Phyu Phway loved Baw Phyu very much. She did not even let her friends meet Baw Phyu when they came. She put Baw Phyu upstairs when her friends came and talked and played with her friends.

One day when Phyu Phway took time in bathing, she caught cold and ill. She could not go to school, as she was ill. In the evening, her friends came to ask and gave her the lesson books that were taught at school to copy.

Since Phyu Phway was ill, she was together with a little dog Baw Phyu inside the bedroom. When she heard the voices of her friends downstairs, she carried Baw Phyu, put inside the clothes-closet, covered with her clothes, and closed the closet door. She was afraid that her friends might find her little dog. She would like to love her little dog alone. She did not like her friends love and hold Baw Phyu. Soon after she closed the closet door, her friends came into the room. When they found Phyu Phway they asked, 'Are you feeling well, Can you go to school tomorrow, what lessons are taught today at school' and ate the snacks her mother fed and went back after some time.

While she was talking with her friends, Phyu Phway heard the sound of scratches inside the closet. However, she was afraid that her friends might hear she talked a lot. When her friends went back she hurried to the closet, opened and took Baw Phyu.

Sons and daughters, what do you think Baw Phyu would happen when Phyu Phway opened the closet door. Tell me.

Period Two

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Doing practical (the whole class) Give plastic bags and ask the condition of bags. Is it flattened or is it bulged. Let them blow inside the bag and ask why it is getting bulged.</p>	10 min.	Plastic bags or flattened balloons	Let the children know that bags become bulged because of air coming in.

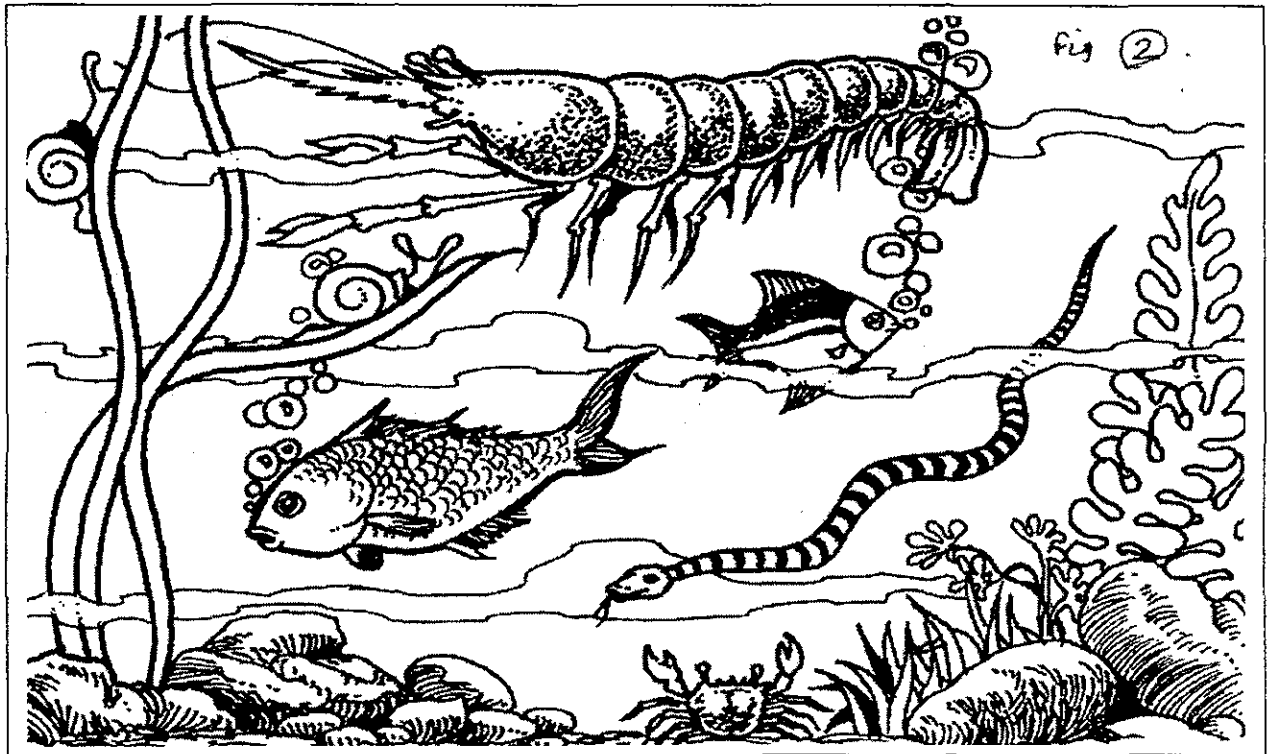
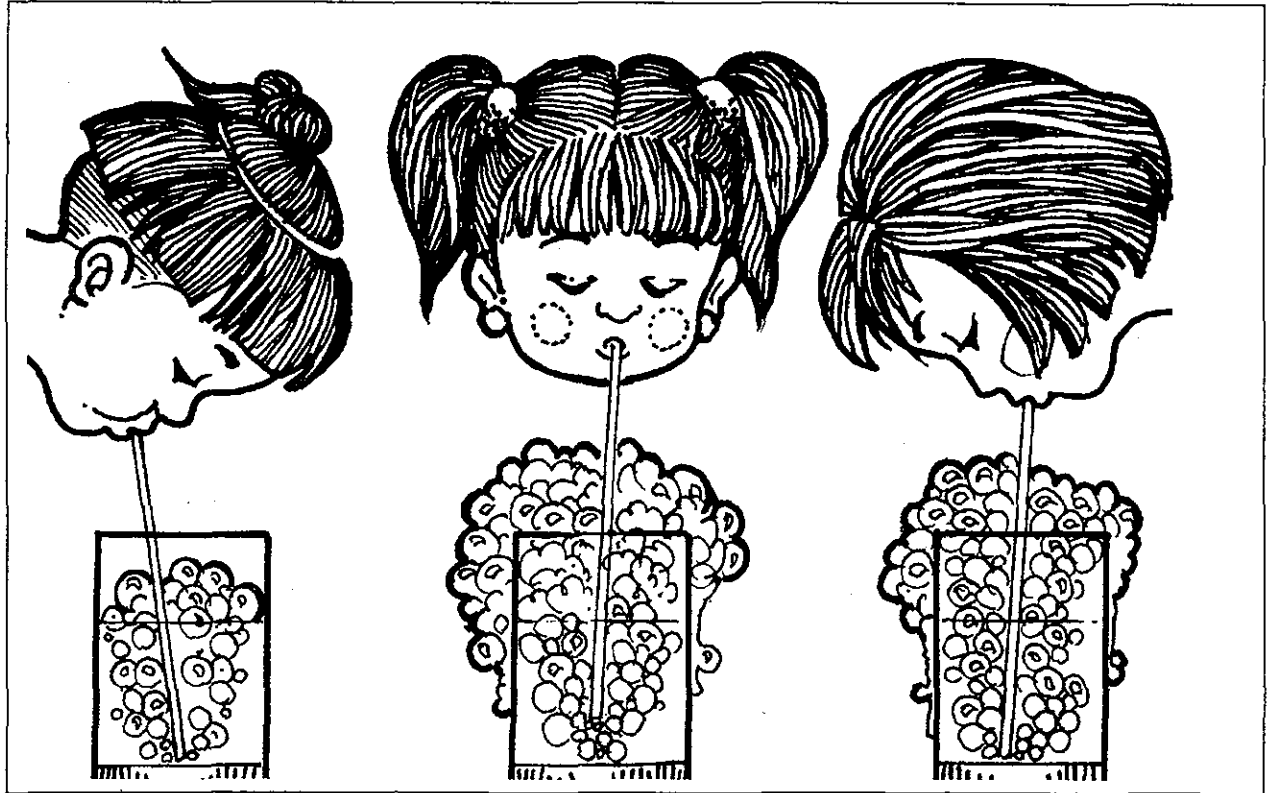
<p>Group work By giving plastic bag let them fetch the air as much as they can from environment and tie the tip with a string. Ask them to put the plastic bags on the desk of every group. Teacher goes round and asks the following questions. “What happens to the bag?” “Why did it happen like that? Due to what inside it?” “From where is the air taken in?” Have the children discuss within the group. Then, ask them to answer by turns.</p>	10 min.		
<p>After answering by all children, let them unfasten the string and release the air inside gradually. “What happens to the plastic bag?” “To where does the air inside reach?” “Do you see the air?” “ Try to hold it!” “Can you hold it?” Ask them to think where else air can be present at home as homework.</p>	10 min.		

Period Three

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Ask them about the homework given yesterday. “Where else can air exist?” “What experiment has to be done to know it?” Distribute every group materials for experiment. Give three cups filling with water, soap water, and juice to each group. After that, let them blow air into the cup with straws in turns. “What will happen in cups?” “Why it happens like this?” Teacher explains that the reason of bubbling in cups is due to the formation of air bubbles.</p>	30 min.	glass or plastic cups, water , soap water, juice, straw	<p>It is also possible to ask the children to bring cups from their home.</p> <p>Teacher has to supplement if correct answers come out from the children.</p>

Then, air (Oxygen) is saturated in water. Therefore, aquatic animals can survive in water. After that, give homework to think where else animals inhabit.

Write "Oxygen Gas" on the blackboard.



Period Four

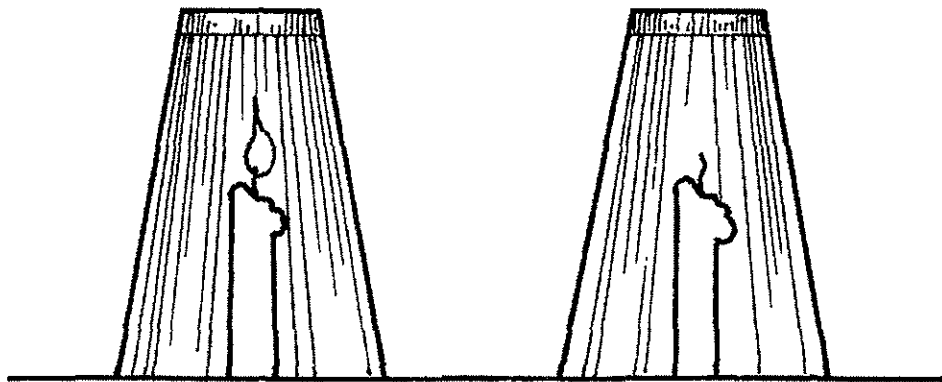
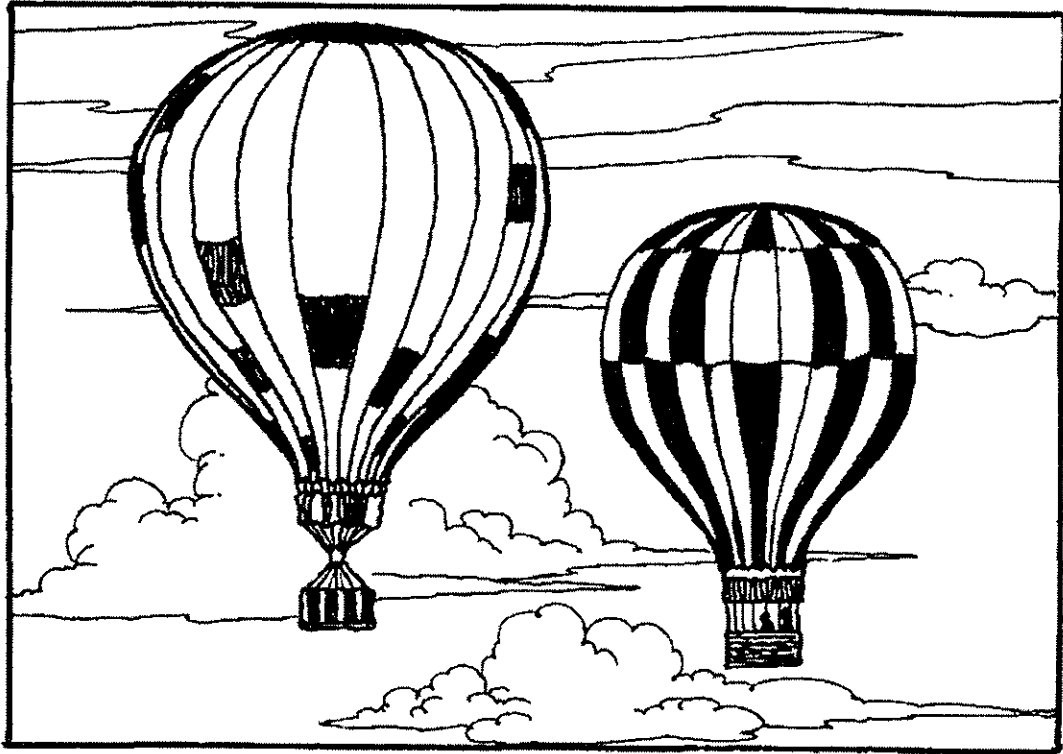
Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Ask the question regarding the issues teacher asked them to think at home. Write the answers of the children on the blackboard.</p> <p>Teacher distributes materials to carry out an experiment and tells the procedure. As shown in figure, insert the cut papers into an empty cup with hand. Then, immerse the cup in upside down position into the water filled in the bowl.</p> <p>“Will the paper inside the cup get wet or not?”</p> <p>Divide the groups who guess it will get wet and the other who guess it will not get wet. Let everyone touch the paper.</p> <p>After the experiment, let the whole class tell the answer.</p> <p>Ask, “Why does not the paper get wet?”</p> <p>“What will happen if the cup is changed to slightly oblique position?”</p> <p>Then, change the cup into oblique position. Let the children tell their guesses.</p> <p>Teacher explains that paper does not get wet because of the presence of air inside the cup; when the cup is changed to oblique position, water takes the place of air.</p>	15 min.	Glass, cut papers	Glass or cup has to be sunk under the-water in the bowl.
<p>At the beginning of this period, have the children read again the answers of the children. Teacher supplements in case of not containing the answer, “some animals can live in the hole”.</p>	5 min.		
<p>Ask the following questions.</p> <p>Do you think the animals that live in the hole (e.g. snake, rat, earth worm) breathe?</p> <p>If they breathe, what will they breathe?</p> <p>“What do you think is in the hole?”</p> <p>It has been found that air is present</p>	10 min.		

in the empty cup by means of the experiment. Teacher explains that air is also present in the hole and topsoil so that animals can live there.			
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Period Five

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Observation by going outside the classroom</p> <p>Teacher tells the children, “Let’s go outside the class and observe the blowing of the wind.”</p> <p>Take them into the school compound and ask to observe the condition of leaves. If the leaves are swaying, ask them why they are swaying. If the leaves are still at that time, ask if they have ever seen leaves swaying and why they are swaying. “Children, raise the plastic bag you brought”</p> <p>“What is happening to the plastic bags? Why?”</p>	10 min.	Plastic bags	<p>The leaves on the big trees sway more strongly than those on the small.</p> <p>Ask them to bring plastic bag in advance. It can be done individually or by group.</p>
<p>Teacher explains that air is gas so that it can move freely from one place to another. Such moving air is called wind. The wind has force so that things (e.g. leaf, hair, cloth, balloon etc.) become shaken. In other words, it can also be said that things can be moved by wind.</p>	5 min.		<p>Wind can be shown by means of soaring balloon.</p>
<p>After that, let them come back into the class and think by group about the things that can be shaken or moved by wind. Ask the children to tell their thoughts individually by group.</p>	10 min.		

<p>After that, have them recite the poem collectively.</p> <p>Reciting poem</p> <p><i>Our friend</i></p> <p><i>Tell me if you know</i> <i>Our friend who is invisible</i> <i>It is Air, Air, Air</i> <i>It has no color</i> <i>Tell me if you know</i> <i>Our friend who has no fragrance</i> <i>It is Air, Air, Air</i> <i>It has no odor</i> <i>Tell me if you know</i> <i>Our friend who is the most important</i> <i>It is Air, Air, Air</i> <i>It is for breathing</i> <i>Only when breathing fresh air</i> <i>All will be very healthy</i> <i>Air is not scanty on our world</i> <i>Keep it free from pollution</i> <i>To be fresh forever.</i></p>	<p>5 min.</p>		
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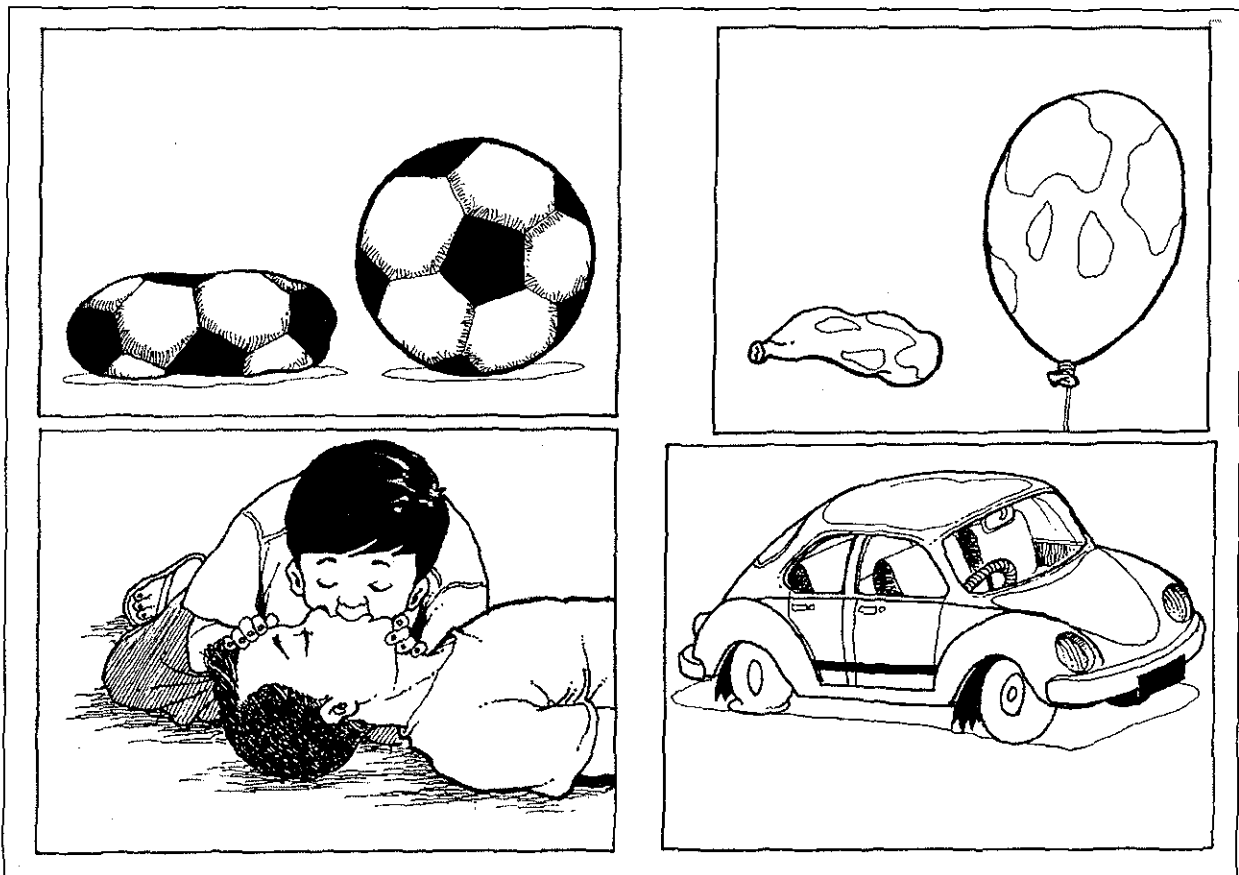
Assessment

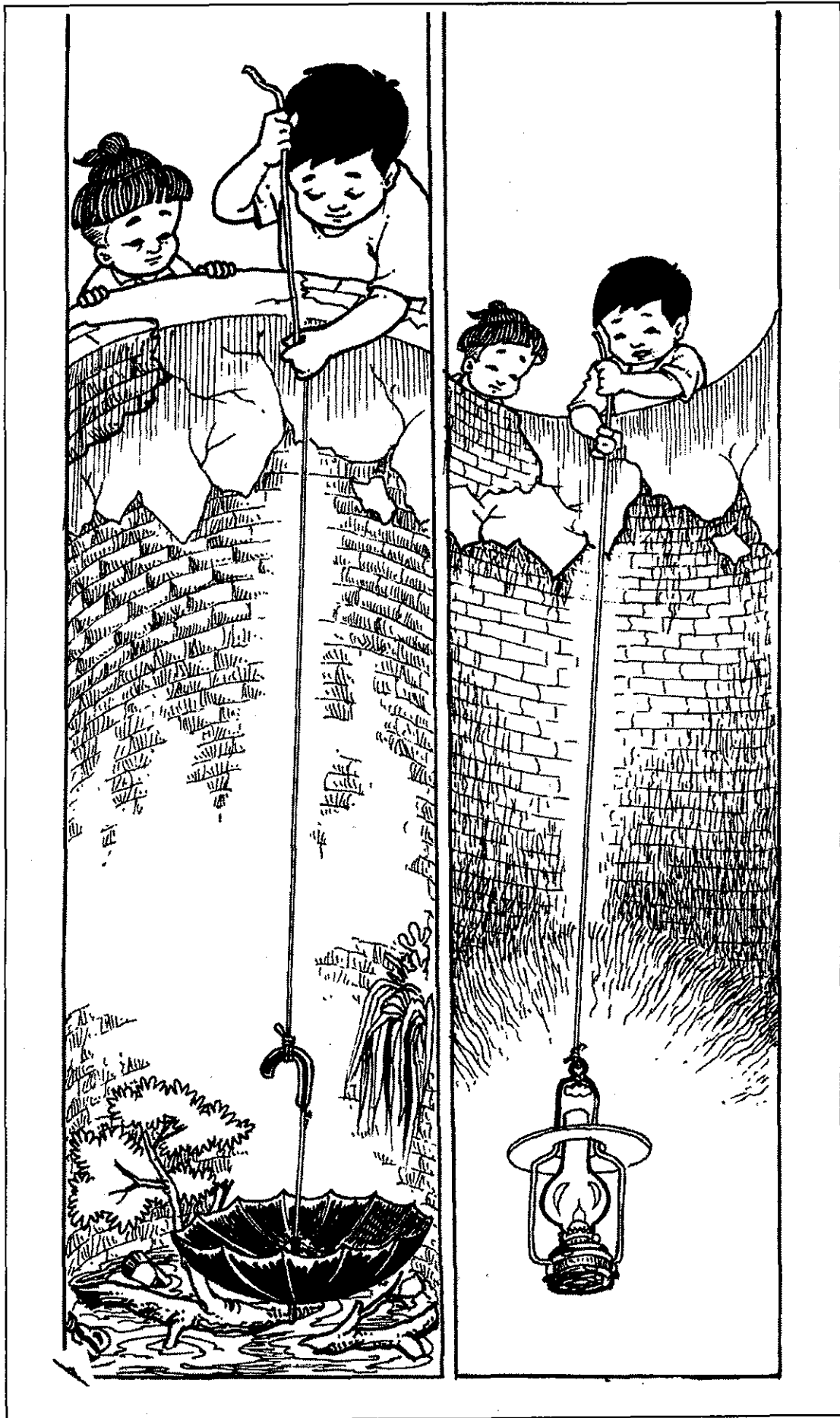
Period Six

(A) Asking questions related to the above lessons.

- (a) What must be present in the environment for us to breathe?
- (b) Why is a flattened balloon distended when blown with a mouth?
- (c) Why are motorcar wheels and bicycle wheels flattened when they puncture?
- (d) What is inside an empty bottle?
- (e) Describe five commodities made by using air.

(B) What would happen if there were no air around us? Why?




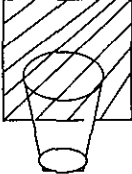

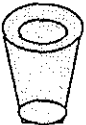
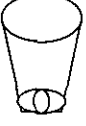




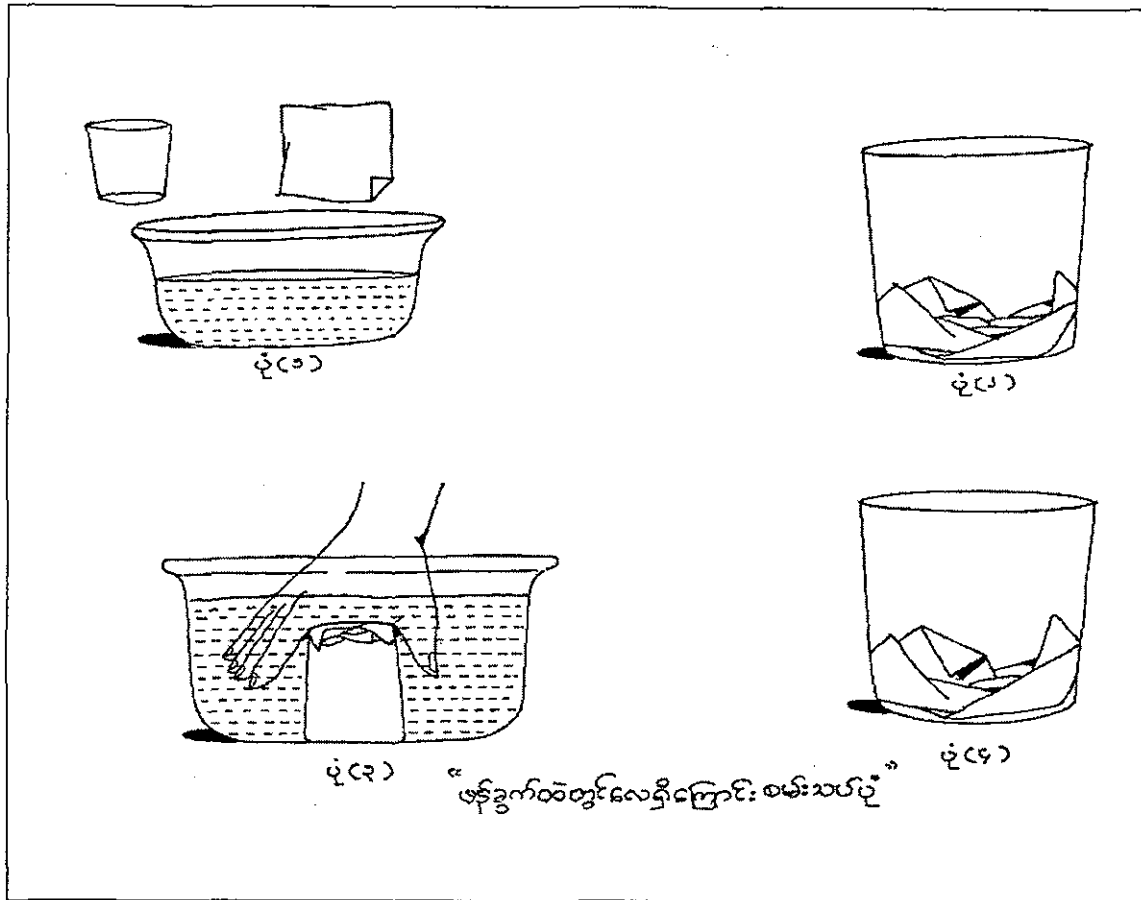
(C) Where do you find air?

Name

* Tick (✓) if there is air inside the cup of picture and tick (x) if there is no air.

- (1) ()  an empty glass
- (2) ()  a glass, upside down
- (3) ()  a glass placed sideways
- (4) ()  a glass covered with a glass plate
- (5) ()  a glass half-filled with water
- (6) ()  a glass filled to the full with water
- (7) ()  a glass with a hole at its bottom

Date



Reference

Air is the gas state among three states of matter, solid, liquid and gas. In other word, air is the gas. More than one kind of gases are contained in air. Nitrogen is 80%; Oxygen is 19%; Argon is 1%. Little amount of Carbon dioxide is also contained in air. Oxygen is a gas that animals breathe in for their survival. It is impossible to be alive if lacking Oxygen.

There is no air in water. Some Oxygen is saturated in water. Therefore, aqueous animals can live in water. Man breathes through nostrils and Oxygen pass through lungs. When water enters the mouth of fishes, Oxygen saturated in water is absorbed by the capillaries of the gills and gas exchange is done simultaneously so as to release Carbon dioxide along with the water. In this way, they make respiration. Man does not have gills so that it is impossible to live in water.

Applying fan in water in fishery farms is to make air pass through water continuously. It is not possible to put large quantities of fishes in small aquarium because the fishes are likely to die. Therefore, it has to manage for air to pass through water with two small soft pipes. Although there is air in the hole under the ground, Oxygen is absent in very deep part. Therefore, man who goes down into the well cannot climb up through suffering from unconsciousness if the well is very deep. In this case, it has to light a candle and put down into the well first before going down into this well. If the flame of candle becomes extinguished, Oxygen is lacking there. In this case, it is not suitable to go down into the well because of the danger. Oxygen supports the burning.

Air pollution can occur due to the smokes coming out from the factory in industrial zone.
(Remarks: It is not for the children to copy or learn by heart. It is for the teacher to know.)

Topic 8: Three States of Matters (Solid, Liquid and Gas)

Key Concept	Matters exist in three states of solid, liquid and gas.
Learning Objectives General Objectives	To be able to categorize correctly the matters as solid, liquid, and gas groups
Specific Objectives	Children are able (1) to understand simply characteristic of matters (2) to know and tell the three states of matters (3) to categorize the matters into the groups of solid, liquid and gas practically
Activities Involved	<ul style="list-style-type: none">- Group discussion- Observation- Games
Teaching/Learning Materials	Ice block, soap, ball pen, eraser, book, ruler, desk, chair, chalk, bag, umbrella, Tiffin box, basket, clock, oil, palm oil, coffee, orange juice, inhaler, joss stick, mosquito coil, candle, ball, and illustration of boiling kettle from which water vapor is coming out, firewood fire from which smoke is coming out, chimney of a mill from which smoke is coming out
Teaching periods	4 periods (120 minutes)

Before Getting Started

Background Information for Teachers	Some properties of matters have already been learnt in KG and Grade One. Some properties of liquid and air (gas) have previously learnt in Grade Two. Therefore, it has to give the knowledge on the classification of three states, solid, liquid and gas. In this case, it is necessary to identify which is solid, liquid or gas among the things we use everyday. Solid and liquid are easy to know but it is difficult to see the gas so that teacher has to tell them that smoke and vapor such as smokes coming out from chimney, smoke from firing firewood are smokes but not gas. It will be learnt the properties of solid, liquid and gas in next grades. However, teacher has to know the basic properties or definitions.
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<p>Then, light the joss stick. Ask them to catch the smokes coming out. Have them observe in which way the smoke spread out.</p> <ul style="list-style-type: none"> - "Have you ever seen the smoke coming out?" - "Tell as much as you know." - "This group is called the group of gas state." - "Think about other materials that cannot hold by hands like gas." 			
<p>Tell them, 'let's do practical on liquid'</p> <p>Pour the water from the drinking bottle into a glass.</p> <p>Ask the color and utilization of it.</p> <p>Ask the other liquids like this water.</p> <ul style="list-style-type: none"> - "What do you use when you want to drink the liquids?" - "Is it possible to grasp the liquids with fingers or hands?" <p>Ask them to tell the other liquids beside the drinkable liquids as much as they know.</p> <p>Tell that this group is called the group of liquid state.</p>	10 min.		<p>Children must know the liquid already.</p> <p>Write all the names of liquids the children tell.</p> <p>By putting the water in a bowl, it can be done practically.</p>
<p>Children, think this time the matters that can be grasped with hands. Ask them to grasp.</p> <ul style="list-style-type: none"> - "Can you tell the shape of these matters to the nearest?" <p>The matters that have shape and can be grasped are the solid group.</p>	8 min.		<p>Write all responses of the children on the blackboard. It is also fine to raise the things.</p>
<p>Teacher tells the following;</p> <p>Therefore, the matters you know are categorized as three groups of solid, liquid, and gas.</p> <p>Ask every group of the children to collect five kinds of solids, five kinds of liquid, and three kinds of things that produce gas state.</p>	2 min.		<p>The three states can be shown by lighting a candle (or) with an ice.</p>

Period Two

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
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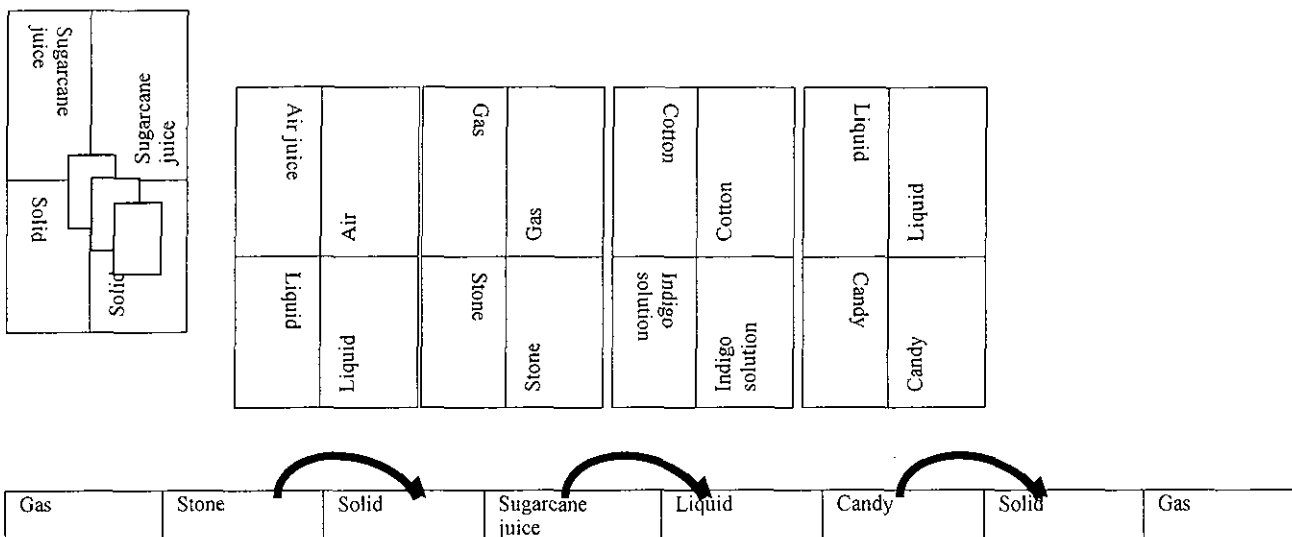
Have them put the things they are asked to bring yesterday separately in accordance with the group of state of matter. Have the children present the classified things to the class by group.	20 min.	Book, pencil, ruler, pencil box, umbrellas, bag, coffee, milk, orange, oil, coconut oil, mosquito coil, joss stick, distended balloon	It is to be cautious for the children not to touch the mosquito coils and joss sticks while observing.
Teacher writes an example of thing that can exist in three states on the blackboard. Sugar- Solid state Sugar juice- liquid state Vapor coming out from the boiling sugar juice- gas state Have each group think the things that can be seen in three states and ask one representative from every group to write on the blackboard. Then, teacher leads the whole class to read.	10 min.		Give time to think. If necessary, teacher has to supplement. e.g. Jaggery, soap, ice

Period Three

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
Have the children go outside the classroom and look for the things of solid, liquid and gas producing materials.	10 min.	Stone, leaf, flower, wooden block, drinking water bottle, water, orange	Have the children look for and bring the things freely and happily.
After arriving back at classroom, have them classify these materials they noted* or brought into three groups. Ask them to show the class.	5 min.		* Things unable to be brought such as smoke from the smokestack of rice mill, water in the well etc.
Let the children play the game of connecting words. Teacher explains how to play with example.	15 min.		

Preparation of the game

Teacher writes the couples of words as he/she likes as shown below. (If pictures are illustrated along with the words, it is even better for the children to recognize the objects clearly.) The method of playing game is to connect the respective group correctly. Distribute five each to each child. One has to place first on the desk. Next one has to connect correctly. In this way, the child who can use up all pieces of paper will win the game. In this way, game can restart after mixing the pieces of paper.



(Or)

Have one child from a group write what he/she likes on the blackboard. E.g. If he writes "Stone", the next child from another group has to write "Solid" beside the "Stone". If it is correct, he will get one score. And then, this child has to write what he/she wants below it. E.g. "Liquid" Another one from next group has to write a kind of liquid as he/she likes. In this way, it has to write quickly. It is possible for all children to write if capable of writing quickly. The skill of children can be tested by playing in this way.

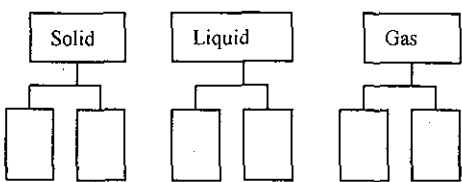
For example:

Stone - Solid

Liquid - Vinegar

Period Four

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
After giving each child the picture card or card on which name of matter is written, let the groups think, come out in front of the class and hang on the blackboard (OR) teacher hangs the following chart on the blackboard and lets the children write the respective	15 min.		Tell the children that it is not possible to shunt. Give time to think.

name.			
<div style="text-align: center;">  </div> <p>Ask children to guess and tell one or two different facts of solid, liquid and gas. Have them tell by consulting among themselves. Teacher has to supplement if necessary.</p> <p>Solid - It can be grasped with hands easily. It has a definite shape. It can be cut and crushed.</p> <p>Liquid - It cannot be grasped with hands. It has no definite shape. The shape changes according to container. It can flow. It cannot be cut or crushed.</p> <p>Gas – It cannot be grasped with hands. It has no definite shape. It can spread to different places. It cannot be cut or crushed.</p> <p>Conclude by saying that the matters around one's environment exist in the three states such as solid, liquid and gas.</p>	15 min.		<p>Give time to think. Teacher has to write on the blackboard.</p>

Assessment

- (1) Describe three kinds of solid.
- (2) Describe three kinds of liquid.
- (3) In what kind of state does air contain?
- (4) Choose the correct one in the following.
 - (a) Jaggery is (liquid, gas, solid)
 - (b) Vinegar is (gas, liquid, solid)
 - (c) Vapor coming out from the boiling water is (solid, liquid, gas)
 - (d) A kind of matter included in the group of liquid is (candy, coconut juice, and book).

Reference

Solid has definite shape, can be hold and does not flow. Liquid can flow, has no definite shape and change its shape in accordance with the container in which it is put. It cannot be grasped. Gas cannot also be grasped and can spread everywhere. Real gas cannot be seen. Oxygen that animal breathes in for their survival is a kind of gas. There are many kinds of gas like Oxygen around us. This issue has been briefly explained in the chapter of Air (Gas).

Topic 9: Emergence of Heat from Friction

Key Concept	Heat is emerged from friction of two objects.
Learning Objectives	
General Objectives	To know that heat is released from friction of two objects
Specific Objectives	Children are able to have the heat emerged through friction of the two objects.
Activities Involved	<ul style="list-style-type: none">- Story telling- Reciprocal discussion with the teacher- Having children to think themselves- Having to do practical
Teaching/Learning Materials	- Bamboo shafts, wooden rods, stones, stone slab, thanakhar block, water squirt
Teaching Periods	2 periods (60 minutes)

Before Getting Started

Background Information for Teachers

When the cars and trains stop suddenly while moving with speed, sparks will occur due to the forceful friction between the wheel and the road. Friction is a force that acts against the movement of surfaces that are in contact. Friction changes kinetic energy into heat energy as it resists motion. Some of its effects are unwanted and others are useful. One example is making fire. Matches use friction. When the head of a match is rubbed against the surface on the side of a matchbox, friction makes the temperature rise. The heat causes chemicals in the match head and the surface to react together. As the temperature increases further, the match head burns in air and finally ignites the wood. When we walk forwards by pushing backwards with feet, it is friction that makes us possible to walk. It is because without friction, floors, roads and pavements would be too slippery and would be impossible to walk. When an object is on the move, the contacting surface gets friction and microscopic rough points on the surface lock into one another. A film of lubricating oil holds the two surfaces of metal, for example, apart. They slide past each other without making contact. In this way friction is reduced and movement creates far less heat.

Therefore, cars, trains and various kinds of machines use grease to make the movement smooth and to reduce the heat produced from friction. In the factories when the machines are spinning, the heat is emerged and sparks occur so that grease and lubricants have to be used to prevent the breaking out of fire. One of the causes of forest fire is the heat produced from friction.

Lesson Planner

	<u>Period One</u>	<u>Period Two</u>
Specific Objectives	Be able to do in practical the emergence of heat from the friction of objects.	Be able to do in practical the emergence of heat from the friction of two objects.
Introduction (Evocation)	1. Story telling (One picture chart) 2. Teacher tells and discusses.	1. Discussion between the teacher and children
Development (Reflection)	Having to do practical	Having to do practical
Conclusion (Realization)	Let the children tell among themselves	Let the children tell among one another by doing themselves
Assessment points	1. What will happen if the two stones undergo friction for a long time 2. What will happen if the two bamboo shafts are rubbed? 3. What will happen if the bamboos and wooden rods are rubbed for a long time	1. What will happen if the two objects are rubbed 2. Write three methods to release heat from friction 3. Write three objects that can rub to release heat

Teaching/Learning Procedure

Period One

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
Telling a story by showing the picture chart Before telling the story show the picture chart and ask the followings: - What do you think happens in the picture? - What can happen next? After that teacher will tell children a	5 min.	One picture chart	Let the children answer, as they like. Teacher does not have to tell the answer beforehand.

<p>story on how the fire was first found.</p> <p>Story <i>In the stone age, man lived in stone caves. At that time, people did not know bulb, fluorescent light and fire like us.</i> <i>One day, the wind blew with great force in the forest. At that time, the two branches on a tree rubbed each other as the wind blew.</i> <i>The young stone age man saw this. He saw the two branches rubbed each other for long by this means.</i></p> <p>Sons and daughters what do you think will happen if the two branches rubbed each other for long?</p> <p><i>That is right, if it is rubbed like this for long, it will become hot. When it is hot for long, flames develop on the two branches.</i></p> <p>In that case, what was found first? Where did this fire come from?</p>			<p>Let the children think and answer</p> <p>Let the children answer.</p>
<p>Teacher tells and discusses What will happen if the branches are rubbed and caught fire? The answer is that forest fire will break out. These forest fires can be seen frequently and the fire will break out the whole forest. From the forest fire, what will continue to burn? Towns and villages will continue to burn. Children will be asked if they have seen or experienced forest fire. Children will be asked to tell their experiences and feelings.</p>	5 min.		<p>In some regions, one can experience personally. To enable those who have experienced among the children to tell.</p>
<p>Having to do practical Form the children into groups and the groups will be given two bamboo shafts, two wooden rods and two stones. Group 1 and 2 will be asked to rub the two bamboo shafts for about 3 minutes. Let the remaining groups see. After they have rubbed for long, they will be told to hold the bamboo shafts and asked how they feel.</p>	20 min.	Bamboo shafts wooden rods, stone	<p>It is for the children to be able to tell their feelings themselves. To know that it is getting hot.</p>

<p>Group two and three will be given two large stones and asked them to rub. After about three minutes, they will be told to hold the stones and asked how they feel.</p> <p>Group 4 and 5 will be given two wooden rods each and they will be asked to rub like the previous groups. They will be asked how they feel.</p>			To know that heat emerges from the friction of two objects.
<p>Objects will be asked to exchange among groups and let the children rub themselves in groups. Let them hold among themselves and tell.</p>			

Period Two

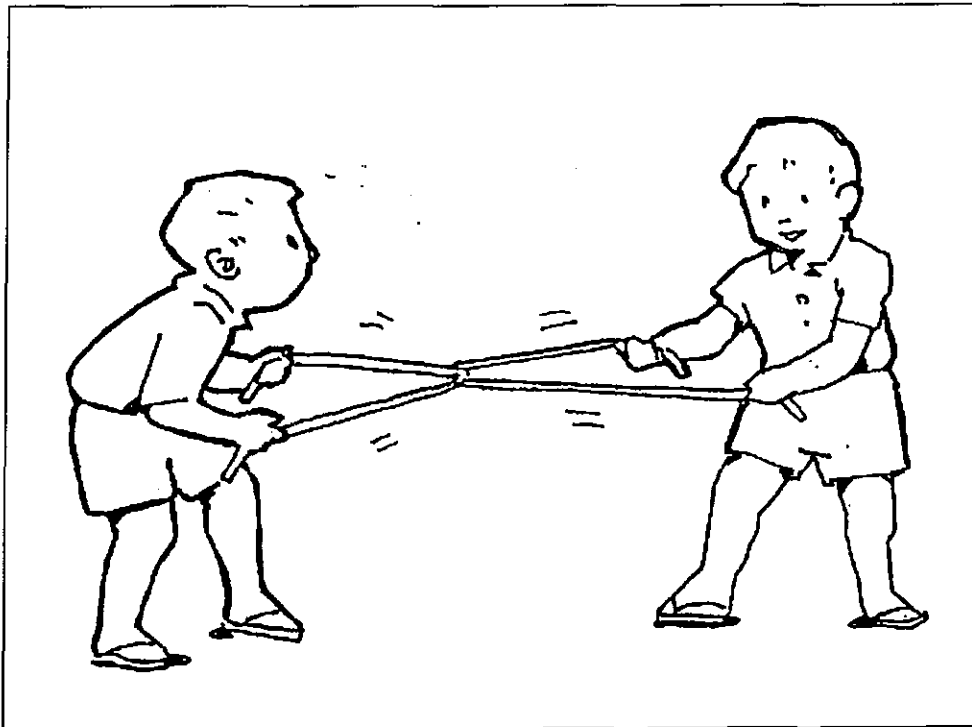
Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>1. The emergence of heat from the first teaching period will be discussed again. Children will be told to discuss in groups and write on the paper what other objects will produce heat from rubbing. What is written from each group will be asked to stand up and read out. Teacher will record on the blackboard.</p>	10 min.		It does not have to write again the same objects.
<p>2. Having to do practical. Form children into groups and give each group two stone slabs and thanakhar block. Let them hold the stone slab and thanakhar block and ask how they feel. Let the children grind the thanakhar block with the stone slab without water for about 3 minutes. Then let them hold the stone slab and thanakhar block and ask how they feel.</p>	15 min.		<p>It has to ask children beforehand the stone slab and thanakhar block.</p> <p>To know that heat is emerged from friction.</p>
<p>Give each group 2 water squirts and ask them to hold. Let them pump the water squirt without water for about 3 minutes. Then they will be told to hold the water squirt and asked how they feel. Let each child do it alternately. Children will be made to know that while heat emerges from the rubbing of similar objects, heat is also emerged from the rubbing of two hard dissimilar objects.</p>	5 min.		

Assessment

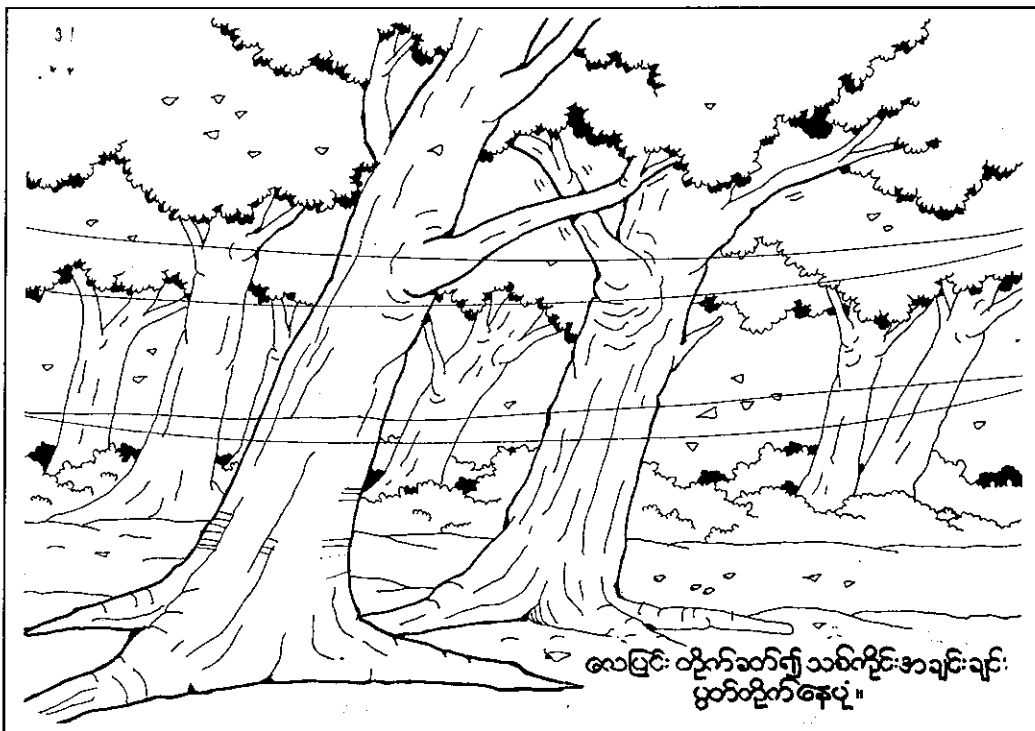
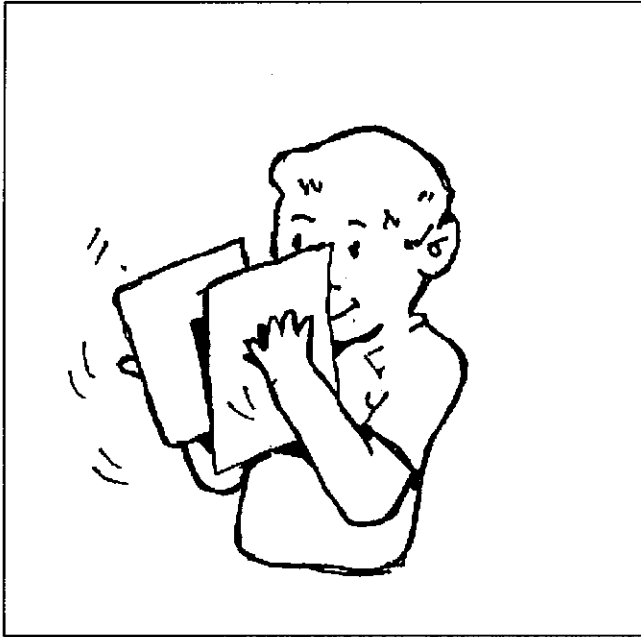
1. What will happen if the two stones are rubbed?
2. What will happen if the two stones are rubbed for a long time?
3. What will happen if the two bamboo shafts are rubbed?
4. What will happen if the two wooden rods are rubbed?
5. What will happen if the two objects are rubbed?
6. Write three methods to produce heat from friction.
7. Write three kinds of objects that can be rubbed to produce heat.

Reference

1. Heat emerges whichever two similar objects are rubbed. When two ropes made of coconut fiber are rubbed for long, heat emerges and the ropes break.



2. Heat also emerges when the two surfaces of the two papers are rubbed.



Topic 10: Possible Feeling Caused by Sounds

Key Concept	It is possible to have different feeling due to the sounds around us.
Learning Objectives General Objectives	Be able to differentiate the feelings caused by the sound heard in one s environment
Specific Objectives	Children are able - to differentiate the possible feelings caused by the sounds heard in one s environment - to differentiate the feelings that make the sound one heard come out
Activities Involved	<ul style="list-style-type: none">- whole class discussion- group activity- reciting a poem- singing a song- playing by group- investigation- playing parcel game
Teaching/Learning Materials	Relia such as plastic bag, balloon, various sizes of bamboo slats, various musical instruments, small illustration cards, bottles, cassette, radio etc.
Teaching Periods	5 periods (150 min.)

Before Getting Started

Background Information for Teachers

In the Grade One, it has been learned that there are various sounds around us. These various sounds can cause the different feelings of the man. It makes to feel enraptured by hearing a bird singing when getting up from bed in the morning. Similarly, the sounds of musical instruments can make the humans happy, active and highly pleased but the feeling of sadness can also appear sometimes. Some natural sounds like thunder can cause the feeling of fear. When hearing the songs like marching songs, man becomes active. Therefore, various sounds such as musical sound, natural sound, sound made by animals cause of the different feelings of man.

Moreover, by listening to the sounds of man and animals, it is possible to know roughly how they are feeling. E.g. it is possible to differentiate the feelings such as anger, pain etc. Feelings can be caused by different sounds as well as feelings can make the different sounds come out. The capability of knowing the feelings

is very supportive for the relationships among people, among animals, and between man and animal.

Lesson Planner

	<u>Period One</u>	<u>Period Two</u>	<u>Period Three</u>
Specific Objectives	to differentiate the possible feelings caused by the sounds heard in one s environment	to differentiate the possible feelings caused by the sounds heard in one s environment	to differentiate the feelings that make the sound one heard come out
Introduction (Evocation)	Mutual greeting of teacher and students	Listening to the cassette or making sounds with sound producing materials	Practical doing by the teacher
Development (Reflection)	Let them tell their feeling of the sounds they heard	Telling the feeling of sounds, poem, and song	Self-doing by the children
Conclusion (Realization)	Making to know that the sounds of animal according to the feeling are different	Making to know by themselves what sound makes them happy	Making to know that feelings are different in accord with the sound.
Assessment points	Asking the questions Telling their feelings	Let them think and answer by themselves	Observing while doing practically if they participate or not

	<u>Period Four</u>	<u>Period Five</u>
Specific Objectives	to differentiate the feelings that make the sound one heard come out	to differentiate the feelings that make the sound one heard come out
Introduction (Evocation)	Playing the game of tug-of-war by themselves	Playing parcel game by all children
Development (Reflection)	Tell feelings by the children	Making the sounds of various feeling
Conclusion (Realization)	Making to know what feeling is obtained	Making to know various feelings and sounds
Assessment points	Self-participation of the children	Observing while doing practically

Teaching/Learning Procedure

Period One

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Children greet the teacher when she/he enters the class. Teacher tells to greet again. I feel happy to hear your greetings. I become strong to teach you. What do you feel when you hear my greeting?</p>	10 min.		Teacher keeps smile on her face while greeting the children
<p>Tell the sounds you heard on the way to school. Record all their responses on the blackboard. According to the individual sound they said, ask them, How did you feel when you heard this sound? e.g. I heard dog barking. Some children —feel frightened</p>	10 min.		Let them tell their feelings freely.
<p>What pets are you rearing at home? (Or) What are the animals you love? Group the children and ask them to write the name of animal on the sheet of paper and tell by group. Write them on the blackboard. Let them make the imitation of cries of the animals they said. - cry while getting angry - cry while getting hungry - cry while feeling pain</p>	10 min.		They will know that the cries of animals are different in accordance with the feeling.

Period Two

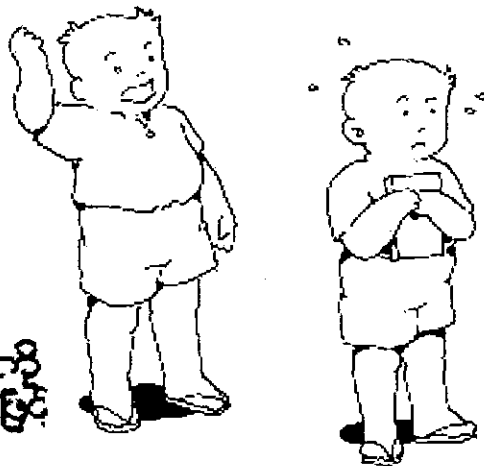
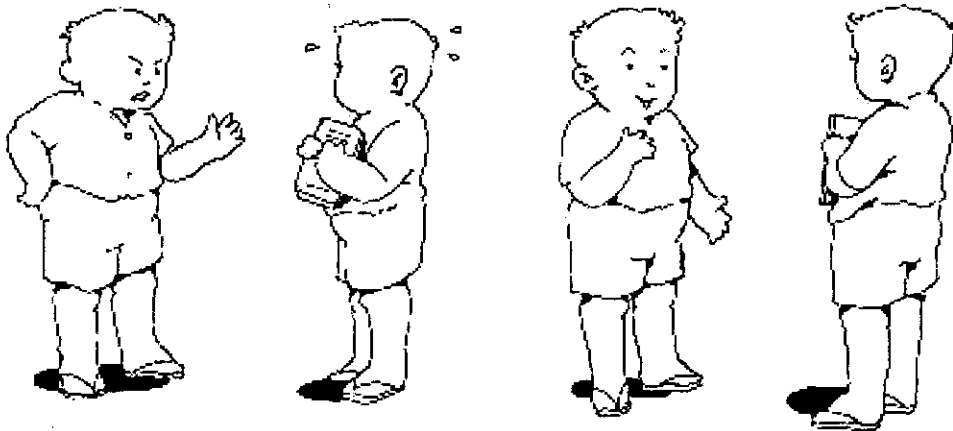
Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Let the children listen to a gay song or melody from the cassette. In case of unavailability of cassette, ask the children to make sounds simultaneously with bamboo clappers, cymbals, and drum. If those materials cannot be available,</p>	10 min.	cassette, bamboo clappers, cymbals, drum, bamboo slat, sound	Let the children follow the song or melody if they want to.

<p>it can be carried out by clapping hands, or beating sound –producing materials.</p> <p>How do you feel?</p> <p>What do you want to do when you hear these sounds?</p>		producing materials	Have the children express their feeling by themselves.
<p>Ask the each group recite a joyful poem. While reciting by one group, the others have to listen.</p> <p>How do you feel?</p> <p>What else sounds are joyful?</p>	10 min.		Let the children speak up as they like.
<p>Ask all the children choose and sing the sounds they think those sounds are joyful by themselves.</p>	10 min.		Let the children create whatever they think it is joyful apart from the poem. In case they are not able to speak up, teacher has to lead them to do.

Period Three

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Teacher beats the cover of aluminum loudly in surprise and asks how do they feel.</p>	10 min.	aluminum cover, stick	Make the children know that it is likely to be frightened when heard a loud sound
<p>Ask the children to blow into the plastic bag and puncture the swollen bag. Ask them how do they feel when they hear the sound of bursting plastic bag.</p> <p>Tell the other frightful sounds you are afraid of.</p> <p>Dividing the children into groups, let them tell the frightful sounds and record on the blackboard.</p> <p>Distribute various cards of illustration for sound to the groups. Let them choose the frightful sounds.</p>		plastic bags	Children will be able to retell the sounds they hear.
<p>By showing the pictures, let the children guess how the person in the picture is speaking.</p> <p>After that, teacher speaks the only one item (e.g. Give me a book) with</p>	10 min.		Teacher has to give guidance for the children to be able to identify correctly. e.g. Take books to me.

<p>various tones. (e.g. speaking with the voice of shouting at, speaking with regular tone, speaking like a request)</p> <p>When two persons borrow your book, to whom will you give it, the person who request you sweetly or the other who asks for rudely?</p> <p>Ask the children, How will you speak if you request other person to give a book?</p> <p>Have the children think and answer.</p>			
<p>Group the children and let them make the voices of shouting, crying, laughing, getting angry, giving applause, feeling sorrow, etc. by group.</p> <p>When one group is making, the remains have to listen and think which voice it is and speak up by group.</p>	10 min.	various picture cards	Write various kinds of voices on small sheet of paper and let them draw lots.



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 တောင်း နေပုံ

Period Four

Learning Activities	Duration (Min.)	Teaching/ Learning Materials	Points to be noticed
<p>Go outside together with the children and ask them to compete in tug-of-war.</p> <p>Name two teams of group (1) and (2), Myanmar and Thai; let them play. Ask the remaining children to watch and encourage.</p> <p>Again, name two groups, Japan and Myanmar; let them play and ask the remaining children to watch and play.</p>	15 min.	Nylon rope	Let them play in turns.
<p>When arriving back to the classroom, ask the children, how you encourage the team or group you want to win?</p> <p>How do you feel when you hear the sounds of applause?</p> <p>What else sounds you hear make you feel active like this?</p> <p>Have the children sing the songs of National anthem, song Myanmar student , and songs of march together with the teacher.</p>	5 min.		
<p>Ask the children how they feel?</p> <p>If the children are able to sing the national anthem and songs of march, let them sing.</p> <p>Teacher asks how they feel when they hear those sounds.</p>	10 min.		They can give the answer It makes us feel active and brave.



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