

## A LETTER TO TEACHERS

Dear teachers,

Greetings from Shriram Foundation!

Dussehra, Gandhi Jayanthi and Diwali make October an eventful month for schools. We hope you will make every event come alive with meaningful and enriching activities for your children. In this issue, we feature a story on Gandhiji and his ideal of non-violence or ahimsa, a concept that is relevant and important for this day and age. We hope you will share the story with your students and encourage a discussion around the relevance of ahimsa for our age. Over the next few issues we will also be discussing the Teacher Assessment held in June 2017, we are starting with high school science.

At Shriram Foundation, we look forward to hearing from you about your experiences.

Write to us at [m100.shriramfdn@gmail.com](mailto:m100.shriramfdn@gmail.com).

Warm regards

Editor



## WISE WORDS

*Here are some proverbs, sayings and quotations from all over the world to inspire you. You may write or display them on your blackboards or notice boards, explain and discuss them with your students.*

**“We learn about life not from plusses alone,  
but from minuses as well.”**

**- Anton Chekhov**

**“There is no end to education. It is not that you  
read a book, pass an examination, and finish  
with education. The whole of life, from the  
moment you are born to the moment you die, is  
a process of learning.”**

**- J Krishnamurthi**

## TEACHER TIP

It can be difficult to keep students on task in the classroom. Especially if the weather is good outside and they want to run around. Why not take learning outside and let them do just that? Take maths outside and have children estimate the time it would take to run, hop and skip across an area. Get them to look at the natural shapes of things and to measure spaces and dimensions. Get them to plan a play or other activity area, measuring out spaces, marking lengths, width, planning space, organisation and time.

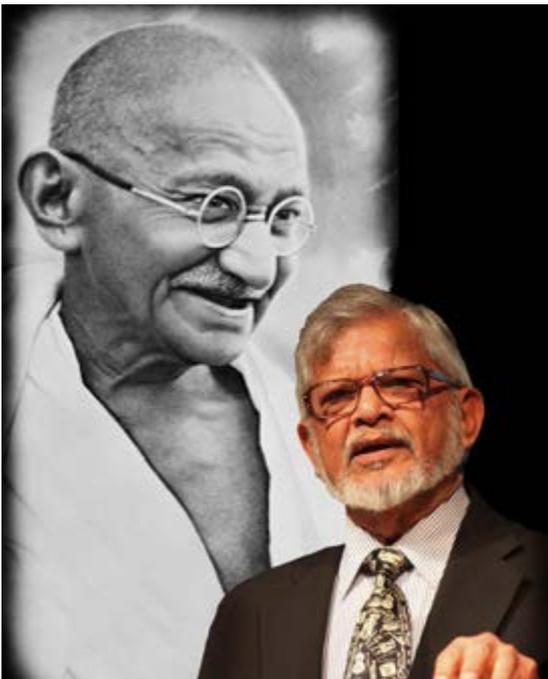


By taking learning beyond the classroom you'll find dozens of opportunities to make learning concepts, real and relevant by putting them into a more realistic context. Many concepts which seem too difficult to get a grasp of in the classroom are a lot easier to understand in the big wide world when they're set in context, and when the children are more engaged and motivated to understand and learn.

Learning outside can give you a great opportunity to teach your pupils about the environment and about your local area. This is an important part of developing them as responsible citizens that can be difficult to convey in the classroom.

## STORY OF THE MONTH

## Non-Violence



Every year on 2 October, the world celebrates the birthday of Mahatma Gandhi as International Day of Non-Violence. It is an opportunity to spread the message of non-violence with the goal of securing a culture of peace, tolerance and understanding. You can share the story given below with your students and have a discussion on how to handle a situation with a non-violent approach.

Throughout his life, Gandhiji remained committed to his belief in non-violence even under difficult circumstances.

Dr. Arun Gandhi, grandson of Mahatma Gandhi and founder of the M.K. Gandhi Institute for Non-violence, in a lecture at the University of Puerto Rico, shared the following story as an example of nonviolence in parenting:

I was 16 years old and living with my parents at the institute my grandfather had founded 18 miles outside of Durban, South Africa. We were deep in the country and had no neighbors, so my two sisters and I would always look forward to going to town to visit friends or go to the movies. One day, my father asked me to drive him to town for an all-day conference, and I jumped at the chance. Since I was going to town, my mother gave me a list of groceries she needed. My father asked me to take care of several pending chores as well. When I dropped my father off that morning, he said, 'I will meet you here at 5:00 p.m., and we will go home together.'

After hurriedly completing my chores, I went straight to the nearest movie theatre. I got so engrossed in a John Wayne double-feature that I forgot the time. It was 5:30 before I remembered. By the time I ran to the garage and got the car and hurried to where my father was waiting for me, it was almost 6:00. He anxiously asked me, 'Why were you late?' I was so ashamed of telling him I was watching a John Wayne western movie that I said, 'The car wasn't ready, so I had to wait,' not realizing that he had already called the garage. When he caught me in the lie, he said: 'There's something wrong in the way I brought you up that didn't give you the confidence to tell me the truth.



In order to figure out where I went wrong with you, I'm going to walk home 18 miles and think about it.' So, he began to walk home in the dark. I couldn't leave him, so for five-and-a-half hours I drove behind him, watching my father go through this agony for a stupid lie that I uttered.

I decided then and there that I was never going to lie again. I often think about that episode and wonder, if he had punished me the way we punish our children, whether I would have learned a lesson at all. I don't think so. I would have suffered the punishment and gone on doing the same thing. But this single non-violent action was so powerful that it is still as if it happened yesterday. That is the power of non-violence.

**DID YOU KNOW?**

**Lake Hillier**

We learn from geography classes that water bodies are marked with blue on the map. But nature likes to tease us with oddities like the Lake Hillier in Western Australia. A mere 600 meters in length, Lake Hillier is not one that will impress you by its size or by the population of fish that inhabits it. Lake Hillier delights your eye with its pink colour. Moreover, it lies just next to the Pacific Ocean, thus if you watch it from above, the contrast between the mellow pink of the lake and the blue of the ocean is striking.

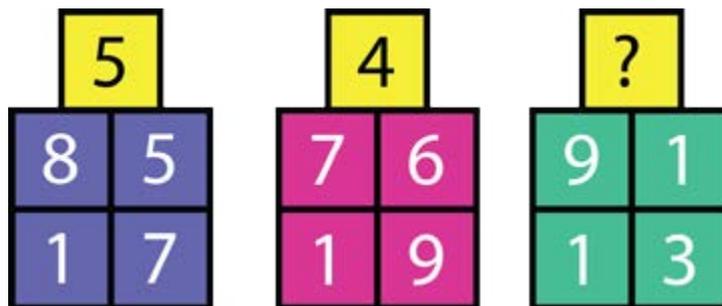


**PUZZLE**

**Math Riddle**

*Math puzzles and brain teasers help students develop inductive and deductive thinking skills. Please share this puzzle with your upper primary students.*

Find the number that should replace the question mark.



**IN THE NEWS**

**Mt. Everest**

*It is important for children to know what's happening in the world around them. You may think of conducting a "News Discussion time" in your classrooms once a week! To start with, you can use this small snippet!*

NASA's famed Cassini space-craft was launched 20 years ago to circle Saturn and transformed the way we think about life elsewhere in the solar system. Cassini, an international project that cost \$3.9 billion and included scientists from 27 nations, recently ran out of rocket fuel as expected after a journey of some 4.9 billion miles (7.9 billion kilometers).

After 20 years of Saturn exploration Cassini had to fall silent. Its end too had been planned by NASA: the spacecraft took its final dive into the atmosphere of Saturn where it vaporized within minutes, becoming part of the atmosphere of the planet it probed for two decades.



Three other spacecraft have flown by Saturn -- Pioneer 11 in 1979, followed by Voyager 1 and 2 in the 1980s. But none have studied Saturn in such detail as Cassini, named after the French-Italian astronomer Giovanni Domenico Cassini, who discovered in the 17th century that Saturn had several moons and a gap in between its rings.

**THEME FOR THE MONTH****World Post Day**

With more than 1.5 lakh post offices spread across the country, India has the largest postal network in the world. The number, which stood at about 23,000 during the time of independence, has grown by almost 7 times. Remarkably, 90% of the total post offices in the country are situated in rural areas.

Today, when SMS's, e-mails and social media have replaced traditional post-cards and letter writing, it is fun to revive and remember the old medium of interpersonal communication. October 9 is celebrated as World Post Day, you can get your students to do the activities given below to celebrate this day.



- ✓ Start a stamp album. Also known as philately, stamp collecting is a popular pastime that everyone can enjoy. Your students can create an album or journal and paste in stamps cut out from used envelopes that they find at home. You can also take a trip to your local post office for them to see which new stamps they may want to include!
- ✓ Find a pen pal. Many of us remember having a pen pal in elementary or middle school. Your students might enjoy learning about another culture or another part of the country in this way. Your students could identify any relatives or friends who may live in a different area or state that they could become pen pals with.
- ✓ Write a letter to your future self. You can come up with some questions to ask your students to help them think about what their life is like now and what they hope for their own future. They can set a date in the future when they would like to open this letter and look back at their lives and how things have changed since then. This is something your students will enjoy keeping with them.
- ✓ Surprise someone. Make a card (or postcard!) and create a post office scene within the class room. The students can then act out visiting the post office and mailing their cards to one another. To take it one step further, a trip to the post office can be organized and they can mail their cards and surprise someone.

**EDUCATIONAL WEBSITE REVIEW****Design for Change**

*The world around us is full of challenges – from potholes to lack of education, discrimination to environmental degradation, failing economies to bad healthcare systems. All these and a thousand other challenges affect millions of people around the world. It was while trying to empower people to solve these challenges that Kiran Bir Sethi founded 'Design For Change' in 2009.*

<http://designforchangeindia.com>

Design for Change (DFC) is a global movement that cultivates the 'I Can' mindset in every child. This 'I Can' spirit empowers children and gives them an opportunity to express their own ideas for a better world and put them into action. Design for Change was born out of the conviction that children are not helpless, the optimism that change is possible and belief that they can drive it. Through a simple design process of Feel-Imagine-Do-Share, they asked children to identify and transform



anything that bothered them in their community – shifting their mindset from 'Can I?' to 'I Can!' The yearlong immersive Design For Change Curriculum develops and nurtures the required behaviour and skills both in students and in teachers as facilitators at a classroom level. Going to the website you can download their toolkit and lesson plans for free and even participate in the "I CAN, School Challenge" and share your schools story.

**ENGLISH ACTIVITY**

**Reading Comprehension**

Building reading comprehension skills is important. Students need to learn not only to read but also to comprehend what they read. This can be a challenge for teachers particularly in contexts where students' exposure to the English language is limited to textbooks. Teaching children strategies to approach new text will help them fend for themselves when they encounter new texts. One such strategy is to look for the main idea and supporting details in the text. For the early primary classes you could teach this strategy by giving unfamiliar prose comprehension passages with simple text-based questions. Encourage children to look for cues in the question and look for the same cues in the text to guess the answer.

For example in the first question following the passage given here, the key word the children should identify is 'like'. Help them identify the same key word in the text, particularly in the first one or two lines. Explain that the main idea of the text is usually clearly stated in the first sentence or the second.

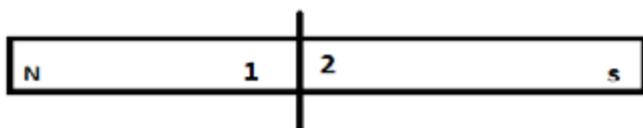
First get the students to read and understand the text. Then take up the questions one by one and look for key words and their matching words in the text to find answers.

Find simple four to five sentence texts like this for students to practise.

Going Fishing	
Holly likes to go fishing. She likes to fish with her dad. Holly's dad taught her how to fish. Holly has caught five fish. She is excited to go fishing soon!	
	
1. What does Holly like to do?	<input type="checkbox"/> swim <input type="checkbox"/> eat <input type="checkbox"/> fish
2. Who taught her?	<input type="checkbox"/> Holly <input type="checkbox"/> her dad <input type="checkbox"/> her mom
3. How many fish has she caught?	<input type="checkbox"/> four <input type="checkbox"/> five <input type="checkbox"/> six

**TEACHER ASSESSMENT JUNE 2017: High School Science Answer Key**

Given below are the answers to the first five questions of the High School science assessments. Each question is followed by an explanation of the answer.



**Q1.** The picture shown above is a bar magnet. The poles of the magnet are marked for you. The vertical line indicates the position where the magnet is cut into half. What will be the poles 1 and 2 of the two magnets?

- a. S, N   b. N, S   c. N, N   d. S, S

**Answer :** The choice is a.

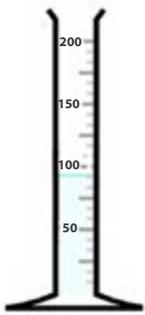
When a magnet is cut into half, the poles realign. When this magnet is cut at the line, side 1 acquires a south pole and this half behaves as an independent magnet. In the other half, side 2 acquires a north pole and this behaves as an independent magnet.

- Q2.** Fuels like petrol and diesel are formed from
  - a. Volcanic eruption
  - b. Chemical reactions in the earth's crust
  - c. Minerals from the earth's crust
  - d. Organic matter [dead plants and animals]

**Answer :** The choice d. is the correct answer.

Factual question.

We all know that petroleum and by products are fossil fuels. They are formed when dead organisms, especially algae and zoo plankton buried under sedimentary rocks are subjected to intense heat and pressure for many many years.



**Q3.** Using the given measuring cylinder which of the following cannot be measured accurately?

- a. 125 ml
- b. 25 ml
- c. 65ml
- d. 175 ml

**Answer:** This question is about instruments. Scale interval. Depending upon what has to be measured, an instrument with the right scale interval has to be chosen.

Look at the picture. We can accurately measure in intervals of 25 and 50. Given that, measuring out 65ml using this measuring cylinder will bring in errors of precise measurement. Hence the choice is c.

**Q4. The part of the body that joins two bones is**

- a. Muscle
- b. Ligament
- c. Joints
- d. Tendons

**Answer:** Factual question. The answer is b.

**Q5. It is raining heavily. The wiper of the car was working. It cleaned the car glass from outside. Yet, Kumar notices**

that the front glass and windows of the car becomes cloudy from inside. Why does this happen?

Here are a few answers he got from his friends and elders.

1. When it rains the glass always gets cloudy from inside.
2. The temperature outside is more than the temperature on the inside.
3. The temperature outside is less than the temperature inside the car.
4. If we use air conditioners while driving in the rain, glass gets smoky from inside.

**Identify the choice that explains the correct reason.**

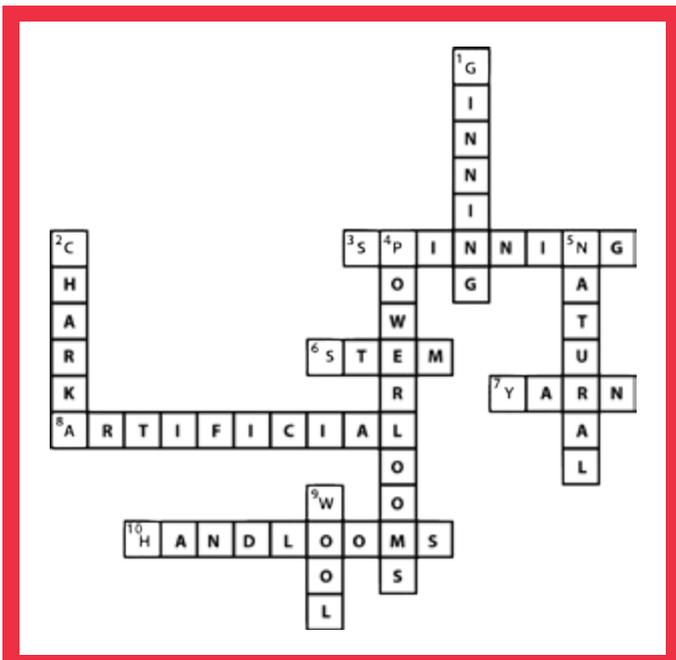
- a. 4
- b. 2 and 4
- c. 3
- d. 1

**Answer:** The cloudiness on the glass is because of condensation. When it rains, it is cooler outside than it is inside the vehicle. Therefore the water vapour around the vehicle tends to condense and settle on the glass. This gives a cloudy appearance. When the air conditioner is on, we reduce the temperature of the inside of the vehicle and prevent condensation from happening.

Hence the correct choice is C.

## ANSWERS

### CROSSWORD PUZZLE - Fibre to Fabric



### In The Classroom : What's Going On?

Membranophones are instruments that make sound from the vibrations of stretched skins or membranes. Drums, tambourines, and some gongs are common examples of membranophones.

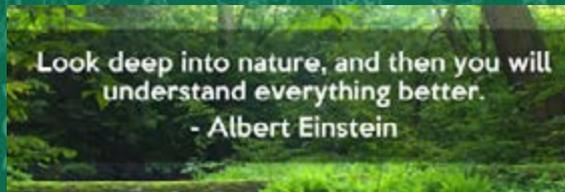
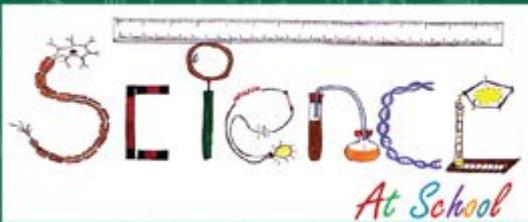
As you blow into the straw, you create pressure in the space between the outer wall of the construction-paper tube and the inner wall of the water bottle. The pressure forces the membrane to rise, allowing air to flow into the top of the tube and escape out of the bottom.

As the air escapes, the membrane returns to its initial position. But as you continue blowing air into the instrument, you force the membrane to rapidly rise and fall, over and over again. If you place your finger over the top of the membrane, you can feel it vibrate. These vibrations produce sound.

Opening or covering the finger holes changes the pitch of the sound. That's because opening a hole has the same effect as shortening the length of the "pipe" (the rolled-up construction paper).

### PUZZLE - Math Riddle

$$91/13 = 7$$



## In the Classroom: Water - Bottle Membranophone

This surprising instrument is fun to make—and even more fun to play with. Here, a water bottle and a paper tube make a membranophone—an instrument that produces sound from a vibrating stretched membrane. Kazoos and drums are both examples of membranophones.

Materials: Clean, empty plastic water bottle, any size (bottles with ridges work best) Scissors or cutter (for adults only), Latex, rubber, or vinyl glove or a balloon, Rubber band, Hole punch, Drinking straw, Sheet of construction paper

Assembly:

1. Cut the bottle in half using scissors. Make sure you cut evenly, leaving a smooth edge. Take only the top half of the bottle for this model.
2. Punch a hole as far from the cut edge as you can towards the mouth of the bottle. Put the straw through the hole to test it for size. It should be a tight fit.
3. Cut a large enough sheet/surface from the glove or balloon such that it is bigger than the cut edge of the bottle. This pliable material is your membrane.
4. Stretch the membrane over the opening you cut on the bottle. Make sure that the hole in the side doesn't get hidden. Secure the membrane to the bottle with a rubber band
5. Roll a piece of construction paper into a tube, making it as tight and straight as possible. Put the rolled-up tube into the neck of the bottle, where the cap had been. Let go of the paper tube when it barely touches the bottom of the membrane. It should fit securely in the bottle opening. Tape it to the neck of the bottle so it stays in place.
6. Re-insert the straw into the punched hole on the side of the bottle, and you're ready to play! Now that your instrument is complete, simply blow into the straw on the side of the bottle, and your Water-Bottle Membranophone should play!

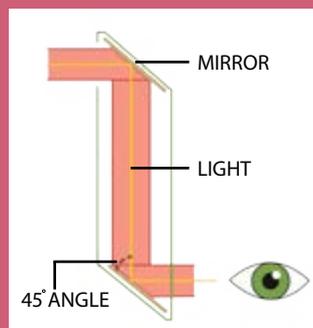


To understand the working of a Membranophone you can refer to the Answer Key on page 8.

## Invention of the Month: Periscope

A periscope is a device used for covert observation, usually associated with submarines. A simple periscope is made of a tube with parallel mirrors at each end on a 45 degree angle, although modern periscopes use prisms and magnification to provide a better image. The design of this device allows a person to look into a viewfinder and get an image from the other end of the device. This is particularly useful for observing potential threats from a safe position.

The first device that resembled a modern periscope was designed in the 1430's by Johannes Gutenberg to allow people to see over the crowd at a religious festival. The first naval periscope was invented in 1854 by Hippolyte Marié-Davy. This periscope used a vertical tube with two mirrors at a 45 degree angle. This device was improved for use in submarines by Simon Lake and further by Sir Howard Grubb. Periscope design has come a long way since then and they were used extensively on submarines and tanks during both world wars.



Given below are a set of quiz questions for your students to do after understanding the concepts of reflection of light.

- When you throw a ball against a wall at an angle, in what direction does it bounce off the wall? Answer: At the same angle.
- In what direction does light reflect off shiny surfaces? Answer: At the same angle as it hits the mirror, i.e. like the ball
- How can you get to see the back of your head? Answer: By using two mirrors.
- How would you turn a beam of light at a 90° angle? Answer: Using one mirror at an angle of 45°.

The scientist is not a person who gives the right answers, he's one who asks the right questions.

Charles Lindbergh

## Science Newsletter for teachers

### Crossword Puzzle: Fibre to Fabric

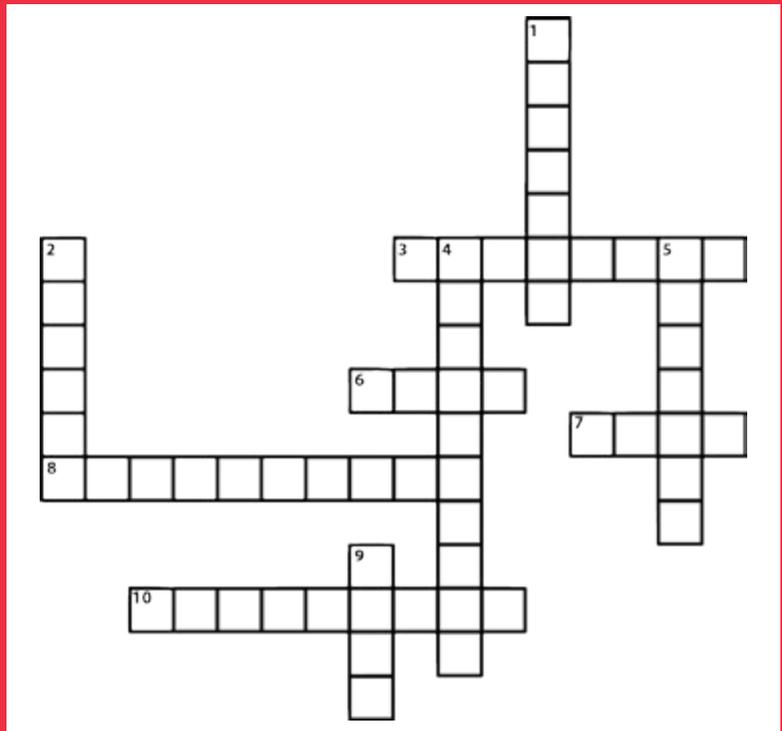
Test your students' knowledge in science concepts with this crossword puzzle. The theme is "Fibre to Fabrics". This fun activity will help your students recollect and remember key words and definitions from the chapter.

#### Across

3. What is making yarn from fibre called?
6. What part of the plant is jute fibre obtained from?
7. What is woven together to make a fabric?
8. Fibers made of chemicals are known as what ?
10. What are looms that are worked on by manpower called?

#### Down

1. What is the process of removing seeds from cotton wool?
2. What instrument is used to spin yarn?
4. Large scale spinning of fibre is done on what type of loom?
5. Fibers that are derived from plants and animals are known as what?
9. What type of fibre is obtained predominantly from sheep?



### Special Feature: Conservation

Jane Goodall is known for her long-term study of wild chimpanzees in Tanzania. The Gombe chimp observation, which Jane began in 1960, is the world's longest running continuous wildlife research project. Through her Jane Goodall Institute, she has become equally well known as a conservationist and a champion of human rights. In 1991, Jane and 16 Tanzanian students founded Jane Goodall's Roots & Shoots, a global environmental and humanitarian education programme for young people. Roots & Shoots "Mission Possible" provides sets of activities for teachers to use both in and out of the classroom to encourage pupils to learn about people, animals and their local environment. One such activity provided on their website (<http://www.rootsnshoots.org.uk/resources/>) is given below for you to conduct in your classroom.



**Theme:** Reducing school waste

**Objective:** To reduce the amount of waste in school and the waste created by pupils and their families.

**Process:** Organise recycling points in school for paper, cardboard, plastic, aluminium foil, cans and glass; Encourage the school to reduce paper use by photocopying on both sides and only printing off emails when essential; Encourage parents to re-use carrier bags when they go shopping; and Help the school turn kitchen and garden waste into compost.

- Publicise your ideas and plans by posters in school and in assemblies.
- Contact local waste management bodies like your waste pickers and kabadiwallas so the materials collected can be picked up and recycled.
- Discuss with your students how this activity will help in conserving the environment.