

A LETTER TO TEACHERS

Dear teachers,

Greetings from Shriram Foundation!

The end of the year is always a time to ring out the old and ring in the new. While we send off the old year, let us spend some time in reflecting on what we did, did not do, what we learnt and felt in the outgoing year. Reflection will help us build on our mistakes and weaknesses, learn from our experiences and move into the new year with greater confidence. As teachers, we have a duty to our students to reflect on ourselves as humans, as professionals and as responsible members of the society and country.

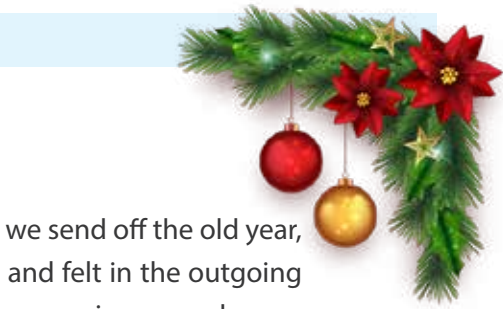
So let us ring out the old year and look forward to the New Year in a positive frame of mind.

As always we look forward to hearing from you about your experiences.

Write to us at m100.shriramfdn@gmail.com.

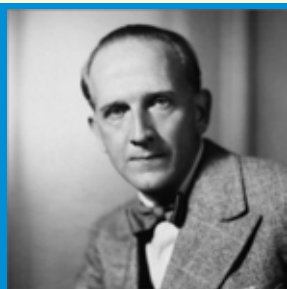
Warm regards

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.



"You're braver than you believe,
and stronger than you seem, and
smarter than you think."

– A. A. Milne

"We are what our thoughts have
made us; so take care about what
you think. Words are secondary.
Thoughts live; they travel far."

– Swami Vivekanandha



STORY OF THE MONTH

Santa Claus

Every year on 25th December, we celebrate Christmas to commemorate the birth of Jesus Christ. Here is a story about the legendary figure Santa Claus, who is said to bring gifts to the homes of well-behaved children on Christmas Eve and the early morning hours of Christmas Day. It is an opportunity to spread the message of unconditional love by helping those in need.



The legend of Santa Claus, actually originated from the story of Saint Nicholas, who was born during the 3rd century in the village of Patara, in ancient Turkey. He lost his parents when he was very young. Inspired by the teachings of Jesus Christ, Nicholas gave all his possessions to assist the poor, the sick, and the suffering. He pledged his life to serving God, was made Bishop of Myra while still a young man and became known far and wide for his generosity to those in need, his love for children, and his care for sailors and ships.



There are many stories about Santa Claus. One of the stories told about him, is of a poor man with three daughters. This man had no money for his daughters' future, and he feared that they would end up being sold into slavery. However, when the old father was close to giving up, someone threw in a gold ball through the window. The gold ball landed on a pair of stockings that was drying near the fireplace. The same thing happened three times, whenever the old man badly needed money or was ready to give up. Later the father discovered that it was Santa Claus who had heard their conversations and had thrown in the gold balls.

This is why children even now hang up stockings or put out shoes during Christmas, and why oranges are sometimes put inside them, as symbols of the gold balls that were gifted to the three daughters. There are many stories of St Nicholas protecting children and the innocent, quietly rescuing those in danger, saving people from famine, and providing aid and care to those who were in need. His selfless and generous deeds were remembered through history, so we now know him as the kind, jolly Santa Claus.

THEME FOR THE MONTH

National Energy Conservation Day is celebrated on 14th December. It is a day dedicated to educating people on the importance of conserving energy. Sources of energy are not unlimited and using energy efficiently is vitally important so as to leave enough for the future generations. We cannot deny our dependence on energy. Almost everything in our lives exists in some way because of energy. Therefore, it is very important to use energy efficiently, without wasting it or taking it for granted, while also trying to use renewable and environmentally friendly sources of energy.



**NATIONAL
ENERGY**
Conservation day
14th December

Activities:

1. Divide the class into groups and get each group to research how energy is used. They can divide it into different categories, food, transport, electricity, industries, houses etc. and each group can choose one topic. They can find out how energy is used in each area, what kind of energy is used, and if some companies are using renewable sources of energy. One group can be assigned to research the environmental impact of each source of energy, and how we can substitute certain sources of energy with more environmentally friendly and long-lasting sources of energy.
2. Have the students explore the school and take note of all the ways energy is used, and list out ways that energy can be conserved, and then implement those changes in the school. Ask them to do the same thing in their homes as well.
3. Plants are the most energy efficient organisms as they convert solar energy, water and carbon dioxide into food for themselves. Have each class grow a small garden, where while tending to the plants they can also watch them grow. If the students grow a vegetable garden, the school could make use of the produce, which is a way of conserving energy as they would be saving fuel.

TEACHER TIP

Everyone in the world feels fear, at all stages of their lives. Some of the fears and anxieties that individuals have during their childhoods, can endure for the rest of their lives, and shape their personalities and their attitudes. Some common fears that children face include fear of failure, fear of their parents' or teachers' criticism or disapproval, fear of their peers' opinion, and bullies. Other more general causes of fear include animals, the dark and being alone. Some people think fear is a positive thing that motivates children to do better, but fear usually does more harm than good. It can lead to chronic anxiety and stress in children, and can inhibit their learning and performance. Since our impulse is to run away from the cause of our fear, fear of school can cause children to hate going to school, and to try and avoid it. Fear of their parents' disappointment may make them afraid to go home.

Fear and stress

Being stressed and panicked usually makes it difficult to concentrate and can hamper the comprehension and retention of information, which would only lead to more stress. It causes hypertension, and increases the likelihood of making mistakes. Comparison to other children who are performing better than them can lead to feelings of jealousy and inadequacy. Fear of public opinion and being ostracized can result in taking extra pains and effort to fit in with others. Fear of the outside world can stop children from searching for more experiences. Children have to be taught early that fear cannot rule their lives. A child should, first and foremost, look at the cause of his fear and try to understand what exactly it is that they are afraid of.

Take a child who is afraid of lizards, and make him look at a lizard. Make them examine it for a long time, and contemplate on exactly what it is about the lizard that makes him so afraid of it. Often it is the unknown factors that make an object all the more frightening. So, encourage the child to face his fear and examine it, and find out what exactly it is that is so frightening to them. After observing the lizard for a while, the child might not find it so scary. Studies have shown that parents who are themselves semi-literate or uneducated put more pressure on their children to do well academically. Try talking to the children who are undergoing academic stress and make them open up about their feelings; expressing their feelings to another person may by itself release some of their pent up anxiety. Involving such children in extra-curricular activities, which would not only provide a productive distraction from their studies, and allow them space to let go of their stress, but could also help them feel good about themselves. Tone down the competitiveness in the classroom, and do not put emphasis on who is 'first' in class, but give praise to every student for any individual improvement. Also, teach the students breathing exercises that they can use during exams, or other high-stress situations.

QUIZ**Indian Awards**

Knowledge of the country, past and present, is very important for young minds. It does not always come from textbooks. Making students familiar with these quiz questions and answers is a fun and easy way to build general knowledge. Share a small quiz with your Upper Primary children about famous awards given in India.

1. What are the National Bravery awards?
2. Which is the highest civilian honour given in India?
3. Which is the highest wartime military award given in India?
4. Which is the highest literary honour given to any author for outstanding contribution towards literature?
5. Which is the highest sporting honour of the Republic of India?
6. What is the Dronacharya award?
7. What is the Shanti Swarup Bhatnagar Prize given for?
8. For what is the Dadasaheb Phalke award given?

PUZZLE

Brain Teasers

By solving math puzzles and brain teasers students actively develop inductive and deductive thinking skills. You can share this puzzle with your upper primary students.

1. The details of 3 friends, Abdul, Julie and Sridhar were recorded wrongly by Ameira in the following table.

Name:	Abdul	Julie	Sridhar
Age(in Years):	9	5	4
Ice-cream Flavour:	Strawberry	Vanilla	Chocolate
Ambition:	Doctor	Pilot	Scientist
Pet:	Fish	Dog	Parrot

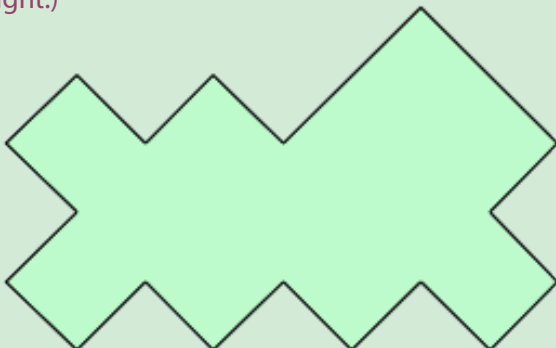
Follow the correct clues listed below to find out:

- Who is the youngest of all?
- Which is Sridhar's favourite ice-cream flavour?
- Who wants to become a Scientist?
- What pet does Abdul own?

Clues:

- Julie named her parrot "Kiki".
- Sridhar wants to treat patients in his village for free in future.
- Abdul's favourite flavour is Chocolate.
- Sridhar can count his age with one whole hand and is an odd number.
- Julie is 9 years old.
- Abdul doesn't want to become a Scientist.
- Sridhar hates dogs.
- Julie loves the flavour which is also a red fruit.

2. Can you draw a line to divide this shape into two identical parts? (Hint: The line doesn't need to be straight.)



PUZZLE

Winter Sudoku

Here is an alternative challenge for your high school children taking Sudoku to the next level.

Firstly, only the letters W, I, N, T, E and R from the word WINTER can be used to fill the grid. The next rule is that each letter can appear only once in each every row, column and block.

I	W			T	N
		R	I		
		N	T		
N	T			E	R

LEARNING THROUGH PLAY

Vocabulary building

Write about 10-15 simple nouns and verbs on chits of paper. Put them into bag or a box. Invite each student to draw two chits from it. Give them each a minute to frame a sentence that uses those two words and is also meaningful. Then let each of them share their sentence with the class. Collect the words back and repeat. Some of the variations can be using the new words learnt the previous day, asking the child to pick more than 2 chits, asking them to use a different form of the verb picked, using different parts of the speech etc. This can be a very nice morning activity before the class begins everyday.

bear	sleep	hand
find	bed	work
crawl	grass	mother
baby	school	kick
draw	dig	box
build	home	dive
rabbit	paper	hop

CREATIVE CORNER

Homemade Christmas Stars

Here is a very simple, yet colourful way to make Christmas stars. These are paper window stars that can be used as Christmas decorations.

Things needed:

- Coloured papers
- Pencil
- Scale
- Scissors
- Glue



1. Using your pencil and scale, draw 8 rectangles on the coloured papers and cut them out. The length of each rectangle has to be twice as long as its width. You can use as many or few colours as you like.



2. Take one of the rectangles and fold it in half length-wise, and then unfold again, to leave a crease down the center.



3. Fold each of the corners to meet the center line.



4. On the right, fold the two edges in to meet the centre line again, like you were making a paper plane. On the left, fold the corners so they look like this.



5. Fold all the other pieces the same way.



6. Turn one of the pieces over, and apply glue on the white area as shown in the picture.



7. Place the piece on top of another piece, like this. Notice that the taped edge on the pink piece lines up with the center-line on the blue piece.



8. Add the rest of pieces in the same way. Finally, you will complete the star by taping the first and last pieces together. The easiest way is to fold back the star like this, put some glue on it, and then fold it back down.



9. You can flatten the finished star in a book for a few hours to set the creases.

10. To attach your star to a wall/window, use a small dab of glue. If you use too much, it will be impossible to remove the star without tearing it. Instead of using glue, you can also tie a thread to one point of the star.



TONGUE TWISTER

“There was a fisherman named Fisher who fished for some fish in a fissure.
Till a fish with a grin, pulled the fisherman in. Now they’re fishing the fissure for Fisher.”



Answers

Quiz – Indian Awards

1. They are national awards given annually to children for deeds of bravery and sacrifice.
2. Bharat Ratna.
3. ParamVir Chakra.
4. Jnanpith Award.
5. Rajiv Gandhi Khel Ratna Award.
6. It is the highest national award for sports coaching and training in India.
7. Shanti Swarup Bhatnagar Prize is the highest national prize given to scientists in domains of science.
8. For lifetime achievement in the field of movie making.



Puzzle – Brain Teasers

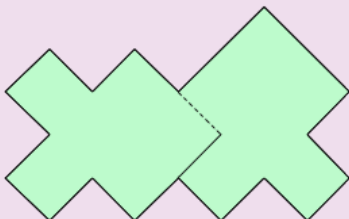
1.
 - a. Abdul is the youngest of all.
 - b. Sridhar likes Vanilla ice-cream.
 - c. Julie wants to become a scientist.
 - d. Abdul owns a dog.

Name:	Abdul	Julie	Sridhar
Age(in Years):	4	9	5
Ice-cream Flavour:	Chocolate	Strawberry	Vanilla
Ambition:	Pilot	Scientist	Doctor
Pet:	Dog	Parrot	Fish

Puzzle – Winter Sudoku

I	W	E	R	T	N
R	N	T	E	W	I
T	E	R	I	N	W
W	I	N	T	R	E
E	R	W	N	I	T
N	T	I	W	E	R

2.





Dear Science Teachers,

Welcome to the December edition of Science at School – the monthly magazine specially for you!

In this edition, we bring to you, recent events in Science, ideas for classroom and some backyard Science, Question Corner and much more!

DISCOVERY OF THE MONTH: Friction matches

Some of the objects around us are so common that it's difficult to imagine how life would have been before they were invented. Here's a story of one such everyday object, that you can share with your students.



Looking back, what do you think was one of the first and most important discoveries for humans? Yes, you guessed right – fire! This single discovery changed the way of life of humans. Now imagine lighting a bunch of wooden sticks, without using matchsticks. Wouldn't it be extremely difficult?

The story of this invention can be traced back to the country of China in the 16th century, where wooden sticks coated with sulphur were used. These could not start a fire, but could be used as 'carriers' of fire. The breakthrough came with the discovery of phosphorus, which could ignite on its own. The first match was made in Paris in 1805 by Jean Chancel, but this match worked by dipping the wooden stick with chemicals in sulfuric acid. Though his idea was the first of its kind, it was unsafe to use.

It often happens that important discoveries or inventions in Science happen accidentally. The invention of the friction match was also one such example. In the year 1826, John Walker, a pharmacist was working on creating simpler ways to produce fire. He accidentally scraped the stone in his workplace with a small stick dipped in a mixture. The stick lighted up immediately. This gave him the spark of creating matches that work on friction – rubbing two surfaces together.

He made his first matches with cardboard strips having flammable chemicals. These strips could be rubbed against a rough surface to produce fire. Soon he replaced the cardboard strips with sticks and began selling them in his neighbourhood. Many years later, his invention was commercialized.

Today we have different variety of matches, from the ones we use in the kitchen to the ones used as Diwali crackers – all owing to one accidental invention. So, encourage your students to keep observing and keep questioning, you never know how Science would surprise you!

DID YOU KNOW

Modern day matches are made from a variety of chemicals like antimony trisulfide, potassium chlorate and paraffin wax. The side of the matchbox contains red phosphorus and some powdered glass to generate friction. The Diwali matches - or 'sparkler matches' as they are popularly called – additionally have a metal powder (aluminium, magnesium, zinc etc) that burns to produce sparks and metal salts that give a colour to the flame.



Classroom Activity:

Ask students to research and write about the story of inventions of some everyday objects.

SCIENCE IN THE NEWS

Science from waste

Children often see the world very differently from adults. While a drain might be nothing but a source of pollution for us, two students from a rural government school in Puducherry saw it as an opportunity! T.Mitra and Sharani Priya of the Government Primary School in Kalitheerthakuppam village successfully generated electricity from the drainage water in their neighbourhood. The water in the drain reminded them of the science concept they studied in class, that electricity can be generated using fast-flowing water. They carefully measured the dimensions of the drain and the speed of water to design a turbine. Using just this simple set-up they were able to generate about 8-9v power, which is enough to charge a mobile phone! *

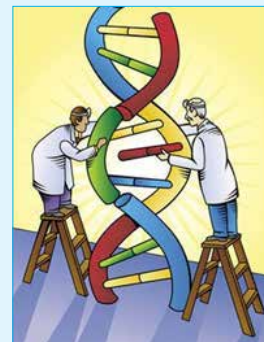


* Picture courtesy: The Hindu newspaper, November 04, 2017

Medicine takes another leap

Imagine you are copying down a phone number from a directory. You make a mistake in one of the numbers and hence end up calling the wrong person. Something similar happens in the case of genetic diseases. A gene is wrongly 'copied', leading to a loss of function. One way to cure such diseases is to 'correct' the gene, (just like in our example of the phone number, you would go back and check the correct number). In medicine, such 'corrections' are known as gene therapy.

Recently, gene therapy was used to treat the 'butterfly skin' disorder for a 7-year old boy. When the treatment began, the boy had lost 80% of his skin. Artificial skin was grown externally in which the gene was 'corrected'. This regenerated skin was then 'stitched' back onto his body. Two years on, the boy is healthy and normal.



What makes this success story significant is that this is the first time, this approach has been used for this disease. This study has opened a new avenue to treat patients with organ failure due to genetic diseases.

SPECIAL FEATURE: Curious questions, Simple answers

How does an eraser remove pencil marks from the paper?

We love making drawings with a pencil, but we think twice about drawing with a pen, isn't it? And the reason is it is so much simpler to erase mistakes made with a pencil than with a pen. Let's explore how and why this is so.

What happens when we write with a pencil? The graphite in the pencil lead spreads on the top surface of the paper. This graphite binds only on the surface. Now when we use an eraser, the rubber in it, picks up the graphite particles without affecting the paper much.

On the other hand, when we write with a pen, the ink soaks into the paper. Hence it is not possible to remove it as easily.

Why not start a question corner in your own class and send us your students' questions? Mail it to us at m100.shriramfdn@gmail.com. We will feature your question and the answer in the next edition of Chalkboard.

