

A Letter to Teachers

Dear teachers,

Greetings from Shriram Foundation!

February 28 is observed all over the country as National Science Day. It is the day on which India's star scientist Sir C.V. Raman declared the discovery of what came to be called the Raman Effect in his honour. The Raman Effect won for him the Nobel Prize for Physics in 1930. You could observe this day at school with special events like a Science Quiz, or a few science experiment or even a simple nature walk to help students understand the importance of not only science in our lives but also that of developing the scientific temper.


According to the United Nations' calendar of special days, February 22 is observed as Mother Language Day. Let us also build pride in mother language by focusing on Mother tongue based special activities this month.

We hope you find our newsletter useful and interesting. We encourage you to write in to us at m100.shriramfdn@gmail.com with your suggestions, comments and feedback.

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.



"Most people say that it is intellect that makes a great scientist. They are wrong: it is character." – Albert Einstein.

"He who asks is a fool for five minutes, but he who does not ask, is a fool forever." – Chinese proverb.



Remembering Sir C. V. Raman

Chandrasekhara Venkata Raman was born at Tiruchirapalli in Tamil Nadu on 7th November 1888 to a physics teacher. He was a brilliant student. Raman passed his matriculation exam at the age of 11. He was all set to travel abroad for higher studies, but a medical examination by a British doctor upset his plans: the reports proved that he was not medically fit for travel. In 1902, Raman joined Presidency College in Madras and completed his Bachelor of Arts (B.A.) in 1904. He won a gold medal in physics in B.A. In 1907 he obtained his Master of Arts (M.A.) degree with the highest distinctions. Raman is famous for his research on the scattering of light. His discovery later came to be known as the Raman Effect. Raman was awarded the Nobel Prize in physics for this discovery in 1930.



Story

This month we feature a story from the life of Albert Einstein

Albert Einstein was a German – born physicist who is famous for developing the General Theory of Relativity. As a child, Einstein seldom spoke and when he did, he spoke very slowly. He was bold to the point of being called rebellious. He had no respect for authority and often spoke his mind frankly, even if it was unpleasant.



He was enrolled in a school that gave more importance to classical languages like Latin and Greek than to Mathematics and Science. He was not happy with this. He could not memorize dates and events in history and disliked being made to do so. His teachers found him a difficult student. One day he was called to the headmaster's study. There, the headmaster faced him and said, "Your work is terrible. You are a dunce. I do not want you in this school any more. Please leave the school." Einstein had to leave. But this setback did not pull his spirit down. He continued his study and followed his dreams till as an adult, this 'young dunce' who was thrown out of school had the entire world hailing him as one of the greatest geniuses of all times. He was awarded the Nobel Prize for physics in 1921.

Teacher tip : Classroom Arrangement

The arrangement of students and teacher in the classroom is extremely important in managing the class.

At all times, the teacher in the class must be positioned such that she can observe every student. The teacher should also be able to see the door from where she sits or stands.

Likewise, the blackboard and the teacher must be easily seen by every student in the class, without having to strain themselves.

The paths between rows of students must be free and unobstructed. It is a great idea for the teacher to circulate in the class while students are working.

While at the blackboard, the teacher must position herself such that she does not have her back to the class. If she stands slightly at an angle to or away from the blackboard, the teacher will be able to keep most students in her view. Arrangement of space and furniture in the classroom is one of the keys to effective classroom management.



Quiz

Knowledge of the world, 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.

1. Olympus Mons is a large volcanic mountain on which planet?
2. How many days does the moon take to orbit the Earth?
3. Jupiter has a great red spot that looks like an eye. What is this spot?
4. Which metal is in liquid form at room temperature?
5. Which two parts of the body continue to grow for your entire life?
6. Which famous scientist was awarded the 1921 Nobel Prize in Physics for his work on theoretical physics?
7. How many bones do sharks have in their bodies?
8. Who invented the telephone?
9. What is the name of NASA's most famous space telescope and which American astronomer is it named after?
10. True or false? You can extend battery life by storing batteries at a low temperature.
11. The area of biology devoted to the study of fungi is known as?
12. What is the name of the first satellite sent into space?

Learning through Games

This is a game to practise formation of four or five digit numbers and place value in a primary class. Divide your class into groups of four or five. Tell every student to write any number from 0 to 9 on a piece of paper. Ask every group to do any or all of the following:

- Stand in a row to form the greatest possible number with their digits.
- Stand in a row to form the smallest possible number with their digit.
- Ask the groups to identify the greatest and the smallest numbers formed in the class.
- Ask the groups to identify the place value of any digit in four different numbers formed in the class.

You can vary this game by asking every student in the group to write a four- or five-digit number and asking them to stand in ascending or descending order and identifying the greatest and smallest numbers.



Puzzles

A group of four people have to cross a narrow bridge at night. They have only one flashlight and no more than two people can cross the bridge at the same time. After crossing the bridge one person has to return with the flashlight so that the next batch can cross. Each person takes a certain amount of time to cross the bridge as given below:

- Person 1: 1 minute
- Person 2: 2 minutes
- Person 3: 5 minutes
- Person 4: 10 minutes

For example, if persons 2 and 3 cross the bridge simultaneously, then they will take 5 minutes for the journey

How can the group cross the bridge in 17 minutes?

Theme for the Month : *Our Mother Tongue*

Thematic tasks and celebrations are exciting and fun for the whole school. They also provide opportunities for learning outside the textbook framework. Every class can undertake one or more of the tasks given here. Some of the best displays can be put up as an exhibition in the school. The theme for February 2016 could be Our Mother Tongue. You could even run two themes in the month. Here are a few simple activity ideas around the themes.

- » Make a chart of great literary figures who wrote in Telugu.
- » How do you feel about your mother tongue? Students can express their love for their mother tongue by writing two lines of poetry about it. These can be combined into a collage for classroom display.
- » Conduct a Telugu Poetry Reading session at School Assembly. Encourage different classes or students to read out their favourite Telugu Poem or story during the Assembly. This can be done at least once a week in February.
- » Getting to know our Literature. Telugu teachers can read out a small famous poem or an extract from a story or some couplets or proverbs once in two or three days this month in all their classes. Motivate students to talk about the literary pieces they listen to.
- » My own Telugu dictionary. Every class can undertake the creation of their own Telugu dictionary as a class project. Every student in the class can take a letter of the Telugu alphabet and collect all the words he or she can think of and by asking his classmates. Word meaning can be written alongside in English. The dictionary can be bound into a booklet and maintained in the class.

Special Science : *Classroom Sugar Candy*

Teachers, when you teach Solutions or Heat in your science classes, you can demonstrate this simple, fun experiment. You may need to bring a stove to class for it. Be careful to keep students at a distance when you are working with fire or hot things.

Requirements :

Some wooden skewers or clean thin wooden sticks like chopsticks, equal number of clothes clips, 1 cup of water, 2-3 cups of sugar, three or four tall narrow glasses, two or three food colours

Procedure :

Clip the wooden skewers into the clip. Take the glasses and add five drops of food colour into each of them. Then hang the skewers one each in the tall glasses such that they do not touch the bottom of the glass.



Pour the water into a pan and bring it to boil. Pour about 1/4 cup of sugar into the boiling water and keep stirring till it dissolves. Keep adding more and more sugar, until the syrup can dissolve no more sugar and the syrup is thick.

Now remove it from heat and allow it to cool for at least 20 minutes. Carefully pour the sugar solution into the glasses almost to the top. Stir so that the food colour drops mix in the syrup. Then place the skewers back into the glass making sure that they hang straight down the middle. Let them remain in the class for three or four days. Keep each glass covered by a net so that insects and dust do not get to them. The sugar crystals will grow on the skewers in 3-4 days. Your students can enjoy their own sugar candy.

Explanation :

Mixing water and sugar over the stove makes a super saturated solution. This means that the water could only hold the sugar in liquid form when both were very hot. As the water cools the sugar crystallises on the skewers.

Answers

Puzzle

Persons 1 and 2 cross first and 2 returns with the flashlight. Persons 3 and 4 cross next and person 1 returns with the flashlight. Finally, persons 1 and 2 cross the bridge. Now all four of them have crossed and the time elapsed is 17 minutes.

Quiz

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| 1. Mars | 7. Zero. Sharks have skeletal systems made of cartilage and connective tissue. |
| 2. 27 days (27 days, 7 hours, 43 minutes, 11.6 seconds to be exact) | 8. Alexander Graham Bell |
| 3. A storm that has been raging since the 1600s | 9. The Hubble Space Telescope, Edwin Hubble |
| 4. Mercury | 10. True |
| 5. The nose and the ears | 11. Mycology |
| 6. Albert Einstein | 12. Sputnik |