

# Samvaad

Chandigarh's Monthly CCT Newsletter

## LEADER SPEAKS

As we begin this new year, I would like to congratulate the entire education fraternity of the UT Chandigarh, for their tireless efforts in an exceptionally difficult year. We were faced the most challenging situations of our lifetimes, and I was proud to see how our teachers took this as an opportunity to innovate and to think outside the box, as we have witnessed in all the stories from the past editions of Samvaad. These stories are a testament to the sheer determination of our teachers, and their unwavering commitment to do the best for our students even under the most trying circumstances. I hope that this new year is kind to us all, and keenly look forward to more stories of creativity, innovation and collaboration from our teachers, students and parents in the upcoming editions.

Wish you all a very Happy New Year 2021.

**Ravinder Kaur**  
Deputy Director, School Education, UT Chandigarh

## Initiatives by SCERT

### Poll of the month

Do you think students are ready to adapt to online examination mode?

Submit your responses at  
<https://forms.gle/6RA81vi7Fa1vfua09>

- **CCT Practice Questions** - CCT practice questions for Science, Mathematics, Reading Literacy - English, and Reading Literacy - Hindi have been launched on DIKSHA during the month of December.
- **Teacher Training** - 226 teachers from 112 government schools were trained under School Health Program of Ayushman Bharat. These trainings were conducted in two different batches between 2nd December to 14th December, 2020.
- **NISHTHA Online Course** - NISHTHA Online Course on DIKSHA for Government School Teachers was launched on 21st October, 2020 by Director SCERT, UT Chandigarh. The 18 courses need to be completed between 21st October, 2020 to 18th January, 2021. Teachers have completed Fifteen courses out of which courses 10,11,12,13,14,15 were completed in December 2020

## In shorts!

### Mathematics - A Poetry of Logical Ideas

Govt Model Sr. Sec. School, Sector 21 A, Chandigarh has established an Outdoor Mathematical Park filled with rich opportunities for mathematics learning that can instill interest and engage children in real-life problem solving. This Mathematical Park has a rich assemblage of activities, for integrating learning opportunities into play and for connecting outdoor explorations to child's learning. The various activities have been so conceived that they enhance the creative and critical mathematical thinking of students across all classes. The Park has Mathematical Ludo, and Snake and Ladder to study the concepts of multiples and, common multiples to be played with a Mathematical dice. Another interesting game has been designed for calculating perimeter and area by counting the number of squares inscribed in the polygon made by students. There are several other games to help students solve problems related to mensuration, circle theorem, angle and time concept. This park is a rich resource for the school, that will keep making mathematics creatively pleasurable and critically uplifting for years to come.



More details about this activity can be found at this link:

[https://drive.google.com/open?id=1ZSL-Makhplrw0\\_W8iYt1GrGtfTJKpaeY](https://drive.google.com/open?id=1ZSL-Makhplrw0_W8iYt1GrGtfTJKpaeY)

### Evolving Mathematics Through Art

Mathematics and art have a historical relationship. How can we imagine the domes of the Mughal empire without analysis of symmetry and notes of ragas without the numerical repetitions? Isaac Newton's work on the optical spectrum influenced Goethe's Theory of Colours (Theory based on the nature of colours and how they are perceived by human beings). Academically, art integration is a joyful way to experience mathematics, ignite creativity, deliberate critically, evolve life skills and expand intellect.

The students of DAV Model, Sector-15, Chandigarh, are being motivated to explore mathematics in folk art like Warli paintings. The students were given projects in which they explored various art forms and integrated them with mathematical concepts such as the similarity of triangles. All these activities aim at furthering Creative and Critical Thinking and applying principles of mathematics in day to day life.



More details about this activity can be found at this link:

<https://drive.google.com/open?id=1rBBlasvxvjBroEBabxjGKckTFoWS715I>

## Counting the Carbon Footprint: Beat Plastic Pollution

The students of class 9, Shivalik Public School, Sector 41B, Chandigarh, conducted a survey to collect data on plastic pollution and spread awareness to control this pollution, through google forms. 51 responses were recorded which helped the students to get an idea about the amount of plastic which goes into use in daily life, how much of it is re-used, re-cycled or reduced. This project engaged students in conducting evaluation and design of scientific inquiry, interpretation of data and evidence. The students arranged data in excel sheets and graphs for easy visualization. Students were very pleased and enthusiastic to be a part of this endeavour which taught them a billion facts about scraping the pollution and making a way for a better future and a healthier planet. Many such integrated projects are being conceptualised and organised by the team of efficient teachers of the school, to make learning an enriching experience.

More details about this activity can be found at this link:

[https://drive.google.com/open?id=14ODIzDmv\\_djGkgokGCD7PSFvIXP5ysxE](https://drive.google.com/open?id=14ODIzDmv_djGkgokGCD7PSFvIXP5ysxE)

### What is plastic pollution?

Plastic pollution is the accumulation of plastic objects and particles (e.g. plastic bottles, bags and microbeads) in the Earth's environment that adversely affects wildlife, wildlife habitat, and humans. Plastics that act as pollutants are categorized into micro-, meso-, or macro debris, based on size.





### INTRODUCTION TO PLASTIC

Plastic is the general term for a wide range of synthetic or semi-synthetic organic solid materials suitable for the manufacture of industrial product.

Plastics are typically polymers of high molecular weight, may contain other substances to improve performances and/or reduce costs.

Plastics is one of the new chemical materials which pose environmental problem. Polyethylene, polyvinyl chloride, polystyrene is largely used in the manufacture of plastics.

## Fun with Pressure: No need to take pressure

During the ongoing pandemic, teachers of Govt. Model Sr. Sec School, Sector 35, Chandigarh accepted the challenge to take up experiential learning (learning by doing) activities in an online mode. In one such practice, the abstract concept of Atmospheric Pressure was taken up by performing activities using inexpensive material available at home. These activities were performed and shared by students in online classes, thereby doing away with rote learning and heading towards competency - based learning. Each activity was followed by assignments, to strengthen the knowledge and evaluate the competencies achieved by the students. These activities helped students explain phenomena scientifically by giving the reason for events like bursting of tyres in summer, constructing thick walls of submarine etc. This added to their understanding of the concept of air column and atmospheric pressure.

All such activities assist in applying classroom knowledge in the real life; interpretation, analysis and evaluation of a given situation; create interest in science and encourage them to explore various dimensions of the content. Teaching after all is not just the completion of syllabus but development of skills and competencies.

### CCT worksheet

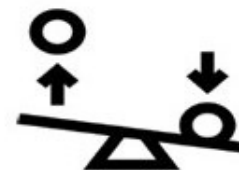
Pressure is defined as the physical force exerted on an object. The force applied is perpendicular to the surface of objects per unit area. The basic formula of pressure is  $F/A$  (Force Per unit area). Unit of pressure is Pascals (Pa).

Atmospheric pressure: air pressure is the result of the weight of a column of air pushing down on the area. There is a column of air above you all the time. The weight of the air in the atmosphere causes air pressure.

Factors affecting atmospheric pressure are:

1. Altitude- pressure is low at higher altitude and pressure is high at low altitude.
2. Temperature- higher the temperature lower the pressure, lower the temperature higher the pressure.

Temperature and altitude are inversely proportional to Pressure



Q.1 Would a lady in High heels standing on your foot is more painful than an elephant standing on your foot.



More details about this activity can be found at this link:

[https://drive.google.com/open?id=1pbgY1oaiQHh\\_PQYmfqIQsXVHqo\\_ggb\\_3](https://drive.google.com/open?id=1pbgY1oaiQHh_PQYmfqIQsXVHqo_ggb_3)

## लघु एवं कुटीर उद्योग --आत्मनिर्भरता की ओर

भाषा भावों की अभिव्यक्ति का एक माध्यम है। अपनी मातृभाषा कल्पनाओं को उड़ान भरने की दिशा और गति देती है और जब ये कल्पनाएँ वास्तविकता में परिवर्तित हो जाती हैं तो स्वाभिमान, आत्मसम्मान और गर्व की भावना उत्पन्न करती हैं, व्यक्ति को अधिक क्रियाशील अन्वेषक या खोजी बनाती हैं। भारत प्राकृतिक सम्पदा संपन्न देश है। इन्हीं संपदाओं पर हमारे देश में कई उद्योग निर्भर हैं जिस पर कई लोगों की रोजी-रोटी चलती है। इसी भाव पर आधारित कक्षा नवी में एक पाठ है "खुशबू रचते हैं हाथ", इसी पाठ को आधार मान कर योग्यता विस्तार के अंतर्गत "भवन विद्यालय, सेक्टर -27, चंडीगढ़" के कक्षा नवी के विद्यार्थियों से रचनात्मक गतिविधि करवाई गई। यह गतिविधि GOOGLE APP JAMBOARD पर करवाई गई। कक्षा को आठ दलों में बाँट दिया गया। प्रत्येक दल में 4-5 विद्यार्थी थे।



हर दल का एक लीडर नियुक्त किया गया। हर दल को एक उद्योग दिया गया जिसकी जानकारी एकत्र कर वे jamboard के स्टिकी नोट पर लिखकर उसके एक फ्रेम पर चिपकाएंगे। दल के लीडर को अपने योगदान के साथ साथ फ्रेम को सुनियोजित तरीके से व्यवस्थित करना था। इस गतिविधि में माचिस, ईंट, चूड़ी, चिकनकारी, खादी सूत, मिटटी के बर्तन, बांस की वस्तुएँ, मोमबत्ती, पापड़, मसाले आदि के निर्माण से जुड़े उद्योग को शामिल किया गया। इस गतिविधि को करवाने में कई उद्देश्य जुड़े हुए हैं जैसे किसी उद्योग को लगाने के लिए किन भौगोलिक परिस्थितियों, कच्चा माल, रसायनो, मानव संसाधियों की आवश्यकता होगी, उनको ये जानकारी मिलेगी। इसी के साथ उनका हिंदी साहित्य में प्रयोग होने वाली नए शब्दवाली का ज्ञान बढ़ेगा एवं लेखन क्षमता का विकास होगा, भाषा और सहित्या के रचनात्मक उपयोग के प्रति रुचि उत्पन्न होगी, संचार माध्यमों में प्रयुक्त हिंदी की प्रकृति से अवगत होने और नए नए तरीको से प्रयोग करने की क्षमता से परिचित होंगे। श्रमिक वर्ग के प्रति संवेदनशीलता उत्पन्न कर मानवीय मूल्यों को विकसित कर एक जागरूक नागरिक बनाना भी एक उद्देश्य है। इन जानकारीयों के बल पर भविष्य में उद्योगों को बढ़ावा मिले और स्वरोज़गार के बहु आयाम ढूँढने के लिए संभावनाएं विकसित हो सके और आत्मनिर्भरता की ओर बढ़ सके। इस तरह बहु आयामी विषयों को जोड़कर बच्चों के विश्लेषणात्मक, तुलनात्मक और निर्णयात्मक क्षमता को उजागर/प्रज्वलित करना संभव होगा ताकि नये परिवर्तन की ओर अग्रसर होने की उनकी क्षमता को विकसित किया जा सके।



More details about the activity can be found on the link below:

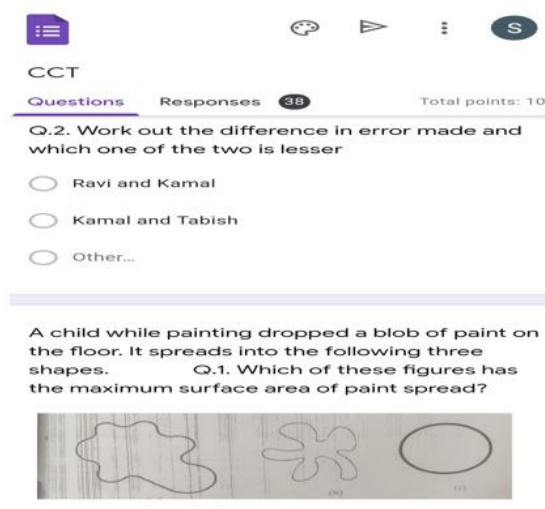
<https://drive.google.com/open?id=1NRpa5Ga4XJ1wpLneNbY1OEcpqkC3gOtUoze1n50ecxI>

## Geometry and Spatial Sense

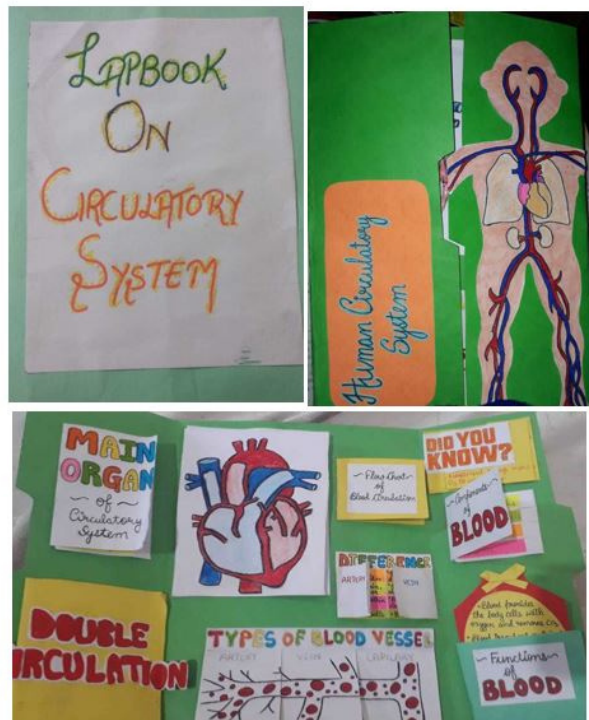
Mathematical models are an excellent way to represent various concepts of math creatively. The students of Govt. Model Sr. Sec. School, 45C, Chandigarh are being encouraged to make geometrical models for broadening their spatial sense and concept of measurement. They make videos to demonstrate various models in online classes. The activity aims to develop the ability to describe the characteristics of 3-D objects, 2-D shapes and to analyse the relationship among them; to use direct or indirect measurement to solve problems; to explain the purpose of measuring; and to describe methods of measuring and applying the formula of areas. Activities like these are being organised across all subjects and classes, for enhancing the Creative and Critical Thinking of students.

More details about this activity can be found at this link:

<https://drive.google.com/open?id=1gBPCZFIPN6KiU4k8YaiPEcwipMkAGWLY>



## Let us work up our circulatory system



With a desire to develop an innovation mindset, creativity to integrate and to strengthen a sense of belonging, students of class 7 of Ajit Karam Singh International Public School, Sector 41, Chandigarh were motivated to make a Lapbook on the central theme of the Human Circulatory system. This Lapbook has drawings, writings, pictures, graphs, etc. on main organs of the circulatory system; components of blood; functions of the blood; parts of the heart; different types of blood vessels and their role in the circulation of blood. Along with this the students performed yoga to improve blood circulation and added their pictures in the Lap book.

This hand-on activity was followed by many other activities where the students were asked to note down their heart rate while doing different activities like at rest, low intensity walk, medium intensity jog and high intensity run and tabulate the data.

These values were expressed as the product of powers of the prime factors in the table and represented graphically. In this manner, the biological aspects of the circulatory system were integrated with Art and Mathematics, there by bridging the learning gaps and catering to multiple intelligences.

## A dial inspired by the rising sun....

To instill experiential learning and encourage hands on experience among students, science department of KBDAV Senior Secondary Public School, Sector 7 B, Chandigarh took an initiative and participated in the mega event called, "India International Science Festival" (IISF) from 22nd December to 25th December, 2020. The students of Class VII enthusiastically participated and attempted a World Record Title on the "Largest Assembly of Sun dial nationwide on a virtual platform". The budding scientists expressed their logical thinking and gained confidence by assembling the sun dial kit (received from Vigyan Bharti ) and then testing it in a fun - oriented learning process.

This event gave the learners' a first hand learning experience of reading time without a watch. The objective was to enable the learners to think out of the box for improving their knowledge and learning. Such activities are a part of day to day teaching - learning transactions in the school that help students learn how to connect skills and knowledge from multiple sources and real -world experiences and then indulge in interdisciplinary understanding (Science and Art and Craft). KB Davians believe that the more actively students are engaged in their learning, the more lasting knowledge they will gain.

More details about the initiative can be found on the link below:

<https://drive.google.com/file/d/1Qz1AI80b9uuzCTFTEBS1oAV6g7ANEnPm/view?usp=sharing>

### K.B.DAV CLASS-7 STUDENTS ENTER GUINNESS BOOK OF RECORDS

It was time to rejoice for 75 students of KBDAV-7, who set a Guinness World Record for attempting a World Record Title on the "Largest Assembly of SUN DIAL NATIONWIDE" on a virtual platform. More than 6000 students created a world record nationwide by completing the assembling process in the stipulated hour simultaneously. They achieved this feat during the ongoing India International Science Festival (IISF 2020) on Dec 22, 2020.

The students of the School Jagged between 12 to 14 years took 20 minutes to carry out assembly of the Sun Dial kit and then testing its working in the presence of scientists from the Ministry of Science and Technology.

Students showed a lot of enthusiasm and curiosity while performing the activity and gained hands-on knowledge. This activity was aimed at giving a meaningful learning experience to students and will improve their subject-related knowledge.

Hartliff's Class 7 said: "It was a great honour for me to be a part of this record breaking team. I will now proudly tell my friends and family that now I'm a part of Guinness World Record." Aayana and Sachet, both in Class VII, were equally happy to be a part of the team.

Since an attempt of this level requires prior orientation and practice, a "mock training session" was organized by the team IISF on 20th and 21st December. The students were instructed to follow simple protocol and steps of assembling the SunDial Kit and its testing.

#### PURPOSE

1. To relate Science to real life and give a new meaning with hands on learning activity
2. To learn how shadows are created and how they move and change in relationship to the sun's position.
3. To integrate art with science.
4. To bring "joy of learning" in online classes and enhance scientific literacy skills of the students.
5. To generate enthusiasm and a love for science amongst the learners.
6. To foster scientific creativity and ingenuity thus building creative thinking and promoting scientific temperament among young learners.

#### IMPACT

Through this exercise, students learn how to connect skills and knowledge from multiple sources and real world experiences and then indulge in interdisciplinary understanding (Science and Art and Craft). This kind of activity will give a positive push to the students' minds. This will help in enhancing the grasping power of the students, will help them to interconnect things and help them to study the subject with more interest.

#### WAY FORWARD

Looking at the response from the learners, teachers planned to create more such activities that elicit creative thinking amongst the learners. This will enable students to understand Science in a further advanced way and they will be motivated to explore the vast world of SCIENTIFIC WORLD.



## Experiencing Fluid Mechanics



The laws of science are involved in every aspect of our lives. The students of St. Kabir Public School, Sector -26, Chandigarh conducted activities to relate the application of concept of Pascal's law to a variety of observations in day to day life. This helped students understand and design the structures required to support liquid pressure e.g. construction of an overhead water storage tank, working of a hydraulic lift, the layout of water supply lines, etc. This knowledge further helped clarify the basics for understanding and developing the concepts of *Upthrust* and *Floatation*. The models made by the students helped them to visualize complex concepts, understand problems, and communicate new ideas, thereby developing Creative and Critical Thinking in them.

More details of the activity can be found on the link below:  
[https://drive.google.com/open?id=1y\\_N8A4GuuT-N8w3FKH0Z6x7nBwasHq5S](https://drive.google.com/open?id=1y_N8A4GuuT-N8w3FKH0Z6x7nBwasHq5S)

## Maths is fun...enjoy it!

When learning is associated with fun and enjoyment it becomes easier to retain. The students of St. Joseph's Sr. Sec. School sec 44 D, Chandigarh are being exposed to many such memorable experiences. With the aim of making mathematics more interesting and minimising the learning gaps, basic concept like integers, perimeter and area are being taken up through hands on activities for the students.

Through these activities students are being presented to the idea that life works on the principles of maths. These hands on activities are proving to be a boon to the kin aesthetic learners. Students jump, skip, use threads, balls and many such things in their surroundings to understand complicated concepts of maths. Colourful Mathematical Rangolis are also designed by the students on the concepts of symmetry. These activities allow students to investigate on simple problems, link theory to practice and apply the principles of mathematics to day to day happenings.



## Parent Corner!

"My daughter, Amiya Sachdeva, a student of class 9th in Sacred Heart Sr. Sec. School has been taking the PISA (the Program for International Student Assessment) tests in school as well as online for the academic years 2019-2020 and 2020-2021. I think this is a unique way of learning because it focuses on the application of skills and knowledge and presents problems in real-world contexts I have been motivating and encouraging her to prepare for it by attempting the sample question papers. The teachers have also been supportive and have been discussing PISA related questions in the class in order to prepare us for the tests. Overall, PISA really helps students in creative and analytical thinking."

Neha Sachdeva

Housewife

Mother to student in Class 9,  
Sacred Heart Sr. Sec. School

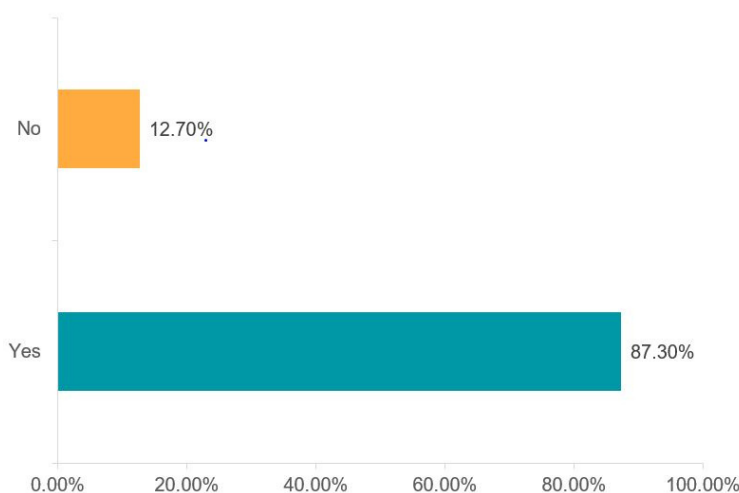
To share stories from parents and their experience of supporting the Creative and Critical Thinking initiatives for their students, please fill in the form below:

<https://forms.gle/FVmF2xXGR6au5mL8A>

## Results of last month poll

Do you think comic books (such as Harshit, Cogito) help students understand concepts better?

Total responses: 1,738



## Your opinion matters!

Do share your feedback on this edition of Samvaad on this link

<https://forms.gle/5xNdzr2UGne7LSz76>