Newsletter on Innovative Practices

केन्द्रीय विद्यालय संगठन

ZIET MUMBAI

2017

Creating a culture of innovation in schools
Our Patrons

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KVS New Delhi
Commissioner’s Message

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Message

I am delighted to note that ZIET Mumbai is continuing the good practice of bringing out a newsletter exclusively dedicated to publishing articles on ‘Innovative Practices in Classroom Teaching’. It is also pleasing to know that the second issue of this newsletter has a variety of articles contributed by teachers of various subjects and cadres.

I hope this newsletter, disseminating tried and tested innovative ideas, would serve as a handy tool for reference to thousands of teachers and foster more creativity in classroom transactions.

I congratulate the team of ZIET Mumbai for this initiative and wish them all the best.

(Santosh Kumar Mall)
Commissioner

Ms. Usha Aswath Iyer
Director
Kendriya Vidyalaya Sangathan
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KVS Complex, NCH Colony, Kanjur Marg (West)
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KVS ZIET Mumbai brought out the first issue of a compilation of Innovations and Experimentations last year, with contributions from various teachers and even some Principals.

This year the magazine has a collection of articles from various KV teachers, including the reports on Projects undertaken in English and Mathematics. The teachers attended workshops in ZIET Mumbai and sent in their reports after doing the activities in their respective schools.

All the articles show a heartening trend of the teacher taking up the challenge of doing something new and different so as to improve the ‘learning’ of the students. The focus here has clearly shifted from ‘teaching’ to ‘learning’ - and that too learning by doing.

These articles also show the benefits of collaborative teaching and learning. For English, the teachers roped in teachers of other subjects in their schools. Even the Principals joined in willingly and provided the much-needed support and guidance. For Mathematics, the teacher and the Principal attended the workshop. Back in school, the activities ensured that the whole class was involved. The Principals ensured that the activities were conducted in a time-bound manner.

I congratulate all those who have contributed to this magazine. I also thank the Principals who mentored and monitored their teachers and students.

My earnest request to all the teachers is to take up some small, innovative techniques and try it in their classes. Keep accurate records. And learn from these projects. Our students don’t just need academic knowledge; they urgently require skills and attitudes that will stand them in good stead in their future.

USHA ASWATH IYER
DIRECTOR
It is a challenge for the educators of twenty-first century to prepare a person for work that does not yet exist and cannot yet be clearly defined. Innovation is the vital spark of all human change, improvement and progress. Kendriya Vidyalaya Sangathan is endeavoring to impart the culture of innovation in teaching learning process through various programmes. This newsletter is one of such attempts and it brings out a compilation of innovative practices of Kendriya Vidyalaya teachers.

It is heartening to find articles on innovative practices from teachers of various subjects. I hope the articles reflecting the success stories of Project Based Learning and Interdisciplinary Projects would inspire more teachers to take up such projects. It is our aim to make innovation part of our way we live and teach. Our future growth relies on competitiveness and innovation.

We have received many articles written merely on assumptions and theories. But priority was given to publish the articles which reflect the success stories of innovative methods which were actually practised in the classrooms. I thank all the Principals and teachers who had contributed articles on innovative practices.

EUGENE D. LEEN
Editor & Graphic Designer
Grammar is central to the teaching and learning of languages. It is also one of the most difficult aspects of language to teach well. A young learner is eager and enthusiastic to learn each and every new thing presented to him, but he should be motivated to do so in an interesting manner. Once the level of curiosity is increased learner can give maximum result of satisfaction. In order to develop interest and temper towards learning, it was thought to teach grammar in an innovative, creative and playful way through games.

To enforce learning, an exhibition was organized at school by class IV students. Required TLM too was prepared by the students.

1) **TAG THE PICTURE GAME**

Students had to read and tag the pictures having flags of different countries, famous personalities in one minute.

2) **FISH THE SYNONYM**

Students would pick the word and fish the synonym of it from the pond. An interesting way to learn synonym

3) **HOMOPHONE PUZZLE**

Homophone words were written on cardboard, the cardboard was then cut into jigsaw puzzle having one word on each which were to be arranged.
4) BOW AND ARROW GAME

Meaning of the words were written on the target and arrows have words. With the help of bow student has to aim the correct goal.

5) LIGHT ME UP & MAGNETIC BOARD

Best way to learn opposites by lighting the correct answer. Young ones of the animals were to be matched on magnetic board using magnetic cards having names of young ones written on it.

6) PICTURE CALANDER & POEM BASKET

Picture calander of opposite words was made and it was spiral bound. Poem Basket had strips of poem Child will read and arrange the poem strips in right order.

7) RHYMING WORD PLAYING CARDS

Rhyming words were written on playing cards. Each word had 4 rhyming words and they were to be arranged in one minute.
8) HANG PREPOSITION

Picture cards showing prepositions of place were made, cards have thread with the help of which it could be hung on the board at its appropriate place of preposition.

9) SPIN THE WHEEL

Inner wheel has pronoun as HE, SHE, IT, THEY written and outer wheel has sentences written on it, wheel will spin and students will match pronoun to its sentence.

10) ARRANGE ME

Pictures were drawn on paper and laminated and then cut into 6 pieces. Sketch of picture was given and student were asked to arrange pieces to form original picture and to say a few lines about the picture.

“The biggest game changer in Education will never be a technology -
Its an educator who’s willing to be Innovative”
George Couros
A Project Based Learning study with interdisciplinary approach, was initiated by teachers of English from five regions of KVS in collaboration with ZIET Mumbai in September 2016. It was a pilot project undertaken by Teachers of English from various schools in each region on a specific theme. The Teachers of Mumbai Region were assigned the topic ‘Environment’.

At KVIIT Powai, we decided to take on the issue of ‘Environmental Conservation’ as it is the current and a major concern in the world today. As an educational institution, nurturing young impressionable minds, it is the need of the hour to create awareness of the inevitable necessity to conserve and protect the environment. People should be sensitized to have a stronger sense of commitment to conserve and protect the flora and fauna in the ecosystem. What better way then, than to engage young minds whose views and ideas can be shaped, to ensure that they live in a better world tomorrow.

The study was taken up with class X students for four months. The topic was further subdivided after students and teachers brainstormed to finalize ideas for the topic. The five subdivisions were: Bio-diversity Conservation, Clean Air to Breath, Climate Change, Renewable Energy and Safe Drinking Water. Over the course of the weeks that ensued each group read up on related topics, watched videos and documentaries, listened to podcasts, prepared PPTs on Google Slides and Questionnaires and Write-ups via Google Docs, conducted Debates and engaged in Case Studies related to their topic.

Apart from this, activities for the entire class were undertaken wherein the students were taken on a Nature Walk to the Solar Power Lab and the Solar House at IIT Bombay. They were introduced to the nuances of Solar Power and the uses and ways it is produced. The Solar Power house was a unique stop over, as they were able to observe how a home can function completely on Solar power. During the walk the Off-line Survey of the Questionnaire was also conducted. A You-tube video was prepared and uploaded on Facebook.

https://www.youtube.com/watch?v=Kd2DUY-LJ7o&feature=youtu.be
As part of the FA 4 assessment, students answered a 10 marks worksheet prepared on this topic. Since it was a practical experience the class average was high.

An Educational Field trip was arranged to the Regional Meteorological Centre at Colaba, Mumbai where students were briefed about different aspects with regard to weather and other related areas. They interviewed the Director, Mr V K Rajeev, who gave them valuable insight on weather reporting and answered all the questions the students put forward.

As an ambitious venture, the students performed a Street Play to create awareness among the public as to the importance of conserving the Environment. The play was scripted with the help of the Economics teacher and the song to accompany was composed by the students themselves with inputs from the teachers. They performed the play within the IIT Campus and the adjoining areas of Powai. It was a success. A You-tube video was produced and uploaded on Facebook and has received over 700 hits. 

https://www.youtube.com/watch?v=-3Kv3WIC6_4&feature=youtu.be

The On-line Survey prepared on Google Forms, garnered close to 130 responses. The survey was categorised into three age groups: Adolescence, Youth and Middle age.

Using the information collected, a statistical analysis was prepared. This helped to formulate a clearer understanding of the awareness of the public in each age group and how they contribute to the environment.

https://docs.google.com/forms/d/1MdxTQ2NSKKDJzzmsFzB9kl_5t6msr_NjCd-aaAnplMM/edit

Each participating student wrote his/her reflections on the Study they had undertaken, and they all felt that the next step would be to concentrate on sensitizing the Adolescent age group since, that would make a phenomenal difference towards Conserving the Environment!!
“If you want to see different results, do things differently.”

So far, in my teaching career of 15 years, I have heavily relied on working teaching-models. Though these models were helpful in evoking and sustaining interest among the students, the instructor-centered teaching remained dominant. For certain chapters in science, active and sincere involvement of students is a must so that the concept as well as the environmental issues get registered in their minds properly.

“Water” is a very interesting and simple chapter in Class 6 science textbook. However “Chalk and Talk” method doesn’t produce the right effect and fails to do justice to this wonderfully written chapter. So, I thought of involving students in a way that incorporates multi-sensory approach, keeps each student committed and accountable (Individual Accountability) and nurtures Positive Interdependence.

It led to my first structured effort to try Co-operative Learning for the chapter-“Water”. The students were divided into 6 groups. Each group had around 5 to 6 students. The entire chapter was divided into the following 6 sub-units and each group was assigned with one of these.

1. Uses of water and water available on the earth for the same
2. Different ways by which water enters air and cloud formation
3. Water cycle
4. Droughts and floods
5. Why do we need to save water?
6. Ways of water conservation

Each group was explained that they have to read the entire lesson and then focus on their respective sub-unit. The challenge here was that each group had to ensure that every group member had a significant role to play during the presentation. Also, the speakers have to link the concepts during the presentation. It should have a clear introduction and conclusion. They were given 2 days to do preparation at home individually and 2 periods in class to sit together with their group members and consolidate the information gathered and arrange it in sequence. The only concession sought by one of the groups was that a student wanted to explain her part in Hindi during the presentation.
The students were told before the presentation they have to attentively listen to all the presentations and ask questions or doubts after it ends. Also, they were informed that a questionnaire will be given to all of them at the end of the presentations. Besides, a little extra relevant information beyond the textbook would be appreciated. Based on all this, the best two teams will be announced by the teacher at the end. I felt that this added zeal and competitive spirit to their efforts.

To ensure that the teaching learning objectives are met during such endeavours, the teacher’s role apart from the above-mentioned instructions and planning is to monitor the group work to ensure task focus, encourage healthy communication, eliminate hostility and work shirking among the group members and keep them time bound.

Finally, the presentations began. The quality of the presentation, concept clarity, research done by them, confidence and above all the teaching material used by them surprised me. I sincerely hope that some of these enthusiastic youngsters join and enrich the teaching community. Even the question-answer session after each presentation was informative and lively.

The best two teams were announced only after I had finished giving an encouraging feedback to all the 6 teams and acknowledging the role of each student. Omissions or mistakes by the students, if any, were noted by me during the presentation and corrections were made at an appropriate point of time. At the end, a questionnaire covering the key points of the lesson was given to each student. This was to gauge the gaps in understanding. I later re-explained those concepts while giving notes and revision.

Had I used the conventional lecture method of teaching, I would have taken around 3 periods to complete the explanation. Co-operative learning method also enabled us to cover the lesson in around 3 to 4 periods with some extra benefits. Apart from the science concepts, the students imbibed communication and social skills. A lot of face to face interaction and self-assessment also took place. Benjamin Franklin had rightly pointed out that- “Tell me and I forget. Teach me and I may remember. Involve me and I learn.” This teamwork was surely an enriching experience for the teacher as well as the learner.

Worth trying!
Teaching Social Science – A Challenge

Teaching is a noble profession. It is both an Art and Science. It is an Art in the sense that teacher has to be a good actor in the class room and deliver the topic in an interesting way involving the entire body language with proper gestures, postures, eye contact and voice modulation. Teaching is also a Science as it follows Scientific methods like observation, experimentation and drawing conclusion to improve teaching further. It may be done both at micro and macro levels as explained in detail by the pedagogics.

In this context, teaching Social Science in secondary classes is an uphill and formidable task. It has become tough at present in emerging society as students are mostly pressurized by Society and Parents to be in mad and rat race for getting a seat in Science and technical institutions after passing class X examination. Focus of students, parents and teachers remain on Science and Math and consequently Social Science and language subjects are being neglected continuously. Social Science plays a major role in improving general awareness, fostering national unity and integrity, strengthening communal harmony and strengthening language skills. Hence, the teachers teaching Social Sciences must wake up from deep slumber and arrest the process of declining interest in the subject among the students at the earliest. However, the task is not as easy as assumed, keeping in view the following the tricky issues:

**Enormity and Complexity of Subject:** Social Science though treated as a single subject comprises of four subjects i.e. History, Geography, Political Science and Economics. Students at secondary level already overburdened with other subjects like Math, English and Science find the subject bulky and extensive. Insistence by some teachers to refer various private publications/ bazar guides in addition to the NCERT text books increase their woes. Students gradually lack interest in the subject and just cram some dry facts and figures or give a curiosity look just before the examination without understanding the basic objectives and essence of the topics.

**Competency of Teachers:** - As per the recruitment rules prescribed by KVS, NVS and other state boards, a person must be a trained graduate with either History or Geography as a compulsory school subject at graduation level to be eligible for becoming a social science teacher. Thus, a social science teacher usually lacks required competency in all four subjects like History, Geography, political science and Economics. Most of the teachers while doing justice to their own subject History or Geography; find it difficult to satisfy the queries of the students in other subjects like Political Science and Economics. This results in lopsided and imbalanced approach towards the subject. Sometimes, they also lack required attitude and aptitude for learning to improve their professional competency during service. This results in lopsided and imbalanced approach towards the subject.
Societal, parental and Peer group pressure: - As mentioned earlier, there is an ever increasing craze for taking admission in Science and pursuing career in technical fields. While encouraging scientific temper and spirit as always describable and welcome, all parents should try to explore and know the real interest and initiative in the mind of their wards and their inner potentiality. Undue and undesirable pressure of peers, parents and society to pursue career in Medical, Engineering, Management and IT sectors compel students to take more stress and put maximum effort and devote most of the time on science and mathematics leading to gross negligence of a major subject that is Social Science.

Faulty and Uninteresting Method of Teaching: - Teachers teaching Social Science are largely responsible for decline of interest in social science at an alarming rate. While some teachers are untrained, even trained and experienced teachers hesitate to take pain and make the subjects interesting. The subject as taught in a very dry and monotonous manner like reading out the text books, writing readymade answers on the blackboard and emphasis remain only on coverage of syllabus. Few teachers bother whether the students have developed an aptitude for learning the subject in right perspective and in this way the whole objective of teaching social science gets spoilt.

The above-mentioned factors along with other issues have fed to a devastating effect on a very vibrant subject like social science as a result of which students hesitate to choose their career in Humanities. It is not a very positive signal for our nation and education system. Hence, the issue is to be addressed at the earliest and proper corrective measures to bring back the importance of social science in school curriculum are to be taken immediately.

Inter-disciplinary Approach: - Social Science is a multi-disciplinary subject. At present, many chapters in History books of classes IX and X are directly related with Geography, Political Science and Economics. For example, Globalization and Liberalization bring History and Economics closer. Similarly, Federalism is to be studied in Historical context for proper understanding. A Chapter on peasants and tribals cannot be studied without understanding the climate and geographical condition in which communities developed. Thus, all four subjects History, Geography, Political Science and Economics are clearly linked to each other and should be dealt in inclusive and integrated manner. Though all four subjects have their distinct identity, objectives, scope and importance, teacher must try their best to teach them in an interesting and inclusive way as much as possible.

Link with Real life situation

Social science deals with burning socio-political and economic issues and should be taught in a very vibrant and lively manner. Even History should be linked with present issues to have a proper perspective and better understanding of many problems existing now a days. While teaching political science, teachers should give examples from current events and local happenings. Similarly, Geography is to be taught in a systematic way with the help of appropriate teaching aids based on survey of locality. Economics should be dealt with
a practical approach by exposing students to current issues like price rise, depression, banking etc. with the help of print and visual media. Students in a social science class should feel that subject is highly useful for them for better understanding of their Society and Nation and leading a coherent and harmonious social life.

**Effective Use of Teaching aids and Technology**

It has been observed that most of the time Social Science is treated in a very traditional and monotonous way leading to boredom among students. Teachers must use appropriate and effective teaching aids like maps, globes, LCD projectors, PPT presentation. CD’s, DVD’s and multi-media CD’s, interactive boards as per the suitability and availability. Now-a-days Central Institute of Education and Technology (CIET), under NCEPT and many other reputed firms have developed DVD’s and multimedia CD’s with additional information and interesting animation which could be as supplement to text book teachings. Students should be encouraged for Group Discussion on current and important issues and participate in quiz, extempore, and go for Survey at Vidyalaya and local level for better grasp of the subject. Once the subject becomes interesting, students will feel motivated and inspired to explore further and develop their knowledge through self-study.

**Career Perspective:**

The major reason behind declining interest in social science among present generation is lack of awareness regarding career opportunity in subject. Social Science teachers should not only focus exclusively on teaching the subject but make students aware of the importance of subject from career point of view. Students must know that sixty to seventy percent of General Knowledge question paper in any competitive examination comes from social science. A good grasp of general knowledge helps a lot in qualifying various competitive examination including Civil Service Examination at state and all India levels. Apart from this, interested students can pursue their career in subjects like Archaeology, sociology, psychology, tourism, curator in museum / archives, cartography, Geology etc, and of course in schools, colleges, universities and institutes of learning as Teachers, Lectures and professors.

The most important objective of placing social science in secondary school curriculum is to strengthen our national unity, integrity, understanding of international issues and fostering universal peace as well as harmony. We are at a crucial juncture where not only our country but also many parts of world are besieged with grave and contentious issues like ethnic clashes, communal riots, casteism, terrorism, violation of human rights and environmental hazards. Under such circumstances, proper teaching and learning of social science at an adolescent stage will have a lasting and indelible impact on their tender mind and prepare them for a responsible role in society in future.
Improving mathematical skills through games as a part of EQIUP

Mrs. Bindu. P.M TGT (Mathematics) KV B E G, PUNE

Playing Sudoku: One of the best ways to make our students sharpen their critical thinking skills is to engage them in playing Sudoku. Give them very easy levels to start with to develop their interest in solving it. Let two students be given one sudoku card to play. The levels of students whose thinking skills are good can be increased slowly from Medium to Difficult. Rules of filling the squares should be made very clear to them. Each line should have all digits from 1 – 9 and every square also must have numbers from 1-9. No repetitions of number in a row, column or square is allowed. These can be tried out from class IV onwards.

Playing board games to learn “Integer Addition”- Students can be divided into groups where each group has a board of integers (sample given below) and a dice. The dice has three faces numbered 1, 2, 3 and the remaining three faces numbered -1, -2, -3. The coins are arranged on the number zero. When a student throws a dice he has to go upward or downward according to the number he gets. Another student notes the result. For example, if he throws 1 then it will be noted as 0 + 1 = 1. Then if he throws -2 in second turn he goes two steps backwards and reaches -1. This will be written as 1 + (-2) = -1. The first student to reach the top wins the game. To learn bigger additions the number on dice can be increased.

Collage Making - This is also a group activity to acquaint students to link mathematics to real world. In this, students collect pictures from newspapers and magazines on the topic learnt and paste it on a chart. These charts can be displayed in the classroom. Each group can make charts on different topics like Data handling, Geometrical shapes, Polygons, fractions, Graphs etc.
Project Based Learning is an initiative taken by me in collaboration with ZIET, Mumbai under the guidance of school Principal Mr. U.R. Meghwal. An interdisciplinary Project titled “Fire is a good servant but a bad master” was worked out. It was successfully conducted for a group of students from Class VIIth -A with sincere cooperation and support from four subject teachers. Science, Physical and Health Education, Library Science and Hindi were the subjects integrated in this project.

The purpose of this project was “to improve fire safety, to prepare students for fire prevention, to foresee the causes and initiate appropriate and timely actions to control fire, and to prepare one with possible first aid to minimize the harm.

The project was inaugurated by the honourable Principal Mr. U.R. Meghwal on 15th Sep, 2016. A poster about the project had been designed by the students and put up on the school notice board.

The project activities were kickstarted with full zest and enthusiasm. After briefing of the topic to the students, a set of tasks was assigned to them. The topic was also correlated with the lesson “Fire; Friend or Foe” from their textbook- “Honeycomb”. The set of activities which were conducted in the project are as follows: First, collection of information on the topic and poster making. Then, students enjoyed watching power point presentation on the topic.

Further, Science Teacher Mr. Lakma Ram took the charge and an experiment was performed in the open ground “How to Extinguish Fire” with Fire Extinguishers. Students themselves performed the experiments. Then, a visit to Fire Station was organized on 26th Oct and I was to escort the students to the Air Force Fire Station. It was a grand success. Students were amazed to see how firemen worked at fire station and doused fire in minutes.
The next day, a report about their visit and experience was read out in the morning assembly. Further, a short play in Hindi was organized by Mrs. Sonal Sharma PGT (HINDI) about Fire and safety Measures. Students did a wonderful role play in the assembly about safety measures.

A Radio Talk show was organized by me on All India Radio on 30th Oct 2016. It was broadcast at 6:45 pm. It was organized in the form of a presentation cum discussion highlighting the objectives of the project and how to tackle fire accidents and escape from such situation. Our school PET Mr. Ramesh Patel made students aware of what kind of first aid could be provided in such situations. In order to reinforce the ideas they gained, a debate was conducted as a part of CCA activity on the topic “Fire is a Good Servant but a Bad Master”.

Finally, students had made a record of all the activities which we had done during the project right from reading textbook lesson to debating and finding the concluding remarks of the project.

I firmly believe that Project Based Learning with interdisciplinary approach provides students a deeper knowledge through active exploration, experimentations and collaboration with real world problems & challenges.

In the end we submitted all the work to our school Principal and team of teachers who evaluated the project based on a prescribed rubric.

This PBL reminds me the words of **Mark Twain**

“How little a thing can make us happy when we feel that we have earned it.”
MATERIAL REQUIRED:- flash cards ,picture cards

SEQUENCING  AIM: Knowing the sequence of events in a story is an important skill for children to learn. Without it they struggle to understand what they have read. Here you’ll learn exactly what sequencing is, take a look at some examples and see how it's used in education.

What is Sequencing?
Kids sequence naturally. They know that they get up, brush their teeth and then eat breakfast. However, knowing routines and understanding how these steps come together to form sequence is a different matter. Following a sequence of events, or sequencing, means being able to identify the components of an event in order, such as beginning, middle and end of a story or the steps in a science experiment.

Sequencing events in a story is a comprehension strategy for reading. Understanding words like 'first, next, then, after' help readers make sense of time in reading.

Sequencing events is also a skill child will use in science. As an inquiry skill, kids need it to perform the steps in experiments, observe and record changes, and understand how and why things change over time. In math computation problems often follow a certain order.

Social studies, particularly history, uses sequence of events to make sense of what happened and when.

Why Do We Teach Sequencing?
To understand information read in text, students need to be able to make sense of it as it is being read so they can recall it later.

Teaching and helping readers understand the importance of order of events helps them deepen comprehension. The ability to correctly identify beginning, middle and end allows readers to retell the story later and makes the task of remembering important events manageable. In math and science, we support sequence of events concepts every time we teach methods and computations. For example, when you explain the steps to solving an addition problem, you’ve indirectly taught students that the order of steps needed to correctly solve the problem is important. In the same way, scientists use sequence of events when performing experiments.
All steps in experimentation depend on a prescribed order; you can't perform an experiment before you make a hypothesis in the scientific world.

**How do we use it?**

When beginning to teach sequencing, keep it simple. Find text that will easily support the three main ideas of beginning, middle and end. Move to more complex text after readers have mastered this concept.

**English:** Introduce readers to sequencing by reading simple text, like fairy tales and fables, aloud. Ask them to think as you read about what happened first, next and last. As you read, pause and ask questions. Say 'What just happened?' Doing this allows students to practise saying and hearing events recalled. After the story is over model how to retell aloud or on chart paper. Or if your students are ready they can tell you events they remember while you record them on chart paper. After the events are recorded, you can put them in order as a group. Prior to reading a story aloud, remind students that they will be working on their sequencing skills. Depending on your lesson, you might say, "As we read, let's think about what happens during the beginning, middle, and end of the story," or "After we finish reading, we're going to try to retell the story." As you read, pause frequently to ask students to identify the events in the story and to encourage them to think about when the beginning gives way to the middle and the middle transitions to the end. Once you have read the story, make lists with students about the events that occurred, trying to arrange them sequentially. Sentence strips work well for this type of activity, since events can be written on individual strips and then rearranged as necessary to put the events in the correct order.

**MATHS**

Math provides many opportunities for students to think about a process for solving a given type of problem. This process can be thought of as a sequence of steps. Students can list the steps of a process, such as finding a common denominator for a pair of fractions, and work with partners to follow those steps while solving applicable problems. To ask them to read problem solving examples to list items, numbers, steps etc

**SOCIAL STUDIES**

As students study history, they are often asked to keep track of series of events. Sequencing is a critical skill for this type of learning. Students can practise these skills by creating timelines showing the order of events.

**SCIENCE**

Science experiments provide a great opportunity for honing sequencing skills. Not only can students practise following a sequence of steps to investigate a particular concept but many experiments provide a dramatic way for students to try to take a set of mixed-up instructions and put them in a logical sequence. Students may find that some experiments can only be done in a specific order while others can be done in a variety of sequences.

**HOW WE CAN DO IN OUR TEACHING:** Examples:

Begin by reminding students that they will be working on their sequencing skills. One strategy
that may be helpful is to give students pieces of paper and pencils to use as they read. Students can write page numbers and a few words to remind them of important events in the story. For instance, a student who is reading *Goldilocks and the Three Bears* in order to retell it may jot down:

Goldilocks comes in  
She eats the porridge  
She breaks the chair  
She falls asleep  
The bears come home

This list doesn’t tell the whole story, but it does provide the key elements, in order, and would serve as a good outline for someone wanting to retell it themselves. If this procedure is new to students, model it before asking them to do it on their own, using a read aloud story and recording your own ideas in a think aloud style to show students how to do this on their own. Once students have completed reading, give them opportunities to write about their stories’ sequences in a reading journal, to discuss their stories with partners, or to retell them to family members for homework.

MAKING OF AVIAL (CLASS V)

Step 1. Cut all the vegetables in the same length, about 1 X 1 1/2 (pieces)

Step 2. Place them along with turmeric powder, chilly powder, salt and sufficient water in a vessel and keep it on fire.

Step 3. : - Do not add too much water as it might overcook the vegs and also might take too much time to become dry.

Step 4. Cover and allow it to cook.

Step 5. Grind together grated coconut, cumin seeds, small onions, green chillies and curry leaves into a coarse form.

Step 6. When the vegs are cooked, add the raw mango pieces and cook with the vessel open.

Step 7. When the mango pieces too are cooked and the water starts to evaporate, add the coconut mixture and mix well.

Step 8. : - If you are using curd, add it along with the coconut mixture.

Step 9. Allow all the water to get evaporated.

Step 10. When done, add the coconut oil and curry leaves and mix well.

Step 11. Remove from flame and cover the vessel with a lid.
शैक्षिक आलेख
रह रह आँखों में चुभती है .............

क्या कारण है कि मानवीय संसाधनों एवं भौतिक संसाधनों की प्रगति के बावजूद भी हमारा भारतवर्ष सफलता के शिक्षरों को छू नहीं पा रहा है विकसित राष्ट्रों पर दृष्टिपूर्वक। करने पर एक बात समझ में आती है कि वहाँ की जनता और शासक वर्ग शिक्षा के प्रति सचेत हैं और शिक्षा ही मानव को सही समझ और दृष्टि देती है। आधुनिक भारत में शिक्षा के प्रति जो नज़रिया है उसमें परिवर्तन करने की आवश्यकता है। किसी इमारत की मज़बूती उसकी बुतनयाद पर तनभतर है, अगर नीवं मज़बूत या कमज़ोर होगी तो इमारत भी। ककसी इमारत की मज़बूती उसकी बुतनयाद पर तनभतर है, अगर नीवं मज़बूत या कमज़ोर होगी तो इमारत भी।

प्राथमिक शशिा के पुनः सोचना जरूरी है क्योंकि बालक पद्धति मात्रा में सीख नहीं पाता है। नए अनुसंधान के प्रामाणिक रूप से बालक पर्याप्त मात्रा में सीख नहीं पाता है। वहाँ यह कहते हैं कि चार के उम्र में बालक अपनी ज़िंदगी का पचास प्रतिशत सीख लेता है और चार वर्ष के उम्र में बालक सीखने की क्षमता निरंतर कम होती जाती है। इसलिए शिक्षाशास्त्रियों को पुनः सोचना आवश्यक है क्योंकि बालक शिक्षा कब प्रारम्भ की जानी चाहिए।

शशिा हमें दो साल में शुरू करनी चाहिए क्योंकि सीखने का सबसे ज्यादा कारण और महत्व करने का समय प्रथम चार साल के साथ सीखने की क्षमता निरंतर कम होती जाती है। इसलिए शिक्षाशास्त्रियों को पुनः सोचना आवश्यक है क्योंकि बालक शिक्षा कब प्रारम्भ की जानी चाहिए।

यदि इसी प्रकार जाना का विस्फोट होता रहा तो हो सकता है कि शिक्षा एक वर्ष में शुरू करनी चाहिए और यह भी। कठिन नहीं है कि बुलत जल्द हमें यह ख्याल भी पकड़ ले कि माँ के गर्भ से ही बच्चे को शिक्षित किया जाए। महाभारत के प्रसंगानुसार अश्वमेधनु ने अपनी माँ के पेट में ही सावधान को सीख लिया था। यहाँ चेतना है वहाँ सीखना शुरू हो जाता है। माँ स्वस्थ है तो स्वास्थ भी, माँ भूखी है तो गरीबी और माँ का पेट भरा हो तो बेबी अमीरी सीख रहा है। नई सोच में ख़तरा तो रहता है। लोग ववरोध करेंगे, तनंदा और उपहास भी करेंगे। अंत में स्वीकृति शमलेगी।

वूल के पहले काँगों को झेलना पड़ेगा। न हो सकता है क्योंकि मनुष्य को तरोताजा रखने में सबसे ज्यादा कीमत और ग्रहण करने का समय प्रथम चार वर्ष में है। बालक जो ज्ञान प्राप्त कर लेता है बाद में उसे सीखना बहुत कहिन है। यह भी ज्ञान का ववस्फोि होता रहा तो हो सकता है कि शशिा एक वर्ष में शुरू किया गया। और यह भी।

चचंग भी करनी पड़े। रात को सोते समय के रूप में कक गुल आने से पहले गुलाब की पंखुड़ी में कांगें आती है। दूसरा परिवर्तन यह करना पड़े कि तरोताजा और शिक्षार्थी की अपेक्षा होना पड़ेगा। अन्यथा यह दुनिया के साथ तालमेल नहीं बिजल पायेगी। यह पुनः से कम नहीं चलेगा, निरंतर शिक्षित होना पड़ेगा। खाली छोड़ने का प्रश्न ही नहीं होगा।

शशिा ही मानव तार में मानव में सही चौराज धरण व्या स्नातकोत्तर शशिक , हिंदी

गिरिजाधर धरण व्यास
के.वि. क्र.1 वायुसेना भुज
नवाजकोटर शिक्षक, हिंदी
वैदिक व्यवस्था में कुछ परिवर्तन करना पड़ेगा नए का स्वागत करना पड़ेगा साहस जुटाना. नए रास्ते खोजनी पड़ेगी जो कार्य हमने पिछले दो हज़ारों वर्षों.इसके लिए शिक्षक को अपनी जिम्मेदारी ईमानदारी से निभानी पड़ेगी. पड़ेगी में नहीं किये उन कार्यों को आगे आने वाले पचास वर्षों में करना है यह कार्य हो सकता है लेकिन बोध की हो सकता है कि नए के. नए को अपनाकर ही हम शिक्षा के क्षेत्र में क्रांतिकारी परिवर्तन कर सकते हैं. जरूरत है - भटकाव और वीरानी आ सकती है लेकिन उसके बाद में सुनहला सूरज निकलेगा, खोज में अधिरा रहर ऑफ़ में चुभती है प-थ की निर्जन दोपहरी आगे और बढ़ते तो शायद दश्य सुहाने आएंगे.

**नवप्रवर्तन -100% सीखना**

गिरिराज धरण व्यास

शिक्षण के दौरान शिक्षक को अनेक कठिनाइयों का सामना करना पड़ता है जैसे गृहकार्य नहीं, अनुशासनहीनता-शिक्षक चाहता है कि सभी.अनुशासन होना इत्यादि, वसंत अंक प्राप्त होना, मूल वास्तविकता करना,विद्यार्थी रास्ते जानकारी प्राप्त कर तभी उनके ज्ञान में वृद्धि हो और उसके विद्यार्थी कमजोर नहीं रहें और ककश रूप से सीखना यह तब देखा गया शस्त्र सम्पूर्ण रूप से विद्यार्थी ग्रहण कर ले.

इस हेतु शिक्षक को इस मनोविज्ञान को समझना होगा कि कोई बालक कब सीखता है कहीं यह कौनसी बातें बालक को पढ़ने के लिए प्रेरण करती है?

-बालक का सीखना सार्थक हो सकता है अत: ऐसी व्यवस्था की जाए कि

**01. शिक्षण सामग्री को क्रमबद्ध रूप में व्यवस्थित किया जाए.**

**02. विद्यार्थी यदि सही क्रिया करे तो प्रेरणा दी जाए.**

**03. विस्तृत सामग्री बालक के लिए बोधिल बन जाती है इसलिए सिखाई जाने वाली विषयवस्तु टूकड़ों में.**

**04. वही बालक सीख सकता है जो पढ़ते दौरान क्रियाशील रहता है.**

**05. बालक को अपनी भिन्नताओं के अनुसार सीखने का मौका मिलना चाहिए.**

**06. बालक यदि अपनी गति के अनुसार सीखता हुआ आगे बढ़ता है तो वह विषयवस्तु को आत्मसात करेगा.**

**सामान्य शिक्षण और परीक्षण उपर्युक्त बिन्दुओं को ध्यान में रखकर बालकों पर एक परीक्षण किया गया.**

नवप्रवर्तन -100% सीखना

गिरिराज धरण व्यास
पढाने के बाद उनका परीक्षण किया गया। परीक्षण में कुल 15 प्रश्न दिए गए अंक का 1 प्रत्येक प्रश्न। आया अर्थात विद्यार्थियों ने 8.5 विद्यार्थियों के अंकों का औसत मान था 56%। विषयवस्तु को ग्रहण किया। यह परीक्षण सामान्य परीक्षण के अनुसार था,

विशेष शिक्षण

के 1 क्रिया विधान से भुज की कक्षा अष्टम बी के विद्यार्थियों को संज्ञा अध्याय शिक्षक द्वारा पढाया 30 नहीं गया। अंतिम संज्ञा अध्याय से सम्बंधित सामग्री को उपयुक्त मनोवैज्ञानिक नियमों के आधार पर तैयार किया गया और वह विशेष सामग्री वितरित कर दी। ग्राहक सामग्री पर कुछ निर्देश लिख गए।

01. प्रश्न की समाप्ति के पश्चात वे अभ्यास अपने उत्तर की जांच कर सकते हैं।

02. उत्तर को कागज की एक पत्ती से ढककर रखा गया है।

03. उत्तर लिखने के बाद पत्ती हटाकर अपने उत्तर का मिलान कर लेने तथा आगे बढ़ते रहें।

जब विद्यार्थियों ने विशेष सामग्री में प्रश्नों पर उत्तर लिख दिए तत्पश्चात उनका निर्देशन किया गया। अंक प्रदान किया गया और गलत उत्तर के लिए 1 प्रत्येक सही उत्तर के लिए 0 अंक निष्ठित किया गया।

विद्यार्थियों के अंकों का औसत मान 20 आया। अर्थात सभी विद्यार्थियों ने सभी प्रश्नों के उत्तर सही लिखे।

निष्कर्ष

इस प्रकार यह निष्कर्ष सामने आया कि विशेष सामग्री का प्रयोग करने से बालक सम्पूर्ण विषयवस्तु सीखता है।

विशेष सामग्री पाठ का नाम

प्रकरण संज्ञा और उसके भेद:
कक्षा 2016/07/13: हिंदी दिनांक: प्रथम विषय: आठवीं कालांश:
निर्देश:
01. प्रत्येक प्रश्न में रिक्त स्थान की पूर्ति कीजिये।
02. प्रश्न की बांटी ओर सही उत्तर पत्ती से ढककर रखे गए हैं।
03. प्रत्येक प्रश्न का उत्तर देने के बाद पत्ती हटाकर सही उत्तर का मिलान कर लें।
04. यदि उत्तर अशुद्ध हो तो उसे शुद्ध कर लें तथा आगे बढ़े।
| संज्ञा | ० स्थान भाव अथवा दशा के नाम को सं,वस्तु,किसी व्यक्ति.जा कहते हैं राम व्यक्ति का नाम. है अत: राम ।
| स्थान | आदित्य दिल्ली से जयपुर जाता है इसमें.दिल्ली और जयपुर .के नाम हैं________
| तीन | व्यक्तिवाचक संज्ञा- जातिवाचक संज्ञा और भाववाचक संज्ञा, ये संज्ञा के प्रमुख भेद है अत:. भेद हैं____ संज्ञा के प्रमुख
| व्यक्ति | जो शब्द किसी व्यक्ति विशेष स्थान विशेष अथवा वस्तु विशेष ,प्राणी विशेष,को बताता है उसे व्यक्तिवाचक संज्ञा कहते हैं विशेष का नाम है अत: महात्मा गांधी____ महात्मा गांधी । .संज्ञा है____________
| विशेष | जोधपुर स्थानों के नाम है इसलिए ये भी________ भारत, खुज,मुम्बई, .संज्ञा के उदाहरण हैं________
| जातिवाचक | जो संज्ञा शब्द प्राणी वास्तु अथवा पदार्थ की पूरी जाति का बोध कराता है उसे जातिवाचक, लड़का शब्द से उसकी पूरी जाति का बोध.पर्वत सहर कुसी आदि,नदी,मनुष्य-जैसे.संज्ञा कहते हैं ।.संज्ञा है____________________ होता है अत: लड़का शब्द
| जातिवाचक | कबूतर शब्द अपनी सम्पूर्ण जाति का बोध कराता है इसलिए यह भी .संज्ञा है________
| भाववाचक | जो शब्द किसी गुण उन्हें भाववाचक, अवस्था आदि का बोध करते हं,दशा,भाव,दोष,स्वभाव,धर्म, - जैसे.संज्ञा कहते हैं सच्चाई.संज्ञा है_______ अतः ईमानदारी.बुढापा आदि,बचपन,प्रेम,उंचाई,
| भाववाचक | श्रुता मन का एक भाव है अतः श्रुता एक .संज्ञा है________________
| संज्ञा | . के तीन भेद हैं________________
| जातिवाचक | चिड़िया .संज्ञा है_______ संज्ञा है जबकि गंगा_____

Newsletter on Innovative Practices - 2017
KVS ZIET MUMBAI
In education, the term **assessment** refers to the wide variety of methods that educators use to evaluate, measure and document the academic readiness, learning progress and skill acquisition of students.

Assessment is done:

- To know how to teach
- To see how a student progresses
- To inform parents
- To find out how the teacher is teaching
- To get admission
- To understand student’s thinking
- To help students learn
- To motivate students
- To find out who is left behind
- To set pace
- To know which approaches student prefer
- To know if learning objectives are met

Quality of assessment affects the quality of learning. In tests the emphasis is mostly on memorisation and low level thinking.

- The Learning process should enhance the lower order thinking skills to higher order thinking skills

As per NCF 2005, the purpose of evaluation is not:

- To motivate students to study under threat
- To identify students as ‘Slow Learners’, or ‘Bright Students’, or ‘Problem Students’
- To identify children who need remediation
- To diagnose learning difficulties and problem areas

*Human beings will adjust behavior based on the metrics they are held against. What you measure is what you will get* - Dan Ariely
Kendriya Vidyalaya, New Railway Colony, Sabarmati, Ahmedabad, Gujarat. 380019.

- **Topic**: Comparing Quantities
- **Sub Topic**: Ratio and Percentage
- **Objective**: To develop the concept of Ratio and Percentage.
- **Plan**:
  - To visit the site nearby approach road to Kendriya Vidyalaya, Sabarmati where bricks are made.
  - The class is divided into different groups of students.
  - Each group is assigned a specific task to collect information and answer the questions based on them using mathematical ideas/concepts.

- **Learning Outcomes**:
  - Students can compare two or more quantities using ratio.
  - They can compare two or more quantities using percentage.
  - They can find surface area and volume of a cuboid.

**Group A**

- Which materials are used to make the bricks?

  - The materials used for making bricks are cement, sand, gravel powder (5 mm) and water.

- How many bags of cement, sand and ash are mixed?

  - 1 bag of cement, 4 bags of sand and 8 bags of gravel powder are mixed. There is no use of ash.

- What is the ratio of these materials in the mixture?

  - The ratio of materials in the mixture is cement: sand: gravel=1:4:8

- How the bricks are prepared from this mixture?

  - First they mix cement, gravel (5 mm), sand and water in one machine. Then they spread the mixture in another machine having six equal partitions. The worker push the pressure handle on the mixture. Then the bricks are ready but they are wet, so the workers put the bricks in the sun light. After seven days the bricks are ready for use.
How many bricks can be prepared in one batch?

Around 520 bricks can be prepared in one batch.

**Group B**

What is the cost of a bag of cement/sand/ash?

Cost of cement = 240 Rs per bag

Cost of sand = 7000 Rs per truck

Ash is not used.

How many workers are needed for this work?

Six workers are needed for this work.

How many days are required to make one batch of bricks?

Seven days are required to make one batch of bricks.

How much payment received by each skilled/unskilled worker in a day?

Only skilled workers are required for this purpose. Each workers received Rs 300 per day.

How many hours they work in a day?

They work 7 to 8 hours in a day.

Find the manufacturing cost of a brick.

The manufacturing cost of a brick is around Rs 3.50.

Find the market value of a brick.

The market value of a brick is around Rs 4.50

Find profit from each batch of bricks.

Profit per brick is Rs 1

Profit per batch = 520 bricks × 1 Rs = 520 Rs

Find profit percent from each batch of bricks.

Profit % = \( \frac{\text{Profit} \times 100}{\text{C.P}} \) = \( \frac{520 \times 100}{2340} \) = 22.22 %
**Group C**

- Find dimensions of a brick.
  - Length = 23.5 cm
  - Breadth = 9.5 cm
  - Height = 10.5 cm

- Find volume of a brick.
  - Volume = \( l \times b \times h = 23.5 \times 9.5 \times 10.5 = 2344.125 \text{ cm}^3 \)

- How many bricks can be placed in one truck/tractor trolley?
  - There are 1500 bricks can be placed in one tractor trolley.

- How many bricks are needed to cover 1 sq.m area?
  - No of Bricks = \( \frac{\text{area}}{\text{area of bottom of brick}} = \frac{100 \times 100}{23.5 \times 9.5} = 44.79 \approx 45 \text{ bricks} \)

- How many bricks are needed to make a platform of 1mX2mX5m?
  - No of bricks = \( \frac{\text{Volume of platform}}{\text{Volume of brick}} = \frac{100 \times 200 \times 500}{23.5 \times 9.5 \times 10.5} = 4265.98 \approx 4266 \text{ bricks} \)

**Group D**

- How these bricks are different from the traditional bricks?
  - This kind of brick is harder than the traditional brick. Cement is used in it.

- Can we protect environment by using these kinds of bricks? How?
  - Yes, we can protect environment by using these kinds of bricks because traditional bricks are heated in bhattis (boiler) which causes air pollution while cement bricks does not cause air pollution.

- Are these bricks as hard as the traditional bricks?
  - Cement bricks are harder than traditional bricks because cement is used in these bricks.

- Does it protect from heat?
  - Yes, because it traps cold air inside the room made by these bricks and do not allow heat in to the room from outside.
Compare the costs of these bricks and the traditional bricks?

These bricks are little bit costlier than the traditional bricks but their hardness is more than the traditional bricks. In addition, we can protect environment by using this kind of bricks.

How much amount can be saved by making a platform of 1mX2mX5m using these kind of bricks? 4266 bricks are required to make a platform of 1mX2mX5m.

We spend 1 rupee more per brick if we use cement bricks for construction but we can protect environment by reducing the use of the traditional bricks.
OBJECTIVES OF THE PROJECT: To understand the effect of increase and decrease of perimeter of the shape on its area.

Teacher's statement: Children are given different squares and rectangles and asked them to find their perimeters and areas respectively. Observe the effect of changing perimeters on areas.

CLASS LEVEL:
- They know the difference between Perimeter and Area.
- They are capable to calculate the perimeter and area of given shapes.

GROUP SIZE: Small groups of 4 members in each.

OBSERVATIONS:
1) What can you say about area in square shape when perimeter increases?
2) What can you say about area in rectangular shape when perimeter increases?

ACTIVITIES: The following figures are given in different groups to find perimeter and area.
WORKSHEET

Q.1 Complete the following table.

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Perimeter</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cm</td>
<td>2 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 cm</td>
<td>2 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 cm</td>
<td>5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 cm</td>
<td>9 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 cm</td>
<td>8 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 cm</td>
<td>7 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 cm</td>
<td>6 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 cm</td>
<td>5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 cm</td>
<td>7 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 cm</td>
<td>5 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 cm</td>
<td>8 cm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q.2 Area of a rectangle with length 8 units and breadth 6 units is 48 sq units. How many rectangles are possible with same area? Write their dimensions also.

Q.3 The side of a square is 5cm. How many times does the area increase, if the side of the square is doubled?

CONCLUSION: When perimeter of a square increases area also increases but when perimeter of a rectangle increases its area may increase or decrease or remain same.

References used: [http://nrich.maths.org/7534/clue](http://nrich.maths.org/7534/clue)
Project Heading: In the first court yard of KV Danapur Cantt. a Badminton court of Standard Dimension is made then find: -

a. Dimension of first courtyard and Badminton Court.
b. Perimeter and area of the Badminton Court.
c. Find the area of remaining court yard and new perimeter of remaining portion of courtyard.

Name of Project: - To find the perimeter and area of courtyard and Badminton court.

Group: - 6-7 students of class VIII.

Material required: - Measuring Tape, Set Square, Mathematical instrument kit, Rope, Different Colours.

Procedure: -

1. With the help of measuring tape students measured the length and breadth of courtyard and badminton court.
2. During measurement they found that both are in rectangular shape.
3. Then they note down their dimension measured.
4. Using the result of rectangle, students found the perimeter and area of courtyard and Badminton Court.
5. Then they finally found the remaining perimeter area of courtyard using due procedure.
CLASS: VII

TOPIC: PERIMETER AND AREA

To design a garden and find its perimeter and area.

A group of class VII students were taken to the school garden and discussed with them about the shape of the garden, fencing and space inside the garden. They were asked to find the length of the boundary (perimeter) and area. They noticed that there are plants along the boundary which are planted at equal distance. Also, the grills put up for the boundary are also at equal distances. These nonstandard units can also be used to know the length of the boundary.

Students came forward with following ideas:

Student: 1
A farmer who wants to fence his field to shield it from animals needs to find the length of the boundary i.e. the concept of perimeter.

Student: 2
To find the cost of painting the wall of a room or compound wall we need to measure the region i.e. the concept of area.

Then the students were divided into three groups and were instructed to plan a garden of their own. They came out with many ideas like a garden in front of the house, cages for pet animals, a pool etc and it was finalized.

Model of the Garden
TO FIND THE LENGTH OF THE BOUNDARIES OF THE MODEL:

Between two nails (one block) the distance is 2 units
First side there are 37 nails = 36 blocks
Second side there are 25 nails = 24 blocks
Third side there are 37 nails = 36 blocks
Fourth side there are 25 nails = 24 blocks
Total blocks in the boundary = 36 + 24 + 36 + 24 = 120
Now, the length of the boundary = 120 X 2 = 240 units...

TO FIND AREA:

To calculate the amount of region enclosed by rectangular shapes.

Our class rooms, corridors, activity halls etc are laid with tiles. The measure of region inside a room / hall / corridor is equal to the number of tiles covering the region (one tile cover 1 square unit). So, it is sufficient to find the number of tiles inside a closed figure to find its area,

In particular a square shape is used to measure the area of any region. Hence the unit for area is always square units.

To find the area of the following rectangular shapes using a manipulative- square board:

Cage, Garden, Field, House.

Materials required: A square-grid board, Cut outs of rectangles.

The rectangle 1 (Cage) covers 12 squares; therefore, area of the cage is 12 square units.
The rectangle 2 (Garden) covers 18 squares, therefore area of the garden are 18 square units.
The rectangle 3 (Field) covers 48 squares; therefore, area of the field is 48 square units.
The rectangle 4 (House) covers 54 squares; therefore, area of the house is 54 square units.
COMMON MISCONCEPTS FACED BY STUDENTS DURING ACTIVITIES

1. The difference between perimeter and area while applying the concepts.
2. The units are not used correctly.
3. The perimeter of a geometrical figure decreases when a small portion of figure is taken out.

SUGGESTIONS:

1. Perimeter is always a length and measured in centimeter or meter.
2. Area is the quantity of the region and measured in square units.

QUESTIONS:

• What happens to the perimeter and area if a portion is cutoff?
  From a rectangle of dimension 24 x 12, if one square unit is cut off?

Case (i)
It observes that area is decreased by 1 square unit, but the perimeter is increased by 3 units.

Case (ii)
In this case, the area is decreased by 1 square unit but the perimeter remains same. It can be concluded that as area decreases, perimeter may increase or remain the same.

INTER DISCIPLINARY APPROACH:

With English
1. Write an essay about your school garden.

With Science
2. Name different types of plants and trees with their scientific name in your school garden.
The importance of environment is known to each and everybody. Still we talk so much about saving environment. Through various competitions like Drawing competition, Elocution, Skit competition, etc we have been trying to bring awareness. Ironically our environmental pollution is getting worse day after day.

It’s high time we inculcated environmental value in our students. Enough of these competitions and value based classes. I was just thinking of some other way where students themselves would do something to save environment. What could be better than **INTERDISCIPLINARY APPROACH in Project Based Learning**?

As usual I was busy doing correction work and then one of our office staff came and informed that I was to report principal. I went to the principal’s office. I was informed that I had to attend a workshop on Interdisciplinary Learning in ZIET for three days. I came home tried to find out more and more on this subject. I was confused and perplexed to understand the fact that learning has to be planned by using different subjects and disciplines to explore a theme or an issue.

To my amazement after attending the workshop my perspective completely changed. Course director Ms Usha Iyer, Deputy Commissioner, ZIET Mumbai Region and Project Head Mr. Eugene Leen, guided us and inspired us to start the project based on Interdisciplinary Approach. They informed us:

**Interdisciplinary Learning** is learning planned to develop awareness and understanding of the connections and differences across subject areas and disciplines.
➢ Using learning from different subjects and disciplines to explore a theme or an issue, solve a problem or complete a final project. This can be achieved by providing a context that is real and relevant to the learners, the school and its community.

➢ Students can develop Interdisciplinary Project through PBL.

Learning outcome:
1. To develop awareness and understanding among the students.
2. To enable students to understand the connections and differences across subject areas and disciplines
3. To help students meet a challenge, solve a problem and complete a final project.
4. To provide a context that is real and relevant to the learners, the school and its community.

Participants from various regions were more than happy to initiate the project with zeal and enthusiasm. Each region was allotted one class and participants were to choose one topic from their respective class text book. Mumbai region was allotted ‘ENVIRONMENT’ from MCB of X standard. We were two participants from Kendriya Vidyalaya No 2 Colaba.

Both of us spoke to our respective students of class X and asked them to discuss the same with their parents at home. We discussed the topic with the subject teachers of Math, Science, Social Studies and Sanskrit. Everyone was aware of the fact that high-level of environmental pollution is detrimental for human and animal health. The problem was which area of Environment should be taken for project. We called a meeting to discuss the project with students and other subject teachers. They came up with various ideas which displayed their thinking skill and creativity.
Agenda:
Our natural environment and surrounding provides us with everything that we ever need. We get air, water, food, and everything else from the environment.
How to save environment?
After thinking critically four sub topics were decided. The students were divided into four groups. Each group was given one topic: 1. Water Conservation 2. Food waste Management 3. Forest Conservation 4. Vehicular Pollution

Objectives:
The planning of Interdisciplinary learning should provide a clear focus for learning and explore relevant connections across learning. It enhances learning within the curriculum areas and subjects. The purpose is to involve learners in active, collaborative learning with challenging and thought – provoking tasks.

Project-based learning is student-centred. All the work is done by the students themselves. The teacher only guides them and helps them accomplish their work by assessing and evaluating their work at various stages of project. They are using diverse skills such as researching, writing, interviewing, collaborating, or public speaking to produce end product. The end product is solution of the real-life problems related to environment. They learnt how to research complex issues, solve problems, develop plans, manage time, organize their work, collaborate with others and overcome challenges.

I, as a teacher was overwhelmed to see the students participating actively in the project. Some students brought leftover food (vegetables) for vermi-composting. Another group collected used papers from each class which was to be given for recycling. Other groups prepared questionnaire for the survey to be conducted on water wastage and vehicular pollution.
Train the mind to THINK

Innovation distinguishes between a leader and a follower

Steve Jobs

Email your articles on ‘Innovative Practices’ to zietmumbai@gmail.com for the next issue