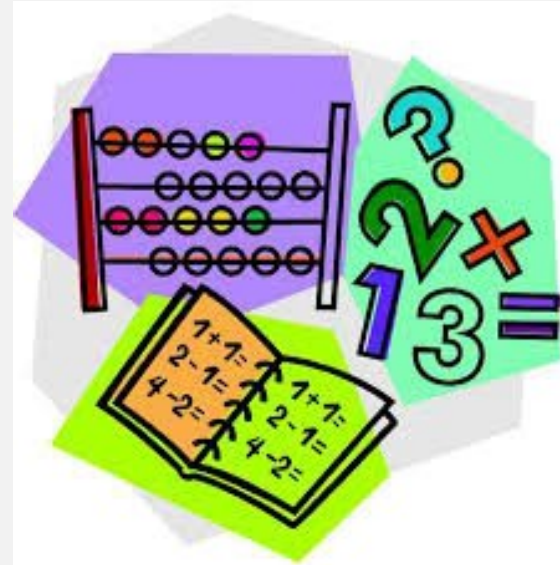


Techniques and Strategies in Teaching Mathematics

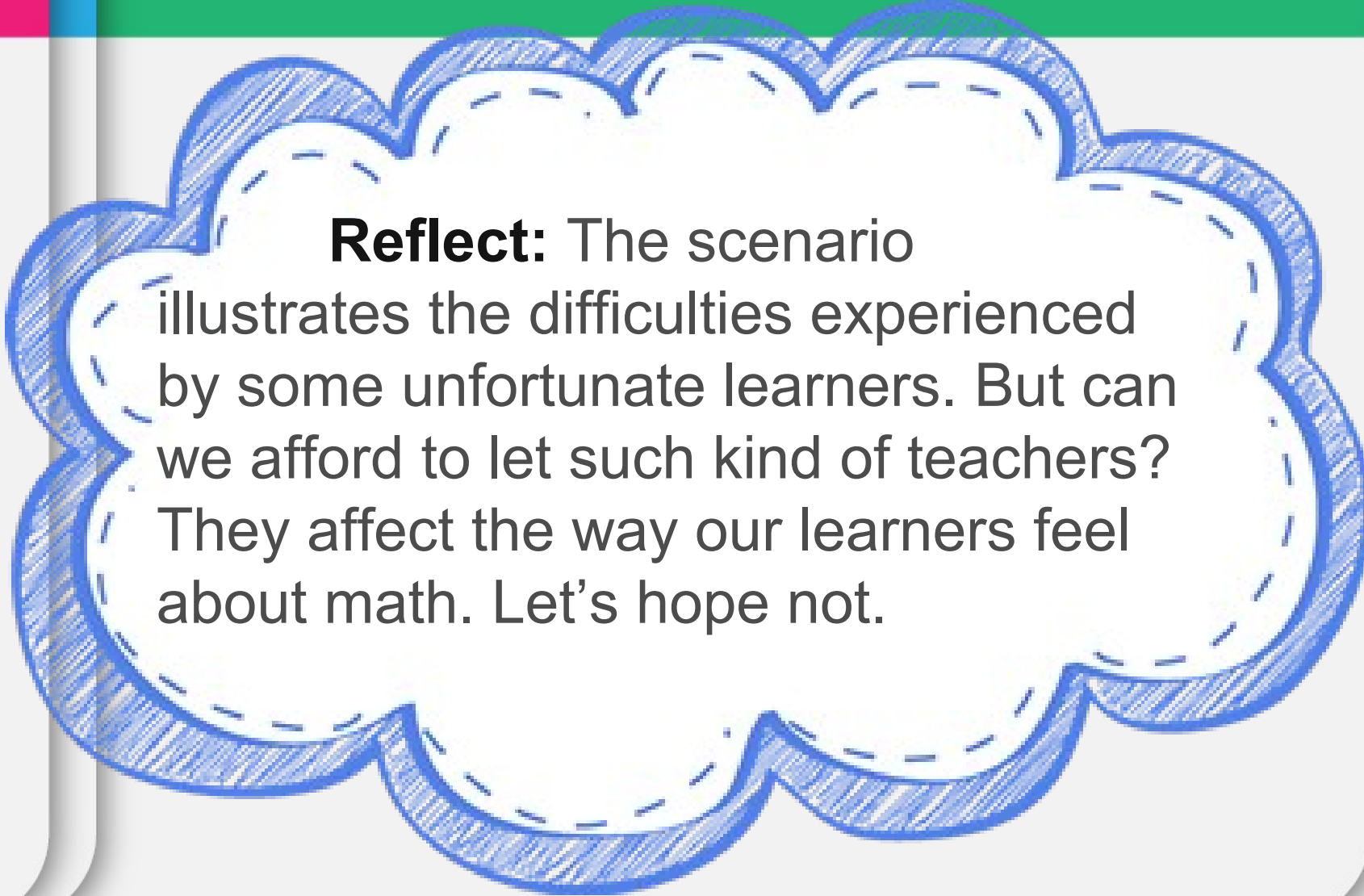


Presented by: Imelda S.

Bautista ♥

“Teacher, can you spare a sign?”

My worst experience with a teacher was during our Math class. I loved math and really thought I knew and understood math. But my math teacher sent me home crying everyday because she marked my homework and test wrong since I used to get my positive and negative signs wrong. I knew how to do the problems, but I always got my answers with wrong sign.



Reflect: The scenario illustrates the difficulties experienced by some unfortunate learners. But can we afford to let such kind of teachers? They affect the way our learners feel about math. Let's hope not.

- Therefore, it depends upon every teacher to strive to improve her/his teaching style to increase the number of children liking, and even loving Mathematics. Such should start as early as in the elementary grades. Furthermore, the use of varied and appropriate teaching approaches can entice more learners to like and love math.



Discovery Approach

A. DISCOVERY APPROACH

The ultimate goal of this approach is that learners ***learn how to learn*** rather than what to learn.

- for developing their higher-order thinking skills.
- This approach refers to an “*Inductive Method*” of guiding learners to discuss and use ideas already acquired as a means of discovering new ideas.

A. DISCOVERY APPROACH

It is "International Learning", both the teacher and the learner play active roles in discovery learning.

Inquiry Teaching

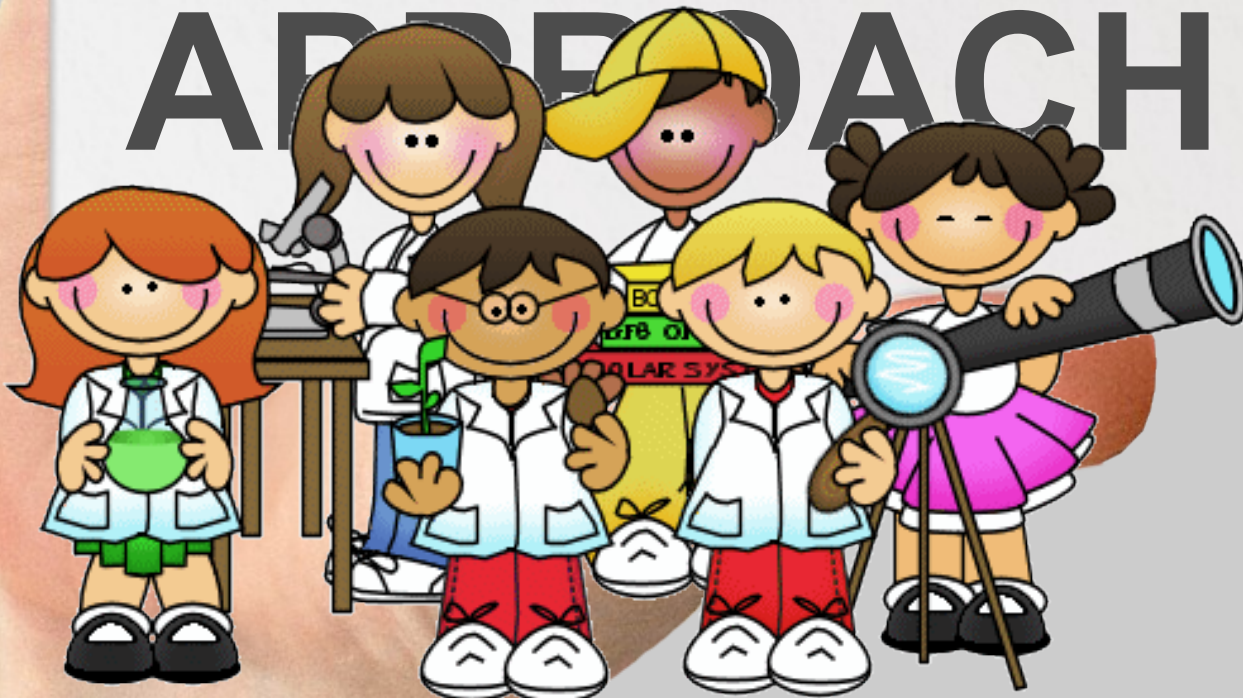


B. INQUIRY TEACHING

- providing learners with content-related problems that serve as the foci for class research activities.
- The teacher provides/presents a problem then the learners identify the problem.
- Such problem provides the focus which lead to the formulation of the hypothesis by the learners

DEMONSTRATIO N

APPROACH



B. DEMONSTRATION APPROACH

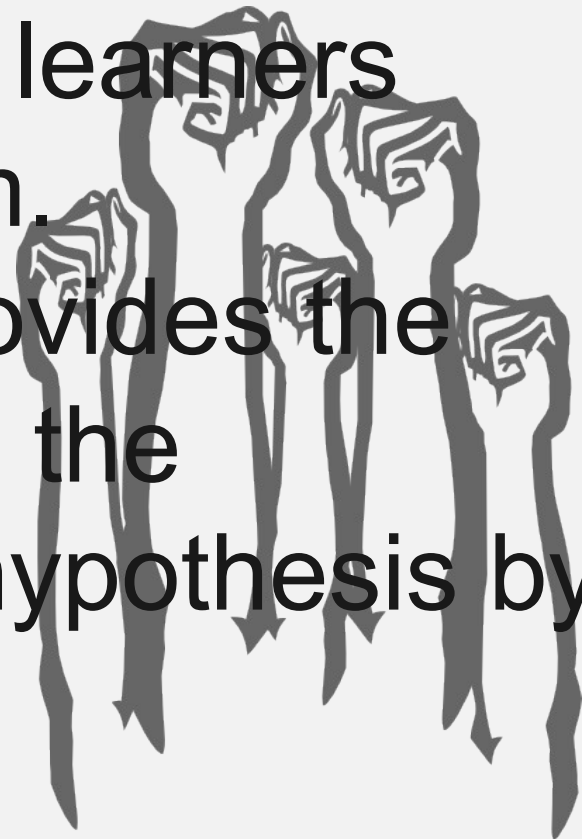
03

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- Once the hypotheses have been formulated, the learners' task is to gather data to test hypotheses.
- The gathered data are being organized then data analysis follow to arrive to conclusion/generalization.

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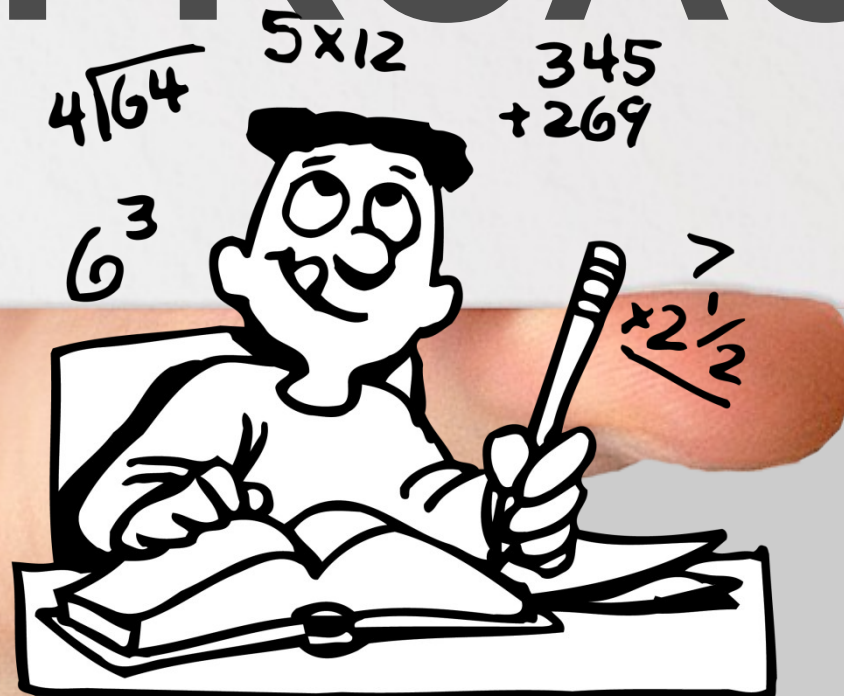
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MATH-LAB APPROACH



- children in small groups work through an assignment/task card, learn and discover mathematics for themselves.



- The children work in an informal manner, move around, discuss and choose their materials and method of attacking a problem, assignment or task.



D. PRACTICAL WORK APPROACH (PWA)

05

-The learners in this approach, manipulate concrete objects and/or perform activities to arrive at a conceptual understanding of phenomena, situation, or concept. The environment is a laboratory where the natural events/phenomena can be subjects of mathematical or scientific investigations. Activities can be done in the garden, in the yard, in the field, in the school grounds, or anywhere as long as the safety of the learners is assured. That's why elementary schools are encouraged to put up a Math park.

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INDIVIDUALIZED INSTRUCTION USING MODULES

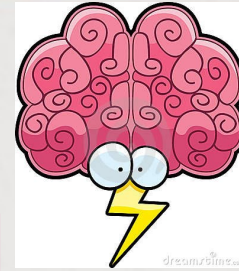
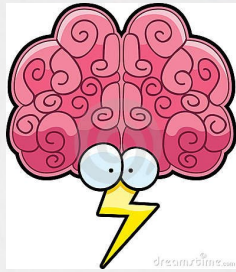


INDIVIDUALIZED INSTRUCTION USING MODULES

- This permits the learners to progress by mastering steps through the curriculum at his/her own rate and independently of the progress of other pupils.

INDIVIDUALIZED INSTRUCTION USING MODULES

- Individualizing instruction does **not** imply that every pupil in the class must be involved in an activity separates and distinct from that of every other child. There are many ways of individualizing instruction: grouping, modules- self-learning kits/materials, programmed materials, daily prescriptions, contracts, etc.



BRAIN STORMING

BRAINSTORMING

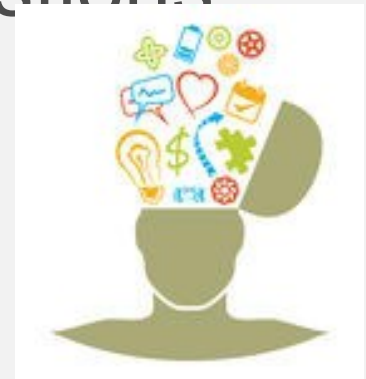
- teacher elicits from the learners as many ideas as possible but refrains from evaluating them until all possible ideas have been generated.
- It is an excellent strategy for stimulating **creativity** among learners.

A close-up photograph of a person's hand holding a white rectangular card. The card is held between the thumb and the index, middle, and ring fingers. The text 'PROBLEM SOLVING' is printed on the card in a bold, pink, sans-serif font, arranged in two lines. The background is a solid, light gray.

**PROBLEM
SOLVING**

PROBLEM-SOLVING

- a learner-directed strategy in which learners “think patiently and analytically about complex situations in order to find answers to questions”



PROBLEM-SOLVING04

When using problem-solving for the first time:

- ☐ select a simple problem that can be completed in a short amount of time.
- ☐ Consider learners' interest, ability level, and maturation level.
- ☐ Make sure resources (materials or equipment) are available.
- ☐ Make sure that learners are familiar with brainstorming before you implement problem-solving.

COOPERATIVE Learning



COOPERATIVE LEARNING

- eliminates competition among learners. It encourages them to work together towards common goals.
- It fosters positive intergroup attitudes in the classroom. It encourages learners to work in small groups to learn.



COOPERATIVE LEARNING

- The group learns a particular content/concept and every member is expected to participate actively in the discussion, with the fast learners helping the slower ones learn the lesson.



Four fingers are visible at the top of the frame, holding a white rectangular sign. The sign has a horizontal pink stripe across its middle. The text 'Inquiry Teaching' is written on the sign in a large, bold, pink font. Below the text is a black and white line drawing of two children. The child on the left is a girl with long hair, looking up with her hands raised. The child on the right is a boy with curly hair, also looking up with his hands raised. The background is a solid light gray.

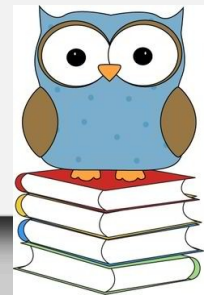
Inquiry Teaching



B. INQUIRY TEACHING

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INTEGRATIVE Technique

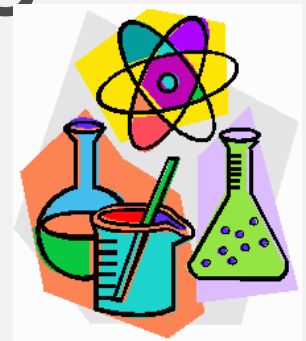




INTEGRATIVE TECHNIQUE

-The Integrated Curriculum Mode (Integrative teaching to some) is both a “method of teaching and a way of organizing the instructional program so that many subject areas and skills provided in the curriculum can be linked to one another”.

❖ Content-Based: The content of Science and Health can be integrated in the teaching of language skills in English.



Modes of Integration:

04

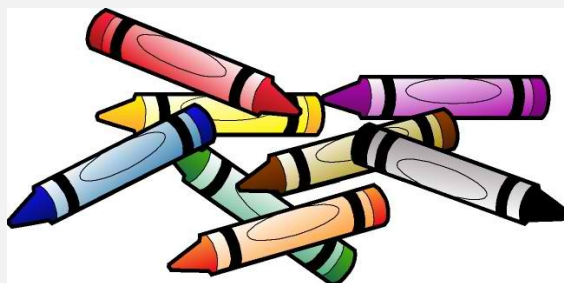
❖ Some topics/content in Sibika at Kultura and Heograpiya/ Kasaysayan/ Sibika were used as vehicle for the language skills development in Filipino



❖ Using Thematic Teaching: Some themes can center on celebrations, current issues, learner's interests/hobbies, priority



Ten Creative Ways to Teach Math



1. Use dramatizations

- Invite children pretend to be in a ball (sphere) or box (rectangular prism), feeling the faces, edges, and corners and to dramatize simple arithmetic problems such as: Three frogs jumped in the pond, then one more, how many are there in all?



2. Use children's bodies



- Suggest that children show how many feet, mouths, and so on they have. Invite children to show numbers with fingers, starting with the familiar, "How old are you?" to showing numbers you say, to showing numbers in different ways (for example, five as three on one hand and two on the other).

3. Use children's play

- Engage children in block play that allows them to do mathematics in numerous ways, including sorting, creating symmetric designs and buildings, making patterns, and so forth





4. Use children's toys

- Encourage children to use "scenes" and toys to act out situations such as three cars on the road, or, later in the year, two monkeys in the trees and two on the ground.

5. Use children's stories

- Share books with children that address Mathematics but are also good stories. Later, help children see Mathematics in any book.



6. Use children's natural creativity

- Children's ideas about mathematics should be discussed with all children.





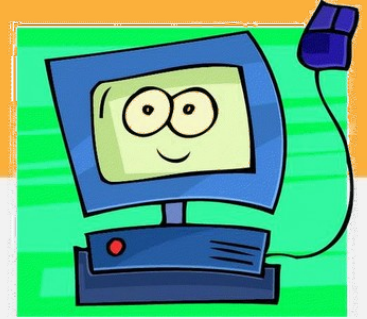
7. Use children's problem-solving abilities

- Ask children to describe how they would figure out problems such as getting just enough scissors for their table or how many snacks they would need if a guest were joining the group. Encourage them to use their own fingers or manipulatives or whatever else might be handy for problem solving.

8. Use a variety of strategies

- Bring mathematics everywhere you go in your classroom, from counting children at morning meeting to setting the table, to asking children to clean up a given number or shape of items. Also, use a research-based curriculum to incorporate a sequenced series of learning activities into your program.





9. Use technology

- Try digital cameras to record children's mathematical work, in their play and in planned activities, and then use the photographs to aid discussions and reflections with children, curriculum planning, and communication with parents. Use computers wisely to mathematize situations and provide individualized instruction.

10. Use assessments to measure children's mathematics learning

- Use observations, discussions with children, and small-group activities to learn about children's mathematical thinking and to make informed decisions about what each child might be able to learn from future experiences.





REFLECTION:

- Choose the best strategy suited to you and your students. Explain how will you employ it in your class.

