

# **Innovative teaching practices**

(Nurturing children's sense of wonder & joy in learning)

My introduction

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Young children are natural scientists. They have great enthusiasm for investigating the world around them and a need to make sense of their world. Through science, children begin to understand their world and can develop genuine curiosity & positive approaches to learning. We can set up opportunities for children to explore, ask questions and learn. Science experiences are a wonderful way to help children to begin to understand their environment. In the Discovery Room, we provide opportunities for children to experience concepts through hands on activities, games, worksheets, projects, CD's, e-beam and walks in the school garden etc.

Through projects children can learn ways to represent what they are observing and learning.

- Promoting science as enquiry- Provide opportunities for children to experience concepts first hand by walking outside and observing the world around them and encourage them to use their senses.
- Promoting physical science- To help them in understanding properties and motion of objects in the environment.
- Promoting life science- To help them to understand characteristics, life cycles and environments of living things.

- Earth and space science- Know about the earth materials, objects in the sky, changes in the earth and sky.
- Promoting science and technology- working on computer can have a positive impact on children's cognitive development and higher order thinking skills. Working together on computers can also promote cooperative learning and social skills.
- We use high quality and developmentally important software and websites. Computers cannot however, replace quality hands on experiences and interactions. Occasionally we record data from the children's experiments and other science experiences in a chart on the computer.

**I try to follow these principles-**

1. Minimize teacher input, maximize student output.
2. Use personalization and students' imagination.
3. Involve the students more and give them more opportunities to give ideas.
4. Encourage student generated activities.
5. Illicit information from children and then move from known to unknown.
6. Learning by doing.
7. Keep material simple and self- corrective.
8. Concrete to abstract.
9. Correction of worksheets by exchanging worksheets among students to help in peer learning.
10. Work in groups.
11. Use of AMP box for giving equal opportunity to all the students and to keep them alert.
12. Practice of drawing well labeled diagrams and the map work.
13. I respect my students because they are neither empty vessels to be filled with the knowledge by the teacher nor a restless passive audience to be entertained by the teacher.
14. Motivate them, expose them to variety of questions and give them challenging work in order to learn.

## **TECHNOLOGY INTEGRATION WITH EDUCATION**

- Multiple Intelligence- Our children demonstrate intelligence in many ways, including some that can't be quantified.
- The seven intelligences are :
  1. Linguistic intelligence
  2. Logical-mathematical intelligence
  3. Spatial/Visual intelligence
  4. Musical intelligence
  5. Bodily-kinesthetic
  6. Interpersonal intelligence
  7. Intrapersonal intelligence
- Use OHP to project slides, Graph, picture etc.
- Use OHP to create shadow puppet theatre.
- Use Computer to show them CD related to the topic.
- Computer & Printer for making work-sheets.
- In the Audio-Visual Room I show them films related to the topic and encourage them to participate in the discussion.
- e-Beam with a projector to show lessons made on computers.
- e- Beam to show Power Point Presentations made by children.
- Use of e-Beam interactive white board.
- E- mail - Exchange of information & pictures with students. Try to guide them individually.
- Role play by children- e.g. Solar system- Position of sun, moon earth and planets and their movement.
- OMR- Use of OMR machine for checking MCQ (Multiple choice questions) done by children.
- Tape Recorder – Use of tape recorder to hear animal / Birds sounds etc.
- Hands on activities and experiments related to air, water and matter etc.
- Use of white board for showing them the content available on the net- On line.

- Digital Camera- Take pictures during outdoor activities and take the printout or see the pictures on the computers or on white board.
- Movie camera- coverage of outdoor activities and use it for reference and analysis.
- TV – Encourage students to watch TV channels like Discovery, National Geographic and Animal Planet etc.
- Drilling- teaching a concept in different ways like playing a card game, quiz, experiments, project and demonstrations etc
- Use of Microscope and telescope etc.

### DEVELOPING SKILLS AND ATTITUDES

It is very important to acquire a variety of skills and attitude, which will help the student to become **an effective, life long learner and an aware, thinking adult.** Some of these skills and attitudes are listed below

#### 1. OBSERVATION

#### 2. FINDING OUT

- from people ( interview)
- newspaper, magazines, films etc
- from books
- from the Internet

#### 3. EXPERIMENTING- using everyday in life situations

#### 4. RECORDING, COMMUNICATING INFORMATION – Tally marks, tables & graphs etc.

#### 5. CLASSIFICATION & LOOKING FOR PATTERNS- classification of cloth samples, things we get from plants etc.

#### 6. ESTIMATION & MEASUREMENT

#### 7. SEQUENCING

#### 8. LINKING CAUSE AND EFFECT

#### 9. APPLYING KNOWLEDGE TO NEW, LIFE RELATED SITUATIONS

#### 10.ASKING QUESTIONS OF THE RIGHT KIND

#### 11.SEPARATING FACT FROM FICTION

#### 12.JUDGING WHETHER AN EXPERIMENT IS FAIR OR NOT

#### 13.ANALYSING INFORMATION.

#### 14.ABILITY TO WRITE APPROPRIATE ANSWERS BY USING SCIENTIFIC VOCABULARY.

## EVS- LESSON PLAN – CLASS V – TOPIC “MATTER”

Instructional objective: The students will be able to classify things into three groups of solids, liquids and gases on the basis of their properties.

Purpose: To build up ground for study of three states of matter and how one state can change into another on heating or cooling (Physical and Chemical changes).

### Providing information:

1. Each group can classify objects into three groups(a number of objects will be given to each group and students will have to classify these objects on the basis of properties and observations).
2. They can arrange rajma seeds to show arrangement of molecules in solids, liquids and gases.
3. Compare the seating arrangement of students in the classroom for example when the teacher is teaching there is least movement of students in the class, this can be compared with solids etc).

### Modeling information:

1. Properties of solids, liquids and gases (charts).
2. Demonstration of arrangement of molecules with concrete objects.
3. CD on computer
4. Use of e-Beam
5. Hands on activities
6. Worksheets

Monitoring and adjusting: Questions asked with thumbs up and down responses (signaled answers or chorus answers)

\*use of AMP box for asking questions.

## Content-

1. Matter has weight & occupies space.
2. Sunlight, sound, etc. are not matter.
3. Matter is made up of tiny particles called molecules.
4. Solids have definite volume, shape, cannot flow, be compressed but can be seen and felt.
5. Liquids have definite volume, take the shape of the container, can flow, cannot be compressed but can be seen and felt.
6. Gases take the shape and volume of the container, can flow, can be compressed. Most gases cannot be seen or felt. We can smell some gases.

Guided Practice & Closure: Peer discussion and revision, summarization of the lesson with the help of children.

### Independent Practice:

1. Draw a diagram to show arrangement of molecules (inter molecular space) in solids, liquids and gases.
2. Complete the worksheet.

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