

Pre-MATH

LESSON PLAN

MATERIALS NEEDED

LCD Machine, Shoe String Licorice or Peel & Pull Licorice, Fruit Loops, Coffee/Hot Chocolate Straws, Miniature Marshmallows, M & Ms (1 bag for 2 students or snack-size bags),

OBJECTIVES: After studying this unit, students will be able to:

- Identify math experiences that will help develop math concepts.
- Recognize different activities that will help a child develop pre-math skills.
- Complete several pre-math activities.

INTRODUCTION: Write a calculus problem on the board or on a poster.

Students will have 1 minute to solve the problem.

How do you feel?

Math concepts are exciting but frustrating - make them fun!

POWER POINT PRESENTATION

Have students follow in their STUDY GUIDE as the PowerPoint presentation and activities are completed for the pre-math unit.

PRE-MATH – More than 1-2-3

Vocabulary

Early Math Programs

Seriation (Licorice)

Patterns (Edible Abacus)

Sequencing (Activity)

Classification: Sorting & Matching (M & M MATH – color graph)

Math in Books (Synopsis)

Math in Song & Fingerplays (do several as a class)

Math in Every Day Life

Assessing Math Ability

Math Manipulations

Math Sun (handout)

Touch Numbers (handout)

As each concept is discussed, the students will participate in the activity. Adjust activities according to the time you have available.

(See notes in the PowerPoint Presentation).

Optional Activities:

Shape File Folder Game

Sensory Number Glashcards

Sandpaper – textured wallpaper – beans – colored salt/sand – glitter, etc.

Tangrams

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Teacher Information

Child Care Curriculum, USOE (summary)

Early math programs must be hands-on, filled with play, and exploration. Children love to move and use their senses. Some of the activities they like are sorting, piling and arranging things. These same skills can be used to begin basic math concepts. Many pre-math experiences are begun in every day life. Children often become aware of sequences in event before they can talk about first, second, or third. By age two, they know that if they place one block on top of another it is two blocks. When children lift objects they experience lightness and heaviness before they are able to label what they feel. Other pre-math experiences they have daily are small, big, measurements, differences, one/many, few/lots and time. By using this beginning mathematical thinking process, early stages are very general and then become more specific.

The first step in pre-math skills is to help children develop a language of mathematics. These terms should be used in daily routines;

Big / little	few / many	bunch	group
Long / short	tall / short	pair	more / most
High / low	light / heavy	once / twice	low / high
First / middle / last	once	first / last	

Once children are aware of these words, the teacher should begin demonstrating their meaning.

NUMBERS: Children learn numbers by repetition and memorization. At first, children have no comprehension of these abstract terms, but as they gain experience, they begin to attach meaning to numbers. Before children are three, they can often count from one to ten in proper order. The next step of number concepts is understanding the numerals as they apply to a sequence of objects. A harder pre-math concept to understand is the idea that the 1st number counted in a sequence of objects represent all the objects in the sequence. This is called rational counting. Rational counting is a high-level number concept and develops very slowly. Hearing counting can help children reach this level of thinking. As you begin to help them they need to hear frequent counting – climbing steps, objects being stacked, foods being distributed. Finger plays are being played, familiar nursery rhymes and songs, and during many other activities.

True counting ability is not possible until the child understands one-to-one correspondence. While learning, children will count two numbers for one item or two items while saying only one number. Some ways that caregivers can encourage one-to-one correspondence is to touch each object as they count. Other activities may be: Counting: Have children practice putting three buttons, bottle caps, or similar objects into a box and then take them out of the box.

Bean Bag Toss: Have a target and give each child a specific number of throws at the target.

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CLASSIFICATION: SORTING & MATCHING

Look at items to see how they are alike and how they are different.

Sorting trays are very helpful. These can be dishpans, clear plastic cups, dividing a board or tray into sections with tape, or boxes. Other containers can be egg cartons, plastic sewing boxes, divided dishes.

Objects to sort can include: nuts and bolts, fabric shapes, bells, greeting cards, buttons, textured paper, colored paper, shells, beans, macaroni, seeds, socks, beads, and rocks.

SERIATION: Understanding size differences - small to large – light to heavy – shortest to tallest.

Objects that are an example of seriation are cups, plates, paper clips (regular & jumbo), stacking cups, dolls, etc.

PATTERNS: Items put in an order that will repeat itself.

Materials may include: Fruit Loop necklaces, colored blocks, colored designs, beads, etc.

SEQUENCING: Order of how things happen – First, second, third, fourth Beginning-middle-end

Teaching pre-math concepts should be fun and simple. Remember to use some of these basic principles in using your every day surroundings to encourage math concepts.