

**Mathematics Governor's Institute 2003
Problem-in-a-Bag Template**

Title of Project: Goin' Fishing

Team Members: Beth Komar
Kara Felix

Grade Level and/or Course: Kindergarten

Concept(s) used: Number sense, compare and contrast, and measurement

PA Standard(s) Addressed:

2.1 Number, Number Systems and Number Relationships

C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols.

G. Use concrete objects to count, order and group

H. Demonstrate an understanding of one-to-one correspondence

2.3 Measurement and Estimation

A. Compare measurable characteristics of different objects on the same dimensions (length)

B. Determine the measurement of objects with non-standard and standard units

NCTM Standard(s) Addressed:

Number and operations

Understand numbers, ways of representing numbers, relationships among numbers, and number systems

Understand meaning of operations and how they relate to one another

Measurement

Understand measurable attributes of objects and the units, systems, and processes of measurement

Apply appropriate techniques, tools, and formulas to determine measurements

Introduction / applications: Teacher will explain to students that they are going fishing. They will be given a bag containing five worms of various lengths and colors. They will be asked to use the number line to answer questions that pertain to length. The teacher will explain the use of the number line as a measuring tool.

Question:

Who can catch the longest fish?

Model:

The students will use magnetic worms on the end of a pretend fishing pole to catch magnetic fish with various numbers written on them.

Resources and Materials (estimated cost):

Enough candy worms for each student to have five. (Estimated cost: \$0.10 per child)

Bags to hold the candy (Estimated cost: \$1.50)

Number line for each child (handmade)

Magnets (\$2.50)

Fishing pole and string (\$0.50)

Handmade fish cut-outs

Procedures & Activities:

The students will be given a bag containing five colored worms of various lengths. Each student will have a number line that will be used to determine the length of various size worms.

These questions are to be asked orally.

1. Put your worms in order from shortest to longest.
2. Hold up your longest worm.
3. Hold up your shortest worm.
4. Lay your longest worm on your number line. How long is it?
5. Turn to your partner and find whose worm is longer.
6. Lay your shortest worm on your number line. How long is it?
7. Turn to your partner and find whose worm is shorter.
8. If you lay your longest worm and your shortest worm right next to each other on the number line, what number do they come to?
9. Place the other three worms on the number line one after the other. What number do they come to?
10. Place all five worms on the number line, one after the other. What number do they come to?

When the above activity is complete, each student will take turns going fishing with the magnetic worm. The student will catch a fish and determine how long it is on the number line. In order for the student not to see the actual sizes of the fish, you may have to ask the students to close their eyes, or blindfold them. Once everyone has caught a fish, these questions will be asked:

1. Measure your fish on the number line.
2. Take turns sharing how long your fish is.
3. Stand in order from shortest to longest fish.
4. Who has the longest fish?

Answers / Rubric:

Students will be assessed through teacher observation. The teacher will be checking to see that the students can:

1. Determine the shortest length
2. Determine the longest length.
3. Compare and order according to various lengths.
4. Correctly use a number line to determine length.
5. Correctly add the length of two or more numbers.

Accommodations/Adaptations

Special Ed:

The special education student will only have to determine the length of the longest and shortest worm. The student will find a fish that is longer and/or shorter than the one he/she caught.

Enrichment:

An enrichment activity would be to use the lengths of the fish that were caught in various addition and subtraction problems.

GOIN' FISHING

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