

**Pennsylvania Governor's Institute
for Mathematics Educators
2004**

Names of Group Members: Gloria Facey, Susan Hartger, Patricia Cozza

Topic/Theme: Measurement and Lengths

Level: K

Time Element: 45 minutes

NCTM Standards Addressed:

Understand measurable attributes of objects and the units, systems, and processes of measurements.

Apply appropriate techniques, tools, and formulas to determine measurements.

PA Math Standards Addressed:

- 2.1 Numbers, Number Systems and Number Relationships**
 - A. Counting using whole numbers.**
 - C. Equivalent forms of the same number of concrete objects.**
 - G. Use concrete objects to count, order and group.**
- 2.3 Measurement**
 - A. Compare measurable characteristics of different objects on the same dimensions. (e.g., length)**
 - B. Determine the measurement of objects with non-standard and standard units.**
 - E. Determine the appropriate unit of measure.**

Math Assessment Anchors Addressed:

- M3.B.1.2 Use the attributes of length, area, volume and weight of objects.**
- M3.B.2.1 Determine the measurement of objects with non-standard and standard units.**

Reading Assessment Anchors Addressed:

R3.A.1.1 Identify the meaning of vocabulary.

R3.A.1.3 Make inferences and draw conclusions based on text.

Objectives:

- **The teacher will provide concrete experience with linear measure.**
- **The students will identify basic vocabulary. (length, long, longer, longest, and measure)**
- **The students will use a non-standard unit of measure.**
- **The students will compare the length of objects in the classroom.**
- **The students will order objects according to length.**

Instructional Strategies and Plan (include strategies used to help different types of learners, i.e. auditory, visual, etc.):

1. **Students will be questioned on their prior knowledge of lengths of measurement.**
2. **Introduce vocabulary words and place the words on the word wall.**
3. **Students will measure objects around the room with string or linking cubes.**
4. **Teacher will read the story Inch by Inch by Leo Lionni with puppets (if available).**
5. **Center Activities:**
 - A. **Create your own inch worm with pom poms and compare by size.**
 - B. **Sort linking cubes by color and compare and order by size. (long to longest)**
 - C. **Inch worm puzzles. Fit together according to size.**
6. **Students will measure identified objects with linking cubes and color squares according to amount of cubes used.**
7. **Journal activity – Draw 3 objects in journal and label. (long, longer, and longest)**

Materials/Resources:

Inch by Inch by Leo Lionni

Linking Cubes

Hand out with 10 squares

Identified Objects (example: pencil, pretzel rod, and crayon)

Math Journals

Popsicle sticks

Glue

Pom Poms

Pipe Cleaners

Crayons

Interdisciplinary Connections:

- **Reading:** Vocabulary words
Word wall
Story: Inch by Inch by: Leo Lionni
Journal writing
- **Technology**
Enrichment web sites: www.funbrain.com
www.coolmath.com
www.gamequarium.com
- **Other – Art:** Creating inch worms.

Assessment Strategies:

- **Formative Evaluation (checking student understanding during the lesson):**
 1. Measuring objects in the room with a non-standard measure.
 2. Sort inch worms by size in center activity.
- **Summative Evaluation (how will it be determined that the objectives were achieved?):**
 1. Coloring the cubes to identify lengths of objects.
 2. Journal Writing: Draw 3 objects, long, longer and longest and label.

Correctives/Remediation:

1. Sort objects from long to longest.
2. Create categories on paper: long, longer longest. Have children cut pictures and paste under category.
3. Students will use letter cube cards to spell vocabulary words.

Extensions/Enrichment:

- Additional literature: The Very Hungry Caterpillar, by Eric Carle
How Big is a Foot, by Myller
Measuring Penny, by Leedy
Super Sand Castle Saturday, by Murphy
- Introduce a ruler and how to measure with inches.
- Allow enrichment activity on computer, explore above web sites.

Special Accommodations (special needs students)

- Description of the Special Needs Student Selected:

Emily has a severe hearing loss in both ears. Her language comprehension and expressive skills are 4 years below grade level, as are her reading skills. She is above grade level in basic math computation, but has great difficulty with word problems and abstract concepts. Emily uses an assistive listening device in the classroom to allow her to hear better, but even with that she has difficulty comprehending lengthy verbal explanations. She does not use sign language. She learns best using visual representation of information or a process when possible.

- Accommodations to Use with this Student:
 - Assistive listening device
 - Students should speak only one at a time.
 - Review story on tape with headsets to eliminate background noise.
 - Visual cues are utilized through out the lesson.