Lesson Created by Katie Brandon

Title Ruler and Magnifying Fun (Guided Discovery)

Grade Level/Age Intended 1st grade Length 30-45 minutes

Standard(s): Science 1.1.4 Use tools, such as rulers and magnifiers, to investigate the world and make observations.

Objective(s): The students will be given a ruler to correctly measure five objects with 80% accuracy.

The students will explain what the use of a magnifying glass is in science with 100% accuracy.

Teacher Preparation: The teacher must collect enough rulers and magnifying glasses for every student in the class. The teacher will also have to collect a variety of items that the students can observe and measure. The items that the students might enjoy observing are a worm, acorn, piece of bark, pine cone, and maple seeds. The teacher will also have to create a data-recording sheet for the students to record their observations and measurements.

Motivation/Introduction: How many of you have ever been on a walk outside or a nature walk and have noticed many small items? (Bloom’s Taxonomy- Knowledge) What are some of the things that you notice or recognize? (Bloom’s Taxonomy- Knowledge) Are their tools that you could use that would help you see the items better and also measure the items to see how big they are? What are some of those tools? Well, today we are going to experiment with some tools and see what we can observe. (This part of the lesson is the part where the students become engaged.)

Step-by-Step Plan

1. The teacher will place the acorns, worms, bark, pine cones, and maple seeds at all of the learning centers so the students, each, have something to observe at all times. As the items are being placed; she will explain to the students what each item is in case the students are unsure.

2. The teacher will then explain to the students that for the next 10 to 15 minutes the students will experiment and discover how to use the tools that are placed in front of them (ruler and magnifying glass). After explaining the rules to the students, the teacher will pass out a data-recording sheet. On the data-recording sheet the students will write a characteristic for each item and also a measurement.

3. After the data-recording sheets have been passed out, the students will be asked to get into partners and begin experimenting and discovering with the tools given to them. (Gardner’s Multiple Intelligences- Visual/Spatial)

4. During the discovering stage the teacher will observe the students and encourage them to continue their work. Some questions that may be asked are as follows: What might this tool be called? What do you use it for? How might these tools help someone that is observing objects trying to find as much detail as possible during a science experiment? (This part of the lesson is known as the encouraging stage.)

5. After the students have had time to discover, the teacher will ask the students to come
back together and discuss their observations.

6. The teacher will also inform the students what the two tools are called and how they are correctly used. The teacher will also explain why these tools might be important in the science field and with experiments. (This part of the lesson is the engaging part).

7. After the students have learned the correct way to use the tools, they will be asked to complete a paper to show their understanding of the lesson.

**Closure:** Now that we have learned how to correctly use a ruler, we are now going to use the ruler as we work on math problems.

**Adaptations/Enrichment:** For a student that may have a learning disability in written expression the aide may help them write down their observations. An aide may also assist any students that have a mild to moderate disability.

**Assessment:** The teacher will observe the students during the encouraging part of the lesson to see if they understand how to use a ruler and a magnifying glass. After the second engaging session, the teacher will have the students fill out a paper to show their understanding of a ruler and a magnifying glass.

**Self-Reflection:** After completing the lesson, the teacher will reflect on how engaged the students were. The teacher will also question if the students learned what they were supposed to about a ruler and magnifying glass. These are a few questions that may be thought of after the lesson is complete.

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**Data-Recording Sheet**
**Directions:** Write anything that you notice using the two tools given to you!

<table>
<thead>
<tr>
<th>Object</th>
<th>Observations</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acorn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maple Seed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pine Cone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>