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Segments and Angles using Geometer’s Sketch pad

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<table>
<thead>
<tr>
<th>Name: Ijeoma B Okafor</th>
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<tbody>
<tr>
<td>Grade level(s)/Subject taught: Mathematics 10th Graders</td>
</tr>
<tr>
<td>Objectives: How do we Find the length of a segment and the measure of an angle Using Geometers Sketchpad.</td>
</tr>
</tbody>
</table>

Please provide a rich one-page, single-spaced, description or a vision of your best thinking on a way or ways you might teach the planned lesson. (approximately ½ page for the teacher role, ½ page for the student role). Also, construct a tentative rubric that you might use with your students (see example)

Items to include in your lesson plan: (Choose your discipline/concepts from your own area).

1. Write the Mathematical Concept or “key idea” that modeling will be used to teach: (e.g. Students use mathematical modeling/multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)

   **Key Idea 4: Modeling and Multiple Representation:** Student uses Mathematical modeling/multiple representation to provide a means presenting, interpreting, communicating, and connecting mathematical information and relationships.

   and/or...

1b. Write the Science Concept or “key idea” that modeling will be used to teach: (e.g. Organisms maintain a dynamic equilibrium that sustains life).

Materials:
“…a rich one-page, single-spaced, description or a vision of your best thinking…”

Prompts:
1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions)
4. How will you assess the learning for the lesson?

Using __________________________ I plan on having my students…

(software / modeling package(s))
**Example:** “I was thinking about beginning the class on [modeling X] by using the overhea
Essential question: How do I find the length of a line segment and measuring the angles using Geometers Sketchpad?

Prior Knowledge: Using a ruler and protractor, student should be able to measure a line segment and the angles formed.

New Lesson: Using Geometers Sketchpad, construct a line segment with angle

Step 2

Using GSP, we will now measure the line segments.
click on each line segment, and go to measure and click on length.

\[ \begin{align*}
  m \overline{CU} &= 7.77 \text{ cm} \\
  n &= 7.86 \text{ cm} \\
  j &= 6.07 \text{ cm} \\
  k &= 6.29 \text{ cm} \\
  l &= 6.47 \text{ cm} \\
  m &= 7.25 \text{ cm} \\
  m \overline{CV} &= 7.24 \text{ cm} \\
\end{align*} \]

Now to measure the angles.

\[ \begin{align*}
  m \angle UCD &= 33.26^\circ \\
  m \angle DCH &= 40.40^\circ \\
  m \angle HCE &= 29.09^\circ \\
  m \angle ECF &= 27.35^\circ \\
  m \angle FCG &= 23.94^\circ \\
  m \angle GCV &= 25.96^\circ \\
\end{align*} \]
m∠UCD = 33.26°
m∠DCH = 40.4°
m∠HCE = 29.09°
m∠ECF = 27.35°
m∠FCG = 23.94°
m∠GCV = 25.96°

33.26° + 40.4° + 29.09° + 27.35° + 23.94° + 25.96° = 180.00°

Now to show that the measure of the angles in a straight line adds up to 180°.

Practice Ex.

1. Find the length and angle measure of each segment.

2. Find the measure of each angle, and show that the sum of the angles is 180°.

3. Find the measure of sides of the triangle, and measure each angle, and show that the sum of the angles is 180°.

Rubric

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Mastering the concept of CSP, being able to draw, hide, measure, and calculate the length and angles.</td>
<td>Having some understanding, being able to draw, hide, and able to measure the length only.</td>
<td>Limited understanding, able to draw and hide only.</td>
<td>Able to draw and nothing else.</td>
<td>No idea, no work done. Clueless.</td>
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