Balancing Act

Procedure

1. Record your data in the chart below.

<table>
<thead>
<tr>
<th>Ruler Balance Point</th>
<th>Number of Notes on Left</th>
<th>Number of Notes on Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 cm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Use Numbers  Count out two stacks of 25 self-stick notes. Place one stack on the left end of a metric ruler. Place the other stack on the right end of the ruler. Be sure the numbers on the ruler are face up.

3. Experiment  Make a loop of masking tape and press it onto the tip of a triangular wooden block. Balance the ruler on the tip of the block at the 15-cm mark. Record the number of self-stick notes on each end of the ruler.

4. Experiment  Reposition the ruler at the 18-cm mark. Place additional self-stick notes on the right end of the ruler until the ruler balances again. Record the number of self-stick notes on each end.

5. Experiment  Repeat step 4, but this time reposition the ruler at the 21-cm mark.
Conclusion

Write the answers to the questions below.

1. **Analyze Data** As you moved the ruler farther to the right, how did it affect the number of self-stick notes you needed to balance the ruler?

   __________________________________________________________

   __________________________________________________________

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2. **Predict** Predict how you could balance the ruler if you repositioned it so that the 10-cm mark was over the tip of the block.

   __________________________________________________________

   __________________________________________________________

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**Solve a Problem** A construction crane has an arm balanced on a tower. In the space below, draw a diagram to show where you would attach the weight and place the arm of the crane to most easily lift a heavy object.