Circling Around!

Procedure

1. **Collaborate**  Work in a small group. Use the chart below to record your observations.

<table>
<thead>
<tr>
<th>Time (minutes)</th>
<th>Temperature Near Ice (°C)</th>
<th>Temperature Near Hot Rock (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<td>1</td>
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<td>5</td>
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</tbody>
</table>

2. **Experiment**  Add water to the container. Drop the hot rock into one corner of the container. Float the ice cube in the opposite corner.

3. **Observe**  When the water is still, add several drops of food coloring next to the ice cube. Observe how the food coloring moves. Record your observations on the lines below.

4. **Measure**  Use the thermometer to measure the water temperature near the rock and near the ice cube. Be careful to disturb the water as little as possible. Record the temperature in your chart. Repeat the measurement every minute for 5 minutes.

5. **Communicate**  In the space below, draw and label sketches of any currents you observe in the water.
Conclusion

Write the answers to the questions below.

1. **Communicate** Uneven heating causes a liquid or gas to move in a loop called a convection current. Describe any convection currents you observed.

   __________________________________________________________

   __________________________________________________________

2. **Infer** How would the currents change if you moved the hot rock or ice cube to new positions? Try it!

   __________________________________________________________

   __________________________________________________________

3. **Analyze Data** On a separate sheet of paper, make a line graph to show how the water temperatures at each end change with time. How do changes in water temperature affect the convection current?

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**Investigate More!**

**Research** What role does convection play in nature? Research how a lake surface freezes in winter or how a thunderstorm forms.