

Current Events

Scientists in this program predicted where parts of a sinking ship would have fallen depending on their size and weight and the nature of the underwater currents carrying them. Try the following experiment to see what role temperature plays in how currents are formed.

Materials for each group

- hot tap water (near boiling)
- cold water (from refrigerator or ice water)
- four unbreakable glass or transparent plastic cups
- food coloring (one color)
- plastic spoon
- sheet of paper

Procedure

1 Before you begin, write down on a separate sheet of paper which temperature of water you think will sink faster: cold or hot. Explain why you think so. Now test your prediction using the following experiment.

2 Fill two cups with cold water and two cups with hot water.

3 Stir 5 drops of food coloring into one of the cups with cold water. Stir 5 drops of food coloring into one of the cups with hot water.

Titanic's Lost Sister
NOVAactivity

4 Work with the colored cold water and the uncolored hot water first. Collect a spoonful of colored cold water. *Gently* empty the spoon on the surface of the uncolored hot water by placing the spoon against the side of the cup to avoid mixing the two fluids. Draw and describe what you observe.



5 Next, work with the colored hot water and the uncolored cold water. Collect a spoonful of the colored hot water. *Gently* empty the spoon on the surface of the uncolored cold water. Draw what you observe in the empty cup on this page and describe what you saw.

Questions

Write your answers on a separate sheet.

1 Compare your results. At which temperature is water more dense: hot or cold?

2 What evidence do you have to support this conclusion?

