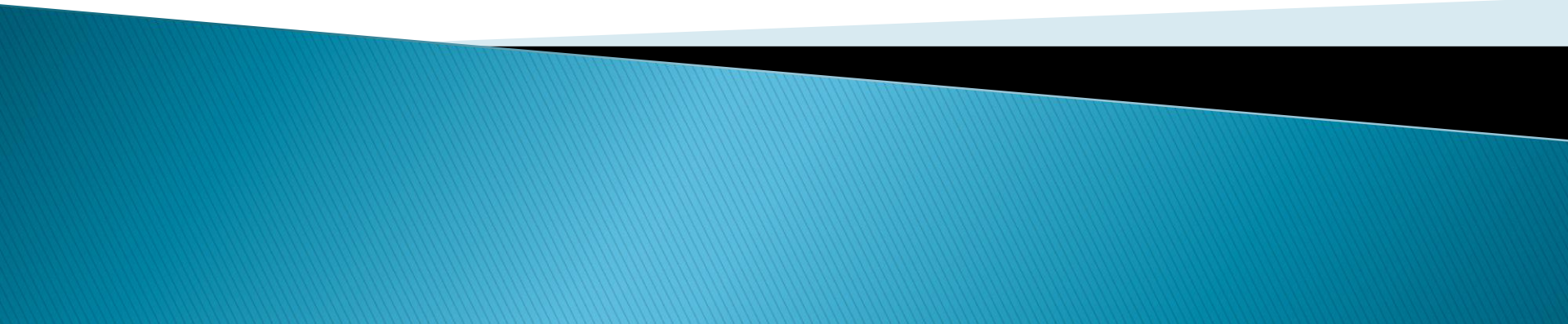
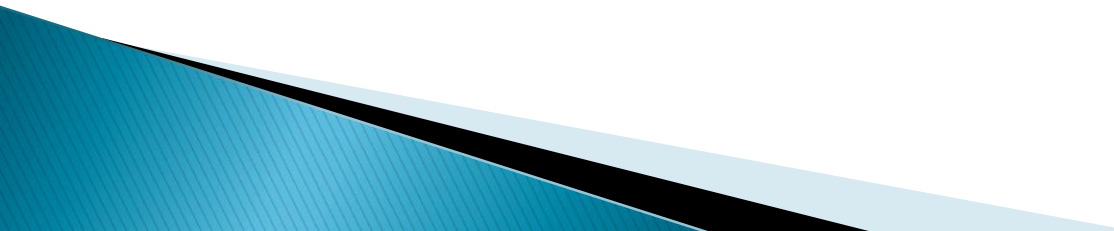


Temperature Affects Density



Question to Investigate:

- ▶ Is there a density difference between hot and cold water?
- 

Demonstration:

- ▶ Do you think the hot and cold water will mix or stay separate?
- ▶ Why do you think the hot water stayed on top of the cold water?
- ▶ What might happen if you place the blue cold water on top of the hot yellow water and then remove the card?
- ▶ Why do you think the hot and cold water mixed when the cold water was placed on top?

Answer questions 1 and 2 on your Lab Activity Sheet

Activity:

- ▶ You will work with your partner to complete the lab activity. (15 minutes)
- ▶ Draw pictures and answer all questions.

Objective:

- ▶ To be able to explain, on the molecular level, how heating and cooling affect the density of water.

Key Concepts:

- ▶ Heating a substance causes molecules to **speed up** and spread slightly **further apart**, occupying a **larger volume** that results in a **decrease** in density.
- ▶ Cooling a substance causes molecules to **slow down** and get slightly **closer together**, occupying a **smaller volume** that results in an **increase** in density.
- ▶ Hot water is **less** dense and will **float** on room-temperature water.
- ▶ Cold water is **more** dense and will **sink** in room-temperature water.

Processing Activity

- ▶ Work on the processing activity in your Interactive Notebook.