

## Temperature Affects Density

Objective: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Key Concepts:

- Heating a substance causes molecules to \_\_\_\_\_ and spread slightly \_\_\_\_\_, occupying a \_\_\_\_\_ that results in a \_\_\_\_\_ in density
- Cooling a substance causes molecules to \_\_\_\_\_ and get slightly \_\_\_\_\_, occupying a \_\_\_\_\_ that results in an \_\_\_\_\_ in density.
- Hot water is \_\_\_\_\_ dense and will \_\_\_\_\_ on room-temperature water.
- Cold water is \_\_\_\_\_ and will \_\_\_\_\_ in room-temperature water.

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## Temperature Affects Density – Processing

### EXPLAIN IT WITH ATOMS AND MOLECULE

In the animation, you saw water molecules being heated and cooled. Look at the model of water molecules in the diagram below to help you compare the volume, mass, and density of cold and hot water.

Write *more*, *less*, or *same* in the chart to describe the volume, mass, and density of cold and hot water compared to room temperature water.

| Comparing cold and hot water to room-temperature water |            |           |
|--|------------|-----------|
|  | Cold Water | Hot Water |
| Volume   |            |           |
| Mass   |            |           |
| Density  |            |           |