

# Oil and Water

## Procedure

- 1. Collaborate** Work with a partner. Using the balance, find the mass of an empty 250-mL beaker. Then add 100 mL of vegetable oil to the beaker. Find the mass of the beaker and oil. Subtract to find the mass of the oil. Record the results on the line below.  

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- 2. Use Numbers** Repeat step 1 with the other beaker and 100 mL of water. Compare the masses of the two liquids. Then subtract to find the difference. Record your answer on the line below.  

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- 3. Collaborate** Cover the cardboard with plastic wrap. Lean the piece of cardboard against a stack of books to make a ramp. Tape the ramp to the books. Place strips of tape near the top and bottom of the ramp. They are “start” and “finish” lines.
- 4. Observe** One partner will start the timer while the other adds five drops of oil to the starting line. Time how long it takes for the oil to travel down the ramp. Record your observations below. Repeat with water on the right side of the ramp.  

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- 5. Observe** Pour the water into the oil and stir the mixture. Observe the mixture for about a minute. Record your observations below.  

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## Conclusion

Write the answers to the questions below.

- 1. Use Numbers** Calculate the density ( $D$ ) of oil by dividing its mass by its volume ( $D = M/V$ ). Then calculate the density of water.

- 2. Apply** What happens when two liquids of different densities are mixed together?

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## Investigate More!

**Design an Experiment** Viscosity is a measure of how much a fluid resists flowing. Does a liquid's density affect its viscosity? Design an experiment to test your answer.