

Liquid Flow Rate Experiment

Week 8 — Wednesday | Racing Liquids Down a Ramp

Reading Time

Today you are going to race different liquids down a ramp! This is a real science experiment that tests the **viscosity** of each liquid. Remember — viscosity means how thick or thin a liquid is. Thin liquids like water flow very fast. Thick liquids like honey flow much slower.

To make a fair test, every liquid must travel the same distance and start at the same time. You will pour a small amount of each liquid onto a tilted board and watch which one reaches the bottom first. This is called testing the **flow rate** — how quickly something moves from one place to another.

Before each race, make a prediction. After the race, record the actual order. Sometimes your prediction is right, and sometimes you discover something surprising!

Reading Questions

1. What does viscosity measure?

2. What is a flow rate?

3. Why is it important that every liquid travels the same distance in this experiment?

4. What makes a test "fair" in science? Explain with an example.

Flow Rate Race Experiment

Materials: A flat board (cardboard or cutting board), a book to prop it up, 4 small amounts of liquid (water, dish soap, honey, vegetable oil), paper towels

Step 1: Prop the board on the book to make a ramp.

Step 2: Predict the finish order from fastest to slowest.

Step 3: Pour a small amount of ONE liquid near the top of the ramp. Watch it flow to the bottom.

Step 4: Wipe the ramp clean with a paper towel before the next liquid.

Step 5: Repeat for all 4 liquids and record the actual order.

#	Liquid	Look (Color/ Clarity)	Feel (Thin/ Thick)	Predicted Order (1=fastest)	Actual Order (1=fastest)	Was I right?
1	Water					
2	Dish Soap					
3	Honey					
4	Vegetable Oil					

Results Chart

Write the liquids from fastest to slowest based on your experiment results.

Place	1st (Fastest)	2nd	3rd	4th (Slowest)
Finish Order				

True or False — Circle Your Answer

- ☐ 1. All liquids flow at the same speed.
- ☐ 2. A fair test means every liquid has the same conditions.
- ☐ 3. Honey probably flows faster than water.
- ☐ 4. Viscosity is about how thick or thin a liquid is.
- ☐ 5. You should clean the ramp between each test.
- ☐ 6. A prediction is written after the experiment.

Draw Your Experiment Setup

Draw your ramp with a liquid flowing down it. Label the ramp, the liquid, and the direction of flow.

Think About It

1. Which liquid was the fastest and which was the slowest? Why do you think so?

2. If you tested ketchup or mustard, where do you think they would finish? Why?

3. How does temperature affect flow rate? (Hint: Think about melted vs. cold honey.)

Fill in the Blanks

Word Bank: viscosity flow rate fair test prediction thick thin

1. _____ tells us how thick or thin a liquid is.

2. The speed at which a liquid moves is called its _____.

3. When every liquid has the same conditions, it is a _____.

4. A _____ is a guess you make before the experiment.

5. Honey is _____ so it moves slowly.

6. Water is _____ so it moves quickly.

 Try It at Home

Ask a grown-up to help you test 2 more liquids. Record below.

Liquid	Thin or Thick?	Fast or Slow?	Notes