

# JR-SCIENTISTS

# MARBLE RACE

Let's learn about viscosity by having a marble race!

## INSTRUCTIONS

**STEP 1:** Fill your glasses with your various liquids. Make sure they are all filled to the same level.

**STEP 2:** Place your ruler on top of your glasses and then place the marbles on top.

**STEP 3:** Tip your ruler toward you to release all of the marbles into your glasses at the exact same time.

**STEP 4:** Watch closely to see which marble reaches the bottom of the glass first. Did you guess which marble would win?

## SUPPLIES:

**Marbles**  
**Clear glasses**  
**Various liquids**  
**(water, syrup,**  
**honey, oil)**  
**Ruler (optional)**

## THE SCIENCE

Friction is a force that is created when there is motion between two solid objects. Liquids can also have friction. This internal friction is called viscosity. All liquids have different viscosities, which means some liquids flow more easily than others.

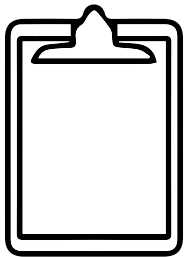
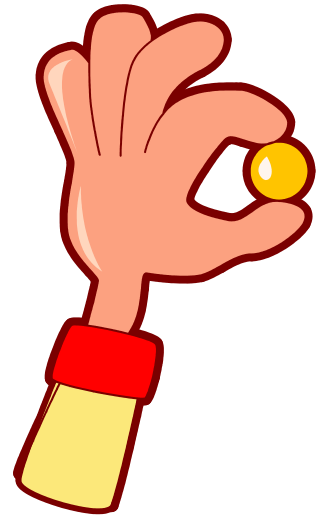
Viscosity is a physical property of fluids. The word viscous comes from the Latin word viscum, meaning sticky. It describes how fluids show resistance to flow or how "thick" or "thin" they are. Viscosity is affected by what the fluid is made of and the temperature of it.

For example; water has a low viscosity, as it is "thin". Hair gel is much more viscous than oil, and especially more than water!



# Marble Race Observations

Use this worksheet to process and evaluate your work.



RECORD

What did you observe?

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Why do you think the marbles moved at different speeds?

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What did you learn about viscosity?

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What did you learn about friction?

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