



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

make a rainbow in your glass with water and Skittles.



Supplies Required:

- Water
- A mug
- 5 separate cups
- Table spoon
- A clear glass
- Dropper or pipette

Video

See a rainbow in a glass: <https://tinyurl.com/rpexr3u>

Overview

Skittles are mostly made of sugar. When you add hot water to them, the sugar dissolves and the coloring on the shell of the Skittles turns the water different colors. The cup with only two red Skittles doesn't have as much sugar as the cup with ten purple Skittles, but they both have the same amount of water. The amount of matter packed into a certain amount of space is called the density of the material. The red water is less dense than the purple water, so it will float on top of the purple water.



Instructions



1. Separate the Skittles into the cups, in these amounts: 2 red, 4 orange, 6 yellow, 8 green, and 10 purple.
2. Heat a mug of water in the microwave for a minute and a half (or long enough that the water is hot, but not boiling). Be careful removing the water from the microwave—it's hot!
3. Measure and pour two tablespoons of hot water into each cup, on top of the Skittles.
4. Stir each cup carefully so no water splashes out. The cups need to be cool for the next part of the experiment, so leave them somewhere where they won't get knocked over. Stir them every ten minutes or so until the Skittles are dissolved and the water is room temperature.
5. Using the dropper, add the colored water from the five cups to the clear glass. Start with purple, then add green, then yellow, orange, and red last. Go slowly here, we don't want the different layers to mix.
6. Congratulations, you made a rainbow. You didn't even have to go outside!

Additional Resources

Think About It! What happens if you stir your rainbow? What if you leave it sitting there overnight? What happens to the rainbow if you add the colors in the opposite direction? Start with adding the red first and see what happens!

1. Watch a video about density: <https://tinyurl.com/lwwyt3w>
2. Learn more about density: <https://kids.kiddle.co/Density>

Share It Out

Share on social media: Record a video or take a picture of your experiment and post the results online using the hashtags:

#RainbowChallenge
#ProjectExploration
#StemAtHome

Tag a friend and challenge them to make their own rainbow in a glass!

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 411. Learn more at www.projectexploration.org/explore-store

Join PE's character contest!

Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists. Learn more at: www.projectexploration.org/character-contest.



Call or text us for help: 312-772-6634

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