



DISSOLVING PUMPKINS

VIDEO URL

<https://youtu.be/Sgz5RmYWfTQ>

TIME

30-45 minutes

MATERIALS NEEDED

- 1/2 c Milk
- 1/2 c Water
- 1/2 c Vinegar
- 1/2 c Vegetable Oil
- 1/2 Soda
- 5 clear cups or glasses
- Candy pumpkins
- Marker
- 5 small pieces of paper for labels
- Measuring cup
- Observation log (on page 3)
- Plastic spoon

OBJECTIVES

- Predict which liquid dissolves candy pumpkins the quickest. Test this prediction.
- Learn how the type of molecules of each liquid impacts dissolution

MODIFICATIONS

- Experiment with other liquids such as corn syrup, soapy water, rubbing alcohol, juice, etc.
- Introduce heat by testing warm or hot liquids
- Try different types of candy

LESSON

1. Label 5 clear cups/glasses with the name of each of the 5 liquids that will be used in this experiment.
2. Measure 1/2 cup of each liquid and pour into labeled cups.
3. Predict which liquid will cause the candy to dissolve most quickly. Make predictions on what will happen to each candy pumpkin.
4. Place 1 candy pumpkin in each cup of liquid.
5. Set a timer and record observations using the observation log on page 3 every 5 minutes until you have reached 30 minutes.
6. After 30 minutes, take out each pumpkin and record observations.

THE SCIENCE BEHIND THE LESSON

To dissolve, molecules in the candy pumpkin and molecules in the liquid need to be attracted to each other through positive and negative ions. If the molecules are not attracted to each other, the candy will not dissolve. The molecules in water have powerful magnetic properties that can break sugar molecule bonds. Eventually they insert themselves in between all sugar molecules which causes the candy to completely dissolve. Vegetable oil has no positive or negative ions on the molecules and thus, is not attracted to the candy molecules. As a result, the candy pumpkin does not dissolve in the oil.

RELECTION

1. What surprised you about this experiment?
2. What do you think would happen if other types of candy was used, such as chocolate or caramel?
3. If you could do this experiment again and change one variable, what would it be?
4. How can you teach others about this experiment?
5. How might you use what you learned in other areas of your life?

ADDITIONAL RESOURCES

- **Dissolving M & M's experiment:**
<https://www.acs.org/content/acs/en/education/whatischemistry/adventures-in-chemistry/experiments/dissolving-m-ms.html>
- **Colorful Dissolving Candy Kitchen Science experiments:**
<https://www.stevespanglerscience.com/2012/08/06/colorful-dissolving-candy-kitchen-science/>
- **Make Mouthwatering Candy Melt experiment:**
<https://www.scientificamerican.com/article/make-mouthwatering-candy-melt/>

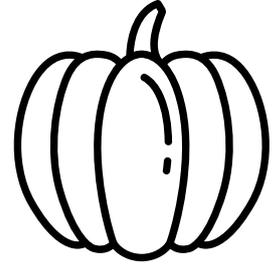
WHO WE ARE

4-H began over 100 years ago, and has since grown into the largest youth development program in the nation. 4-H prepares young people to be leaders in their community and around the world through hands-on experiences alongside their peers and caring adults. 4-H delivers research-based programming around positive youth development. In Indiana, 4-H can be found in all 92 counties as delivered through Purdue Extension. Community clubs, afterschool programs, school enrichment, camps/workshops, and special programs are all ways youth across Indiana can be involved with the 4-H program. For more info, visit extension.purdue.edu/4h.

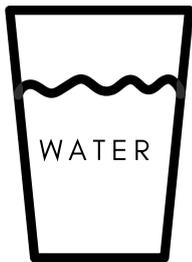


DISSOLVING PUMPKINS Observation Log

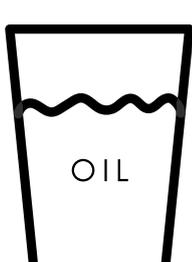
Prediction: Which liquid do you think will cause the candy pumpkin to dissolve the quickest?



List your observations below - pay attention to shape, color, texture, etc. What changed as more time elapsed?

	5 min _____
	10 min _____
	15 min _____
	20 min _____
	25 min _____
	30 min _____

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Was your prediction correct?

