

Struggling to find a hands-on way to teach variables?

Don't spend any more time planning, searching, or brainstorming. Everything you need is in this easy to use download!

Name _____

WHAT WILL MAKE ICE MELT THE FASTEST?

Procedure:

1. Label the cups to match the material you'll use to melt the ice.
2. Place one ice cube piece in each of the three cups. Pour $\frac{1}{2}$ cup of material in each cup to match the label.
3. After 5, 10, and 15 minutes, use the spoon to pick up the ice cube. Carefully place the cube back in the container and wipe off the spoon. Record your observations in the chart below.
4. Repeat for each ice cube.

Materials:

- 3 different materials to melt the ice
- 3 clear cups
- 3 ice cubes
- Spoon
- Timer
- Paper Towels

	Material #1: _____	Material #2: _____	Material #3: _____
5 minutes			
10 minutes			
15 minutes			

Which material did the ice cube melt the most? Why do you think it melted more than the others? _____

What are the controlled variables in this experiment? _____

What is the independent variable in this experiment? _____

What is the dependent variable in this experiment? _____

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Teacher Directions Page

- Learning Goals
- Materials Needed
- Specific
Directions for All
Parts of Lesson

Scientific Method: Variables

Learning Goal: Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions

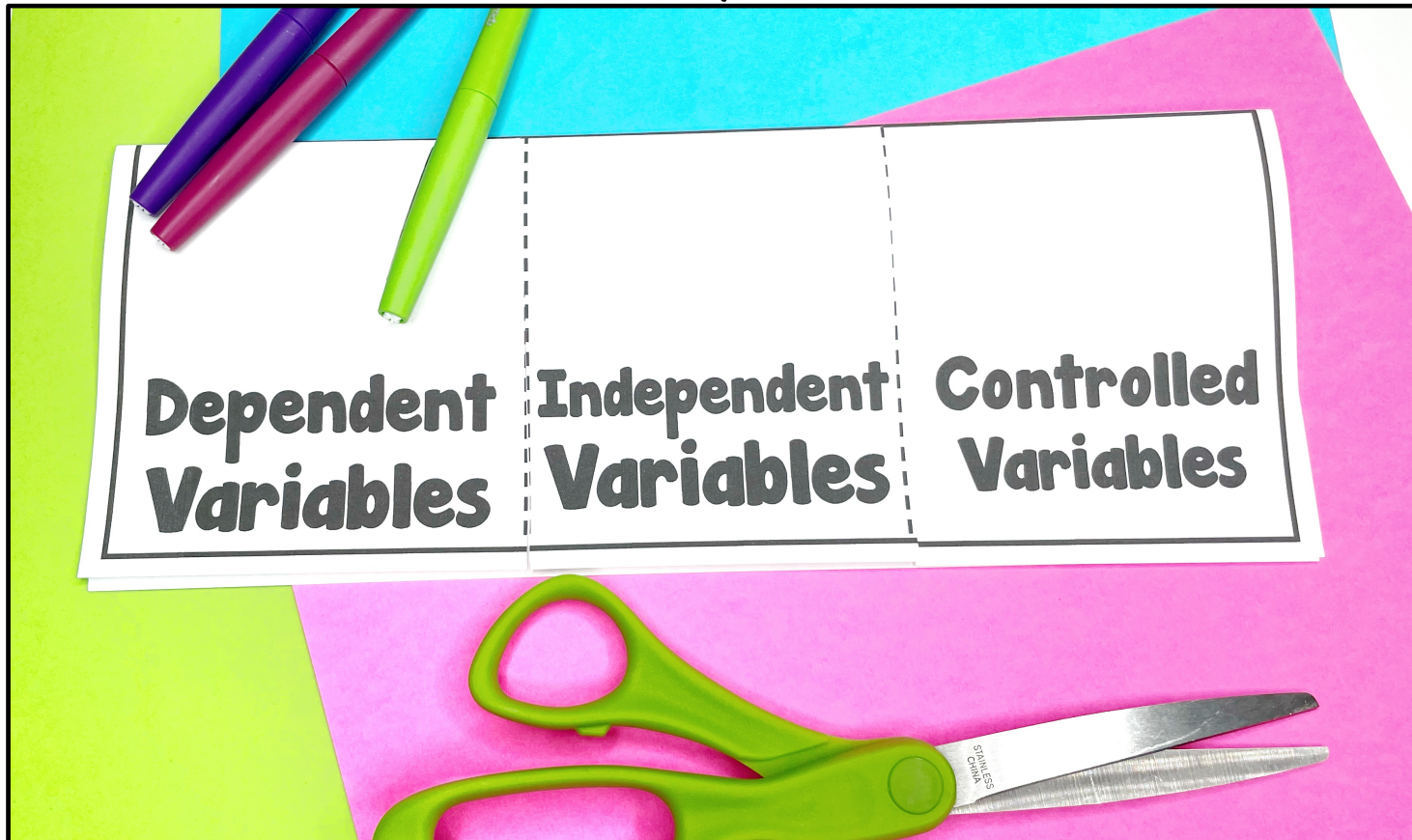
Materials Needed: Foldable (1 per student), Scissors, Recording Sheet (1 per student), 3 different materials to melt the ice (salt, sugar, sand, room temperature water, etc.), 3 clear cups, 3 ice cubes, spoon, timer, paper towels, Exit Slip (6 per page)

Teacher Directions for Variables:

1. Begin the lesson on variables by sharing the idea that variables mean a feature of experiments that can change. There are three types of variables that you'll dig into today.
2. Complete the dependent, independent, and controlled foldable (1 per student) as a class, giving specific examples of each type. See the answer key provided for assistance.
3. Experiment time! You'll need one recording sheet for each student. The experiment is "What will make ice melt the fastest?". You can choose what material to use to help melt the ice cube...pick something you already have on hand. ☺ I suggest salt, sugar, sand, room temperature water, etc. The questions for the experiment are on the recording sheet. Be sure to emphasize the questions from the foldable: What did I measure or observe? What did I change or test? What did I keep the same? Focus on the last three questions of the recording sheet to ensure the experiment serves its purpose...practice identifying variables!
4. Close with a class discussion on the difference between the types of variables and how to identify them in experiments.
5. Have students complete the exit slip questions: What is an independent variable? What are controlled variables? What is a dependent variable?
6. Review exit slips and record students who've mastered this lesson and those who need additional practice.

Foldable Notes

- Dependent Variables, Independent Variables, and Controlled Variables
 - Perfect for Interactive Notebooks!
 - Answer Key Included



Experiment

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What is the independent variable in this experiment? _____

What is the dependent variable in this experiment? _____

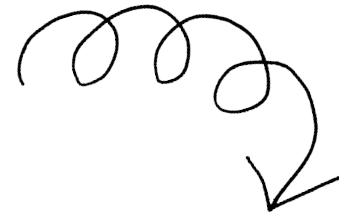
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- What will make ice melt the fastest?
- Uses common household items
- Includes recording sheet
- Specifically focuses on identifying variables in experiment

Quick Assessment

[illegible]

Use this simple exit ticket question to measure your students' learning at the end of the lesson. Includes 2 questions to choose from!



BONUS: Includes a Mastery Checklist. You can easily keep track of students who need extra practice and students who are ready to move on to the next lesson in one easy place!