



variable: something that changes or can change

Mars Rover Model Celebration – Lesson Plan

Introduction:

TEACHER: Teach this card before teaching the “control” vocabulary card as the control vocabulary card assumes children are already familiar with the word variable.

One of the new vocabulary words for this unit is “variable”. A variable is “something that changes or can change”. The temperature outside is variable. Some days it will be warm and sunny. Other days, it might be cold or cloudy. Our moods are also variable—sometimes we feel happy but other times, we are angry or sad. In science, we use the word variable to talk about something we change in an experiment. For example, we might change the amount light a plant gets. When we conduct an experiment, it is very important that we only change one variable, so that we can see how that change affects our experiment. If we change more than one variable we won’t know which one affected our experiment.

Let’s look at some pictures that will help us understand the meaning of “variable”. The weather at the beach at the top of the page is variable. The weather had been sunny—, but we can see that a storm is about to bring rain to the beach. In the bottom picture, the students changed the variable of light. They put this plant in a box near a window with direct sunlight. This caused the plant to grow at an angle toward the window.

Example:

Do you remember when we discussed selecting missions? When I was discussing this with you, I gave you an example about Saturn in which I decided to find out whether an object could orbit Saturn outside the rings. The experiment will use a satellite to pull a rock away from the rings and see what happens to it. In this experiment, the variable I would be changing is the orbit of the rock. I can then observe the rock to see what happens to it in the new orbit. Does it stay in orbit? Does it fall into Saturn? Does it fly back into the ring?

Reflection:

I am going to read some sentences. If the students in the sentence are changing only one thing, I want you to put your thumbs up and say VARIABLE. If they are not changing something, I want you to put your thumbs down and remain silent.

- A student adds fertilizer to one of several plants on his desk. (thumbs up)
- Students measure how tall plants are. (thumbs down-they didn’t change anything)
- Students watch a goldfish swim in an aquarium. (thumbs down)
- A student has her friends read a list of words from close up and far away and keeps track of how many they get right each time. (thumbs up)

Make it personal:

Think about your Mars Rover project. What is the variable that you are going to change? Have you thought it out to make sure you are only changing one thing in your experiment? Share your thinking with your neighbor. Be sure to use the word “variable” in your sharing. Then I will ask some of you to tell the class about your variable.

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Illustration Credit: Janice Van Cleave's Teaching the Fun of Science to Young Learners
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