



hypothesis:

a good guess about something that
has not yet been proven to be true

Mars Rover Model Celebration – Lesson Plan

Introduction:

One of the new vocabulary words for this unit is hypothesis. A **hypothesis** is a good guess about something that has not yet been proven to be true. Scientists use research to help us learn new facts or test new ideas about something.

Let's look at a picture that will help us understand the meaning of the word hypothesis. The girl in this picture has just received a present but hasn't opened it yet. Before she makes a guess about what the gift is, she examines different aspects of the gift. She considers the size of the box, how much it weighs, and what she hears when she shakes the box. Because the box is small and cannot be very heavy, if the girl were to guess that an elephant or a bicycle was inside the box, this would NOT be a good hypothesis because it is not a good guess. If the girl were to guess that there was a bottle of perfume or a cell phone in the box, this would be a good guess or a good hypothesis.

Example:

Let me give you another example of the word hypothesis. Suppose you walk out of your house or apartment and see some of your neighbors loading their car. They are placing a cooler, an inflatable raft, a beach ball and some very large towels into the trunk. From what you have observed, you might make the hypothesis that they are going to the beach, a lake or a pool for the day. You haven't asked your neighbors where they are going, so your hypothesis hasn't yet been proven. If they tell you they are going to the beach, then your hypothesis would be confirmed and would become a fact.

Hypothesis is a word often used by scientists. Scientists will research a subject, to learn what people already know about it. Then, they will try to learn something new by making a hypothesis and designing an experiment to see whether that hypothesis is true.

Scientists know plants need water to grow and that too much water can kill them. But, exactly how much water is too much for a tomato plant may not be known. So, a hypothesis might be that 1 cup of water a day is too much and will kill the tomato plant. A scientist could test this hypothesis using ten tomato plants. Each day, the scientist could give each plant a different amount of water and observes what happens to each one.

Reflection:

Think about the following sentences. If you have a good guess or hypothesis about what might be happening, raise your hand and tell me "I have a HYPOTHESIS. I think that..."

- After taking a drink, you observe a friend say "OWW" and start to fan his tongue with his hand. (Hypothesis: the drink is very hot.)
- You see a picture of trees in which the leaves are red, orange and yellow. (Hypothesis: the picture was taken in the fall.)
- A man has parked his car at the side of the road and is looking at a map. (Hypothesis: he is lost.)
- A cat is meowing in front of a bowl. (Hypothesis: the cat is hungry or thirsty.)

Make it personal:

Think about what you already know about Mars. Then, make a guess about something you think may be true about Mars but you don't know for sure. I will pick on some of you to share your ideas and we will discuss whether or not your guess would be a hypothesis or not. *(Let the students think for a moment and ask for volunteers. Go through each statement and have students evaluate it to see if it is a hypothesis. Have them review the definition on the other side of the card if necessary.)*