Science Magic Pre-Lab Lesson Plan
The Edible "Candle"

Overview

This pre-Lab lesson, the Edible "Candle," is a teacher-led demonstration in which students are "puzzled" by a discrepant event that takes place before their eyes. This thought provoking demonstration will not only grab hold of the students' attention, it will also emphasize the importance of sound observations as opposed to inferences when it comes to drawing accurate conclusions.

Materials

- String cheese stick, mozzarella or any white cheese
- Slivered almonds
- Match or barbeque lighter
- Knife

Getting Ready

Use the knife to cut the cheese stick to a length of approximately 4-5 inches. For the "wick", insert an almond sliver into the top of the cheese stick. For added effect, blacken the "wick" by holding it in a flame for a few moments. Place the edible "candle" out of the sight of the students until you are ready to use it.

Procedure

Introduce the demonstration by talking about the importance of good observations in scientific investigations. Discuss with students how we use our senses to make scientific observations. Show students the "candle" and light it in front of them—refrain from calling it a "candle" throughout the demonstration. Ask students to use their senses to make observations about the "object" you are holding. Students are likely to provide descriptions of what they are observing ("There is a light being given off" or "I smell something burning") and also what they are inferring incorrectly based on prior experiences ("The wax is melting").

After collecting student observations, gently blow out the flame if it has not already extinguished itself. Ask for any final observations. Then, casually take a bite of the "candle", including the wick, making sure to chew and swallow your bite. Students will be momentarily stunned. Without providing any explanation of what the "candle" really was, steer the discussion toward the difference between direct observation versus inference. A direct observation is gathered via the senses and is done so without any preconceived assumptions about the object(s) you are observing. An inference, on the other hand, is an interpretation of or an explanation for an observation. Often times, inferences are drawn based upon observation and/or prior experiences. Inferences can range from being very reasonable conclusions to being weak guesses based upon faulty assumptions. Both direct observations and inferences play important roles in scientific investigations; however, we must be careful to avoid drawing erroneous conclusions based upon assumptions. Review with students some of the

observations and inferences that they shared about the “candle” and allow them to categorize their statements as “observation” or “inference.”

At the end of the discussion, reveal the identity of the “candle.” If using the same demonstration in multiple classes, caution students against ruining the surprise for their peers.

Assessment

Find 2-3 age appropriate photos that you are able to display in your classroom. For each picture, ask the students to record at least 3 observations and 1 inference about the picture. Allow students time to share their observations and inferences, highlighting the idea that several different inferences can be made even when the observations are the same.

Note:

For simplicity, the activity uses a cheese stick to simulate the “wax” portion of the candle. An apple can be substituted for the cheese. Simply use a cork borer to carve out an apple cylinder and use a knife to remove any excess “skin.” Pour a small amount of lemon juice over the apple to prevent it from turning brown.