Name: _____ Date: _____ Period: _____

Physical and Chemical Changes Virtual Lab

Problem

How do physical changes differ from chemical changes?

Introduction

Matter can undergo physical and chemical changes. Physical changes involve change of one or more physical properties. Chemical changes involve changes in the composition of the substance. The following are clues that indicate that a chemical change may have occurred: a color change, the evolution of bubbles, the formation of a solid (a precipitate), and heat absorbed or produced. In this lab you will carry out four procedures and make observations. Then you will decide how well the clues enable you to determine if a chemical reaction occurred. In addition, you will develop molecular definition s of physical and chemical changes.

Pre-laboratory Assignment

Answer the following questions in complete sentences.

1. What is a physical change?
2. Give two examples of physical changes.
3. What is a chemical change?
4. Give two examples of chemical changes.
5. What are three things that indicate a chemical change may have occurred?

Materials (Equipment and Reagents)

http://www.glencoe.com/sites/common_assets/science/virtual_labs/E03/E03.html

Procedure

1. Select one of the four events and view the video. You can stop the video at any point and watch it as many times as you need to.
2. Click the Play/Pause, rewind & fast forward button when needed.
3. Use your observations to check all the items on the Observations Checklist (on the screen). When all items are checked, decide whether the changes you observed represent a physical or chemical change of matter.
4. Click the Physical Change or Chemical Change button
5. Record your observations in the Table.
6. Select another event to observe. Watch the remaining 3 events & analyze the data.
7. You will have to click reset to get new events (and may have to reset several times to get ALL the data)
8. Complete the Analysis questions.

Data Table

Complete the first 6 empty columns with a yes or no indicating if the event was observed. In the last column ident6ify if the change was physical or chemical.

Event	Shape or Size Change	Color Change	Bubbles Formed	Change in state	Produces heat, light or sound.	New substance formed	Physical or Chemical
1. Boiling water							
2. Steal rusting							
3. Metal (or butter) melting							
4. Forest burning							
5. Baking Soda mixed with Vinegar							

6. Wrecking ball destroying building							
7. Sodium hydroxide dissolves fat							
8. Steam evaporating							
9. Burning match (or garbage)							
10. Sodium hydroxide reacts with Aluminum							
11. Bananas ripening							

Analysis and Conclusion (to be completed after the lab, answer in complete sentences)

1. Given an example (not used above) of a chemical change that you encounter every day
2. Give an example (not used above) of a physical change that you encounter every day.
3. Explain how burning a candle demonstrates both physical and chemical changes.
4. Of the event you observed during the lab compare the substance that underwent chemical changes. What ere the similarities and the difference in these examples? Include specific information from your data table.
5. Of the event you observed during the lab compare the substance that underwent physical changes. What ere the similarities and the difference in these examples? Include specific information from your data table.