

Weird Water Events- Alternative Assignment

Name_____ Per_____

Go to the Amplify: Program and Apps: Library: Phase Change Unit: Weird Water Events

Read Chapter 1: Weird Water

Explain 3 things that are important or helped you review regarding phase change from this chapter?

The article explained that everything is made of the same molecules but the molecules just move differently in each stage and then explains how the molecules move in each stage. In the liquid stage the molecules can move more freely but still tend to stick together. In the solid state the molecules only move in place and are tightly packed and have a lower freedom of movement.

Read Chapter 3: Glacier Caves of Iceland

Explain how the caves are formed in Iceland.

The article explains how in Iceland when ice touches volcanically heated rock a glacier cave can form because of phase change. The ice will melt and flow downhill and create tunnels and caves under the glacier. The article also explains that the tunnels are possible due to the molecules' freedom of movement creating rigid ice walls.

Explain the phase change that occurred at the macroscale and at the molecular scale.

The phase change that occurred at the macro scale is when the ice changes phase and melts into liquid water.

The phase change on the molecular scale was when the liquid water changed phase into steam.

In order for phase change to occur, there must be energy and there must be a change in freedom of movement of the molecules. In this example, where does this energy come from originally and how does it result in phase change in Iceland? Use the following terms in your answer (Law of Conservation of Energy, Kinetic Energy, Freedom of Movement, Phase Change-list the specific type, molecule)

The energy originally comes from the heat from the magma in the volcanos. The heat coming off the magma is then transferred into kinetic energy. This results in phase change because the heat coming from the magma/volcano melts the ice (phase change melting) and the heat makes the liquid water into a steam (phase change evaporation). The law of conservation of energy means energy cannot be created or destroyed and is "transferred" from each phase change to another. When an object changes phase the freedom of movement will change from form to form. For example, liquid molecules move around each other and take the shape of their container and solid molecules move in place and do not take the shape of their container.

Final Analysis:

In the ice cream lab, we used dry ice to freeze the milk mixture. Research- what is dry ice? What is the phase change from solid to gas called? Why does it not exist in the liquid phase and explain how it relates to molecular attraction. ?

Dry ice is a solid form of carbon dioxide. It is called dry ice because it goes from a solid to a gas without a liquid stage, this is called sublimation. Dry ice does not exist in a liquid form because when dry ice takes in heat from its surroundings the dry ice will immediately begin to sublime skipping the liquid stage this relates to molecular attraction because sublimation is caused by the dry ice absorbing heat allowing molecules to escape the molecular attraction and become a vapor form.