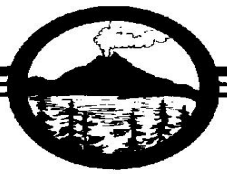

Name _____ Date _____

WHY DO VOLCANOES EXPLODE?

If you shake a container of soda and open the top, thousands of bubbles along with lots of liquid comes spraying out. Unfortunately, most of us have had this experience. When the lid was on, the pressure kept the gas dissolved in the liquid. However, when you opened it, the pressure of the gas made it suddenly come out of solution and "explode." That is when you got sprayed.

Beneath volcanoes the hot magma has a lot of gas dissolved in it, too. The rocks on the top act like a bottle cap and keep the gas dissolved. If the top rocks are removed, the gas suddenly comes out of solution and explodes out of the volcano. Hot lava and rocks come with it.

Cider cones are more dangerous than *shield volcanoes* because the magma under cinder cones is made mostly of *Andesite*. This is a type of rock which can dissolve a great deal of gas. If you think back to our soda container example, you will realize that the cinder cone is very explosive. The magma under shield volcanoes, like those in Hawaii, is made mostly of *Basalt*. Basalt can dissolve only a small amount of gas. A shield volcano is therefore much less explosive. When they erupt the magma doesn't explode but rather it flows. This gives people time to move to safety.

Answer the following questions:

1. What is dissolved in hot magma? _____

2. What type of volcano is more dangerous than a shield volcano? _____ Why? _____

3. Which type of volcano "flows" rather than explodes? _____