Name: Class: Date:

**How Do Igneous Rocks Form?**

**1) Four Igneous Rocks:** *Examine the four igneous rocks. Each one formed as melted rock cooked and solidified. Briefly describe the four rocks.*

Rock 1 Rock 2

Rock 3 Rock 4

**2) Describing Rock Textures:** *A rock’s texture refers to its grain size. Enlarge is rock and read its description. Use one of the three terms to describe each rock’s texture: 1) coarse-grained, 2) fine-grained, 3) glassy or 4) porphyritic—having a two-staged coarse- and fine-grained characteristic.*

Rock 1 Rock 2

Rock 3 Rock 4

**3) Igneous Rock Texture:** *Read the descriptions for the three types of igneous rock textures.*

**4) Identifying Igneous Rock Textures:** *Click on each rock’s image. Identify its texture.*

Rock 1: Rock 2: Rock 3:

Rock 4: Rock 5: Rock 6:

**5) Igneous Rock Crystallization Animations**: *Click on each labeled feature to view how igneous crystals form under different cooling conditions. Answer the following questions.*

**Pyroclastic Flow Animation**

During a pyroclastic flow, magma slowing crystallizes in the chamber and then erupts out of the volcano. The minerals in the pyroclastic flow then crystallize fairly quickly. Pyroclastic flow generally results in a two-staged crystallization process.

Slow-cooling lava results in (large or small) crystals.

Fast-cooling lava results in (large or small) crystals.

**Lava Flow Animation**

Quick-cooling lava results in (large or small) crystals.

What forms holes in the lava-turned rock?

**Magma Animation**

Slow-cooling magma results in minerals having (large or small) crystals.

**6) Igneous Rock Textures and Cooling Rates:** *Click the triangular ARROW at top right of box to continue to the next slide.* *Click on each rock’s image to examine its texture. Observing its texture, infer its cooling rate and environment.*

1. *Choose one of the following cooling rates: fast, slow, or two-staged.*
2. *Choose one of the following cooling environments: magma chamber, eruption from volcano, or deep cooling followed by eruption.*

Rock 1 Rock 2 Rock 3

Texture: Texture: Texture:

Cooling Rate: Cooling Rate: Cooling Rate:

Environment: Environment: Environment: