

# Igneous Rock Classification Data Table

## Part 1

| Rock Number                  | 1 | 2 | 3 | 4 | 5 |
|------------------------------|---|---|---|---|---|
| Grain Size/<br>Texture       |   |   |   |   |   |
| Intrusive or<br>Extrusive    |   |   |   |   |   |
| Types of Minerals<br>in Rock |   |   |   |   |   |

| Rock Number  | 6 | 7 |
|--------------|---|---|
| Observations |   |   |

# Igneous Rock Classification Data Table, continued

## Part 2

| Texture  | High in Quartz             | Low in Quartz            |
|--|----------------------------|--------------------------|
| Large-grained, cooled slowly below the surface of Earth          | Granite<br>Sample # _____  | Gabbro<br>Sample # _____ |
| Fine-grained, cooled quickly at or near the surface of the Earth | Rhyolite<br>Sample # _____ | Basalt<br>Sample # _____ |
| Glassy, cooled quickly at the surface of the Earth               | Obsidian<br>Sample # _____ |                          |
| Bubbly (vesicular)   | Pumice<br>Sample # _____   | Scoria<br>Sample # _____ |

### Igneous Rock Questions *(Answer on a separate sheet of paper.)*

- How are igneous rocks formed?
- Explain the difference between intrusive and extrusive igneous rocks.
- Rocks #3 and #4 both contain the same basic minerals. Other than the color, name a difference between these two rocks. Which one formed near the surface of the Earth and which one formed deeper in the Earth? How do you know?
- What is the main difference between rocks #2 and #5? Which one formed near the surface of the Earth and which one formed deeper in the Earth?
- What do you think caused the holes in rocks #6 and #7?
- Are the textures of rocks #6 and #7 large-grained, fine-grained or vesicular?
- One of the rocks #6 or #7 will float. Which of the rocks do you think will float? Place samples #6 and #7 in a beaker of water and see.

# Sedimentary Rock Classification Data Table

## Part 1

| Rock Number | Observations |
|-------------|--------------|
| 8           |              |
| 9           |              |
| 10          |              |
| 11          |              |
| 12          |              |
| 13          |              |
| 14          |              |
| 15          |              |

# Sedimentary Rock Classification Data Table, continued

## Part 2

| Clastic  | Organic  | Chemical   |
|--|--|--|
| # _____<br>Shale<br>(compressed clay, red, smallest particle size) | # _____<br>Coal<br>(black, decayed plant material)         | # _____<br>Rock salt<br>(clear, cubic shape)             |
| # _____<br>Sandstone<br>(cemented sand grains)                     | # _____<br>Limestone, shell<br>(contains fossil fragments) | # _____<br>Limestone, chemical<br>(gray, dense, compact) |
| # _____<br>Conglomerate<br>(cemented pebbles and gravel)           |  |  |
| # _____<br>Breccia<br>(angular rock fragments, fine-grained)       |  |  |

### Sedimentary Rock Questions *(Answer on a separate piece of paper.)*

1. What are the three types of sedimentary rocks? How do they differ?
2. Which samples were the easiest to identify? Why?
3. If a creek brought sediments into a lake and clastic rocks were formed, which type of rock from this activity would be found nearest the shoreline? Which one would be found the farthest from shore?

# Metamorphic Rock Classification Data Table

|                     |                          |                      |
|---------------------|--------------------------|----------------------|
| <b>Rock Number</b>  |                          |                      |
| <b>Observations</b> |                          |                      |
|                     | Marble<br>(non-foliated) | Gneiss<br>(Foliated) |

## Metamorphic Rock Questions *(Answer on a separate piece of paper.)*

1. How do metamorphic rocks form?
2. What is the difference between foliated and non-foliated?
3. Look at samples 1–7. Which sample was most likely metamorphosed into gneiss? Why?
4. Look at samples 8–15. Which sample was most likely metamorphosed into marble? Why?
5. Which type of rock will form in a lake in a region with a hot climate—igneous, sedimentary, or metamorphic?
6. Describe the appearance of the large sphere and small spheres after they were pressed together in Part B. What type of metamorphism caused this change?
7. Would this be defined as foliated or non-foliated texture? Explain.