

B4. Igneous Rocks

Igneous Rocks

Hey there, fifth graders! Today, we're going to explore the fascinating world of igneous rocks. These rocks are super cool (literally!) because they form from molten magma deep beneath the Earth's surface. Let's dive into the world of igneous rocks and learn more about them!

What Are Igneous Rocks?

Igneous rocks are one of the three main types of rocks found on Earth. The other two types are sedimentary and metamorphic rocks. Igneous rocks are formed when magma cools and solidifies either beneath the Earth's surface or on its surface.

How Do Igneous Rocks Form?

Igneous rocks start as hot, liquid magma. Magma is made up of melted minerals, gases, and water. When volcanoes erupt, they release magma onto the Earth's surface. This molten material is called lava. As the lava flows out of the volcano, it starts to cool down rapidly due to the lower temperature on the surface. As it cools, it solidifies and forms igneous rocks.

When magma cools beneath the Earth's surface, it takes much longer to solidify because the temperature is higher. This slow cooling process allows crystals to grow within the rock, making it coarse-grained. Examples of rocks formed this way include granite and diorite.

Classifying Igneous Rocks

Geologists classify igneous rocks based on their texture and mineral composition. Texture refers to the size of the mineral grains within the rock. If the rock cools quickly on the Earth's surface, it becomes fine-grained because the crystals don't have enough time to grow. Basalt is an example of a fine-grained igneous rock.

On the other hand, if the rock cools slowly beneath the Earth's surface, it becomes coarse-grained with larger crystals. As mentioned earlier, granite and diorite are examples of coarse-grained igneous rocks.

Intrusive vs. Extrusive Rocks

Igneous rocks are further divided into two categories: intrusive and extrusive rocks. Intrusive rocks form when magma cools slowly beneath the Earth's surface. These rocks are also known as plutonic rocks. Because they cool slowly, they have large mineral crystals. Examples of intrusive rocks include granite and gabbro.

Extrusive rocks, also known as volcanic rocks, form when lava cools rapidly on the Earth's surface. As a result, they have smaller mineral crystals. Examples of extrusive rocks include basalt and pumice.

Uses of Igneous Rocks

Igneous rocks have numerous uses in our daily lives. For example, granite is a popular choice for kitchen countertops and floors due to its durability and beauty. Pumice is a lightweight igneous rock used in making lightweight concrete and as an abrasive material in cleaning products.

1. What are igneous rocks formed from?
 - A) Sediments
 - B) Heat and pressure
 - C) Molten magma
 - D) Plant and animal remains
2. What is the molten material called when it flows out of a volcano?
 - A) Sediment
 - B) Granite
 - C) Magma
 - D) Lava
3. How does the cooling rate of lava on the Earth's surface affect the texture of igneous rocks?
 - A) It makes the rocks metamorphic.
 - B) It makes the rocks coarse-grained.
 - C) It makes the rocks fine-grained.
 - D) It has no effect on the rocks.
4. Which type of igneous rock has larger mineral crystals?
 - A) Intrusive rocks
 - B) Extrusive rocks
 - C) Sedimentary rocks
 - D) Metamorphic rocks
5. What is another name for fine-grained igneous rocks?
 - A) Coarse-grained rocks
 - B) Volcanic rocks
 - C) Plutonic rocks
 - D) Sedimentary rocks
6. Which type of igneous rock forms when magma cools slowly beneath the Earth's surface?
 - A) Sedimentary rocks
 - B) Volcanic rocks
 - C) Intrusive rocks
 - D) Extrusive rocks
7. What are intrusive igneous rocks also known as?
 - A) Volcanic rocks
 - B) Extrusive rocks

- C) Plutonic rocks
- D) Sedimentary rocks

8. Which type of igneous rock forms when lava cools rapidly on the Earth's surface?

- A) Sedimentary rocks
- B) Intrusive rocks
- C) Plutonic rocks
- D) Extrusive rocks

9. Which igneous rock is commonly used for kitchen countertops and floors?

- A) Basalt
- B) Pumice
- C) Granite
- D) Diorite

10. What is the texture of igneous rocks with large mineral crystals?

- A) Fine-grained
- B) Coarse-grained
- C) Sedimentary
- D) Metamorphic

ANSWERS & EXPLANATIONS

1. C - Molten magma.
 - Igneous rocks are formed from molten magma.
2. D - Lava.
 - Lava is the molten material that flows out of a volcano.
3. C - It makes the rocks fine-grained.
 - The cooling rate of lava on the Earth's surface affects the texture of igneous rocks, making them fine-grained.
4. A - Intrusive rocks.
 - Intrusive rocks have larger mineral crystals because they cool slowly beneath the Earth's surface.
5. B - Volcanic rocks.
 - Fine-grained igneous rocks are also known as volcanic rocks.
6. C - Intrusive rocks.
 - Intrusive rocks form when magma cools slowly beneath the Earth's surface.
7. C - Plutonic rocks.
 - Intrusive igneous rocks are also known as plutonic rocks.
8. D - Extrusive rocks.
 - Extrusive rocks form when lava cools rapidly on the Earth's surface.
9. C - Granite.
 - Granite is commonly used for kitchen countertops and floors.
10. B - Coarse-grained.
 - Igneous rocks with large mineral crystals are coarse-grained.