Name: _____ Date: _____

Inside a Geode: Crystals Hidden in Stone

Circle group

A geode looks like a plain, bumpy rock. It is gray or brown and about the size of a grapefruit. But when you crack it open, the inside can sparkle with crystals. How can a rock hide such a thing?

It starts with an empty pocket. A gas bubble can get stuck in cooling lava. Or an animal burrow or a bit of wood can leave a hollow in soft rock. The pocket stays buried for a very long time.

Rain soaks into the ground. It picks up tiny bits of minerals from the soil and rock. This mineral water seeps into the empty pocket. Drop by drop, the water dries up or cools. The minerals stay behind on the walls. They build up layer after layer and make crystals. Quartz is a common mineral in geodes.

The outer shell is harder than the rock around it. So when the hillside wears away, the round geode may be left lying on the ground, waiting to be found.

Questions

1. What does the outside of a geode look like?

_____

_____

2. How can an empty pocket form in a rock?

_____

_____

3. How do minerals get into the pocket?

_____

_____

4. What forms on the walls as the water dries up or cools?

_____

_____

5. Why might a geode be found on the ground?

_____

_____

6. Why do crystals take a long time to grow?

_____

_____

Words to know

geode: a rock with a hollow space lined with crystals
hollow: empty on the inside
minerals: natural solid materials found in rock and earth
seeps: flows slowly through tiny openings
quartz: a hard, common mineral that can form clear crystals

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Inside a Geode: Crystals Hidden in Stone

Triangle group

A geode looks like a plain, bumpy rock. It is gray or brown, about the size of a grapefruit, and you might walk right past it. But when someone cracks it open, the inside can sparkle with crystals. How did a hollow space filled with glittering points end up inside solid stone?

The story begins with an empty pocket. Sometimes a gas bubble gets trapped in cooling lava. In other cases, a hollow is left where an animal burrow or a bit of wood once sat in soft rock. Over a very long time, the pocket stays buried.

Rain soaks into the ground and picks up tiny amounts of minerals as it moves through the soil and rock. This mineral water seeps into the empty pocket. Drop by drop, some of the water dries up or cools, and the minerals it carried are left behind on the walls. They build up, layer after layer, and form crystals. A common mineral in geodes is quartz.

The outer shell is usually harder than the rock around it. That is why, when the rest of the hillside wears away, the round geode may be left lying on the ground, waiting to be found.

Questions

1. What does the outside of a geode look like?

_____

_____

2. How can an empty pocket form inside a rock?

_____

_____

3. How do minerals get into the pocket?

_____

_____

4. What forms on the walls as the water dries up or cools?

_____

_____

5. Why might a geode be found lying on the ground?

_____

_____

6. Why do crystals in a geode take a very long time to grow?

_____

_____

Words to know

geode: a rock with a hollow space lined with crystals
hollow: empty on the inside
minerals: natural solid materials found in rock and earth
seeps: flows slowly through tiny openings
quartz: a hard, common mineral that can form clear crystals

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Inside a Geode: Crystals Hidden in Stone

Square group

A geode appears to be nothing more than a plain, lumpy stone. Gray or brown and roughly the size of a grapefruit, it is the kind of rock that most people would walk past without a second glance. Yet when someone cracks it open, the interior may glitter with crystals. How could a hollow space lined with sparkling points end up concealed inside solid stone?

The story begins with an empty pocket. Occasionally, a gas bubble becomes trapped in cooling lava. In other cases, a cavity is left behind where an animal burrow or a fragment of wood once rested in soft rock. For an enormous span of time, the pocket remains buried underground.

Meanwhile, rain soaks into the soil and collects tiny amounts of minerals as it percolates through the earth and rock. This mineral-rich water seeps into the empty pocket. Drop by drop, some of the water evaporates or cools, and the minerals it carried are deposited on the walls. They accumulate, layer upon layer, and form crystals. Quartz is one of the most common minerals found in geodes.

The outer shell is generally tougher than the rock surrounding it. That is why, when the rest of the hillside erodes, the rounded geode may be left sitting on the ground, waiting for someone to discover it.

Questions

1. What does the outside of a geode look like?

_____

_____

2. In what ways can an empty pocket form inside a rock?

_____

_____

3. How do minerals reach the pocket?

_____

_____

4. What builds up on the walls as the water evaporates or cools?

_____

_____

5. Why might a geode be found sitting on the ground?

_____

_____

6. Why must crystals in a geode take an extremely long time to grow?

_____

_____

Words to know

geode: a rock with a hollow space lined with crystals
hollow: empty on the inside
minerals: natural solid materials found in rock and earth
seeps: flows slowly through tiny openings
quartz: a hard, common mineral that can form clear crystals

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Inside a Geode: Crystals Hidden in Stone

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Inside a Geode: Crystals Hidden in Stone

Easier · 167 words · Flesch-Kincaid grade 3.5

1. A plain, bumpy gray or brown rock.
2. A gas bubble in cooling lava, or a hollow left by a burrow or wood.
3. Rain carries them in as mineral water.
4. Crystals.
5. Its shell is harder than the rock around it, so it is left when the rest wears away.
6. Only tiny bits of minerals are added drop by drop.

Triangle: Inside a Geode: Crystals Hidden in Stone

This passage · 200 words · Flesch-Kincaid grade 5.4

1. A plain, bumpy gray or brown rock.
2. A gas bubble in cooling lava, or a hollow left by a burrow or wood.
3. Rain soaks into the ground and carries them in as mineral water.
4. Crystals, built up layer after layer.
5. Its shell is harder than the rock around it, so it stays when the rest wears away.
6. Tiny amounts of minerals are added drop by drop.

Square: Inside a Geode: Crystals Hidden in Stone

Harder · 219 words · Flesch-Kincaid grade 7.6

1. A plain, lumpy gray or brown stone.
2. A gas bubble can be trapped in cooling lava, or a burrow or wood can leave a cavity.
3. Rainwater picks them up from the ground and seeps in with them.
4. Crystals, layer upon layer.
5. Its shell is tougher than the surrounding rock, so it remains when the hillside erodes.
6. Only tiny amounts of minerals are added with each drop.