



Lesson Plan: Rocks, Minerals, and Soil

Grade Level: 3

Subject: Earth Science

Duration: 45–60 min

Core Idea ESS: The composition of the Earth and its atmosphere and the natural and human processes occurring within them shape the Earth's surface and its climate.

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the three main types of rocks: igneous, sedimentary, and metamorphic.
- **Describe** properties of minerals such as luster, streak, and hardness.
- **Explain** the composition of soil and name its three main layers: topsoil, subsoil, and bedrock.



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Materials Needed: (all links are included in this PDF)

- Study Guide - Rocks, Minerals, and Soil (<https://newpathworksheets.com/api/guide/study-guide-science-grade-3-rocks-minerals-and-soil.pdf>)
- Activity Lesson - Rock Cycle & Labeling (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-3-rocks-minerals-and-soil-rock-minerals-soil-4.pdf>)



- Worksheet - Properties of Rocks (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-3.pdf>)
- Assessment Quiz (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-0.pdf>)
- Vocabulary Worksheet Set 1 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-rocks-minerals-and-soil-1.pdf>)

Lesson Procedure

Step 1: Introduction (5 minutes)

- Hook students by asking: 'What do you think the ground beneath our feet is made of?'
- Show images of different rocks and soil layers using the Study Guide to spark interest.

<https://newpathworksheets.com/api/guide/study-guide-science-grade-3-rocks-minerals-and-soil-1.pdf>



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- Have students complete the Activity Lesson, where they draw and label rocks and complete the rock cycle diagram. (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-3-rocks-minerals-and-soil-rock-minerals-soil-4.pdf>)
- Alternatively, assign the fill-in-the-blank worksheet to reinforce rock properties. (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-3.pdf>)

Step 5: Assessment (10 minutes)



- Administer the multiple-choice quiz to assess student understanding of rock types, mineral properties, and soil layers. (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-0.pdf>)
- Collect the quizzes to evaluate individual progress and mastery of the lesson objectives.

Differentiation Strategies

For advanced learners:

- Ask students to research a specific mineral (e.g., diamond, quartz) and present its uses in everyday life.
- Have students compare and contrast two different rock types in a short paragraph.

For learners needing support:

- Provide a visual anchor chart with pictures of the three rock types to assist during the



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[3/rocks-minerals-and-soil](https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-0.pdf))

- Study Guide PDF (<https://newpathworksheets.com/api/guide/study-guide-science-grade-3-rocks-minerals-and-soil.pdf>)
- Activity Lesson PDF (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-3-rocks-minerals-and-soil-rock-minerals-soil-4.pdf>)
- Worksheet PDF (Quiz) (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-0.pdf>)
- Worksheet PDF 1 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-1.pdf>)



- Worksheet PDF 2 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-2.pdf>)
- Worksheet PDF 3 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-rocks-minerals-and-soil-3.pdf>)
- Vocabulary Set 1 PDF (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-rocks-minerals-and-soil-1.pdf>)
- Vocabulary Set 2 PDF (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-rocks-minerals-and-soil-2.pdf>)



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ROCKS, MINERALS AND SOIL

Rocks

Rocks are solid material found in nature made up of minerals. A **mineral** is a natural material usually found in the ground.

A **rock** has physical properties like color and composition, or what exact minerals make up the rock.

Another property of a rock is its texture. The **texture** of a rock is determined by what the rock is made of. Texture is how something feels.



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Lesson Checkpoint: What is texture?

Three Main Groups of Rocks

Rocks can be classified, or grouped, into three main groups. Rocks placed into a certain groups according to how they were formed.

Igneous rock is one rock group that a rock can be classified into. Igneous rocks are formed underground and above ground. **Igneous rocks** are formed UNDERGROUND when melted rock deep below the Earth's surface becomes trapped in small areas underground. Melted rock found beneath the Earth's surface is called magma.



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Lesson Checkpoint: How are sedimentary rocks formed?

A third group of rock classification is **metamorphic rock**. **Metamorphic rocks** are rocks that have been changed by heat and pressure.



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is rubbed against another surface and its **hardness**. The hardest mineral of them all is a diamond.

Lesson Checkpoint: What is one property of minerals?

Gold and silver are very rare minerals. Copper, lead, fluorite, and iron are examples of other minerals.

We need minerals in our bodies to stay healthy. We eat mineral when we eat certain such as vegetables and fruit.



Lesson Checkpoint: Why do our bodies need minerals?



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Lesson Checkpoint: What is soil?



Rock, Minerals & Soil

Sci
C

Name _____ Class _____ Date _____

Rocks are solid materials found in nature made up of minerals. A **mineral** is a natural material usually found in the ground. Rocks can be classified into **three main groups** according to how they were formed.

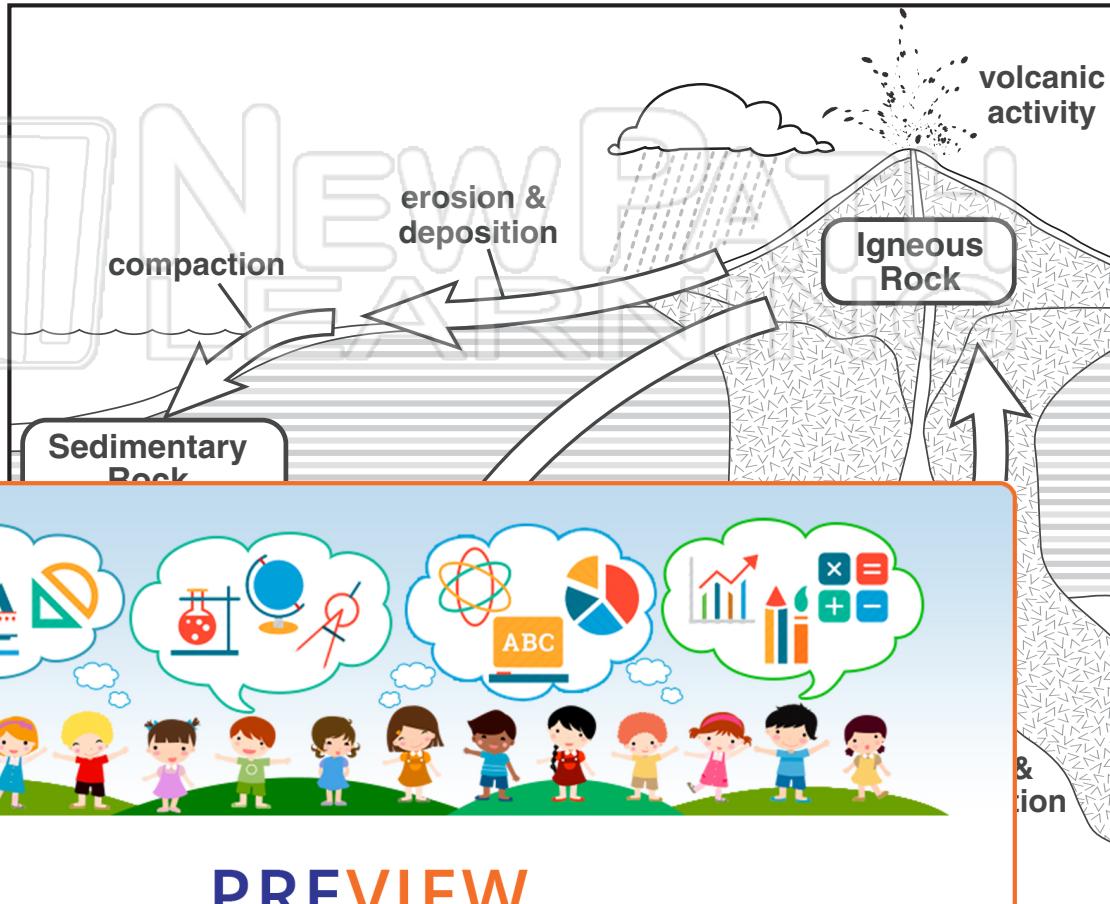
Sedimentary rocks are formed when **sediment** piled up at the bottom of a body of water is pressed over

of ye
Sedir
rocks
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**Meta
rocks**
that h
chan
appli

Igne
below

the magma underground **cools**, igneous rocks are formed. Igneous rocks are also formed above ground when **lava** erupts from a **volcano** and then cools forming igneous rocks above the Earth's surface.



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| Sedimentary Rocks | Metamorphic Rocks | Igneous Rocks |
|------------------------------|------------------------|--------------------------|
| sandstone limestone | gneiss quartz | pumice obsidian |



Rock, Minerals & Soil

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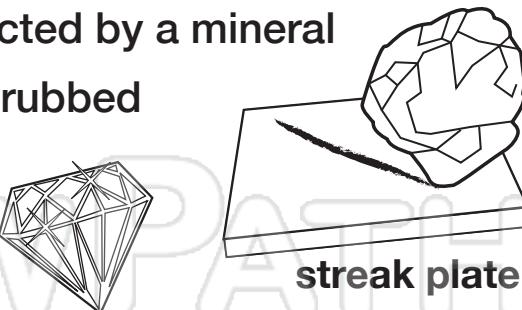
Name _____ Class _____ Date _____

Minerals have different **properties** that can be used to identify them:

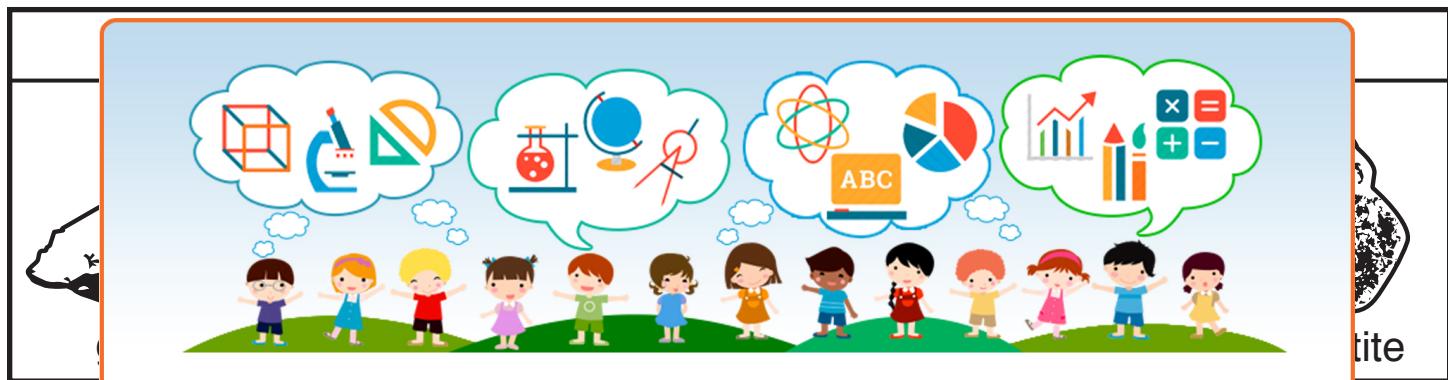
Luster - shows how much light is reflected by a mineral

Streak color - color it leaves behind if rubbed against another surface

Hardness - The hardest mineral of all is a diamond.



Almost everything we use in everyday life is made of minerals or contains minerals. Even our bodies need minerals such as iron, calcium and sodium to stay healthy.



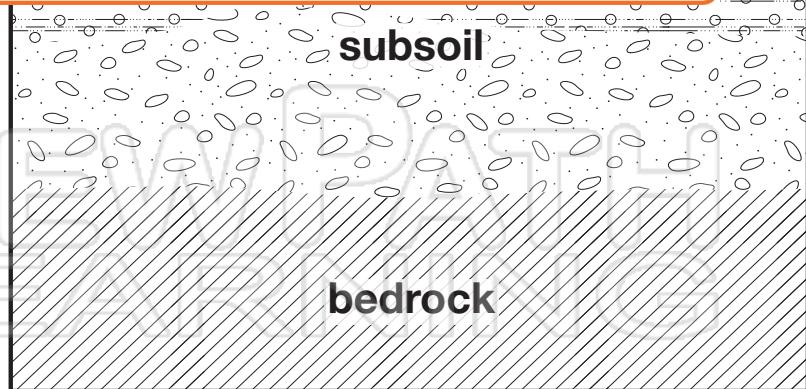
PREVIEW

Soil is the top layer of the Earth's crust. It is made of weathered rock particles and organic material. It is the most important part of the ecosystem because it is where most plants grow. It is the surface layer of the Earth's crust.

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main layers: **topsoil**, **subsoil**, and **bedrock**.

Soil is part of the ecosystem needed to support all life on Earth.



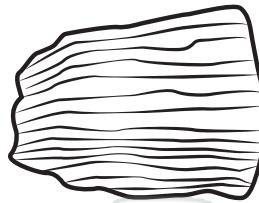


Rock, Minerals & Soil

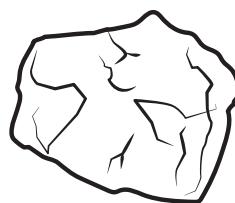
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Name _____ Class _____ Date _____

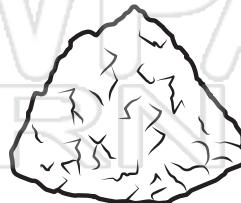
Sedimentary rocks are _____



sandstone



limestone



halite

Draw & label a rock

Met



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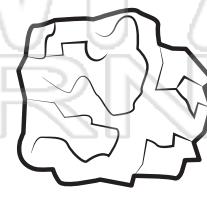
Igne



pumice

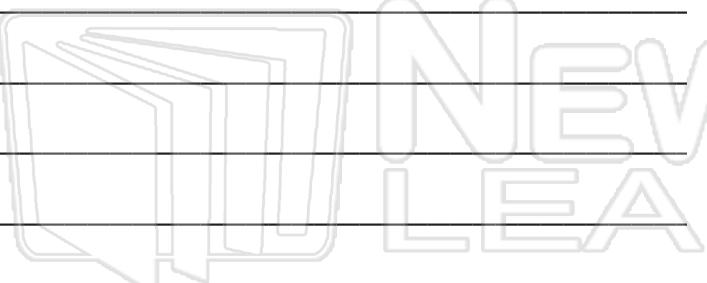


obsidian



granite

Draw & label a rock





Name _____ Class _____ Date _____

What is the Rock Cycle? _____

Complete the Rock Cycle



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Metamorphic
Rock

magma

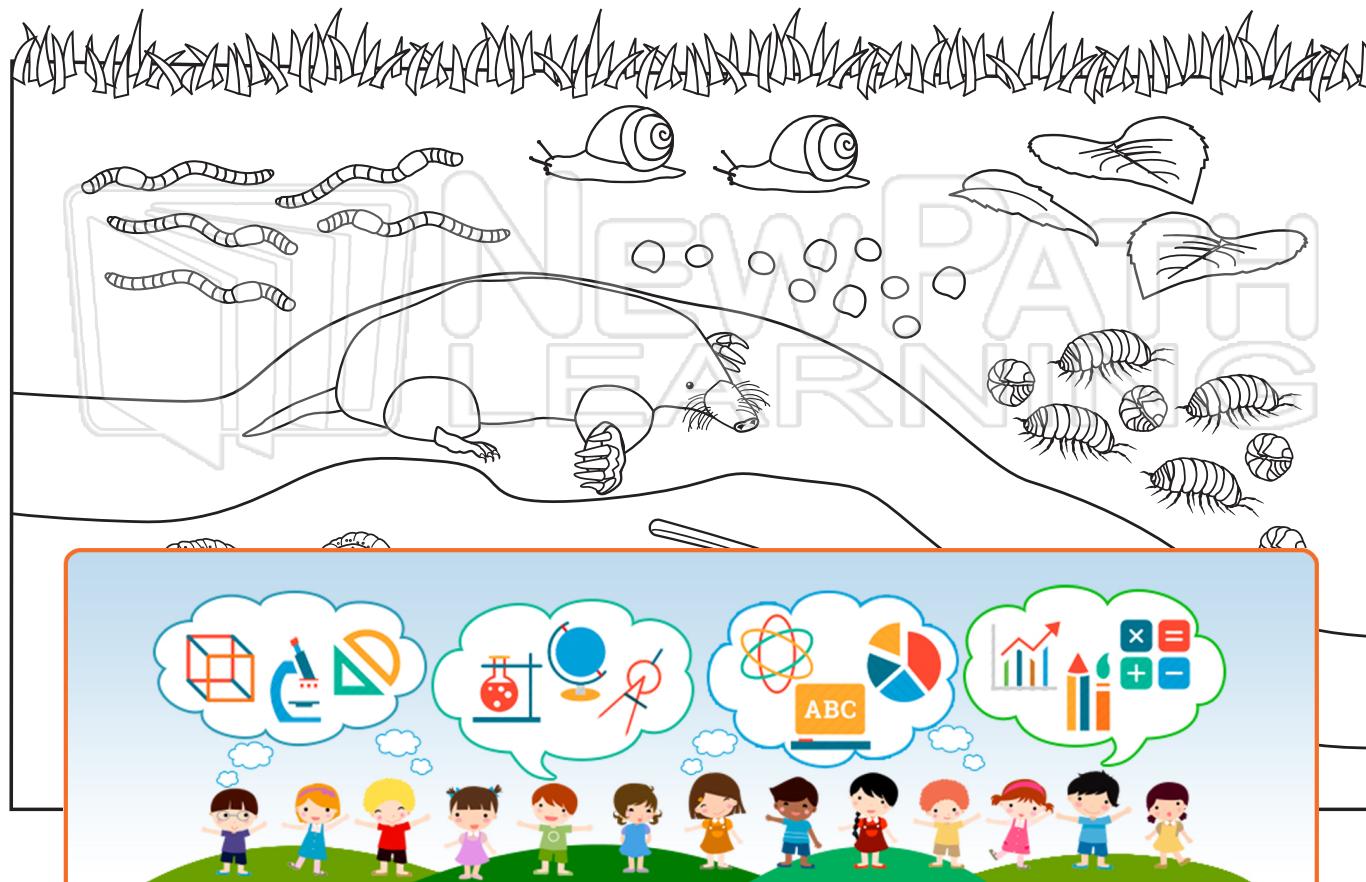


Rock, Minerals & Soil

Sci
C

Name _____ Class _____ Date _____

Soil is part of the ecosystem needed to support all life on Earth.



PREVIEW

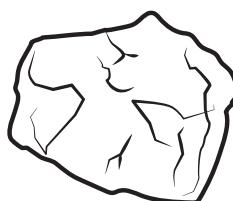
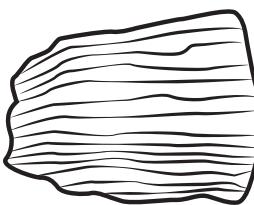
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|---------|--|--|--|--|--|--|--|--|--|
| leaves | | | | | | | | | |
| snails | | | | | | | | | |
| grubs | | | | | | | | | |
| pebbles | | | | | | | | | |
| worms | | | | | | | | | |
| moles | | | | | | | | | |



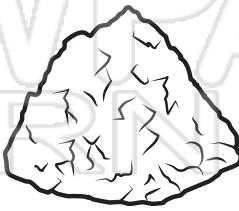
Answer Key

What are rocks? Made from minerals above and under ground.



sandstone

limestone



halite

Draw & label a rock

Sedimentary rocks are _____

formed by layers of eroded materials compressed together.

Met

new
pre

the



PREVIEW

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Igneous rocks are _____

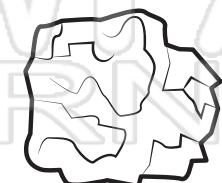
rocks made from lava from volcanoes. They are different based on temperature and where they were formed.



pumice



obsidian



granite

Draw & label a rock



Answer Key

What is the Rock Cycle?

The rock cycle is the recycling of old rocks into new rocks. It's caused by heat, pressure, weathering and erosion.

Complete the Rock Cycle



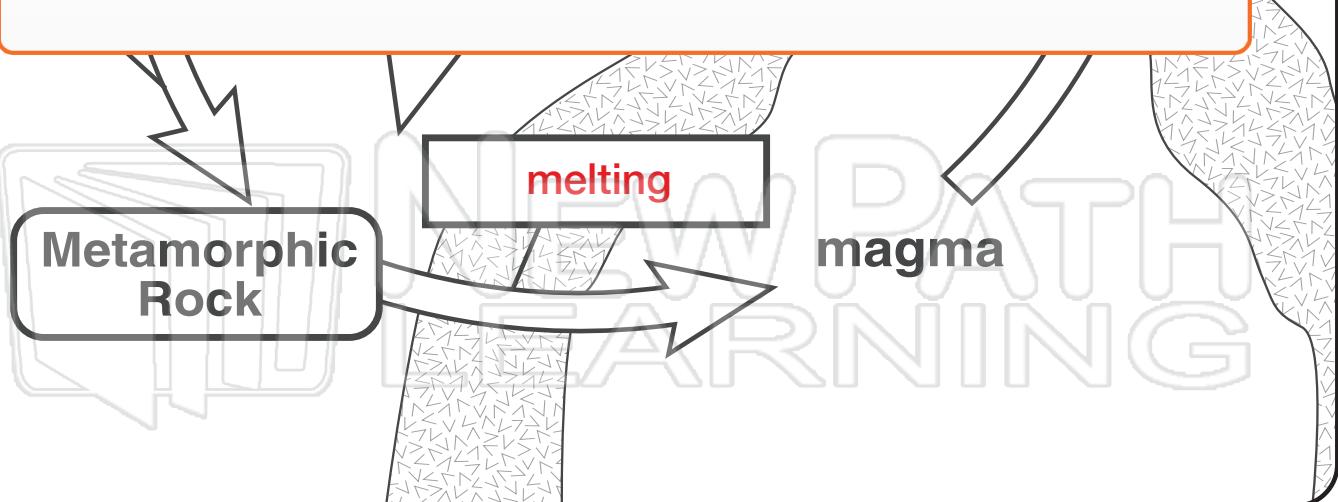
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Metamorphic
Rock

melting

magma





Rocks, Minerals & Soil

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C

Name _____ Class _____ Date _____

1 _____ are solid material found in nature that are made up of minerals. They are usually found in the ground.



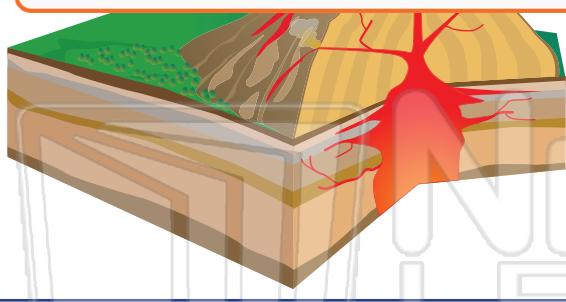
2 Rocks can be classified, or grouped, into main groups. Name them.

6 _____ rocks are formed when sediment piled up at the bottom of a body of water is pressed together over thousands of years

7 What kind of rock can igneous and sedimentary rocks change into?



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5 _____ rocks are formed above ground when lava erupts from a volcano and then cools.

another surface.



10 Soil is made up of three main layers: topsoil, subsoil, and





Rocks, Minerals & Soil - Answer Key

Sci
C

Name _____ Class _____ Date _____

1 Rocks are solid material found in nature that are made up of minerals. They are usually found in the ground.

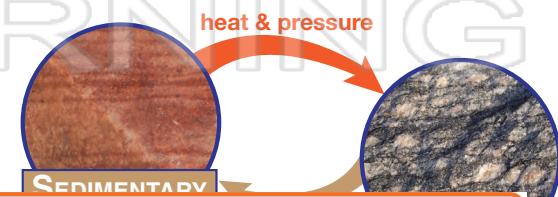


2 Rocks can be classified, or grouped, into 3 main groups. Name them.

sedimentary, igneous, metamorphic

6 Sedimentary rocks are formed when sediment piled up at the bottom of a body of water is pressed together over thousands of years

7 What kind of rock can igneous and sedimentary rocks change into?
Metamorphic



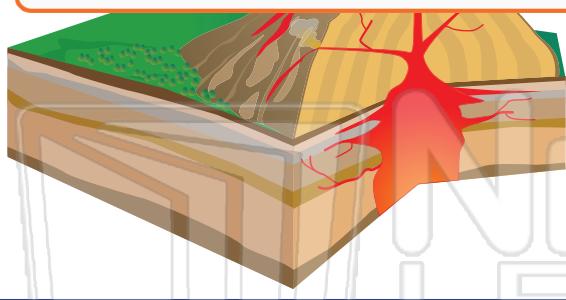
3 Tools
Science
Writing
4 Math



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another surface.



10 Soil is made up of three main layers: topsoil, subsoil, and bedrock

5 Igneous rocks are formed above ground when lava erupts from a volcano and then cools.





Name _____ Class _____ Date _____

1

Rocks are solid material found in nature which are made up of _____.

- A** dirt
- B** water
- C** minerals
- D** vitamins



2

What is a **mineral**?



- A** soil
- B** a type of fish
- C** an energy drink
- D** a natural material usually found in the ground

3

The **physical properties of a rock** include **shape**, **color** and what _____ it is made of.

- A** minerals
- B** sand



4

One property of a rock is its **texture**. The texture of a rock is determined by what minerals the rock is made up of. **What is texture?**



- A** how hard something is
- B** how something feels

5



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7

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- C** in trees
- D** underground or above ground



- D** red water



9

As the **magma** in small areas underground cools, what kind of **rocks** are formed?

- A** metamorphic rocks
- B** molten rocks
- C** sedimentary rocks
- D** igneous rocks



10

Igneous rocks are formed **above ground** when _____ erupts from a volcano and then cools.

- A** soil
- B** lava
- C** water
- D** minerals





Name _____ Class _____ Date _____

1

Rocks are solid material found in nature which are made up of _____.

- A** dirt
- B** water
- C** minerals
- D** vitamins



C

2

What is a **mineral**?



D

- A** soil
- B** a type of fish
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- D** a natural material usually found in the ground

3

The **physical properties of a rock** include **shape**, **color** and what it is made of.

- A** minerals
- B** sand



A

4

One property of a rock is its **texture**. The texture of a rock is determined by what minerals the rock is made up of. **What is texture?**



B

- A** how hard something is
- B** how something feels

5



C

PREVIEW

7

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A

- C** in trees
- D** underground or above ground



- D** red water



9

As the **magma** in small areas underground cools, what kind of **rocks** are formed?

- A** metamorphic rocks
- B** molten rocks
- C** sedimentary rocks
- D** igneous rocks



D

10

Igneous rocks are formed **above ground** when _____ erupts from a volcano and then cools.



B

- A** soil
- B** lava
- C** water
- D** minerals



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Texture

Sediment

Mineral

Igneous rock

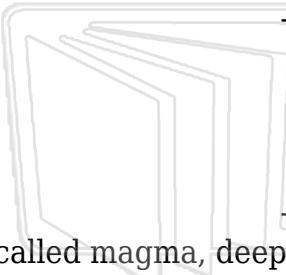
Metamorphic rock

Sedimentary rock

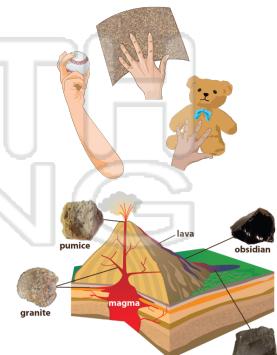
Lava

Rock

1. - how something feels when you touch it



2. - rocks that are formed underground when melted rock, called magma, deep below the Earth's surface, becomes trapped in small areas underground; they are formed above ground when lava erupts from a volcano and then cools



3. surface
surface



4. and
heated
squeezed

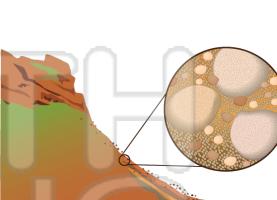
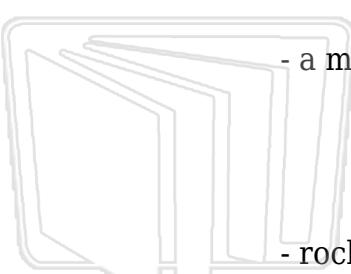
5. that is
from t

6. mineral

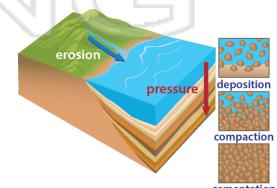
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7. - a mixture of soil, rock, clay and sand



8. - rock formed by the processes of weathering and erosion, transportation, deposition and cementation





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Texture

Sediment

Mineral

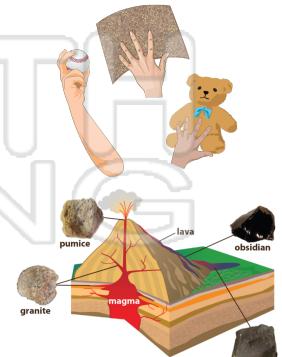
Igneous rock

Metamorphic rock

Sedimentary rock

Lava

Rock

1. texture - how something feels when you touch it**2. igneous rock** - rocks that are formed underground when melted rock, called magma, deep below the Earth's surface, becomes trapped in small areas underground; they are formed above ground when lava erupts from a volcano and then cools**3. lava**
Earth's**4. mineral**
pressure
the ex
togeth

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5. mineral
formed
soil an**7. sediment** - a mixture of soil, rock, clay and sand**8. sedimentary rock** - rock formed by the processes of weathering and erosion, transportation, deposition and cementation