Weathering

For Grades Pre-K-2

Britannica Note:

Weathering involves the breaking apart or changing of rock.

This Pack contains:

1 ARTICLE
5 IMAGES
1 VIDEO

ARTICLE

weathering

Weathering is a natural process that slowly breaks apart or changes rock. Heat, water, wind, living things, and other natural forces cause weathering.

Weathering created an arch of rock on the coast of England.

© David Mzareulyan/Fotolia

Limestone slabs cover the land in an area of Ireland called the Burren. The slabs are separated by channels formed by water over very long periods of time.

Serinde

Over many years, weathering can shape rock into unusual formations. Weathering is responsible for many rock arches and hoodoos (lumpy columns), such as those found in Utah's Arches and Bryce Canyon national parks. Weathering also has shaped the slabs of limestone in the Burren in Ireland.

Weathering and Erosion

Weathering is the wearing away of rock at its location. Erosion involves the carrying away of rock and earth from its orginal location. The two processes transform rock at Earth's surface.

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Weathering is related to erosion, which is the wearing away of rock and earth by natural forces. However, erosion generally means that bits of rock and earth are carried away from their original location. By contrast, weathering leaves the main area of rock in place.

Types of Weathering

Water that freezes inside cracks in a rock may widen the cracks.

Jennifer Booher/Alamy

The forces that cause weathering may be physical, chemical, or biological. Often, weathering results from a combination of forces.

Physical forces include changes in temperature or pressure, freezing or moving water, and wind. An increase in temperature may cause rock to expand. As the rock cools, it contracts, or shrinks. The expanding and contracting may cause the rock to crack and break apart. If heavy material on top of a rock is removed (by a glacier, for example), the pressure on the rock decreases. The release of pressure may cause the rock to split. Water that freezes inside cracks in a rock may widen the cracks. Particles carried by water or wind may slowly scrape away a rock’s surface.

In chemical weathering, the minerals that make up the rock are changed. Water usually is involved in chemical weathering. Elements in the water may react with the minerals in the rock. The minerals may break down or form different minerals.

The roots of plants may reach inside rock openings. Over time, they may push apart sections of rock.

©estike/Shutterstock.com

Biological weathering results from the actions of living things. The roots of plants may reach inside rock openings. Over time, they may push apart sections of rock. Lichens grow on rock surfaces or within cracks. They may wear down rock or etch patterns on its surface.

Citation (MLA style):

"Weathering." *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

While every effort has been made to follow citation style rules, there may be some discrepancies. Please refer to the appropriate style manual or other sources if you have any questions.

IMAGE

Weathering

Weathered faces of the Pancake Rocks, South Island, New Zealand.

Citation (MLA style):

Weathering. Image. *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

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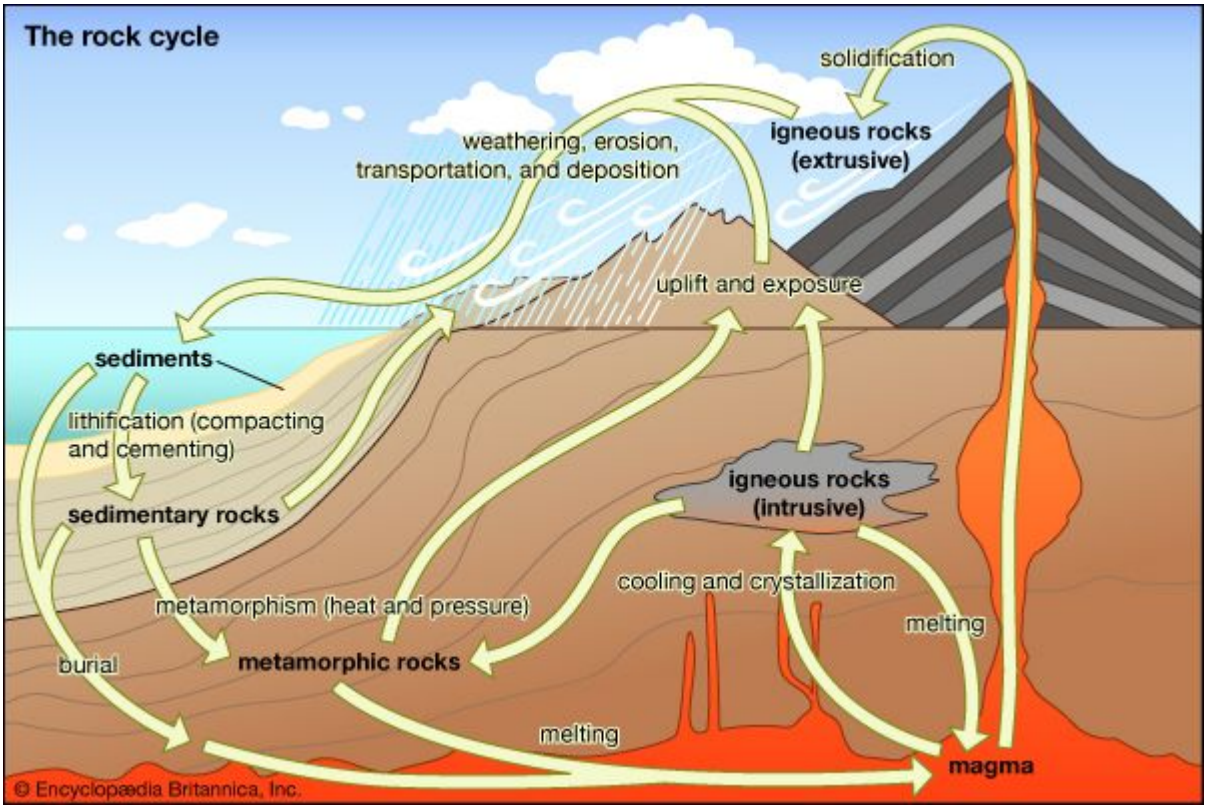
IMAGE

rock cycle

Britannica Note:

Weathering is a part of the rock cycle.



A diagram shows the different ways that rock can change from one type to another in the rock cycle. It can take many millions of years for these changes to happen.

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Citation (MLA style):

Rock cycle. Image. *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

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IMAGE

physical weathering

Water that freezes inside cracks in a rock may widen the cracks.

Jennifer Booher/Alamy

Citation (MLA style):

Physical weathering. Image. *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

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IMAGE

biological weathering

The roots of plants may reach inside rock openings. Over time, they may push apart sections of rock.

Citation (MLA style):

Biological weathering. Image. *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

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IMAGE

weathered limestone of the Burren, Ireland

Britannica Note:

Water is usually involved in chemical weathering.

Limestone slabs cover the land in an area of Ireland called the Burren. The slabs are separated by channels formed by water over very long periods of time.

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Weathered limestone of the Burren, Ireland. Image. *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

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VIDEO

weathering and erosion

Video Transcript

Weathering and erosion are natural processes that change rock at or near Earth's surface. Weathering slowly breaks apart or changes rock at its location. It gradually wears away a rock formation, such as a cliff or a boulder. Erosion, on the other hand, involves the transportation of broken rock away from its original location. The movement of the broken rock can gradually change the shape of the land over which it travels. When the broken rock is finally deposited in a new location, a new landform, such as a sand dune, may form. Together, weathering and erosion contribute to the breaking down and rebuilding of landforms on Earth's surface over long periods of time.

Weathering is the wearing away of rock at its location. Erosion involves the carrying away of rock and earth from its orginal location. The two processes transform rock at Earth's surface.

Encyclopædia Britannica, Inc.

Citation (MLA style):

Weathering and erosion. Video. *Britannica LaunchPacks: Weathering*, Encyclopædia Britannica, 23 Mar. 2025. packs.eb.com. Accessed 4 May. 2025.

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