WASP
Woodside Australian Science Project
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Weathering and erosion

WIND, RAIN, TEMPERATURE CHANGES AND THE ACTIVITIES OF ORGANISMS AFFECT THE ROCKS AND SOIL THAT MAKE UP THE GROUND BENEATH OUR FEET.

Humus

When organic material like leaf litter breaks down it forms a material called humus. Creatures such as earthworms, insects and microorganisms thrive here.

Human activities

Whether we are building a house or planting new crops, our activities can greatly impact the soil. When forests are cleared away for farming, mining or building, the fertile topsoil is stripped away from the ground and can take many years to be replenished.

Physical weathering

Rocks can be broken down into smaller pieces by water, wind, ice and temperature changes. Hot temperatures can cause rocks to expand slightly while cold temperatures can make them contract. This expansion and contraction can lead to cracks and pieces eventually falling away. Wind and water can move rocks from one place to another. All of these processes help to shape the surface of the Earth around you.

Plants

Plants can grow in between the cracks of a rock, which can break it apart over time. Plant and tree roots hold the soil together and prevent the topsoil from being blown away by wind or washed away by rain.

Chemical weathering

The chemicals in rainwater can erode, or wear away, the rock. Rainwater is slightly acidic – like vinegar. Rain can very slowly dissolve rocks like limestone to create caves and can form pitted patterns on rock surfaces.

Soil

Over a long period of time, rocks break down into tiny pieces and form a thin layer of soil covering the Earth's surface. It is a mixture of minerals, air, water, and living things. The dark coloured topsoil is where plant roots grow and seeds sprout.

Subsoil

Deeper in the ground is a layer that contains clay, silt, sand and minerals like iron. There is less of the rich organic material that helps plants to grow.

Subsurface

Beneath the soil is the subsurface, made up of large chunks of broken bedrock.

Bedrock

The unbroken, solid rock beneath the soil can be tens of kilometres deep.

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