

Phenomenon: Biological Activity

This simple demonstration can be used as a phenomenon at the beginning of a unit on physical (mechanical) weathering of rocks. This easy demonstration can be used to activate student thinking about how biological activity can change rocks at the Earth's surface. Biological activity can cause rocks to be broken into smaller pieces. This type of physical weathering can be accomplished by as trees roots grow into fractures and wedge the rock apart. In the top figure, the roots of the tree are breaking and lifting the concrete sidewalk. The second figure shows how tree roots can have the same effect in the natural environment where the tree roots are causing the fracture in the rock to widen as the roots grow.

In this classroom activity, plaster of Paris is a model for rock. Mix water and plaster of Paris (according to the label directions) and pour into a plastic cup or shallow dish. Insert bean seeds



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(larger seeds work better) into the plaster surface so that they are nearly covered in plaster. Let the plaster set and add a little water to keep the seeds moist. Put the plaster cup with seeds in a warm window with light. After a few days, the seeds will begin to germinate. The figure on the left shows this experiment after 3 days where the plaster is breaking into small pieces as the seeds germinate and expand.