THE STANDARD

Weathering & Rate of Erosion

"Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation."

ANCHORING PHENOMENON

The Hill That Washed Away

Build a hill of sand and soil in a tray. Pour a cup of water down the top. The water cuts a groove and carries sand to the bottom. Pour faster or tilt the tray steeper, and a lot more sand washes away. 4th graders will want to know why.

> DRIVING QUESTION
>
> *"What makes the water wash away way more of the hill some times than others?"*

INVESTIGATIVE 1

Roots That Hold the Hill

Build two hills, one bare sand and one with grass, moss, or craft-stick roots pushed in. Pour the same water on both. The bare hill washes away fast, the rooted one mostly stays put. Plants are a cause too, and they slow erosion down.

> DRIVING QUESTION
>
> *"Why does the hill with roots lose so much less than the bare hill?"*

INVESTIGATIVE 2

Ice That Cracks the Rock

Fill a sealable zip bag or flexible balloon with water and freeze it overnight. The bag or balloon bulges and stretches as the ice pushes outward. Water freezing in a crack does the same to rock, breaking it apart a little at a time. This is weathering by ice.

> DRIVING QUESTION
>
> *"How can frozen water be strong enough to break a rock?"*