

# The Wall

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**Program Description:** LeVar visits the Vietnam Veterans Memorial to find out about monuments. Maya Lin, the young architect who designed the Memorial, describes her vision and the process of creating this special place. Other monuments explored include Mount Rushmore—the sculpture of four leading presidents, and a mural dedicated to Louis Armstrong—a great jazz trumpeter.

## Weathering, The Test Of Time



**Key Words:** rocks, weathering, leaching

**Concept:** Rocks can be worn down over time by water.

Monuments are intended to “stand the test of time,” but what does that really mean? Monuments that stand out in the open have to endure the wind, rain, snow, heat, and other elements of the weather. Even a very hard rock gets worn down over time by these elements in a process that is called weathering. Water—in the form of rain, snow, sleet, and even fog—is particularly good at weathering rocks. Some weathering is done as water dissolves minerals in rock and carries them away. This is called leaching.

**Materials:** Instant coffee, regular coffee grounds, warm water, clear cups, spoons.

1. Fill two cups each about half full of warm water.
2. Put about a 1/2 teaspoon of instant coffee in one cup and about the same amount of coffee grounds in the other.
3. Stir each cup for a minute or two and watch what happens to the added coffee and to the water in each. The water will darken in both cups. However, the instant coffee will eventually dissolve (and disappear) in one cup, while the coffee grounds in the other will not dissolve and will remain visible. (You can try to stir the cup with the coffee grounds some more, but the grounds will not dissolve.)

Explain that each cup shows a different example of weathering. The instant coffee is an example of a substance that can be dissolved by water. The coffee grounds are an example of leaching. There is something dissolving out of the grounds that is changing the color of the water, but other parts of the grounds are not dissolving and remain solid. Water can weather rocks in the same ways. Some rocks can be dissolved over time by water. In other rocks, only certain parts of the rock are leached out by water. When this happens the rock is weakened and will then crack or crumble more easily.

# A Monumental Idea

**Key Words:** rocks, hardness

**Concept:** A soft kind of rock is easy to carve.

When architects begin planning a monument, they must give careful consideration to the type of rock that will be used. One important quality of rocks and minerals is their hardness. A soft kind of rock can be carved easily, but may not last very long outside. A hard kind of rock may be difficult to carve, but will last a long time. Rocks and minerals are often classified by their hardness in numbers from 1 to 10, with 10 being the hardest. A diamond has a hardness of 10 and chalk has a hardness of 2. One of the reasons Maya Lin, the architect who designed the Vietnam Veterans Memorial, chose black granite, is that granite is a very hard rock. Carve a monument from a rock that is fairly soft, gypsum.

**Materials:** Plaster of Paris, water, spoon, bowl, measuring cup, small milk carton, pencil, tools for carving such as a table knife and spoon.

1. When the mineral gypsum is heated, it loses most of its water and changes into the fine white powder called plaster of Paris. When you add water to the powder it turns back into a block of gypsum. Pour 1 cup of plaster of Paris into a mixing bowl and add 1/2 cup of water. Stir the mixture until it becomes smooth.
2. Pour the mixture into a small milk carton and wait a day until it hardens. Then tear the milk carton away from the gypsum block inside.
3. To test for the hardness of gypsum, try to scratch it with your fingernail. Your fingernail has a hardness of about 2.5. If you can scratch gypsum with your finger nail, then it has a hardness less than 2.5. (Gypsum has a hardness of 2.)
4. Think of a simple shape to carve out of the gypsum block and then use a pencil to draw an outline of the shape on the block. You can carve what you imagine to be a different view of the shape on each side. You can use tools such as a table knife and spoon to carve your monument. What will your monument remind you of?