# 58 Meltdown

## PURPOSE

*How can solid rock melt?*

## Materials

cup
warm tap water
spoon
timer
½-inch (1.25-cm) -square piece of milk chocolate candy
saucer
toothpick

## Procedure

1. Fill the cup with warm tap water.
2. Place the spoon in the cup of water.
3. After about 30 seconds, remove the spoon from the water and place the chocolate in the spoon.
4. Set the spoon on the saucer.
5. Use the toothpick to stir the chocolate in the spoon.
6. Continue to stir the chocolate for 1 minute or until it no longer moves easily.


## Results

The chocolate melts, then it becomes hard again.

## Why?

Chocolate is solid at room temperature, but like all solids, it **melts** when heated, which means it changes to a liquid. The temperature at which a solid changes to a liquid is called its **melting point.** Because chocolate has a low melting point, the heat of the spoon is enough to raise the chocolate's temperature to the melting point. The hotter the chocolate gets, the more fluid it becomes.

The change in the chocolate from a solid to a liquid due to an increase in its temperature is similar to the change of solid rock to **molten** (melted) rock called **magma** (molten rock beneath Earth's crust). Rocks have a much higher melting point than chocolate. The tremendous heat at depths of about 25 to 37½ miles (40 to 60 km) below Earth's crust is great enough to melt rock. As with chocolate, the hotter the magma, the more fluid it is.

The change of chocolate from liquid to solid is similar to the change of magma to solid rock again. **Igneous rock** is formed when magma cools and solidifies.