

Will it Leak?

MATERIALS

6 very sharp pencils

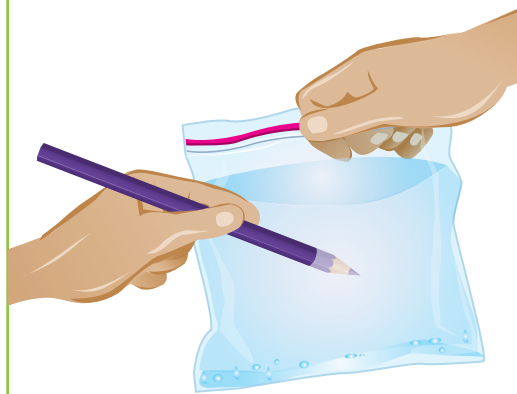
1 gallon-sized resealable plastic bag

water

INSTRUCTIONS



1 Fill the bag $\frac{3}{4}$ full with water and seal it tight. Do this over a sink in case the seal gets stretched.



2 Hold the top of the bag with one hand. With the other hand, take a pencil and gently push it through the bag into the water. Keep pushing until the pencil sticks out the other side of the bag.



3 Repeat until all of the pencils have been pushed through the bag.

When you remove the pencils, do it over a sink.

What's Going On?

The plastic bag is made from long, flexible strands of a polymer called low-density polyethylene. The sharp pencil point pushes the strands of molecules aside as you move it through the bag. Leaving the pencil in place plugs the opening you made.

It finally leaks when you remove the pencils because the polymer strands are not flexible enough to return to their original shape.

