

## GORE-TEX DEMO

**GOAL:** Show how Gore-tex can allow some things through but keeps others out. Specifically letting through gases but keeping water or other liquids out.

### MATERIALS:

Micro scale: 2 Gore-tex gloves  
1 Plastic glove  
3 squeeze bottles with cotton balls with scented oils inside  
Water

Macro-scale: Frame with ribbon cross hatching  
Ping-Pong balls with Velcro dots

### PROCEDURE:

#### Set-up:

1. Velcro one plastic and one Gore-tex glove on to one bottle each.
2. Fill third bottle with small amount of water and then attach Gore-tex glove.
3. Lay out “water molecules” stuck together to form a “water drop”.
4. Supplies to have out:  
1 red squeeze bottle with Gortex glove  
1 yellow squeeze bottle with plastic glove  
1 squeeze bottle with water inside and Gortex glove  
Frame with water molecules

#### During the demonstration:

1. Let visitors feel both gloves, then ask them what they notice. Have the visitors squeeze the bottles to smell each one. (Be careful not to squeeze too much – then the whole room smells and you don’t know where the smell is coming from.) Ask them what each bottle smells like. Probe for discussion by asking how smell travels.
2. Then show the visitor the water bottle. Ask them if they think water will go through the glove. Let them try it out and see what happens.
3. Have a visitor hold the frame. Show them one ball and one clump of balls. Ask them if they know which one is gas and which is a water droplet. You can give them a hint by asking which they can see better a water droplet or the moisture in the air? The gas is harder to see because it’s smaller. Drop the “gas” molecule onto the frame, then drop the “water” molecule onto the frame. Tell the visitors that this frame is like Gore-tex because it lets single molecules like air through and not large clumps of molecules like water droplets.

Clean-up:

1. Remove Gore-tex glove from bottle and empty water.
2. Gather all materials and return to storage.

**EXPLANATION:**

Just like the frame, the size of the holes between fibers of Gore-tex lets single molecules, like air, through and not large clumps of molecules, like water droplets. Often Gore-tex also has a water repellent on it. This also causes the water to bead up and become larger droplets that won't fit through.

**WHAT COULD GO WRONG?**

Be careful not to squeeze the scented bottle too much – then the whole room smells and you don't know where the smell is coming from.

**GENERAL MAINTENANCE:**

Because you are using water you could get mildew growing on things. Try to dry everything before you put it away. Check for mildew every few weeks and wash with warm soapy water or replace the materials if this is an issue.