

**Potential project ideas following background lessons that looked at the adhesive and cohesive properties of water.**

1. Water drops accumulate on cold surfaces and can drip and leave a wet mess such as cold water pipes, toilets, etc. With condensation, windows, mirrors, and glasses can “fog up”.

Can water drops from condensation collect on the surface of a material if the cohesion of water molecules can be prevented?

**Challenge:** Come up with a material that can coat a surface and prevent the cohesion of water molecules from occurring and prevent problems associated with condensation.

2. Think of the countless ways we look to make something waterproof.

If water molecules accumulate and stick together as water drops, then they can't pass through certain materials, essentially making those materials waterproof.

**Challenge:** Find ways that take advantage of, or promote, the cohesion of water in certain fabrics or materials to make them waterproof.

Research the material “Gore Tex.”

3. The phenomenon of capillary action is based on the adhesive properties between certain materials and water.

**CHALLENGE:** Explain how water is able to reach “leaves” hundreds of feet above their source of water lying in the ground of giant trees such as Sequoias.

Which are most absorbent materials and what makes them so good at cleaning up water- based spills.

4. Some devices use the property of adhesion and cohesion to transport water away from an area where it could cause damage. Examples include the drip edge on roof line or rain chains.

**CHALLENGE:** Come with a device that can be used to redirect water using its adhesive and cohesive properties.