

Walk on Water

Water Spiders and Water Strider

What you need!

- 2 paper clips
- Glass or beaker of water

The surface of lakes and ponds is a pretty good place to make a living if you can avoid sinking. The next time you visit a lake, look closely at the surface and you will notice several types of invertebrates living right on the water. They are small and light enough to walk and skate across water without ever getting wet. To live on water, these bugs take advantage of a special property of water: surface tension.

What you do:

1. Bend a paperclip into an "L" shape.
2. Use the bent paperclip to gently lower another paperclip onto the surface of the water.
3. Try to make it float. Keep trying, this will work!



Ask yourself

- How does something made of metal float on water?
- How can you make the paperclip sink?
- Try to float other small items on the surface. What do you notice?
- What else can rest on the surface of the water?
- Keep track of your results.



What did you find out?

The surface of the water bends around the weight of the paperclip like stretched rubber and prevents it from sinking. This is because water has surface tension, which is caused by cohesion. Water molecules like one another and will stick together until a strong enough force drives them apart. If you simply drop the paper clip into the glass, the force of its fall breaks the surface tension and the paper clip sinks. Water Striders, water spiders and other insects are light enough to take advantage of this feature and live on water.

Surface tension can have the opposite effect on some small invertebrates. If they happen to be just a little too heavy, the surface tension of the water can be too sticky. Bugs that are heavier, but not heavy enough to sink, get stuck in the surface tension like quick sand. The stickiness of the water's surface can really be a big deal if you only weigh as much as a hair.

Walk on Water

Water Spiders and Water Strider

Specific Learner Expectations (SLE)

Grade 5 Topic C: Classroom Chemistry.

SLE 5: Recognize that the surface of water has distinctive properties and describe the interaction of water with other liquids and solids.