



LOCKDOWN LABS:
ARCHIMEDES SCREW

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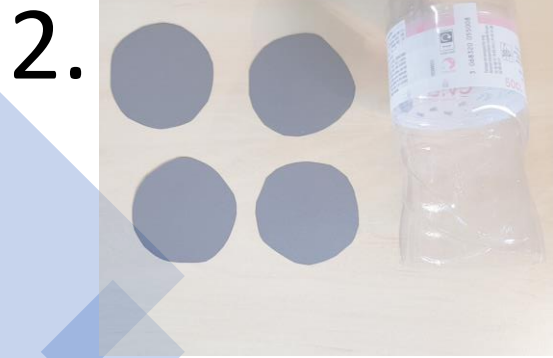
EQUIPMENT:

- Plastic Water Bottle
- A dowel (or substitute e.g. pencil)
- Card paper
- Scissors
- Tape or Glue
- Test substance e.g. popcorn, cereal etc



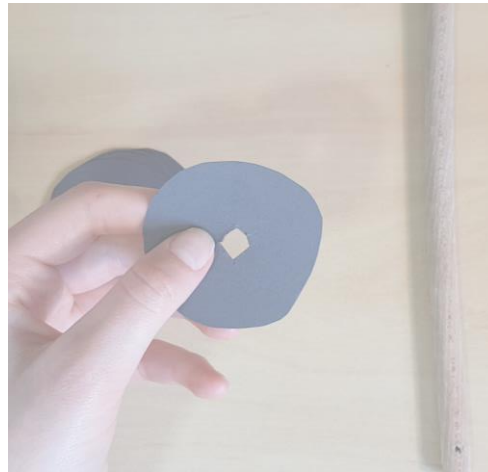
ARCHIMEDES SCREW

1. Cut the bottom of the water bottle off, making sure not to reduce the overall size too much. And then cut a hole in the top of the bottle near the cap. A triangle shape hole tends to work best.



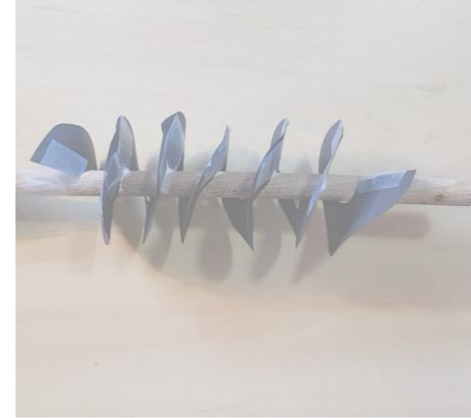
Use the end of the bottle to trace 6/8 circles out on the card paper and cut them out. Trace just inside the lines so that the card will fit snugly inside the bottle.

3.



Use the scissors to cut a hole in the centre of your card circles, large enough that they can slide onto your dowel stick or substitute. And use the scissors to make one cut from edge of the circle to the centre on you 6 card circles.

4.



Use either your tape or glue to connect the circles to make a spiral by gluing from the slit in one circle to the slit in the next circle. Repeat for all your circles until you have a spiral chain made of card paper.

5.

Put the end of your screw into your chosen substance, here I am using popcorn kernels, then twist the dowel inside, the bottle should not be twisting, and watch your Archimedes screw work!



ARCHIMEDES SCREW KS3

- What is the formula for work done?
- What is the displacement of the water in the Archimedes' screw?
- Draw a force diagram of this experiment.
- How would you have to adapt this experiment to move water?
- What resistive forces might there be in this experiment?

