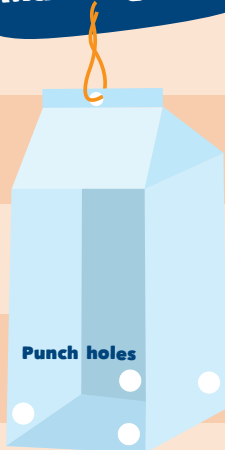


You'll need:

- A quart or half gallon milk carton
- String
- A nail
- Water in another larger container
- Masking tape



Source: energyquest.ca.gov

Make a Turbine!

For every action there is an equal and opposite reaction!



30m

Steps:

- 1.** Using the nail, punch a hole in the bottom right corner of each side of the milk carton. Punch another hole exactly in the middle of the top section of the carton.
- 2.** Push the string through the top hole of the carton and tie securely so the carton will hang from the string. Tape up each hole with masking tape.
- 3.** Go outside and safely hang the carton from a low tree branch or another place where the carton can hang freely and you won't mind if the ground gets wet underneath. Fill the carton with water.
- 4.** Pull off the tape on one corner. Watch what happens. Pull off the tape on two corners opposite each other. Watch what happens. Pull off the tape on all corners and watch what happens.

Conclusion & What's Next:

Sir Issac Newton discovered the principle that for every action there is an equal and opposite reaction. This is called his **Third Law**. The water pours out of the small hole and its force pushes the carton in the opposite direction. This is what makes it turn. The more holes there are, the faster the carton turns. This is similar to some turbines. Some turbines use water or steam that is forced at high speed through many small holes to turn a turbine around. The turbine is connected by a shaft to an electrical generator, which makes electricity when it is turned.