Year 6: Science

Activity Sheet 3: Build a waterwheel

Create your own water wheel and explore how it works.

Materials

Materials required	Per experiment
Recyclable dinner plates	2
Recyclable drinking cups	6
30cm wooden skewer (cut the sharp tips off)	1
Water jug and water	1
Ruler	1
Bucket	1
Stapler	1
Pencil	1
Scissors/sharp object to pierce the plate	1

Method

1. Use a ruler to find the centre of the dinner plate, mark the centre with a pencil
2. Carefully pierce a hole in the dinner plate, slightly larger than your wooden skewer
3. Divide the dinner plate into six equal parts
   (Hint: it may be handy to use a compass for this step)
4. Staple one drinking cup into each of the six parts (take care to use the same angle)
5. Slide the wooden skewer through the hole in each plate (taking care to leave room on both sides to hold on to)
6. Staple the loose dinner plate to each cup
7. In partners test the water wheel
   - One partner holds the waterwheel over the bucket (taking care to hold each end loosely) while the other pours water into the top cup

Conduct the experiment over a grassed area or garden bed so that the water can be reused, just like it is after being though a power station

Figure 1: Material set up

Figure 2: Completed waterwheel

Explore

1. What happens to the water wheel if you
   a. slow down the amount of water being poured?
   b. speed up the amount of water being poured?
2. Create a diagram of your experiment and label the types of energy (gravitational potential, kinetic).
3. Write up your results.

Extension

1. Design your own water wheel
   a. What materials would you use?
   b. How would you construct it?
2. Draw or create your water wheel.