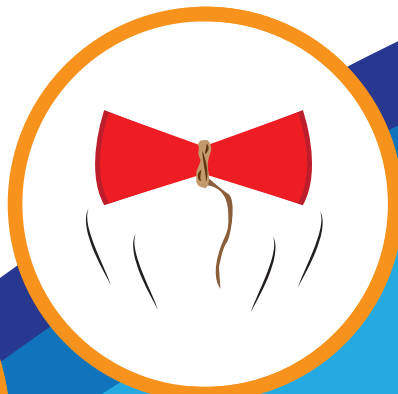


Inspiring
the next
Generation

SFERA KIDS



Experiments

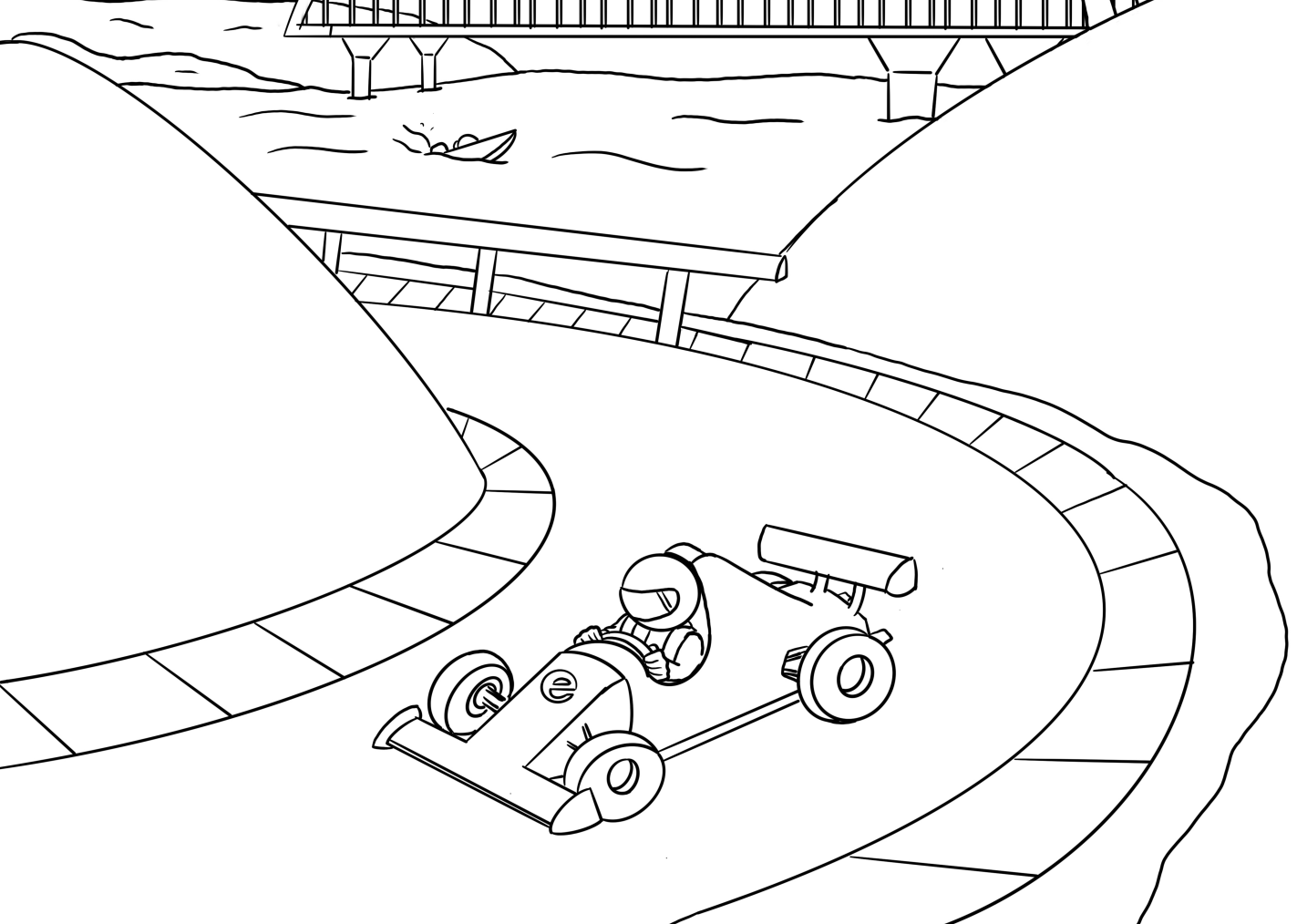
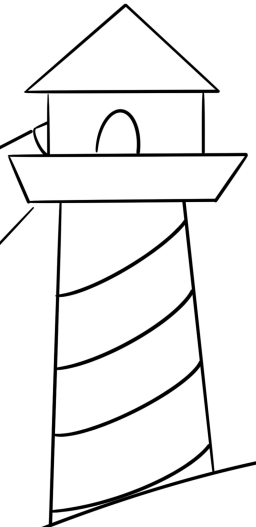
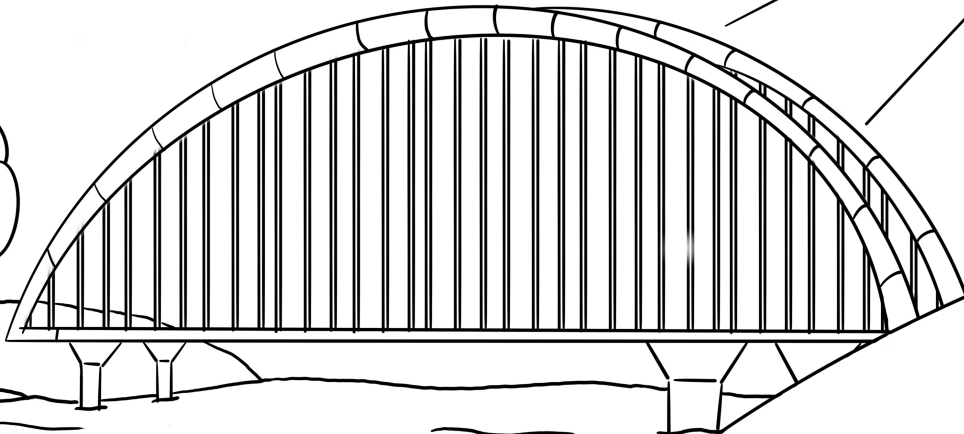
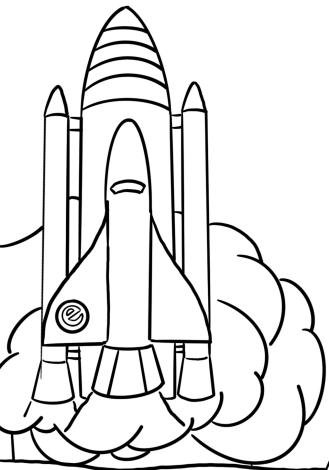
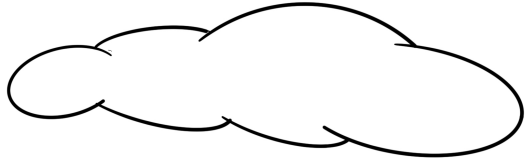
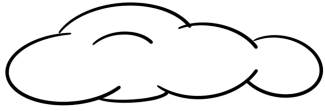
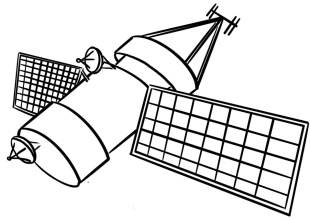


Crafts



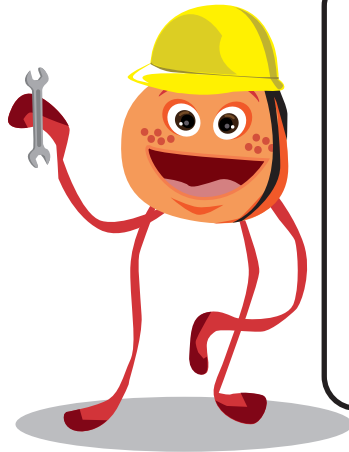
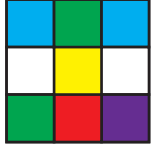
Drawing





Fact!

An international team of scientists and Google engineers have discovered that the Rubik's cube puzzle can be solved in 20 moves or less



Geena wants to be an engineer. Draw a circle around the tools that she needs to work with.

- Teddy bear
- Cake
- Drill
- Lab coat
- Wrench
- Hard hat
- Speaker
- Crane

Fill in the blanks

When I grow up, I would like to become an engineer, and build large buildings. I will make sure that I construct the _____ buildings
(Adjective) you will ever see. I want to study so that I will be able to develop inventions and help other engineers. My dream is to learn how to operate the heaviest machinery that there is such as _____.
(Tool) I will make sure that I will study hard to achieve my _____ job.
(Adjective) Just one thing that I need to keep in mind - Never _____ up!
(Verb)

What am I?

I have a big flat nose and a tall wooden body with a metal head.

What am I?

.....

I have a cylindrical head with a thin body and pointy feet.

What am I?

.....

I have a big thin body with lots of teeth and 1 big ear.

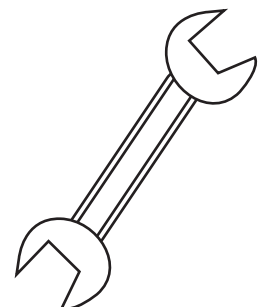
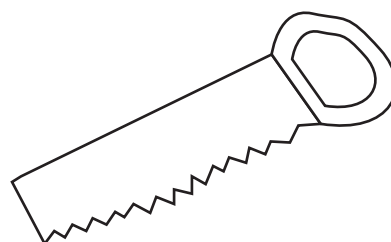
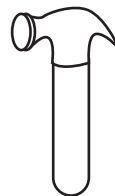
What am I?

.....

I have a flat metal body with 2 heads and a big mouth.

What am I?

.....



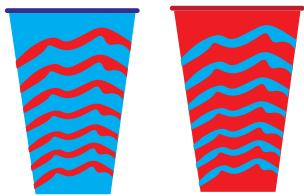
Flying cups

Materials:

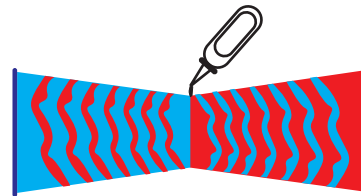
2 Paper cups
Double sided tape
Super Glue
8 rubber bands
Paint brush
Poster colours



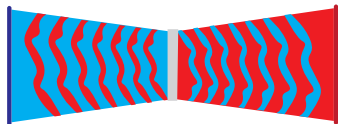
1) Use the poster colours to decorate your cups.



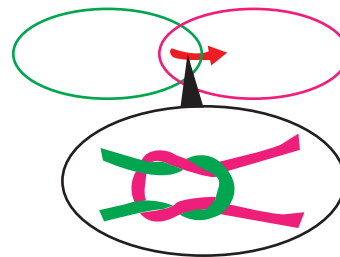
2) Add some super glue to the bottom of the 2 paper cups and stick them together.



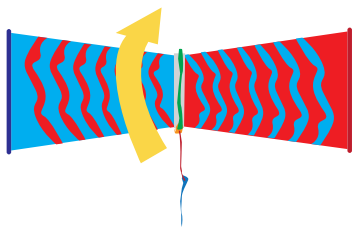
3) Stick a piece of double sided tape to the bottom of the cups. Don't peel the tape!



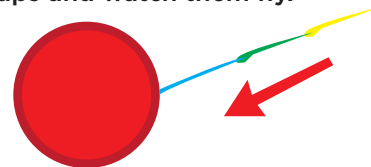
4) Interlace 6 rubber bands together as shown below.



5) Wrap the interlaced rubber bands tightly around the double sided tape.



6) With one hand grab the cups and with another grab a piece of rubber band and stretch it (like using a slingshot). Let go of the cups and watch them fly.



Side view

4-6 years



Adult Assistance
Needed

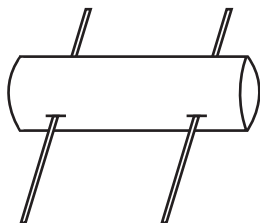
Materials:

Toilet roll
2 kebab sticks
Glue gun
1 long stick
2 magnets
4 bottle caps
Poster colours

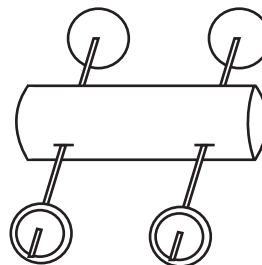
Magnetic Car



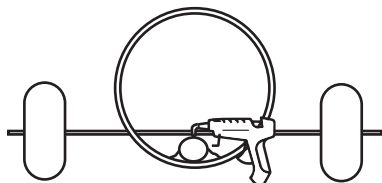
1) Poke the kebab stick into the sides of the toilet roll.



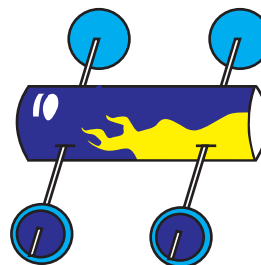
2) Poke a hole in each of the 4 bottle caps and insert them in the kebab sticks.



3) Use hot glue to stick one of the magnets to the car



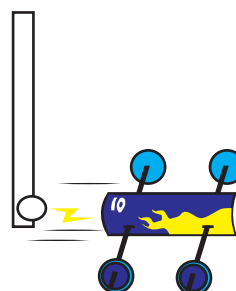
4) Use the poster colours to decorate the car.



5) Use hot glue to attach another magnet to the stick. Make sure to check that the side of the magnet facing you is the side which will repel the magnet stuck to the car.

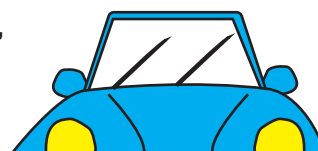


6) Move the stick towards the car. What happens? The force from the repulsion of the two magnets should have made the car move away.



Fact!

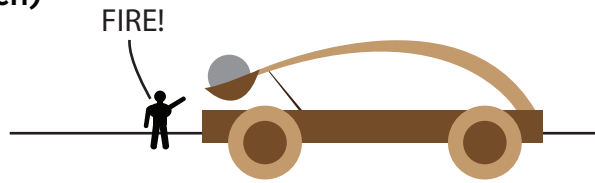
Mary Anderson invented the windshield wiper in 1903, years before Henry Ford industrialized automobile production.



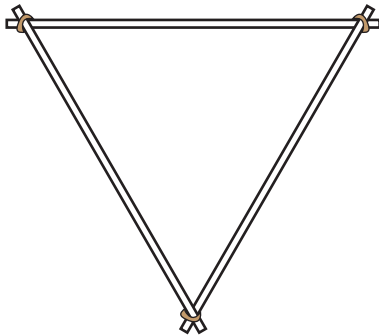
Materials:

- 6 wooden sticks (1 meter each)
- Lots of large rubber bands
- Puncher
- Small ball
- Disposable cup

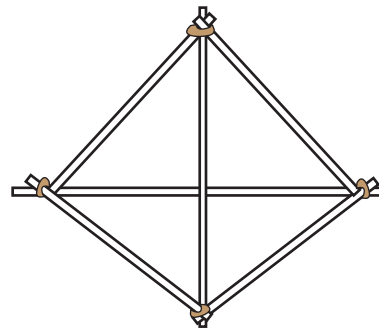
Elastic catapult



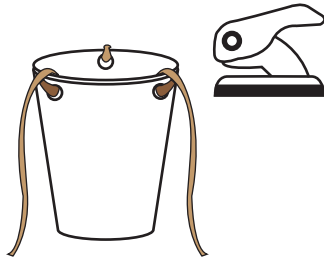
1) Use 3 sticks to make a triangle and secure them with rubber bands.



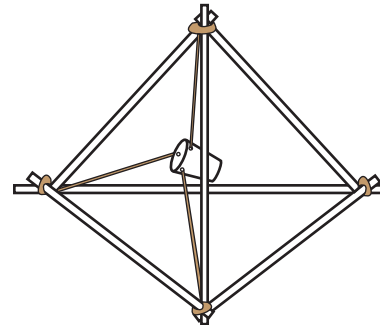
2) Continue to attach the remaining sticks to the corners to create a pyramid.



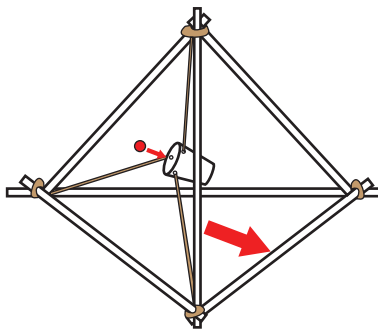
3) Use a puncher to punch 3 holes in the disposable cup. Attach rubber bands through each hole.



4) Attach the rubber bands to the corners of the pyramid. You can attach more rubber bands to each other if necessary.



5) Place a small ball in the cup. Grab the cup and pull it back then release it. See what happens!



Fact!

The first call ever made on a mobile phone was from an engineer called Martin Cooper. In fact he used the cell phone to call a rival engineer to let him know about his accomplishment

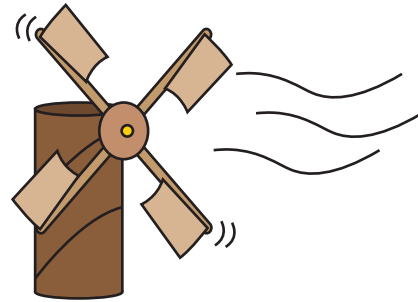
I Win!



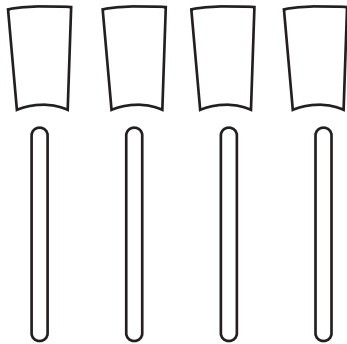
Materials:

Small plastic cup
Cardboard
Toilet paper roll
Poster colours
Butterfly pin

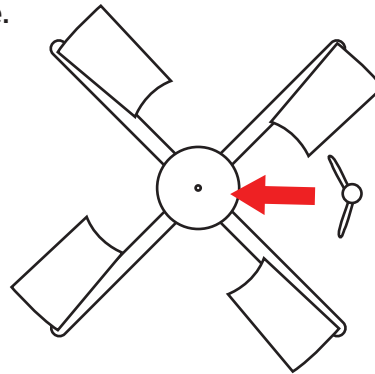
Kinetic Windmill



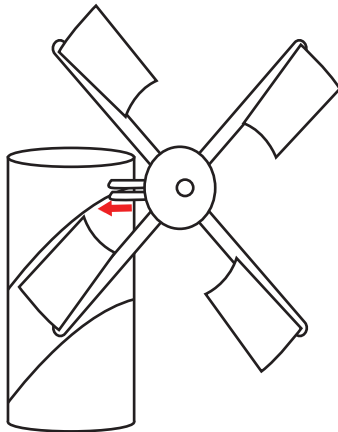
1) Cut 4 equal sides from the small plastic cup. These will be the blades of your windmill. From the cardboard, cut out 4 strips and glue them with the blades to each side.



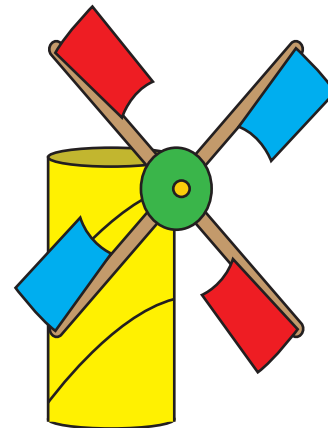
2) From the cardboard, cut a small circle and attach it together with the strips using glue. From the back of the circle, attach a butterfly pin to the centre of the cardboard circle.



3) Make a small hole in the toilet paper roll by using a butterfly pin. Attach all the blades and let them spin!



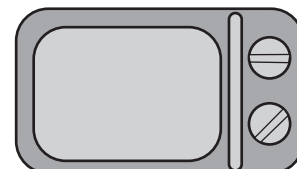
4) Decorate as you wish and place it high up against the wind.



If you want to take your windmill a step further, use a hobby motor to turn kinetic energy into electrical energy and light up an LED. Make sure to ask for an adult's help and use popsicle sticks instead of cardboard to make it more stable.

Fact!

The microwave oven was actually invented by accident when engineer Percy Spencer was working with radars and observed that the chocolate bar in his pocket melted whilst he was working.



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