

Design + Make your own Wind Powered Toy!

Would you like to design and make your own wind powered toy?

Read on to find out how in 4 easy steps.

- 1. Design Research**
- 2. Evaluate a Wind Powered Toy already available**
- 3. Design + Make a 'Junk Model' Wind Powered Toy**
- 4. Evaluate your Model**

You will need:

Junk modelling equipment - cardboard boxes, cartons, plastic milk cartons, plastic drink bottles, plastic bottle tops etc.

Pencil and paper for designing

Colours/paints/papier-mâché for decorating

Scissors

Glue

Curriculum Links: *Design and Technology*

Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

Make

- Select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing accurately.

Evaluate

- Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

Technical Knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Science

Forces

- Identify the effects of air resistance and friction, that act between moving surfaces.

Background Information

Children

Did you know that wind energy is super important to help save our planet? Take a look at this [BBC website](#) to find out how.

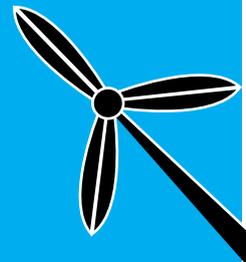
To find out more about how a real life wind turbine works, have a look at [this website](#).

To see a wind powered toy in action see this [You Tube clip](#).

Parents

[This booklet](#) is super useful to help your child find out more about wind power.

1. Design Research



You will need to carry out some research before you can design your own toy.

Look at these pictures below to see what is already available.

Choose one of the wind powered toys to explore, using the questions below to help focus your research.

Decide which toy you would buy (if you were able to) or make and why?



Would you be more likely to buy this toy because it is powered by wind and not a battery? If so, why?

How are the moving pieces attached to each other?

How does the toy move? Spin? Drive?

Where is the wind turbine/ windmill placed?

How would you improve this toy?

What materials is it made from?

How does the power get to the moving parts?

2. Evaluate a Wind Powered Toy

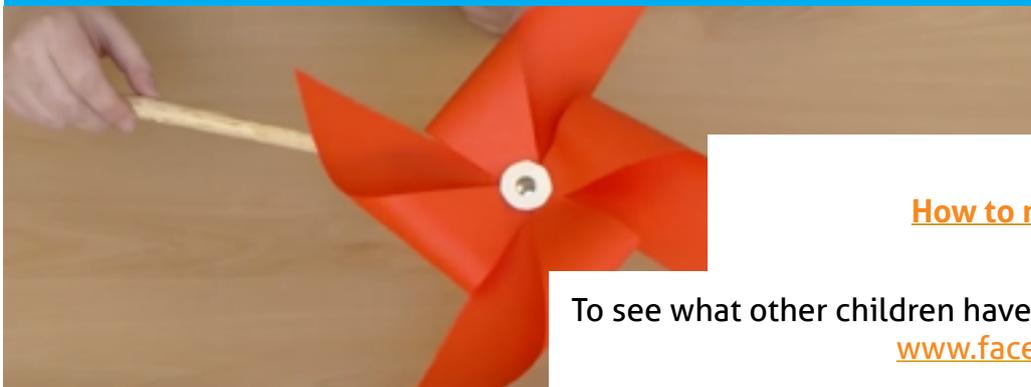
Draw and label a picture of your chosen toy (from the pictures above). On your diagram can you show which parts turn, which parts move, how the parts are attached, where is the wind power coming from? Can you also label the materials the toy is made from and its 'finish' e.g. painted, polished, stickers.

3. Design & Make a 'Junk Model' Wind Powered Toy

Now it's time to make your own 'junk model' wind powered toy (have you collected cardboard boxes, cartons, plastic milk cartons, plastic drink bottles, plastic bottle tops etc.?)

We recommend that you design your 'junk' wind powered toy first. On your diagram can you show which parts turn, which parts move, how the parts are attached. Can you also label the materials the toy is made of and its 'finish' e.g. painted, polished, stickers.

Once you have finished please send a picture to your teacher and/or share your toy on our Solar Power Education Facebook page.



Demonstration

[How to made a wind powered pin wheel](#)

To see what other children have made with junk modelling go to www.facebook.com/solarpowereducation

4. Evaluate your 'Junk Model' Toy

Explain what you are pleased with and what you can improve. Refer back to the design research questions in 1 to help you.

