Year 6: Technologies: *Design and Technologies* and Science

Activity Sheet 1: Design a wind turbine

Design and construct a series of wind turbines which work by blowing air through a straw.

Success Criteria

1. As a class group discuss, negotiate and list a set of criteria against which each turbine will be assessed and use these to make recommendations for which designs are best.
2. Design a checklist to record your results

Examples

- Mark one blade and count the revolutions
- Time how long the turbine spins
- Assess whether the materials are recyclable?

Materials

Materials required		Per student
Straw		1
Checklist		1
Suggested materials		
Aluminium cans	Icy pole sticks	Modelling clay
Plastic bottles	Plastic spoons	Long skewers
Milk cartons	Paper cups	Corks
Sticky tape	Wire	Glue

Method

1. Design your turbine
   - Materials
   - Size
   - Construction
2. Order, collect and collate your materials
3. Construct your turbine
4. Predict how your turbine will work against the agreed criteria
5. Test your turbine against the agreed criteria
6. Record your results

Figure 1: Wind turbine at Bluff Point Wind Farm

Explore

As a class group discuss the turbine results

- Did any of the turbines meet all of the criteria?
- How many designs met most of the criteria?
- Discuss the positives and negatives of the designs.

Extension

1. Consider the design of your turbine and results
   a. How could you improve the design?
   b. What materials might enhance its performance
2. Research the design of other wind powered turbines and how their design compares to yours (some images have been included as ideas.