

card  
size  
high  
constraints  
turbine  
DC wood  
lightweight  
electrical  
carry  
small  
motor  
gears  
plastic  
shape  
camping  
rechargeable  
metal  
direction  
materials  
Portable  
wind  
disassemble  
ergonomics  
equipment  
assemble  
anthropometrics  
battery

# Objectives

Understand the Design Brief and analyse the key features of the final prototype.

## **Introduction to your task:**

**To design and make a prototype portable wind turbine that can be used when camping to provide power to small electronic devices. The turbine should be as small as is reasonably practical and should be able to be assembled and disassembled easily and should be inexpensive.**

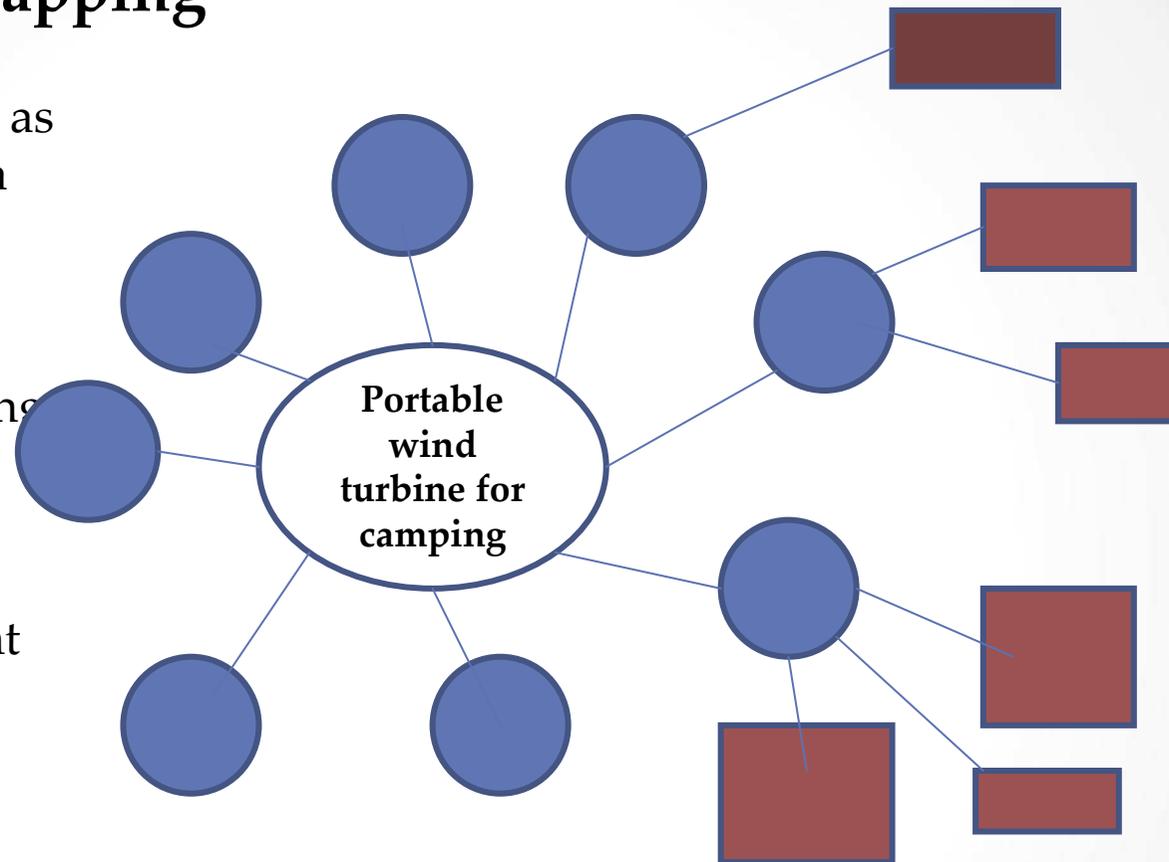
**You will be presenting your design prototype to a “Dragons Den” type panel for funding.**

On your sheet in your pairs highlight the key (important words) and explain what they mean in this context.

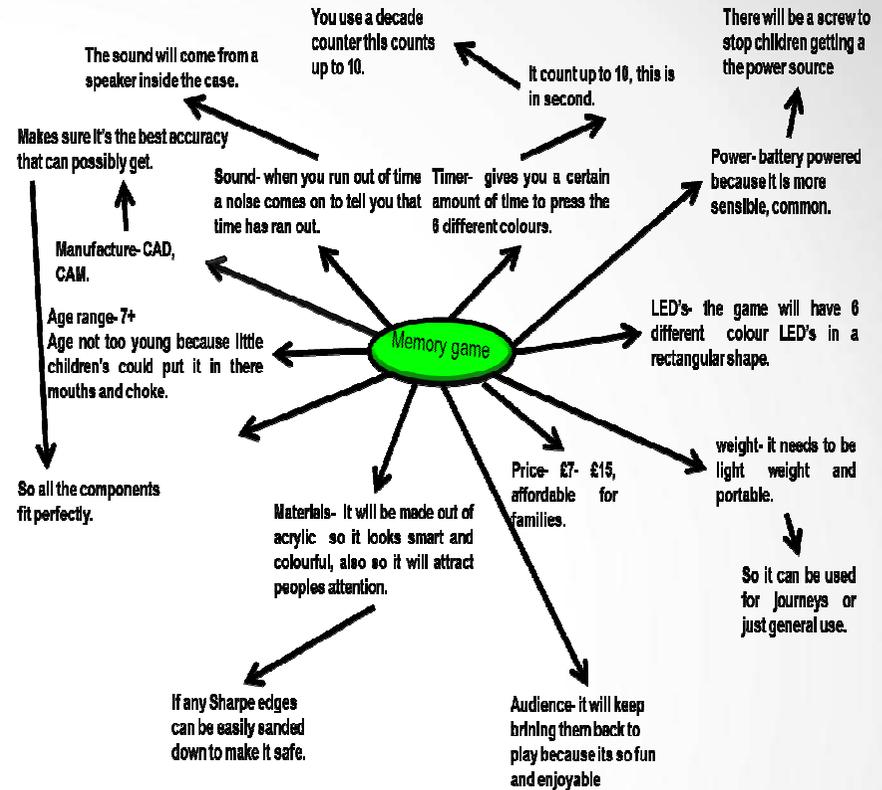
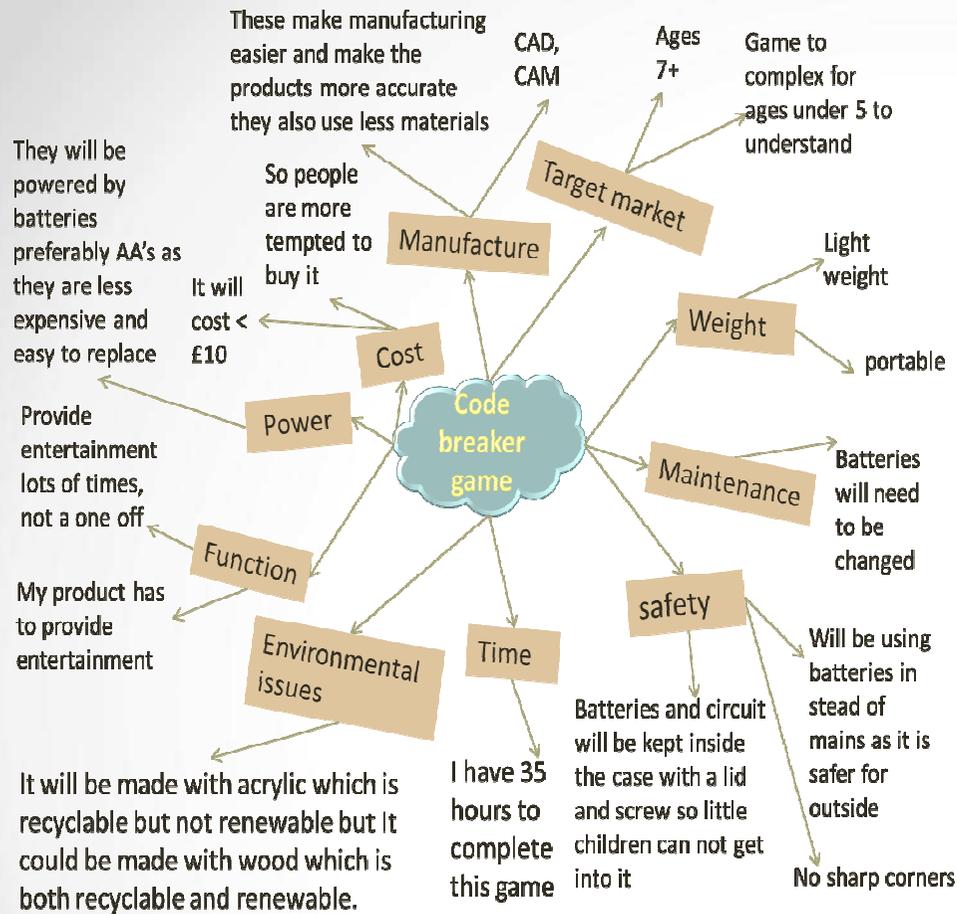
## Analysis of the problem : Mindmapping

Using your key words as a starting point draw a mindmap to help you think of all the things that you need to consider when designing your portable wind turbine.

What are the important features, for example : cost, making it lightweight, materials you could use, etc.



- **Remember these are things that you need to consider, not necessarily answers to your problem.**



Examples of what a mindmap might look like!

# Design ideas

**In pairs start to design some ideas for your wind turbine. Your sketches should include notes and colour because you may be asked to show your ideas when presenting your prototype.**

**You need to consider the information that your mindmap gave you.**

**You will be given a motor to use to convert the movement from the turbine you design into electrical energy.**

**The efficiency of your design in generating power is just one aspect that your overall design will be marked on. You will also be marked on how it looks and how well it copes when the wind changes direction.**

# **Plenary**

**From your analysis of the problem that you have been given and the three areas that you will be marked against :**

**Write in bullet points what your wind turbine needs to do to be successful. You should have no less than 5 bullet points and no more than 10.**

**These are the criteria that you can use when you have made your turbine to see whether your design successfully does what you have set out to do!**

