

SUPER QUESTERS

Make a Windy-Day Pinwheel

It's never been more important to learn and think about renewable energy sources, including biofuels, as included in the SuperQuesters STEM story **The Case of the Great Energy Robbery**. Exploring renewable energy sources, such as solar and wind, is a great starting point for children to understand their importance and develop essential STEM skills.



STORE CUPBOARD

- Sturdy paper straws
- Split pins or push pins
- Scissors
- Pencil
- Ruler
- Sellotape
- A range of materials cut into 20cm x 20cm squares. These should include paper, card, tissue paper and tin foil.



1 Discuss wind energy and wind turbines. If possible, visit one, or watch a video of how they work. Then discuss what a pinwheel is to ensure children know what they're working towards.

2 Lay the range of materials out in front of your child and discuss how they will perform in the wind. Predict which will spin the fastest and why.

3 Choose a material to use first. Tip: For a fancy pinwheel you can use two different pieces of coloured paper and glue together. Fold the material in half diagonally and make a crease, then open it out before folding it in half diagonally the other way.

4 Using a ruler, encourage your child to use their mathematical STEM skills to measure 3.5cm from the centre along each diagonal crease and make a mark using the pencil.

5 Using the scissors, cut along the crease from each of the four corners to the 3.5cm point.

6 Fold down the right corner of each section to the middle. Hold in place with sellotape.



7 Push a split pin or push pin through the centre of the pinwheel until it emerges through the other side, then push it through the top of a paper straw. Pull apart the sides of the split pin to secure the pinwheel head in place, ensuring it can spin. If not, loosen the split pin slightly. Alternatively, use a push pin and add some playdough to the end of the pin for safety, after it's been pushed through the pinwheel and straw.

8 Take your windy-day pinwheel outside and test it in the breeze.

9 Repeat the process with the card, tissue paper and tin foil. Test all varieties and evaluate their performance. Did your child predict correctly? What makes one pinwheel more effective than another? Can they problem-solve and think of a way to improve their pinwheels? Can they think of a material that might perform even better?

DID YOU KNOW?

■ Did you know there are six main sources of renewable energy? Some we know lots about, like solar and wind, but some are a little less known. In the SuperQuesters story, **The Case of the Great Energy Robbery**, the friends explore different types of renewable energy sources including wave energy. Wave energy uses the natural power of waves and currents from the sea to produce heat and electricity.

FUN FACTS! 5-7 YEARS

Renewable Energy Source Facts



Renewable sources of energy are amazing. They never run out because they are replaced naturally.



The most effective form of renewable energy is the sun. If humankind could harness all the sun's solar power, it would power the entire world!



Renewable energy is not a new concept. Throughout history, various civilisations worldwide have harnessed power from the sun, wind and water.



QuestFriendz are giving away all three books in the SuperQuester series. **The Case of the Stolen Sun**, **The Case of the Missing Memory** and out in early October – **The Case of the Great Energy Robbery**.



For your chance to win a set of three books just fill in the coupon on page 61 to enter.

