

Tracking the wind and sun

**Stage:** 0-1**Time:** 4-5 hours

Introduction: As part of our Climate Action Week Live Lessons 2025, we invite schools and nurseries to learn more about how the power of the sun and wind can provide us with clean energy that doesn't make climate change worse.

Curricular links

SCN 1-04a, **SOC** 0-1-07a, 0-1-08a, 0-1-12a, **TCH** 0-1-06a, 0-1-09a, 0-10a

Introduction

If we want to significantly reduce our greenhouse gas emissions, we need to transition from making electricity by burning fossil fuels (such as coal, oil and natural gas) to using renewable sources, such as wind and solar power. In this activity, children will investigate the wind and solar power that is available in their grounds.

Starter questions

In class, have a discussion about the wind and the sun and how we can get power from them. Some questions you could ask include (use our glossary on page 2 to help with this):

- Why is the sun important?
- What would happen if there wasn't a sun?
- Have you ever seen a solar panel? Do you know how one works?
- Why is the wind important?
- What would happen if there wasn't any wind?
- Have you seen any wind turbines (windmills) in your local area? Do you know how they work?
- Why is it a good idea to get our energy from the sun and the wind?

Tracking the wind

In this activity, we will investigate wind power in your grounds.

Follow the instructions on pages 3 and 4 to make simple paper windmills.

Take your windmills outside on a day where there is some wind (at least a slight breeze). Ask children to hold their windmills up in a windy spot of their grounds to make them spin. Then ask them to change the direction of the windmills to see how that affects the speed at which the windmills are turning.

Move around your grounds and see how the speed of the windmills change depending on where you are.

Ask: What do you think is making the windmill slower or faster in different areas?

Can you see anything that would slow the wind down?

If we wanted to put a wind turbine in our grounds where would be the best place to put it?

Tracking the sun

In this activity, we will investigate solar power in your grounds.

Indoors, place a tall object like a water bottle on the ground and use a torch to create a shadow. Move the torch around the object, then closer and further away and see how the shadow changes.

Ask: What is making the shadow change?

For the next part of the investigation, you will need a day with enough sun to cast shadows.

In the morning place several objects in various places around your grounds. Make a list of the objects and their locations. Check your objects each hour and make a tally mark in your list beside each one that has a shadow. At the end of the day total up your tally marks for each location.

Ask: Which location had the most tally marks at the end of the day?

Which location had the most hours of sunshine?

If we wanted to put solar panels in our grounds where would be the best place to put them?

Glossary

Solar power: power obtained from the light and heat of the sun. The light and heat from the sun can be turned into electricity or hot water using solar panels.

Solar panel: a device designed to absorb heat and light from the sun and turn them into electricity or hot water.

Wind power: power obtained from the energy of the wind. Energy from wind can be turned into electricity using wind turbines.

Wind turbine: a device that uses energy from wind to create electricity. It is usually a tall structure with large, flat blades that blow around in the wind like a windmill. Turning the blades creates electricity.

Renewable energy: energy from a source that is not used up when electricity or heat are made, such as the wind and sun. These types of energy have the benefit of not producing greenhouse gases, so they do not make climate change worse.

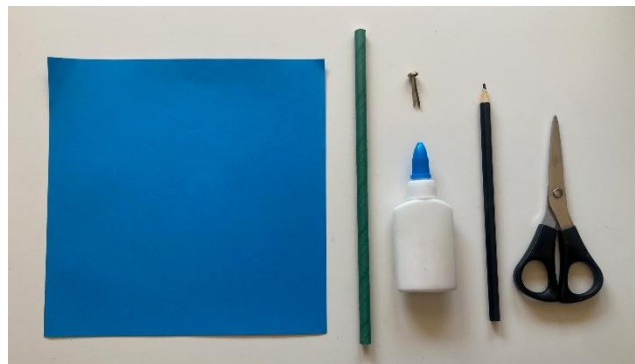
Next steps

Don't forget that you can add this activity to your Eco-Schools action plan and count it towards a Green Flag Award application. [Find out more about Eco-Schools on our website.](#)

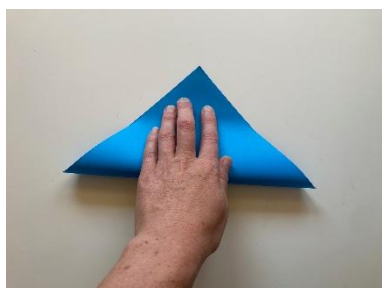
Windmill instructions

For each windmill you will need

- One square piece of paper (15 x 15 cm is ideal)
- A paper straw
- A split pin
- Art glue
- A pencil
- Scissors



1. Fold the paper diagonally into a triangle and crease it along the fold. Then unfold it.



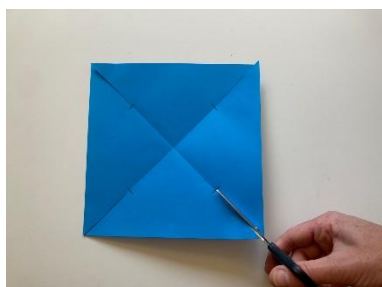
2. Repeat this in the opposite direction so that you have a creased X on the paper.



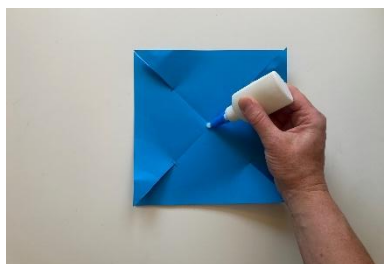
3. Use the pencil to make a mark halfway between each corner and the centre of the paper.



4. Cut along the creases you have made from each corner until you reach each mark.



5. Bend one of the corners into the middle and glue it down.



6. Repeat this with all four corners, overlapping them slightly.



7. Once the glue is dry, make a small circular hole in the centre of the paper using the scissors.



8. Also make a small slit through the top end of the paper straw.



9. Push the split pin through the paper, then the straw and open to secure.



10. You now have a windmill. You can test it by blowing on it from the side.

