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Poster power

Time:

1 hour

Who it's for:

5 to 10 year olds

You'll need:

- Large sheets of black and coloured paper
- Scissors
- Glue
- Glitter
- The 'Changing climate' sheet

- As a group discuss the impact of climate change on the environment and animals. Explain that one thing that we can all do to help is avoid wasting energy. Can they name some ways in which energy is wasted? The 'Changing climate' sheet may help you give them some prompts.
- 2. Split the group into smaller teams and ask each team to think of a simple message which they can put on a poster to encourage people to avoid wasting energy. Again, the 'Changing climate' sheet can help.
- **3.** Now ask each group to come up with an attention grabbing poster concept to get people to take notice of their message.
- **4.** Hand out felt tips, coloured paper and other craft materials for the teams to create their poster.
- **5.** Once the posters are completed you could create a display and invite parents to come and see their work.



A changing climate

Our climate has changed many times over the history of the earth – think of the ice age and the dinosaurs! But most scientists and governments agree that human activities are making the climate change so fast, that nature can't keep up – habitats and species just can't adapt in time to survive. And people are affected too – through increased risk of extreme weather events, flooding, etc which affect livelihoods, property, food production and sometimes take lives.

What's happening?

The earth is surrounded by a blanket of gases. This blanket is important because it lets just enough heat from the sun through to the earth – and just enough heat to escape back into space – to allow life on earth to flourish. But now this blanket of gases is building up too quickly and too thickly – so more heat than before is trapped on the earth's surface, upsetting the delicate balance. Some people call this global warming or the greenhouse effect. A more accurate description is climate change, as the effects can be variable, with some places getting hotter and drier, and others colder and wetter.

The GreenHouse Effect



The Greenhouse Effect, David R. Wright, WWF-UK/Hodder and Stoughton, 1990



A changing climate (continued)

What's this got to do with us?

The houses we live in; the factories which make and the shops which sell the products we use; the cars, lorries, planes, boats and trains which transport goods around the world and which we use to get around in, and a host of other things we humans are responsible for – all use fossil fuels like petrol, diesel, gas or electricity and all help to release greenhouse gases such as carbon dioxide into the atmosphere.

How can we use less energy?

Here are some things for the unit to think about

How do we travel to our meetings - is their a better way?

Stop using so much gas and electricity in our homes and meeting place. How could we do this? Switch off lights, turn down heating, don't leave electrical goods on standby, close the curtains, wear an extra jumper.

Use electricity made from the sun, or wind – this type of energy does not create large amounts of greenhouse gases.

Don't waste water; electricity made from fossil fuels is used to pump water to your tap – using water means using energy.

Buy things that are grown or made close to where you live – less fuel is used to bring these things to you.

Reduce, reuse and recycle – lots of greenhouse gases come from the farms, mines, factories, and transport that make and carry the things we buy. Buying fewer things, looking after the things we have, finding new uses for some of the things we no longer need and recycling other things we no longer need all help to reduce greenhouse gas emissions. It takes less energy to make things like glass bottles, paper and aluminium cans from old cans, paper and bottles than it does when you make them from new. Saving energy helps to save the planet for polar bears and people.

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Power down

A saving energy in the home wide game

Time:

Who it's for:

Variable depending on activities chosen 7+

You'll need:

- Signs for each room
- Pens and paper, one per team
- · Other items dependent on challenges (see next page)

What to do:

This is a wide game that will help members remember key things they can do in their own houses to save energy.

- 1. Divide the group into four teams. Set up four areas around your meeting space, representing different areas of the home. Each area should display the name of the room in the house.
- 2. The aim of the game is for teams to come up with as many energy saving tips for each of the rooms as they can within a limited time frame. To make the game even more of a challenge, and more fun, set a physical challenge teams need to get through before they can get to their next room. You can let your imaginations go wild - we've suggested some ideas on the next page. Give a certain amount of time, eg 5 minutes, for teams to get through the physical challenge and reach the next room and list their ideas - the quicker they do the challenge, the more time they have to think of ideas.
- 3. The winning team is the one with the most energy-saving ideas overall. Share all the ideas with each other!



Ideas for tips:

Kitchen

- · Only boil the amount of water you need for your cup of tea
- · Keep lids on pans while you're cooking
- Turn off the oven or microwave when you're not using it
- Open a window instead of using a fan on a high setting
- Make sure the dishwasher is full before running it and run it on an economy setting
- Make toast for everyone at once not just one slice at a time
- · Keep the fridge door shut

Living room

- Turn off the TV when it's not being used
- If you're a bit chilly, put on extra clothing instead of turning the heating on full
- Draw the curtains when it gets dark to keep the heat in
- Don't leave the TV on standby

Bedroom

- · Don't leave your mobile phone charging all night
- Turn your laptop off when you're not using it
- Turn off the light when you leave the room
- · Get a rug for your floor to help you feel warmer in winter

Bathroom

- Turn off the heated towel rail if you don't need it
- Take a shower instead of a bath and make your showers shorter
- · Use the plug in the sink when running water for washing
- · Let your hair dry naturally instead of using a hairdryer

Challenge ideas:

- Three legged race to carry a pan of water from one bucket to another
- Egg (or potato!) and spoon race
- Wheelbarrow race (ie in pairs one member walks on their hands and the partner walks behind supporting their legs)
- Dribble a ball around an obstacle course
- · Invent a new dance move and do the move as you go from one room to the next
- Think of a song that you know that's linked to energy or electricity and sing it

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What is a carbon footprint?

Time:

Who it's for:

7+

20 minutes

You'll need:

- A cut out footprint (or they could make their own)
- Scissors and pen per group

What to do:

 Read out – or get the members to read out – the story of a morning in the life of Jo. Tell everyone they must listen very carefully to the story as they'll need it later.

A morning in the life of Jo

One Wednesday morning, Jo's alarm clock went off at 7.30, and she stretched and leapt out of bed, ready for the day. She turned on the light, then left the room.

Jo went downstairs and filled the kettle right to the top with water and turned it on to make her cup of tea. She poured milk on her cereal and finished the bottle, so she put it in the bin. She turned on the TV and watched it while eating her breakfast.

When she'd finished, Jo was in a hurry to get to school! She left the TV on, and her mum said she'd give her a lift in the car. After a short 5 minute journey, Jo reached the school gates and met her next door neighbour Lily, who had also got a lift from her mum. They said hello, and went inside to start their day.

- 2. Explain to the group that a Carbon Footprint is a measure of the impact our activities have on the environment. It calculates all the greenhouse gases we are expected to produce in all our activities and measures them in units of carbon dioxide. The world average is about 4,000 kg of carbon dioxide per person. In the UK it is nearly 10,000 kg per person.
- **3.** Put everyone into small groups, and give out one footprint per group, a pair of scissors and a pen. The groups must first cut up the footprint into 5 equal pieces. Now the groups must work together to remember 5 different things that Jo did that would add to her carbon footprint, and write one thing on each piece. The first team to complete their footprint puzzle wins!



Try it this way: You could make this into a running game by asking the team members to run relay-style with each separate piece, and make the footprint on the other side of the room.

For younger groups, ask them to clap when they hear energy being used.

Chat afterwards:

Ask the teams to share what they came up with. The answers are:

- Leaving the light on in her room
- Filled the kettle all the way
- Put the milk bottle in the bin
- Left the TV on
- · Got a lift to school when could have walked with her friend Lisa

All of these things add to your carbon footprint because they rely on energy produced through burning fossil fuels which releases carbon dioxide into the atmosphere and contributes to global warming.

Ask members to suggest what Jo could have done differently to reduce her carbon footprint that morning.



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Wind turbine

Linked activity: 'Energy sources sales challenge' activity

Time:

6-8 hours

Who it's for:

10 +

You'll need:

Full material list included in the plan - see step 3

- Explain to the group that renewable energies are key to helping us reduce our impact on the environment and slowing down our contribution to climate change. The 'Energy sources' cards from the 'Energy sources sales challenge' offer some helpful information.
- **2.** Explore how the energy from wind can be captured and converted into electricity by building a miniature wind turbine.
- 3. You can find detailed plans on how to build a wind turbine here: http://www.re-energy.ca/docs/wind-turbine-cp.pdf
- **4.** Your group may need close supervision to ensure that the project is completed successfully.
- **5.** You could break the group down into smaller teams and assign each team one component to build in order to speed up the process.

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Earth Hour energy-free sleepover or camping trip

8 hours

Time:

All ages

Who it's for:

You'll need:

- · Volunteers to help with supervision
- Torches

- WWF's Earth Hour (http://earthhour.wwf.org.uk) is a global celebration of our planet; a chance to look up at the stars and remember all the things we love about Earth, and what we can do to help protect it. At the heart of Earth Hour is a global 'switch-off', where people around the world spend an hour without using electricity. The official Earth Hour event takes place at 8.30pm on the last Saturday in March each year, but you could celebrate Earth Hour in the weeks leading up to the event, or at any convenient time. Do remember to sign up online to show your group's support.
- **2.** Organise an electricity-free sleepover or camping trip. This could be a fun way for members to spend time with friends whilst saving some energy.
- You could use wind-up torches or radios to help you avoid using electricity during the event and cook meals using a barbecue, camp fire, or even a solar oven (instructions can be found here: http://www.hometrainingtools.com/build-a-solar-oven-project/a/1237/).
- **4.** During a sleepover you could run activities such as paper aeroplane competition, kite making, stilt walking (using recycled tins and string) and stargazing.
- **5.** During a camping trip you could take the opportunity to teach the group outdoors skills such as lighting a fire, tying knots, building a shelter and navigation using a map and compass.
- **6.** You could even charge a small amount to take part in the event and use the money to fund an energy saving change to your meeting room.
- **7.** When organising a sleepover or camping trip you will need to refer to your organisation's guidelines for organising overnight events.

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Elastic band cars

Time:

1 hour

Who it's for:

All ages

You'll need:

- Elastic bands
- Straws
- Old CDs
- Glue
- Wooden skewers
- Scissors and sticky tape
- The 'Elastic band car instructions' sheet

- 1. As a group discuss the impact that using fossil fuels has on the environment. Explain that renewable energy offers a solution to the problems caused by our reliance on fossil fuels for energy.
- **2.** Explain that the group are going to explore the way that renewable energies could be used by creating a miniature car powered by an elastic band.
- **3.** Hand out copies of the 'Elastic band car instructions' sheet and read through the instructions with your group.
- **4.** They're now ready to start making and racing...! With younger children you may want to guide them through the instructions.

Elastic band car instruction sheet



Materials:

- 5 x 6 inch piece of corrugated cardboard
- (cut so the holes from the corrugation are visible along the long edge)
- Ruler
- Scissors
- 1 wooden skewer (use the thinnest available skewers)
- Tape
- 2 bottle tops
- 2 old CDs
- Blue Tac
- 1 elastic band

Instructions:

1. Notch the body

Cut a notch in the centre of the 5 inch side of the cardboard. Make the notch 2 inches wide and $1\frac{1}{2}$ inches deep. Throw away the piece you've cut out.

2. Make the axle

Slide the skewer through the corrugated cardboard, close to the outer edge. Make sure the skewer sticks out the same amount from each side of the body. This is your car's axle.

3. Modify the axle

Wrap a small piece of tape around the skewer where it passes through the notch.

4. Assemble the wheels

Put the CDs onto the skewer and fill the CD hole with Blue Tac to hold them in place. The CDs should be an equal distance from the body on each side.

5. Attach the elastic band

Tape one end of an elastic band to the cardboard at the end opposite the wheels.

6. Power your car

Wrap the unattached end of the elastic band over the catch on the axle. Turn the axle several times. You've given the elastic band potential (stored) energy. When it unwinds, this potential energy is transformed into kinetic (motion) energy, and the axle spins. The more you wind the elastic band, the more energy is available for your car's wheels – and the farther and faster your car goes.

7. Launch!

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Energy pledge

Linked activity: 'Energy footprint quiz' (for group members 10+)

Time:

Who it's for:

You'll need:

20 minutes

All ages

- Paper one sheet for each group member
- Scissors and pens
- Video camera

- **1.** Ask the group to think about a change which they could make to their daily lives to save energy.
- 2. Hand out a piece of paper to each group member and ask them to draw around their own foot then cut out their footprint shape before writing out their pledge. The idea is for group members to see their pledges as representing positive environmental footprints or impacts on the planet.
- **3.** Stick all of the pledges on a pledge board. In one month's time discuss whether the group have managed to uphold their pledges. If so they could add another pledge to the wall.
- **4.** You can also make a video of each member making their pledge. Encourage members to use video cameras or their smartphones to take videos of their family making pledges. Combine the videos to create a piece which can be used to support an energy-saving campaign.
- **5.** For group members aged 10+, this activity would make a good complement to the 'Energy footprint quiz' activity.