



Energy | Motivating



Meet the polar bear!



15 mins

Brownies, Guides & Seniors section

Aim

The aim of this activity is to get the girls to understand what polar bears need to survive in their natural habitat.

Equipment

A picture of a polar bear, post it notes and pens.
Copies of the *Polar bear* fact sheet.

What to do

1) Show your unit a picture of a polar bear or bring in a toy or model. As a group, share what you already know about this animal (the *Polar Bear* fact sheet offers some vital statistics).

The following questions offer one way of doing this:

- Where does it live? • What does it eat?
- What else does it need to survive? • What threats does it face?

2) Hopefully someone will mention climate change or global warming under 'threats' - otherwise you will need to prompt. What does the group know about climate change? - it's a natural phenomenon but most scientists agree that human activities are changing the climate faster than nature can adapt to. The *Polar Bear* fact sheet includes a diagram and further information. **You could ask younger girls to act out the issue:**

One in the middle as the sun giving out rays of heat;
One as the earth;
Two to three as the earth's atmosphere, linking hands around the earth;
Four to five girls as the heat from the sun, reaching the earth - initially about three of these need to bounce back through the atmosphere and out into space.

Split the rest of the unit into paired 'greenhouse gas' girls and 'everyday folk' girls.

As the 'everyday folk' go about their daily lives, e.g. driving, watching the TV or playing on the computer, etc, the 'greenhouse gas' half of the pair need to leave their partner and gather together into the atmosphere, stopping heat escaping (so this time only one or two girls make it back into space, causing the earth to warm up like a greenhouse). A simpler version is to bring in a blow-up globe and cover it with a jumper to make the point about a blanket of gases!



Energy



The Polar bear

Fact sheet



ONE PLANET
CHALLENGE

Description

The polar bear - *Ursus maritimus*, or *sea bear* - is the largest living land carnivore. Adult males measure 2.6m in length and weigh 400-600kg. Females are about half the size. Polar bear cubs are born in snow dens and weigh up to 0.7kg at birth. The polar bear's coat, covering it completely except for the nose and foot pads, is superbly adapted to Arctic environments, where temperatures rarely exceed 10 °C (50 °F) in summer and typically hover around -30 °C (-22 °F) during winter. It is the reflection of light that causes the fur to appear white, or yellowish white. In fact, the fur has no white pigment. Polar bears are excellent swimmers and can sustain a pace of 10km/h by using their front paws like oars while their hind legs are held flat like a rudder. The soles of their feet have small lumps and grooves that help the bear to walk without slipping. They feed on ringed seals.

Where they live

Polar bears live on the ice-covered waters of the Arctic - Canada, Norway, northern USA and Russia. They spend much of their time at or near the edge of the pack ice. This is where they are most likely to find food. As the southern edge of the Arctic ice cap melts in summer, some bears will follow the retreating ice north to stay close to seals and other prey. Other bears spend their summers on land, living off body fat stored from successful hunting in the spring and winter. When the ice returns in the fall, the bears leave land to resume life on the sea ice.

Threats

Increasing levels of carbon dioxide and other heat-trapping gases in the atmosphere from the burning of fossil fuels - oil, coal and gas - are causing global warming (see diagram 'A changing climate'). As a result, annual sea ice in the Arctic is melting earlier in the spring and forming later in the autumn. Research funded by WWF has found that this leaves many polar bears with less time on the sea ice to hunt for food and build up their fat stores, and increased time on land where they must fast. As their icy habitat disappears, the survival of the polar bear is at risk. Although the species is not currently endangered, its future is far from certain. If current warming trends continue, scientists believe that polar bears may disappear within 100 years. Large carnivores are sensitive indicators of ecosystem health. Polar bears are studied to gain an understanding of what is happening throughout the Arctic as a polar bear at risk is often a sign of something wrong somewhere in the Arctic marine ecosystem.



Energy

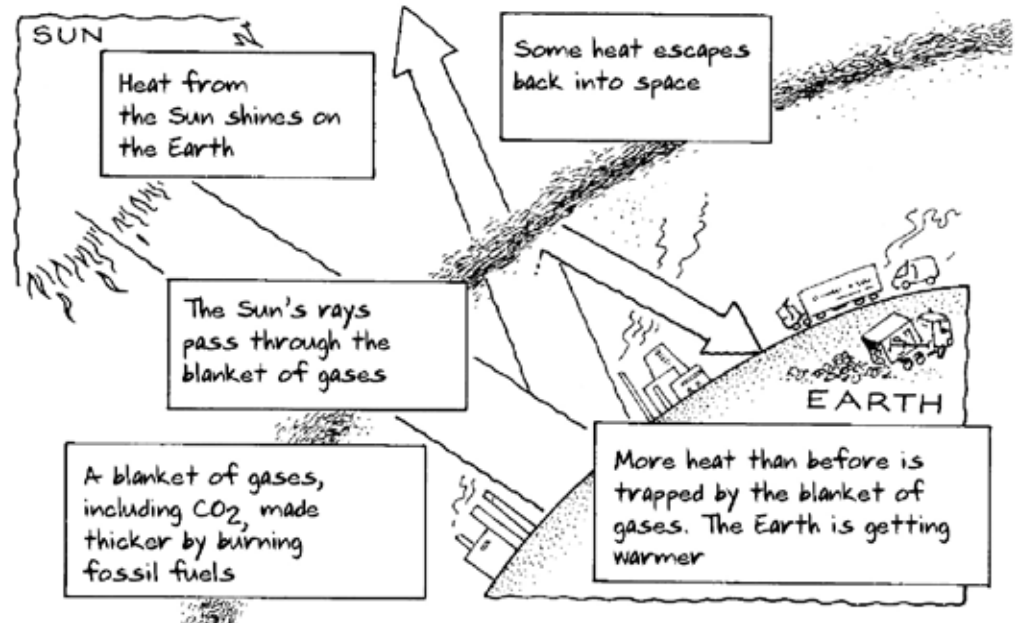


The Polar bear Fact sheet cont.



ONE PLANET
CHALLENGE

A changing climate



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

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.



Be wise, take part!



Energy



The Polar bear Fact sheet cont.



ONE PLANET
CHALLENGE

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 there 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 and recycling other things we no longer need all help to reduce greenhouse gas emissions. It takes less energy to make things like a 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.



Energy | Making the links 

What's climate change got to do with me?



10 mins

Brownies & Guides

Aim

To help girls think about where energy is used in a typical day and how they might reduce the amount they use.

Equipment

A copy of the *A day in the life of...* resource sheet.

What to do

- 1) Read the story about a young girls' Saturday shopping trip in the *A day in the life of...* resource sheet. Ask the girls to clap each time they think energy is being used.
- 2) Break the unit up into seven groups and give each group a paragraph from the story. Ask them to rewrite their bit of the story to show how they could reduce the amount of energy being used. Invite the groups to read their paragraphs in turn so that you create a new, lower energy story. If you think they might need help, you could share some of the ideas from the *Polar bear* fact sheet beforehand.



Energy



A day in the life of...

Resource sheet

ONE PLANET
CHALLENGE

Details

Jess is eight years old. She lives in Guildford.
Here's a story about a day in Jess's life.

1) Jess is woken up by her mum. She's excited because today Mum is going to take her shopping with a friend. They travel in a big car although the shops aren't very far away.

2) Jess is keen to buy some new clothes. Many of the ones she likes most were made in India so had to be transported a great distance to reach the shops in her local town.

3) They stop for lunch and Jess has a quarter pounder: the ingredients come from countries far away (beef from South America; wheat in the bun from North America).

4) On the way home they stop off at the supermarket and they buy lots of food. As Mum wants to make sure they all get their 'five a day' fruit and vegetable portions, there are apples from New Zealand and bananas from the Caribbean.

5) When they get back home, Jess and her friend play with her toys for a while. There are lots of them - many of them made in China.

6) Afterwards Jess has tea. As it's been a long day and everyone is tired, they opt for a ready meal heated in the microwave. The food is wrapped in lots of packaging.

7) Exhausted, Jess finally goes up to her room and watches TV for a while - the adverts show lots of lovely new toys she'd like to buy! She dreams of them as she falls asleep.



Energy | Making the links



Mapping product miles



20+ mins

Brownies, Guides and a discussion for Seniors

Aim

To illustrate how far a great many of our everyday products travel to our homes.

Equipment

A selection of everyday products or foods which have the country of origin on the packaging or labels; paper and pens, an atlas or world map.

What to do

- 1) Divide the unit into groups and give each group a selection of products - including food items, clothing, etc which have the country of origin on the packaging or labels. On a big sheet of paper, ask them to write the name of each item (or draw a picture of it) in one column and the country or countries of origin in another.
- 2) They should then find on the world map the place where each item came from and put a sticky dot on the map. They should stick or pin their labels around the map and link the dots to the pictures with a piece of wool.
- 3) When all the countries have been located, ask the whole unit to sit around the map and talk about what they have found out. This is a complex issue, so the purpose of this is to develop understanding and critical thinking, not to find 'right' answers.

Talking points

- Did anything surprise them?
- Did the items come from all over the world, or are there particular countries or continents that supply much of our food/clothing?
- How many miles might there be for all the items (rough estimates!)?
- How would the items have got here?
- What effect would that have had on the environment?
- Could any of the items have been produced here? If so, why weren't they?
- Would there have been fewer miles had the food come from somewhere different?
- What are the advantages of getting our things from all over the world?
- What are the disadvantages of getting our things from all over the world?
- What effect would that have on the polar bear?



Energy | Going deeper



Agree / Disagree challenge



ONE PLANET CHALLENGE

10 mins

Older Brownies, Guides & Senior section

Aim

To help girls think about why they shop, as well as what they do and don't think about when shopping.

Equipment

Make two big labels for 'Agree' and 'Disagree' and place them at different ends of the room.

What to do

- 1) Explain that you are going to do an activity to follow up to the *Day in the life of...* story, which looked at a weekend shopping trip.
- 2) Tell the group that you are going to read out a number of statements. If they agree strongly with the statement, they must run to the 'agree' end of the room, if they disagree strongly, they must run to the 'disagree' end of the room and if they only partly agree or disagree, they can stand where on the agree-disagree line they think represents their feelings.

I like to dress in the latest fashion.

I only like people who wear fashionable clothes.

I think you should only buy things you need.

I go shopping when I'm bored.

People get bullied if they don't wear the right things.

Shopping is fun!

You need the latest things to keep up with your friends.

What I buy has nothing to do with climate change.

What I buy links me to people all over the world.

I should be allowed to buy anything I want.

All clothes cause pollution.

I should only buy from sustainable sources.

- 3) Run a quick fire exploration of some of the opinions represented.

- Did anything surprise them during this activity?
- Did anything worry them during this activity?
- Is there anything they want to find out more about?



Energy | Going deeper



Help, sinking ship!



20
mins

Brownies,
Guides &
Senior section

Aim

To explore the difference between needs and wants.

Equipment

One copy of the *Help, sinking ship!* resource sheet and a pen or pencil for each pair.

What to do

- 1) Give a copy of the *Help, sinking ship!* resource sheet to each pair and ask them to complete it.
- 2) Discuss the lists as a group.
 - What does it tell us about needs and wants?



Energy



Help, sinking ship!

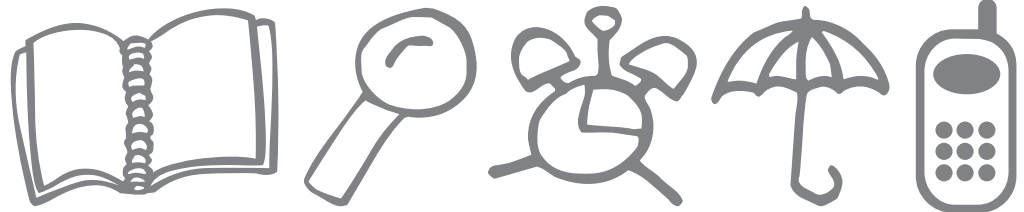
Resource sheet

ONE PLANET
CHALLENGE

Details

You are on a big ship sailing from here to Australia.

You packed very carefully for the trip, bringing two large suitcases full of clothes, shoes, jewellery, books, games, CDs, toiletries, photos, and all the other things you like to have around you.



Suddenly the ship hits a rock and is sinking, close to an uninhabited island.

You have a few minutes to grab ten things that you think you will really need to survive on the island.

- What will they be?

You have a little more time, so take two more things that you want - but could do without.



Energy | Taking action



One Planet Challenges



30+ mins

Rainbows, Brownies, Guides & Seniors

In this part of the session, girls chose a number of practical activities they can do, either to share what they have learned with others, or to take practical action to address the issue of energy use connected with our shopping choices.

Make a polar bear wind turbine

Make a paper or card wind turbine using the *Make a wind turbine* resource sheet, and decorate the arms either with key polar bear facts from the fact sheet or with their ideas for reducing their energy usage in their own lives. This could be extended into a group activity by collecting the wind turbines together to make a display wind farm.

Download *Make a wind turbine* here ►

Habitat boxes

Ask all members to bring in a shoe box and any waste packing materials. Invite them to create an Arctic habitat box showing either a model polar bear or a picture of a bear in his natural frozen habitat. Add some top tips for using less energy to the outside of the box. Remember to include some which relate to your shopping choices.

Find out about other species that share the polar bear's habitat - draw pictures, create a frieze and /or write facts about them. Use this as a backdrop to the habitat boxes.

Story telling

Hold a candlelit story telling session about a polar bear. We recommend *Arctic Spring* by Tim Vyner, Gollancz Children's Paperbacks, 1992, ISBN 0575 055286.

Girls could also write their own personal 'low energy' stories.

This could be extended into a group activity by collecting the personal stories into a book.

Make your own board game

Make your own board game based on a popular model such as snakes and ladders, e.g. 'swap some clothes with your best friend' could be a ladder; 'choose new trainers made in China' could be a snake! Share it with other units.



Energy | Taking action



One Planet Challenges cont.



30+ mins

Photo by: @girlguidinguk

Rainbows, Brownies, Guides & Seniors

Measure your impact

Complete the footprint survey at the start of WWF's *One Planet Challenge*, record your score on a paper cut-out of your physical footprint. Complete the survey again at the end of the Challenge and once you've pledged to become global citizens, and see the difference your actions can make to the big issues facing us all. **Download *What's your footprint?* here ►**

Swap-it event

Hold a 'Recycle' event, where everyone brings items they no longer need, no money changes hands but you take home an item for every one you bring. This could be for clothes, CDs, computer games, books - anything at all, and left over's could be given to your local charity shop. This could be done as a unit event or perhaps a district or division event.

Unit energy pledge

Look at ways to reduce energy as a group. For example, you could think about how girls get to the meeting place (car sharing, bike safety evenings) and the energy you use (low energy light bulbs). Older girls could share their top tips on the *One Planet Future* website.

Support work to protect polar bears


Adopt a polar bear through WWF. Visit www.wwf.org.uk/adoption/index.asp

If you enjoyed working on this project you may also enjoy the 'Friends of the Earth - Climate Champion activities'

Celebrate success!

Don't forget to celebrate success! There are downloadable certificates from the *One Planet Challenge* website to help you recognise effort and achievement. Why not design a polar bear friendly sticker that can be given to girls who do something to reduce their contribution to climate change.



Energy 
**Make a
wind turbine**

**Resource
sheet**

**ONE PLANET
CHALLENGE**

Aim

Think about the energy we use everyday and how much of it comes from renewable sources like wind turbines.

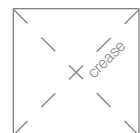
Equipment

A smooth flat surface, paper, ruler, pencil, scissors, blu tac or platercine, sharp pencil, knitting needle or hole punch to make holes, drinking straw, paper fastener and a pony bead.

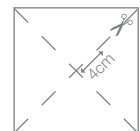
What to do

It's easy to make your own wind turbine by following these instructions. You could recycle patterned wrapping paper for a bright and cheery look, recycled old magazines for fab, fun wind turbines or decorate with pictures of polar bears.

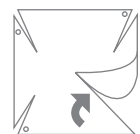
1) Cut a 20cm square of paper and fold it in half diagonally. Press along the crease and then unfold the paper again, fold it across the other diagonal and crease, flatten the paper out again.



2) The point where the two creases meet is the centre of your paper. From the centre, measure 4cm along each crease line and mark a pencil dot. Cut along the creases from the outside corner to each dot.



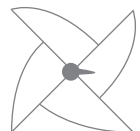
3) Roll some platercine or blu tac into a ball and place under the centre spot of your paper. Using a knitting needle or sharp pencil push a small hole through the centre. Do the same on one side of each corner as marked in the diagram.



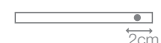
4) Fold each of the corner pieces in towards the centre so the holes line up with the hole in the middle. Push the paper fastener through all five holes.



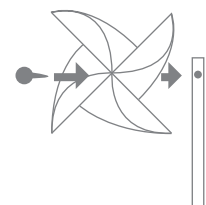
5) Thread a bead onto the back of the paper fastener. This will stop the paper wings of your wind turbine rubbing against the straw and help it to spin better.



6) Measure down 2cm from the top of your straw and using the same method as above, make a small hole going through the front and back.



7) Push the paper fastener through the hole and fold the ends back to hold your wind turbine together.





Energy 

What's your footprint?



10 mins

for

Rainbows,
Brownies,
Guides & Seniors

Complete this survey at the start of WWF's *One Planet Challenge*, record your score on a footprint shape. Complete the survey again at the end of the Challenge and once you've pledged to become global citizens, and see the difference your actions can make to the big issues facing us all.

	1 Pt (All the time)	3 Pts (Sometimes)	5 Pts (Never)
I drink tap water instead of bottled water			
I try to eat a mixture of meat and vegetarian meals throughout the week			
You have all low energy light bulbs at home?			
You have more showers than baths?			
How often do you eat locally grown food?			
You turn off your TV, phone charger and computer at the wall instead of leaving it on standby?			
You turn the tap off while you clean your teeth?			
How often do you eat organic food?			
You use re-usable bags when shopping?			
You avoid eating ready meals			
You use recycled products as much as possible for paper, paper towels and toilet paper?			
I avoid takeaways.			
You only replace your mobile phone when it stops working rather than just to get the most up to date model?			
You always know where your food or products are made?			
You donate your too small clothes to charity shops or to younger siblings and friends?			
How often do you eat Fair Trade food?			
You walk or cycle as much as you can?			
You have travelled by train for a great day out?			
You recycle at home			
You recycle at your unit			
I share a car ride, walk or cycle on the way to school and Brownies/Guides/Seniors			
Total Score			

How do your score?
 20-50 - You're a Green Queen and a globally aware consumer! Keep up the good work.
 50-80 - You've made a start but have more you can do to reduce your ecological footprint.
 80-110 - You've a long way to go, best start now.