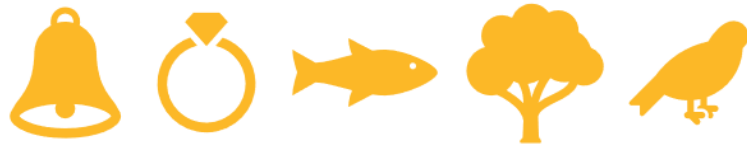




Our Dear Green Place

Sustainability in the City

26th May 2021



Introduce yourself in the chat



#OurDearGreenPlace



#OurDearGreenPlace



Alex McLaughlin
STEM
Development Officer



Hannah Christie
STEM
Development Officer





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Session Aims

This STEM in a Context series explores the various ways in which the science experiences and outcomes can be incorporated within a variety of common contexts, in this instance sustainability and COP26, whilst further developing scientific enquiry skills through activities.

Activities will focus on:

1. Sustainable Development Goals
2. Carbon Footprint
3. Topical Science

SCN I-20a/2-20b/3-20b

TCH I-06a/2-06a/3-06a





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What is 'STEM in a Context'

STEM in a Context' is a series of CLPL session that will explore the various ways in which the science experiences and outcomes can be incorporated within a variety of common primary contexts whilst further developing scientific enquiry skills through activities.





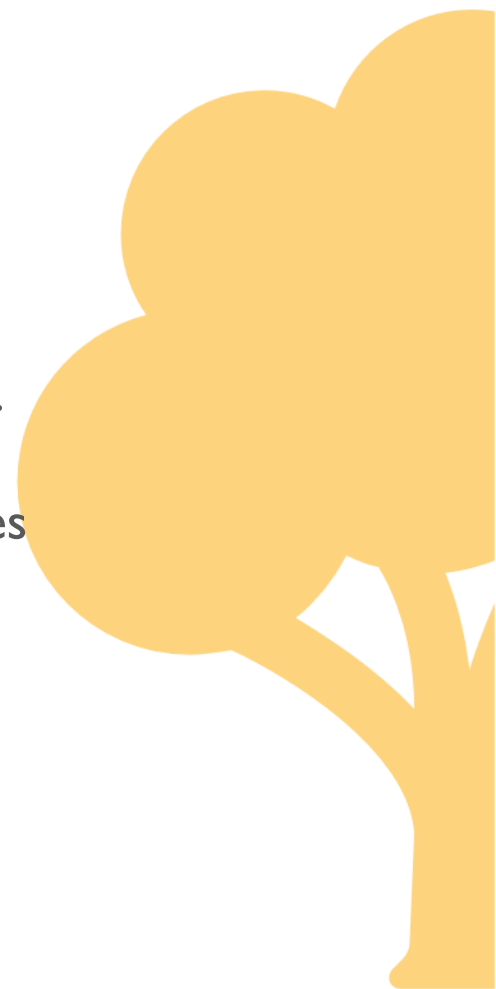
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What is Sustainable Glasgow?

Sustainable Glasgow is a group formed in 2010 by Glasgow City Council made up of representatives from housing, communities, business, universities, enterprise and education.

The groups aim is to make Glasgow one of the greenest cities in Europe by becoming carbon neutral by 2030.

They cover everything from the installation of LED street lights and electric car charging points to the creation of renewable energy schemes and green jobs.





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Sustainable Development Goals - Activity 1



Sustainable Development Goals

Learning Outcome:

Share opinions and justify these.

Resources:

- Sustainable Development Goals cards

What to do:

1. In a group try and list all 17 SDG's. Were you right?
2. Lay out all of SDG cards and make yourself familiar with them.
3. In a group discuss the goals.
4. Prioritise the goals in order of what the group feels are the most important to them.
5. Decide on a top 3 and feedback to the group.



Sustainable Development Goals

I can report and comment on current scientific news items to develop my knowledge and understanding of topical science.

SCN 2-20b

- *Explores items of current scientific interest within the school, local community, nationally or in the global media and collates, organises and summarises findings, with assistance.*
- *Shares opinions about a variety of topical scientific issues considering, for example, moral, ethical, societal, cultural, economic and environmental aspects.*

When I engage with others, I can respond in ways appropriate to my role, show that I value others' contributions and use these to build on thinking. **LIT 2-02a**

- *Contributes a number of relevant ideas, information and opinions when engaging with others.*
- *Shows respect for the views of others and offers own viewpoint.*
- *Builds on the contributions of others, for example, by asking or answering questions, clarifying points or supporting others' opinions or ideas.*
- *Applies verbal and non-verbal techniques in oral presentations and interactions, for example, vocabulary, eye contact, body language, emphasis, pace and/or tone.*



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What are the Sustainable Development Goals?

In 2015, world leaders agreed to 17 Global Goals (officially known as the Sustainable Development Goals or SDGs).

These goals have the power to create a better world by 2030, by ending poverty, fighting inequality and addressing the urgency of climate change





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Sustainable Development Goals

How many of the 17 SDG's can you name?



Comment in the chat box and share your answers.



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THE GLOBAL GOALS

For Sustainable Development





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Sustainable Development Goals

Prioritise the goals based on what you feel are the most important.

Decide on your **top 3**.



Comment in the chat box and share your answers.

SCN 2-20b/LIT 2-02a



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THE GLOBAL GOALS

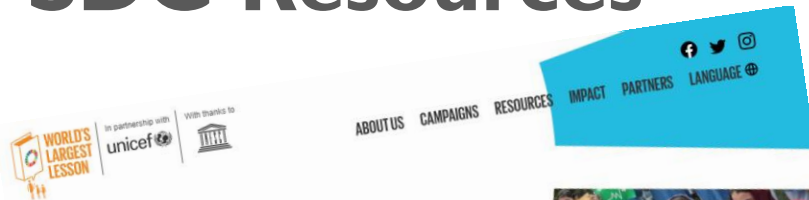
For Sustainable Development





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SDG Resources



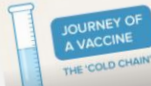
WELCOME TO THE WORLD'S LARGEST LESSON!

We promote use of the Sustainable Development Goals in learning so that children can contribute to a better future for all. From citizenship and justice to climate change and the environment, inspire children to make a difference!

GET STARTED! ➔

DISCOVER FREE RESOURCES

Fun activities and materials for all educators and settings – from schools, clubs and camps to learning at home.



The Journey of a Vaccine



Become a Climate Changemaker!



GOAL 1 No Poverty

End poverty in all its forms everywhere

To achieve Goal 1, States have agreed to

- Ensure that everyone in society is protected against things like unemployment and has access to support services like medical care. This is called social protection and is especially meant to protect and support the poorest and most vulnerable people.
- Ensure resources are allocated to implement social policies that help people who have less money to still have equal access to basic services, labour, land, technology and be able to create companies to grow economically.
- Build the resilience of people with less money so that they are better protected from climate-related extreme events, like floods and droughts, and other economic, social and environmental shocks.

Why is this important for children and young people?



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Carbon Footprint of Food – Activity 2



Carbon Footprint of Food

Learning Outcome:

Investigate where food comes from and the impact this has on the environment.

Resources:

- Various food (incl. packaging)
- World map

What to do:

1. Don't look at the packaging and order food products from furthest travelled to closest.
2. Next check the packaging. Do you need to reorder?
3. Discuss the impact that each food item has on the environment.



Carbon Footprint of Food

I can take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. **TCH 1-06a**

- *Identifies ways in which energy can be saved.*
- *Understands how and where we waste materials and resources.*

I can analyse how lifestyles can impact on the environment and Earth's resources and can make suggestions about how to live in a more sustainable way. **TCH 2-06a**

- *Explains how and why it is important to conserve energy.*



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Carbon Footprint of Food

Food's carbon footprint is the greenhouse gas (CO₂) emissions produced by growing, rearing, farming, processing, transporting, storing, cooking and disposing of the food you eat.





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Carbon Footprint of Food

Without researching order the food products from furthest travelled to closest.



Comment in the chat box and share your answers.

TCH 1-06a/TCH 2-06a





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Where are they from?



A



B



C



D



E

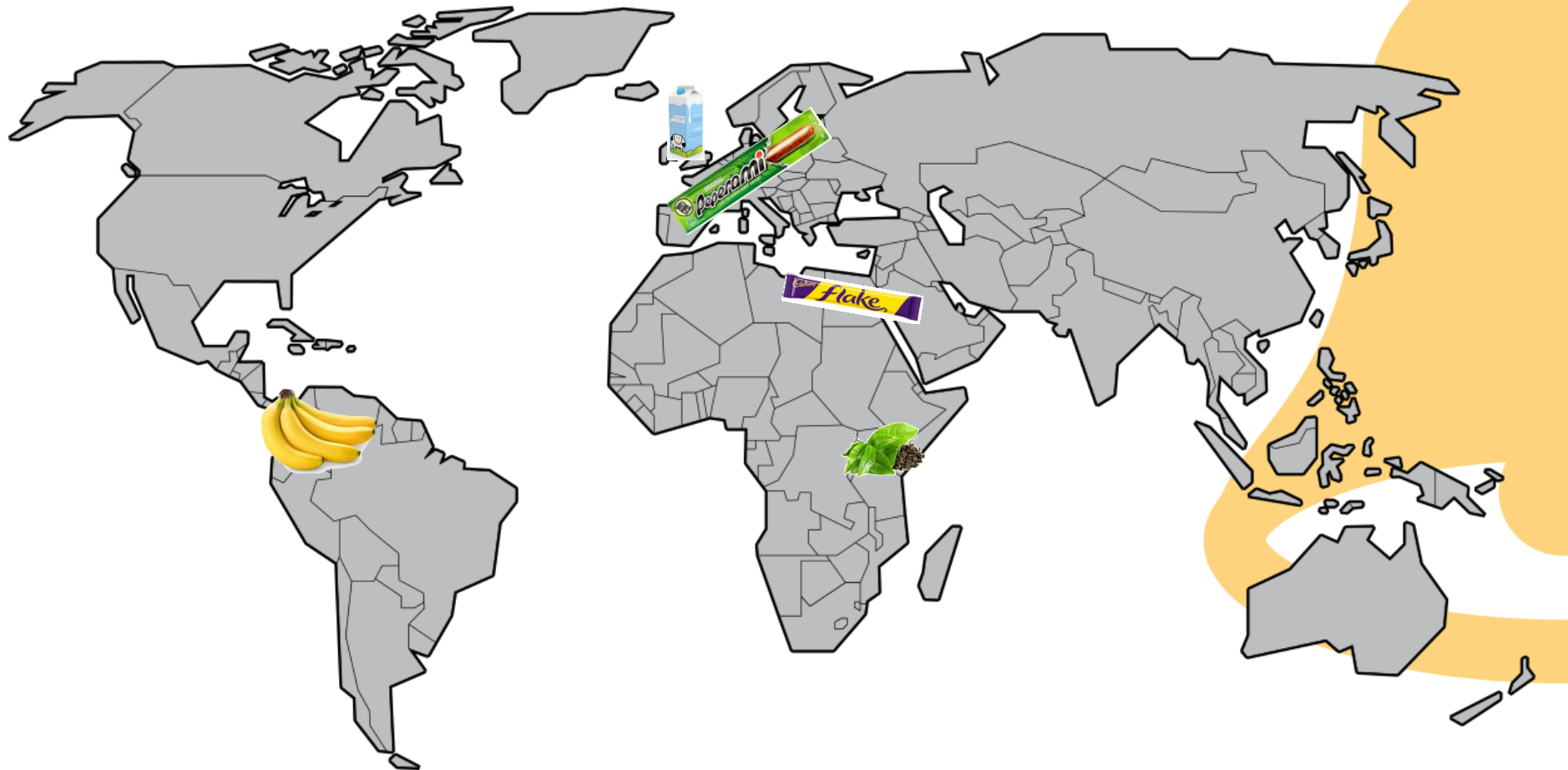


SCN 2-20b/LIT 2-02a



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Where in the World?





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How far have they travelled?



Kenya
6607 miles
825kg CO₂



Columbia
5176 miles
674kg CO₂



Egypt
2673 miles
344kg CO₂



Germany
1002 miles
125kg CO₂



UK 200 miles
103kg CO₂

Average person per
year produces 13000kg
CO₂ emissions

SCN 2-20b/
LIT 2-02a





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Carbon Footprint of Food Resources

The screenshot shows the Keep Scotland Beautiful website. At the top, there is a navigation bar with the "21 YEARS" logo, the "Keep Scotland Beautiful" logo, a search bar, and links for "About us", "Our impact", "News", "Blog", "Events", "Get involved", and "Contact us". The main content area features a collage of images: a hand holding a seedling, a landscape with a white arrow pointing to a green field, and a Highland cow. Overlaid on this is a video player for a "Carbon Literacy Guide webinar". The video player shows a green footprint icon with "CO₂e" inside, followed by an equals sign and two rows of circles. The first row contains "How much you do/use something" and "Carbon intensity of thing/activity". The second row contains "Activity Data" and "Emissions Factor". Each circle is connected to the others by a green 'X' symbol. At the bottom of the video player, it says "Watch on YouTube".

The image shows the cover of a "Carbon Literacy Guide" book. The top half is green with the title "Carbon Literacy Guide" in white. Below the title is a photograph of a hand planting a seedling into the soil. The bottom half of the cover is blue and contains the text "Section Three: Food" and "Where emissions come from and how to reduce them 2018". At the bottom left, there is a logo for the "Climate Challenge Fund" and "Keep Scotland Beautiful". At the bottom right, there is a logo for the "Greener Scotland Scottish Government".



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Fake News? – Activity 3



Fake News?

Learning Outcome:

Discuss and share opinions relating to news headlines.

Resources:

- News headline cards

What to do:

1. Discuss each news headline and decide whether it is classified as fake news or not.
2. Turn over the headline to reveal the answer.
3. What clues in the headline made you make that choice?



Fake News?

I can report and comment on current scientific news items to develop my knowledge and understanding of topical science.

SCN 2-20b

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Fake News?

Fake news is news or stories that are not true.

There are two kinds of fake news:

1. False stories that are deliberately published or sent around, in order to make people believe something untrue or to get lots of people to visit a website.
2. Stories that may have some truth to them, but they're not completely accurate.





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Fake News?

Read each of the following headlines and decide whether it is classified as fake news or not fake news.



Comment in the chat box and share your answers.





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Fake News?



THE Times

This is no longer an excuse not to act on climate change and push the burden onto future generations. Last year, the world's leading climate scientists warned we only have 12 years to limit global warming to a maximum of 1.5C and avoid climate breakdown.

We're already seeing the devastating effects of climate change on global food supplies, increasing migration, conflict, disease and global instability, and this will only get worse if we don't act now. Man-made climate change is the biggest environmental crisis of our time. It threatens the future of the planet that we depend on for our survival and we're the last generation that can do something about it.





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Fake News?



The Times

Emissions from cattle make the production of butter three-and-a-half times as damaging to the environment as plant-based spreads, according to a new study. As food production is a significant cause of climate change, being responsible for up to 30 per cent of greenhouse gases, scientists carried out tests comparing plant-based spreads and margarines against dairy-based equivalents. They found that for each kilogram of product, the “mean average” CO2 equivalent for plant-based spreads was 3.3kg – compared to 12.1kg for dairy-based products. This was an increase of more than three-and-a-half times, based on analysis of 212 plant-based spreads and margarines across 21 European and North American markets, and 21 dairy butters.

The Independent





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Fake News?



The Times

The number of floods and heavy rains has quadrupled since 1980 and doubled since 2004. Extreme temperatures, droughts and wildfires have also more than doubled in the last 40 years. While no extreme weather event is never down to a single cause, climate scientists are increasingly exploring the human fingerprints on floods, heatwaves, droughts and storms. Carbon Brief, a UK-based website covering climate science, gathered data from 230 studies into “extreme event attribution” and found that 68 per cent of all extreme weather events studied in the last 20 years were made more likely or more severe by human-caused climate change. Heatwaves account for 43 per cent of such events, droughts make up 17 per cent and heavy rainfall or floods account for 16 per cent.

WWF





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Fake News?



Donald Trump has regularly repeated claims that scientists had rebranded global warming as climate change because "the name global warming wasn't working" (in fact, both terms are used, but experts at Nasa have argued that climate change is the more scientifically accurate term).

BBC





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Fake News?



As the Earth heats up, animals and plants are not necessarily helpless. They can move to cooler climes; they can stay put and adapt as individuals to their warmer environment, and they can even adapt as a species, by evolving. The big question is, will they be able to do any of that quickly enough? Most researchers believe that climate change is happening too fast for many species to keep up. Species with short lives, like fruit flies, have more generations in which to evolve, compared with long-lived species that don't begin to breed for decades. Conversely, long-lived species with low genetic variability—including many rare mammals—will have less adaptive ability.

NATIONAL GEOGRAPHIC





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Fake News? – Extension Task

- Research facts and information about climate change
- Using this information write 'Fake News' headlines and real headlines
- Can others work out which is real and which is fake?





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Past, Present, Future – Activity 4



Past, Present, Future

Learning Outcome:

Discuss and share opinions relating to news headlines.

Resources:

- Historic and present images of Glasgow
- Pencils, pens, paper

What to do:

Present the images to learners and ask the following:

1. Past

What do you see?

What do you notice?

What do you think is happening?

3. Future

What do you think will be the same?

What do you think will be new/different?

Why do you think that?

Share think through discussion, drawings, written work

2. Present

What do you see?

What is the same?

What is different?

Why do you think that?



Past, Present, Future

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SCN 2-20b

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Past, Present, Future – Activity 4

Past

- What do you see?
- What do you notice?
- What do you think is happening?
- What makes you say that?





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Past, Present, Future – Activity 4

Present

- What do you see?
- What is the same?
- What is different?
- What makes you say that?





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Past, Present, Future – Activity 4

Future

- What do you think will be the same?
- What do you think will be new and/or different?
- What makes you say that?





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Past, Present, Future Resources



Virtual Visit Films



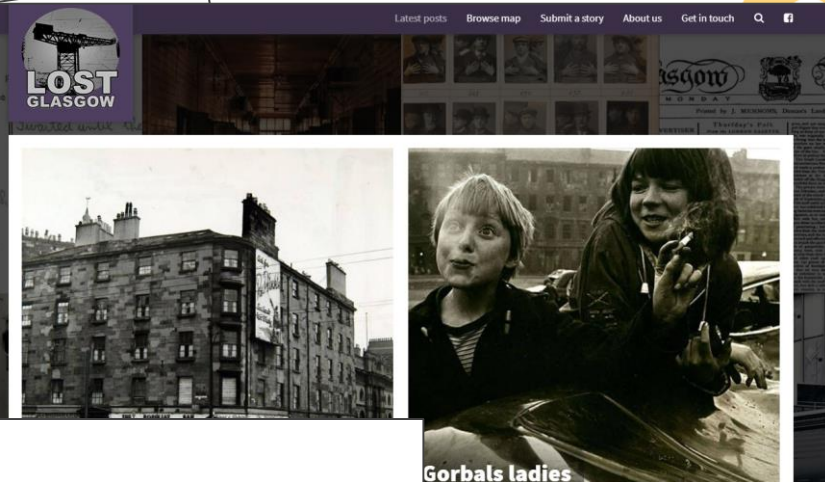
Trails - inside the museum and outdoors



Secondary School Resources



Primary School for Classroom Playground



Gorbals ladies



Enhancing Your Practice



Exploring our

GLASGOW
DOORS
OPEN DAYS
FESTIVAL

We're back!
And we can't wait to see you.

We are now accepting expressions of
interest to participate in the 2021 event.

[Find out more here.](#)



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Summary

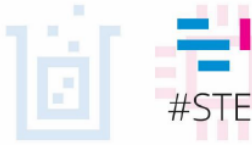


- What is STEM in a Context
- Sustainable Glasgow
- The Sustainable Development Goals
- Carbon Footprint of Food
- Topical Science





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Sustainability in the City Resources

 <p>Wind</p> <p>Learning Outcome: Identify and explain how energy transfers take place in everyday life.</p> <p>Resources:</p> <ul style="list-style-type: none"> Lollipop sticks 2 paper cup Fan String <p>What to do:</p> <ol style="list-style-type: none"> Cut out the base of the... These will act at the prop... Glue 2 lollipop sticks to... Glue 1 propeller to each... Push the sharp end of t... and clue in place. Glue the cork to the ba... Using art straws attach... can spin. Tie the string... Direct fan to propellers. 	 <p>Transport</p> <p>Learning Outcome: Identify and explain how energy transfers take place in everyday life.</p> <p>Resources:</p> <ul style="list-style-type: none"> Energy cards Everyday item cards <p>What to do:</p> <ol style="list-style-type: none"> Match the everyday item... What energy do the item... transfer/transformation... 	 <p>Harnessing the Wind</p> <p>Learning Outcome: Identify and explain how energy transfers take place in everyday life.</p> <p>Resources:</p> <ul style="list-style-type: none"> 4 lollipop sticks 2 cups, 1 large & 1 small Hairdryer/windy day <p>What to do:</p> <ol style="list-style-type: none"> Cut out the base of the sr... These will act at the prop... Glue 2 lollipop sticks toge... Glue the 1 propeller to eac... Using a pin create a small... the motor. Glue the cork to the back o... Attach the LED to the back... motor in hole made in the c... Use remaining cup and lollip... to place the propellers and r...
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Our
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GETTING READY FOR COP26



COP26
1st - 12th November 2021
@EdISGlasgow
#OurDearGreenPlace



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Dear Green Place Launch

Dear Green Place took place on 12th May 2021. The videos are available online for all to see, so if you missed out or just want to see again, you can!

The video includes:

- What is COP26?
- What is climate change?
- What is sustainability?
- What are the Sustainable Development Goals?
- Glasgow schools - LFS work
- Glasgow schools - pledges for the future



- How does climate change make you feel?
- What are you already doing to tackle climate change?
- What's your pledge?



EdISGlasgow and use #OurDearGreenPlace

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STEM Glasgow



#STEMGlasgow

Glasgow Challenges Climate

3rd Level
Engineering project that challenges
students to develop a solution to
problems across Glasgow caused by
climate change.
Presented at end of May

Story Early & 1st Level
Picture books as a context to
STEM Es and Os
will be available from June

Science
2nd Level
to support talking and
using topical science as a tool.
will be available from June

CLPL Sign up via CPD Manager

What are the Sustainable
Development Goals?
11th May or 1st June
What is Climate Change?
17th May or 10th June
Sustainability in the City
26th May

Twitter Challenges

Don't forget to engage with us on
Twitter #STEMGlasgow

Learning for Sustainability
TeachMeet
Sept 2021





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Questions





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Contact us:



Our Dear Green Place
MS Team



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