



## 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.*
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## Here's a Bright Idea!

### Learning Outcome:

Construct a chemical cell.

### Resources:

- 2 pence pieces (minted after 1971)
- Washers or tinfoil
- Beakers
- Wires (with crocodile clips)
- Vinegar
- Lamp
- Cardboard
- Salt

### What to do:

1. Cut out 4 cardboard squares and 4 tinfoil squares the same size as a 2 pence piece
2. Soak the cardboard in a solution of vinegar and salt.
3. Stack in this order; 2 pence piece, soaked cardboard square and tinfoil. Repeat until all are stacked
4. Attach crocodile clips to lamp.
5. Take ends of crocodile clips and hold to top of stack.
6. What happens?



## Here's a Bright Idea!

To begin to understand how batteries work, I can help to build simple chemical cells using readily-available materials which can be used to make an appliance work. **SCN 2-10a**

- *Applies knowledge and understanding to build simple batteries (chemical cells) and demonstrates understanding that a battery (cell) is a portable energy source which has a store of chemical energy.*
- *Explains the process of energy transformation from battery (cell) to electrical components.*



## 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.*



## 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?



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## 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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## Transformers

### Learning Outcome:

Identify and explain how energy transfers/transformations take place in everyday life.

### Resources:

- Energy cards
- Everyday item cards

### What to do:

1. Match the everyday items to the energy cards.
2. What energy do the items require and what energy transfer/transformation occurs?



## Transformers

By considering examples where energy is conserved, I can identify the energy source, how it is transferred and ways of reducing wasted energy. **SCN 2-04a**

- *Demonstrates understanding of the law of conservation of energy (energy can be converted from one form to another but cannot be created or destroyed).*
- *Identifies the common types of energy (kinetic, potential, electrical, chemical, light, sound and heat) used in energy transfers and transformations that occur in everyday appliances.*
- *Explains that when energy transfers and transformations take place, energy is converted into 'useful' and 'wasted' energy, for example a mechanical braking system transforms kinetic energy into heat energy which is dissipated to the atmosphere as 'waste' heat.*



## Harnessing the Wind

### Learning Outcome:

Identify and explain how energy transfers/transformations take place in everyday life.

### Resources:

- 4 lollipop sticks
- 2 cups, 1 large & 1 small (paper)
- Hairdryer/windy day
- Cork
- Motor
- LED

### What to do:

1. Cut out the base of the small cup and cut sides into 4. These will act at the propellers of the turbine.
2. Glue 2 lollipop sticks together to create an X.
3. Glue the 1 propeller to each end of the lollipop sticks.
4. Using a pin create a small hole in one end of the cork for the motor.
5. Glue the cork to the back of the X.
6. Attach the LED to the back of the motor and place front of motor in hole made in the cork. Hold in front of a fan.
7. Use remaining cup and lollipop sticks to construct a stand to place the propellers and motor on.



## Harnessing the Wind

I have used a range of electrical components to help to make a variety of circuits for differing purposes. I can represent my circuit using symbols and describe the transfer of energy around the circuit. **SCN 2-09a**

- *Designs and builds a variety of electrical circuits for differing purposes, using an increasing range of components.*
- *Draws circuit diagrams using appropriate symbols to denote a bulb, switch, motor, bell, buzzer, wires, cell and a battery.*
- *Describes how components in a circuit transfer energy into different forms.*

I can recognise basic properties and uses for a variety of materials and can discuss which ones are most suitable for a given task. **TCH 2-10a**

- *Recognises characteristics of groups of materials such as wood, plastic and metal.*
- *Selects suitable materials to use in a task*
- *Discuss the uses of materials*



## Winding Me Up

### Learning Outcome:

Identify and explain how energy transfers/transformations take place in everyday life.

### Resources:

- Lollypop sticks
- 2 paper cup
- Fan
- String
- Cork
- Pencil
- Glue
- Blue Tac

### What to do:

1. Cut out the base of the small cup and cut sides into 4. These will act at the propellers of the turbine.
2. Glue 2 lollypop sticks together to create an X.
3. Glue 1 propeller to each end of the lollypop sticks.
4. Push the sharp end of the pencil into and end of the cork and glue in place.
5. Glue the cork to the back of the X.
6. Using art straws attach the pencil to the table but ensure it can spin. Tie the string attached the cup to the pencil.
7. Direct fan to propellers. Watch as cup rises.



## Winding Me Up

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- *Selects suitable materials to use in a task*
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