Key Concept/Message

In this instalment's second act of worship, the focus changes from 'how amazing is the sun!' to consider the rising temperatures of the planet. After exploring the concepts of 'greenhouse effect' and 'carbon footprint', pupils are given an opportunity to ponder how we all could show a heart for the earth through reducing our carbon footprint.

Gather

Follow the school's normal gathering routines, using words of liturgy which are familiar to students and adults

or

Light a candle and offer the following prayer: 'The grace of our Lord Jesus Christ, the love of God and the fellowship of the Holy Spirit be with you'. Response: *and also with you*. (To support pupil understanding of the Christian belief in God as Trinity here, why not light a single candle which has three wicks, lighting them in turn as each 'person' is acknowledged?)

.....

Source an artwork (e.g. the art found as an appendix) and fictitiously explain that it was made for you by a close friend. They spent a lot of time and love creating it, and it's something that you really, really value. Then, pass it to someone else (who you've enlisted in advance) who then rips it in half. Ponder with students: was this ok to do? How might the creator of this art feel about it being destroyed?

Link responses to the belief of many Christians: Christians believe that God created the world, and in honouring this creation is right for humanity to treat it with love, care and respect.

Engage

In our last Heart for the Earth collective worship, we thought about how incredible the sun is. Can anyone remember any of the facts we thought about?[1]We thought about how the light and heat from the sun is essential for all life on earth and how it takes just eight minutes for light from the sun to travel 93 million miles across space to reach us. We also thought about how the earth is just the right distance away from the sun for life to flourish; it is not too hot nor too cold.

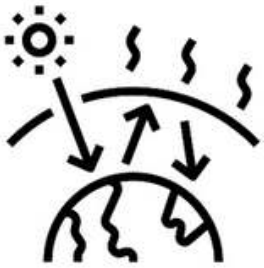
Let's think a little about what happens when the sun's light reaches the earth. Use the icons to explain the **greenhouse effect**.[2] E.g.



- When the sun's rays reach the earth, they pass through a layer of gas that surrounds the Earth – **the atmosphere.**
- The atmosphere contains lots of gases. These gases let the sunlight in (oxygen and nitrogen) and holds some of the warmth of the sun's rays (carbon dioxide); this is called **the greenhouse effect**. Most of the sun's heat is reflected back into space. Without these amazing gases, life on Earth would be very difficult (if not impossible!).

[1] These facts were:
oThe sun is a yellow dwarf star. At its hottest point, it reaches temperatures of 15,000,000°C.
oThis high core temperature is enough to sustain nuclear fusion. Hydrogen atoms fuse together to create helium atoms, which releases an extraordinary amount of light and heat.
o It takes millions of years for energy from the sun's core to reach its surface. It cools down as it does so, before heating up again in the sun's surface; this is unexpected (as it should cool further) and is currently a mystery to scientists. When it does, it then takes just eight minutes for light from the sun to reach Earth. With the sun 93 million miles away (on average), this means that light from the sun travels at a whopping 186,411 miles per second.
o The sun is extremely large. It could contain roughly 1.3 million earths. Some stars in the universe are over 700 times larger than the sun.
The sun's heat and light are essential for life. In fact, the earth is just the right distance from the sun for life to thrive. Not too close (as it would be too hot) and not too cold for liquid water to exist. NASA call earth a planet in the 'Goldilocks Zone'..

[2] A précis from Gregory, D. 'Caring about climate and weather'. In Moore, L. (ed.). Messy Church Goes Wild (Abingdon: Bible Reading Fellowship, 2022), pp. 53-61



- However, over the last two hundred years, the amount of carbon dioxide in the atmosphere is increasing due to human activity. This means that less heat from the sun is escaping into space; the Earth therefore gets warmer.
- It's a bit like a giant blanket or duvet. As humans have not been so careful in the way they live, work and treat the world, the 'atmospheric duvet' is getting thicker and keeping the heat in.
- The average global temperature has increased by 1°C since 1880. The planet is getting warmer and warmer at a faster pace.

Scientists call the amount of carbon dioxide released into the atmosphere as a result of human activity our **carbon footprint.**



Here are some of the main contributors:

- About a third of all carbon emissions come from **food** production (e.g. growing, packaging, transporting). Meat (especially the farming of beef) is particularly carbon heavy
- Making and sending of **clothes** (about 10% of all carbon emissions)
- Using fossil fuels in **transportation** and to heat and power our homes and businesses
- Trees and soils store carbon. Deforestation means that there are less trees and more carbon is present in the atmosphere.

Think/pair/share: *I wonder...*

Are there any facts here that surprise you?

Which do you think are easier for us to reduce our carbon footprint?

Which ones need other people to make the changes?

Which ones are a bit of both?

The good news is that that so much is being done to help reduce carbon footprints. To prevent global temperature increase, many people are:

- switching to electric cars
- buying more locally grown food
- adopting a more planet friendly diet, such as eating less meat
- buying second-hand/pre-loved clothes and toys
- buying clothes made of more planet friendly materials such as linen or organic cotton (two of the least planet friendly materials are non-organic cotton and denim)
- looking after clothes and keeping for longer
- walking or cycling when able instead of using other means of transport
- planting more trees

All of these actions are really important, and all make a big difference. But there is still more that needs to be done. The more planet friendly actions decisions we can make, the better for all life on Earth. For many Christians, such decisions are a key form of worship – they are showing worth to God through loving and caring for God's creation.



Respond

Show the quotes:

- 'Every choice we make is a vote for a world we want to live in';
- 'The greatest threat to our planet is the belief that someone else will save it?' (Robert Swan)

Invite pupils to think of their own 'I wish' and 'I wonder' on the subject of carbon footprints.

After a sufficient time has passed, you might like to invite some pupils to share their reflections.

Invite students, if they would like to, to use their statements here to personally and privately form a prayer to God.



God
I wonder...
I wish...
Amen

Send

Keep the school community thinking and reflecting: 'Together, we can all make a big difference. I wonder how you and those you know might show a heart for the earth through reducing your carbon footprint?'



