Sustainable Living Assembly

These notes run alongside the PowerPoint presentation. They provide additional information (if required) and suggestions for interaction:

Slide 2: What do we need to live?
Discuss with students their ideas about what makes up our most basic needs, perhaps dividing up their suggestions into 'needs' and 'wants'. People need access to food, water and shelter in the form of housing, just in order to survive. Do all people have access to their basic needs currently?

Slide 3: We need access to clean air, food, water and other resources

Humans and other animals need to breathe in oxygen in order to survive.

We need nutrients from food to survive. Humans need to eat a range of different foods so that they can get all the nutrition that they need to stay healthy and have energy. An ideal diet needs a mix of protein, carbohydrates and fats as well as lots of different vitamins and minerals.

Water is vital for survival; human beings can only last a few days without water to drink. Some people only have access to a limited amount of water, or have to drink water that is contaminated and so risk diseases that can make them ill. Water is also needed to help us keep clean.

Slide 4: We need somewhere to live in safety
Although the types of homes that people live in might vary, housing, or shelter, is something else that people need in order to live safely. Not all people have access to a house to live in. Some people need to live in homes that are very small or in basic shelters which do not have heating or access to water or sanitation, such as a toilet. Sometimes people have to flee their homes and they might end up living in structures that are not warm, comfortable, or safe.

Houses around the world are built from different materials. Discuss with pupils what some of these might be and where they think those come from.

Slide 5: Animals and plants also need their own habitats
It isn't only people who have needs. Animals also need enough food, drinking water and space to live in the right habitat for their species. The impact of human behaviour on the planet can have devastating effects on animals' habitats.

As well as animals and people, all the plants in the world need the right conditions to live in. From water and soil to the air that we breathe, planet Earth provides for all of life to exist in a careful balance. Each ecosystem depends on the others and damage to one species can have huge impacts on the others.

Slide 6: The population of our planet is growing.
There are currently over 8 billion people living on Earth and every single one of them needs access to those same basic things in order to live a healthy life. It took over 200,000 years of human history for the world's population to reach 1 billion, and only 200 years more to reach 7 billion. The United Nations predicts that the population will increase by almost another 2 billion people in the next 30 years, reaching 9.7 billion by 2050.

Slide 7: Earth Overshoot Day
Earth Overshoot Day is the date each year when humanity has used up all the resources (such as forests or fish) that it would be possible for Earth to regenerate in that same year. Ideally, we would be looking to last a whole year without reaching that date. In fact, in 2022, Earth overshoot day was July 28th. That means that every day of 2022 after that date, people were using more than the planet could sustain. It isn't possible to keep doing this forever. Humanity is currently using around one and three quarter Earth's worth of resources a year - but we don't have any more Earths!

Slide 8: What does it mean to live a successful life / be successful?
Ask the children what they think makes a person "successful". They may think of academic success, or perhaps financial success and the markers of that. Gather ideas.
What kinds of things do they think a whole *group* of people (a society) needs in order to be a success? As well as all the people having their basic

needs of food, water and shelter met, they might also need education and work, health care and activities to do. How can we tell if a society is successful? What are some ways we could tell whether one society was doing better than another?

At the moment, one way that people measure success is how rich a society is - how much money they have and how many new things they buy.

Slide 9: Is our current way of life sustainable?
Sustainable living can be defined as a lifestyle that attempts to reduce an individual's or society's use of the Earth's natural resources to an extent that they are able to be naturally replenished and will not affect the ability of future generations to live similarly.

Given what we have learned about Earth Overshoot Day - our current way of life isn't sustainable. Humans are using resources faster than they can be replaced and causing damage to the planet that we live on.

Slide 10: What impact is human life having on planet Earth?
Ask the children if they know about any of the current problems that people are causing to the environment. (Image shows a mine, with diggers being used to extract minerals from deep in the earth).

Slide 11: Using up non-renewable resources
Coal, oil and natural gas are known as fossil fuels because they were created millions of years ago from fossilised remains of organic material such as plants and animals. Over hundreds of millions of years, heat and pressure turned these remains into the coal, oil and gas that we use today. These fuels are a finite (non-renewable) resource, meaning that one day, they will run out.

Fossil fuels can be burned in power stations to create steam, which in turn generates the electricity that we use every day in our homes, schools and businesses. Oil is used to make petrol and diesel to power most of the vehicles that we use to transport ourselves and all of the resources we use around the world.

Slide 12: Causing climate change

Unfortunately, when fossil fuels are burned, they introduce gases (such as carbon dioxide, sulphur dioxide, methane and nitrous oxide) into the

atmosphere as waste products . We now understand that these gases can harm the environment.

When carbon dioxide is released into the atmosphere as a waste product, it then acts as an invisible blanket, trapping heat from the sun and warming the Earth - this is called the greenhouse effect. The more fossil fuels that are burned, the thicker the blanket becomes and the more heat is trapped. Records show that global temperatures have been rising more rapidly since the time we started burning fossil fuels in large quantities.

Slide 13: Creating huge amounts of waste
By 2050, the world is expected to generate 3.40 billion tons of waste annually, a dramatic increase from today's already huge 2.01 billion tons. Much of this waste ends up in landfill sites, huge rubbish tips buried in and sitting on top of the ground. Landfill sites cause many problems. Not only are they ugly and smelly for people who live near them or work on them, they contribute to climate change. As organic material such as food scraps break down in a landfill, it eventually releases methane into the atmosphere. Methane from landfill sites account for 12% of total global methane emissions and almost 5% of total greenhouse gas emissions.

We still don't even fully understand the risks that all this rubbish might be creating for future generations. Waste such as plastic creates toxins as it breaks down and these seep into the soil and waterways over time. Because plastic has only been around for a relatively short time, and because it can take many hundreds of years to break down, we have no evidence yet for the harm that it could cause to the environment.

Slide 14: Driving other species to extinction
Humans are also causing devastation to the populations of the other animals that share our planet. Since the 1600s, it is believed that people have caused at least 680 vertebrate species (those with a backbone) to become extinct, with another thousand endangered. Of the animals alive, humanity has managed to wipe out a massive 60% of all mammals, birds, fish and reptiles since 1970.

Do the children know which two animals are pictured? The creature on the left is a dodo, which went extinct in the late 1662 after being hunted to death by humans who sailed to the island near Mauritius where they lived. On the right is an orangutan, now critically endangered due to loss of habitat.

Habitat destruction in order to create farmland is the major cause of this decline in animal numbers..

Slide 15: Can we do better?
Economist Kate Raworth has proposed ways of measuring a successful society that don't rely on using more and more resources to keep making things for people to buy. Her idea of 'doughnut economics' is based on the idea that people need to live in balance with the planet. The green area pictured, the 'Doughnut', represents the safe and just (fair) way of life for all people in the world. Inside the 'doughnut' shape are the issues that societies need to keep fair by keeping everyone above the 'Social Foundation' and outside the 'doughnut' are the harms that can be caused to the environment, which need to be reduced until they are safe, by keeping damage to them below the 'Environmental Ceiling'.

Slide 16: Buy fewer new things
Every time a product is made, it uses up huge amounts of resources. Our clothes, food and belongings are all produced from materials provided by materials from the planet. By taking care of the items that we own, not upgrading every time we have a chance to and by learning to mend the things we already have, we are living more sustainably.

Slide 17: Reduce, re-use, recycle
Reducing the number of new things that we buy is best, followed by re-using second hand and reconditioned items and, finally, recycling unwanted goods to make sure they don't just end up in landfill.

Consider passing things that no longer fit you, on to a younger friend or relative. Instead of buying new clothes that are the same things everyone else is wearing, start thinking about second hand clothes. Take a reusable drinks bottle to school and don't buy drinks in plastic bottles. Never use a plastic straw when you get a drink and make sure to have a reusable bag to take shopping so that you never need to take a plastic carrier bag away.

Slide 18: Using water and energy more sustainably
Not everyone has such ready access to clean drinking water. Many people globally suffer when extreme weather conditions cause droughts. In 1995, the UN predicted that half a billion people would be living in water-scarce or water-stressed areas by 2050. By 2005, the organisation revised that prediction to 4 billion people. The 2018 edition of the United Nations World Water Development Report stated that nearly 6 billion people will suffer

from clean water scarcity by 2050. Yet in countries where water is plentiful, we forget what a valuable resource clean drinking water is.

Slide 19: Using greener sources of energy

If we are to cut the carbon in the atmosphere by the 7.6% a year globally for the next decade, which the UN thinks is necessary to keep global temperature increases below the 1.5C target set by the Paris Agreement, there will need to be a sustained move away from our current reliance on fossil fuels. By changing over to renewable and low carbon sources of energy, we will be able to reduce our emissions of the greenhouse gases that are raising the temperature of our planet. Low carbon energy can't yet produce as much electricity as fossil fuels, so people will also need to get used to living in ways that use less power.

Slide 20: Eating sustainably

There is also the issue of the way that food is distributed around the planet. According to the UN, 820 million people don't have enough to eat, which is around 1 in every nine people in the world. Another 1.3 billion people don't have access to enough nutritious food, so they don't get a balanced, healthy diet. At the same time, 1 third of food produced for humans (around 1.3 billion tons) gets wasted every year.

Where possible, we need to eat less meat, eat a wider range of plant based foods, and shop locally to minimise the carbon emissions created in food production lines. It's also important to stop wasting the food that we do have.

Slide 21: Growing food sustainably

There are different ways of growing foods that don't rely on the chemical fertilisers that damage the soil and seep into waterways. Methods of growing food, such as agroecology and Permaculture ('permanent agriculture') gardening, try to mimic the way that ecosystems work in nature. Plants are grown in groups where they benefit each other. For example, some are chosen because they put nutrients back into the soil or keep away certain insects. Growing a mixture of crops can lead to healthier, more resilient plants which have lower need for chemical fertilisers and pesticides.

Permaculture is also interested in the ideas of 'rewilding'; planting more trees and returning land back to how it might have been before being turned into farmland.

Slide 22: Building more sustainable homes and businesses
People are starting to consider many ways of building homes so that they can still live comfortably without putting a strain on the planet's resources. Homes can be built out of local wood from carefully managed woodland or from recycled materials. This 'Earthship' house in Brighton is made from old car tyres, earth and recycled materials. It uses solar power for its electricity. Water is gathered when it rains and waste water is filtered through plants and reeds before being returned back to nature.

Slide 23: Travel more sustainably
Emissions from vehicles that burn petrol and diesel (made from oil) contain greenhouse gases and other air polluting particles.

Walking, cycling, or sharing a lift with friends when you travel to school can cut down on the carbon being produced by lots of cars on the road. Not only is this better for the environment, it is good for keeping people physically active and healthy.

Consider the number of times that people use the car at home for short journeys. Are there trips that could be made on foot or by bike instead? If you are using the car, consider whether you could be more efficient, by collecting all of your shopping, or running all of your errands at once, instead of going out several times.

Flying produces the most carbon of all, so think about taking holidays closer to home, which don't involve taking an aeroplane.

Slide 24: Have new ideas about ways to define success and ways to solve problems!
We need to think hard about what makes a successful life. If owning lots of new things is harmful to the planet, is it really a good idea?

Some of the solutions to the problems above haven't even been invented yet. The more information people have, the more they can start to discuss these issues and come up with new ways of thinking.

These are global issues and it will take people from all over the world working together to come up with new ideas in order to help. Together, we can make sure that the world is a healthy place for people, animals and plants to live in the future.

Slide 24: Pause for thought

“It is one world. And it’s in our care. For the first time in the history of humanity, for the first time in 500 million years, one species has the future in the palm of its hands.” David Attenborough