

UN Sustainable Development Goals Posters 7 to 11 years

Teacher Notes

The Institution of Chemical Engineers wants to provide teachers with access to educational and careers resources to showcase the range of career options in chemical engineering through DiscoverChemEng. Chemical engineers play a pivotal role in how we live, working across every industry, across the globe, linking sectors together to help address the United Nation's Sustainable Development Goals (UN SDGs).

Chemical engineers are committed to finding a more sustainable way of manufacturing the products and services we need to lead healthy, fulfilling and meaningful lives. To meet these goals, we need to encourage more young people to consider a career in chemical engineering.

The presentation is aimed at pupils aged 7 to 11 years but may be used as a more accessible version for older pupils.

Learning objectives

Pupils have the opportunity to:

- ✓ learn about some of the UN SDGs
- ✓ generate and share ideas about global challenges
- ✓ think about what the UN SDGs might mean for children around the world

Curriculum links

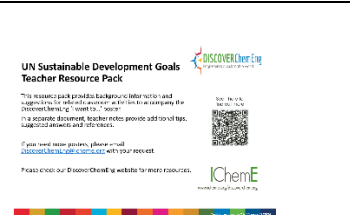
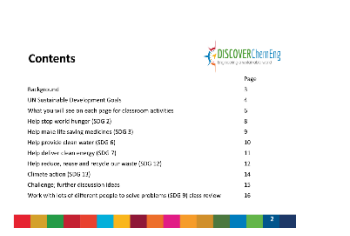
Science
Maths
Personal, social, health and economic (PSHE)
Citizenship and decision-making




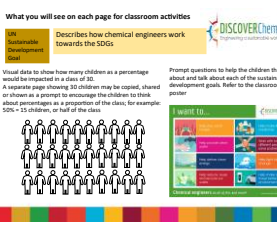
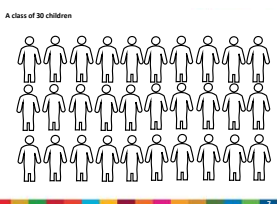

You may be aware of children in your class affected by some of the challenges highlighted in this resource, so you can tailor discussions as needed.

All references accessed July 2024, and links are provided at the end.


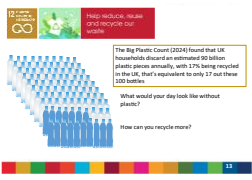
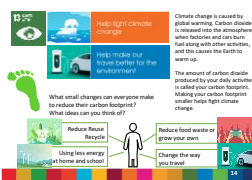
Timing



This can be run in one session taking around 60 minutes depending on your class, how many ideas and questions the children generate and available time. It can also be run as an introduction followed by bite-sized sessions taking each SDG in turn.

Slide number		Presentation Notes
1	 <p>UN Sustainable Development Goals Teacher Resource Pack</p> <p>The resource pack provides teachers with notes and suggestions to help deliver an engaging and interactive lesson on the Sustainable Development Goals (SDGs) to their pupils. It includes a range of activities, games and resources to help engage and educate your pupils.</p> <p>If you need more guidance please email discover@icem.ac.uk or visit www.discoverchemeng.com for more resources.</p> <p>Please visit our DiscoverChemEng website for more resources.</p> <p>IChemE Institution of Chemical Engineers</p>	<p>Introduction for teacher to explain how the presentation supports the DiscoverChemEng poster 'I want to...' about the United Nations Sustainable Development Goals (UN SDGs).</p>
2	 <p>Contents</p> <p>Page</p> <p>Introduction 1</p> <p>UN Sustainable Development Goals 4</p> <p>What you will see on each page for classroom activities 5</p> <p>Help sheet - world flags (SDG 2) 8</p> <p>Help sheet - the planet (SDG 13) 9</p> <p>Help sheet - clean water (SDG 6) 10</p> <p>Help sheet - clean energy (SDG 7) 11</p> <p>Help sheet - heat and power for water (SDG 13) 12</p> <p>Climate action 2023 13</p> <p>Challenge: future classroom ideas 14</p> <p>Work with one of children's goals to solve problems (SDG 11) class review 16</p>	<p>Contents</p> <p>If you want to explore resources for the UN SDGs, go to https://www.un.org/sustainabledevelopment/student-resources/</p> <p>For the 2023 report, go to https://sdgs.un.org/sites/default/files/2023-07/The-Sustainable-Development-Goals-Report-2023_0.pdf</p>

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3	<p>Background</p>  <p>The role of chemical engineers is to provide solutions to the world's most complex problems in a sustainable way. Chemical engineers are also a global force for good, working to solve the world's most pressing problems. For more about becoming a chemical engineer, go to https://www.icheme.org/education-career/discoverchemeng/school-students/</p>	<p>Background to chemical engineering and the UN SDGs. Video link to set the scene about chemical engineering.</p> <p>For more about becoming a chemical engineer, go to https://www.icheme.org/education-career/discoverchemeng/school-students/</p>
4	<p>What are the UN Sustainable Development Goals (SDGs)?</p>  <p>Sustainable development means giving people what they need now, without stopping people in the future having what they need.</p> <p>The United Nations Sustainable Development Goals (SDGs) are a vision for all our futures and these 17 goals are important both for people and planet Earth.</p> <p>Everyone should have the right to a certain standard of living, including: healthy food, clean water, places to live and work, clothing, education and healthcare.</p>	<p>There are 17 goals, and some of them link well to what chemical engineers are working towards.</p> <p>For the 2023 report, go to https://sdgs.un.org/sites/default/files/2023-07/The-Sustainable-Development-Goals-Report-2023_0.pdf</p>
5	<p>I want to...</p>  <p>Help stop world hunger Help provide clean water Help deliver clean energy Help reduce, reuse and recycle our waste Help make the world a better place Help make the world a better place Help make the world a better place Help make the world a better place</p> <p>Chemical engineers do all of this and more!</p>	<p>If you would like additional posters, go to</p> <p>If you need additional posters, please email DiscoverChemEng@icheme.org and ask for the 'I want to...' poster.</p>
6	<p>What you will see on each page for classroom activities</p>  <p>Describes how chemical engineers work towards the SDGs</p> <p>Visual data to show how many children as a percentage would be impacted in a class of 30</p> <p>Prompt questions to help the children think about and talk about each of the sustainable development goals. Refer to the classroom poster</p>	<p>Pupils will learn during that percentages, decimals and fractions are all ways of expressing proportions.</p> <p>Very large numbers and statistics can be daunting, so, using the number 30 (often the number of children in a class) can make the proportions more relatable.</p> <p>You may be able to link numeracy and maths activities to SDGs in other ways.</p>
7	<p>A class of 30 children</p> 	<p>You can use this slide to prompt the children to think about what different numbers means, when they hear about global issues.</p> <p>For example; if a problem impacts 50% of the global population, that would be the same as 15 out of 30 children in a class, or half the children.</p>
8	<p>How do you feel when you are hungry?</p>  <p>2.2% of the world's population are always hungry. Equal to nearly 9 children in a class of 30</p> <p>Nearly 30% of the world's population cannot easily get enough food. Equal to nearly 9 children in a class of 30</p> <p>How do you feel when you are hungry?</p> <p>Is hunger only a problem in some countries?</p>	<p><u>Ideas for answers to questions.</u></p> <p><u>How do you feel when you are hungry?</u></p> <p>Rumbling tummy Grumpy/'hangry' Difficult to learn Tired</p> <p>Encourage children to share their thoughts This may be a sensitive topic for some families.</p> <p><u>Is hunger only a problem in some countries?</u></p> <p>There may be awareness of food banks or charity work locally or problems with food supplies elsewhere in the world</p>

Slide number		Presentation Notes
9		<p>There are many indicators that link to this SDG and some are more challenging depending where you live in the world. For this slide, the focus is about everyone enjoying a right to health and being able to get health care, vaccines and medicines when they need them.</p> <p>More equal health care should reduce the difference in life expectancy between countries.</p> <p>Health services means being able to see a doctor or nurse, go to hospital, get medicines, vaccines or something else to stay healthy.</p> <p><u>Ideas for answers to questions.</u></p> <p><u>Where do you go for help when you are poorly?</u></p> <p>Doctor Nurse Pharmacist Dentist Optician Anyone else...?</p> <p><u>How can people look after their health?</u></p> <p>Eat healthy food Do exercise or sport Anything else?</p>
10		<p><u>Ideas for answers to questions.</u></p> <p><u>What would your day look like without water to drink?</u></p> <p>Get very thirsty This makes you tired</p> <p><u>Have you ever been on a trip where you needed to find water to drink, or has your tap ever stopped working?</u></p> <p>If pupils have been on a camping holiday, residential trip or a camp with Scouts, Guides or another youth group, they may have experienced needing to get their own water.</p> <p>Some children and adults have to walk a long way to collect way and carry it back to their homes.</p>
11		<p><u>Ideas for answers to questions.</u></p> <p><u>What would your day look like without electricity?</u></p> <p>Lots of different answers; lights, tv, charging up phones/tablets, cooking and heating</p> <p><u>What can you do to use energy more efficiently?</u></p> <p>Some suggestions: Don't leave appliances switched on or charging up for longer than needed Share, watch one TV together</p>

Slide number		Presentation Notes
12		<p><u>Ideas for answers to questions.</u></p> <p><u>How can you reduce food waste, or make sure food is in the correct place for people who need it?</u></p> <p>Don't buy more than you need Try to buy food that is grown locally and seasonal <u>Write 120 in words and expanded to show hundreds, tens and ones</u> One (hundreds) Two (tens) Zero (ones) $100 + 20 + 0 = 120$</p> <p><u>Extra activity: Amount of food waste can be demonstrated with a few tins of beans, if available</u></p> <p>If a tin of beans is 400g, how many tins in 1,200g (equal to 1.2kg)? $1200 \text{ divided by } 400 = 3 \text{ tins}$ And how many tins in 120kg? = 300 tins And how many tins for all 30 pupils in the class? $300 \times 30 = 9,000$ That's a lot of tins. You could show the children a few tins and ask them to imagine 300 then 9,000 tins.</p>
13		<p><u>Ideas for answers to questions.</u></p> <p><u>What would your day look like without plastic?</u></p> <p>What are plastic bottles use for? Food and drink storage because they are lightweight and keep food and drink in good condition Lots of things around the home like kettles, tools, toiletries</p> <p><u>How can you recycle more?</u></p> <p>Use recycling bins and throwing materials into landfill that could be recycled What happens to our waste? Waste is sometimes exported or burned as well as being recycled</p> <p>There are many different ways of measuring waste and recycling, so it can be difficult to compare difference pieces of research.</p>
14		<p>Understanding of global warming and climate change will vary among pupils, more there are many resources available online including at BBC Bitesize, National Geographic and World Wildlife Fund.</p> <p><u>Ideas for reduce, reuse and recycle:</u></p> <p>Bring a re-usable water bottle to school Recycle plastics and other materials (cardboard, paper, metal, glass, plastic bags and so on) Only buy what you need</p> <p><u>Ideas for using less energy at home or school:</u></p> <p>Turn the thermostat down Turn off lights and devices off when not being used Don't leave phones charging or screens switched on overnight</p> <p><u>Ideas to reduce food waste or grow your own:</u></p> <p>Try to buy food produced locally (to reduce the amount it travels) Reduce food waste, only take what you need Try growing your own vegetables or fruit</p> <p><u>Ideas for change the way you travel:</u></p> <p>Take a bus, cycle or walk if you can Using electric cars</p>

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15	 <p>What do you think each of these children need from the Sustainable Development Goals?</p>	<p><u>What do you think each of these children need from the Sustainable Development Goals?</u></p> <p>Use as a prompt to think about differences around the world.</p> <p>Top left: living in a dry, remote, farming community: water and food security, access to health services. (Ethiopia)</p> <p>Top right: living in an arctic region, effects of global warming, food security, access to health services. (Nadym, Russian Arctic)</p> <p>Bottom left: living in a region where waste is imported or dumped, reduce, reuse, recycle. (Thailand)</p> <p>Bottom right: living in a crowded city with poor air quality, clean energy.</p>
16	 <p>Work with lots of different people to solve problems</p> <p>Class review: How can people work together? What can each person or community do?</p> <p>Of these SDGs, are there any goals that one person can support and work towards on their own?</p> <p>Or our school can work towards?</p> <p>Or our local community?</p> <p>Or our country?</p> <p>Or the world?</p>	<p>Although this relates to SDG 9, it come at the end of this activity to encourage children to think about solving problems together, to help all the other sustainable development goals.</p> <p><u>What do you think all of us could do to work towards the Sustainable Development Goals?</u></p> <p>Use as a prompt to think about differences that individuals or larger groups of people could make.</p> <p>You can expand this activity to produce a poster, collage or other artwork to present their ideas.</p>

Notes

Bibliography and Sources of information

Slide number	
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