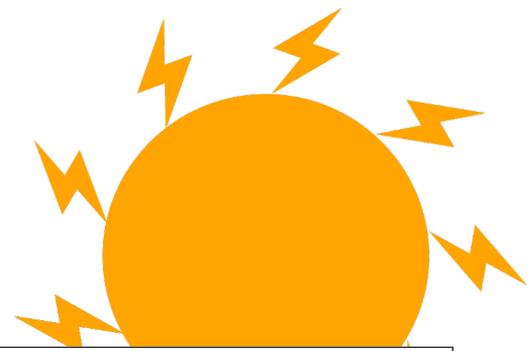
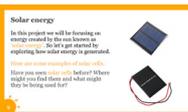
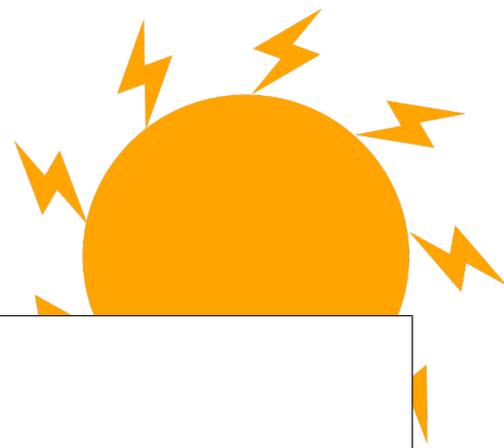


SOLAR CHALLENGE

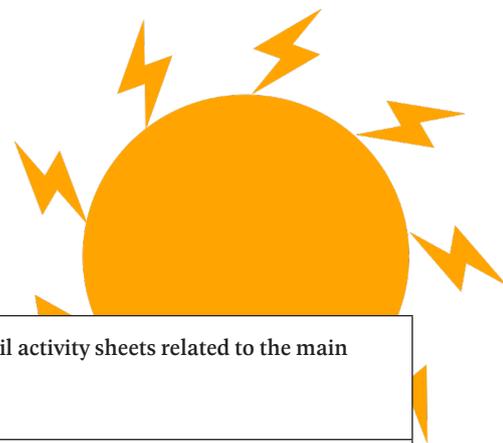
PowerPoint notes

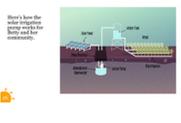


1.		
2.		<p>You could extend the chart on the PPT slide on a whiteboard to develop a list of the different appliances pupils think of. Then, encourage them to consider whether the appliances are powered by battery or mains electricity.</p> <p>Some pupils may suggest that certain appliances can use both (e.g., a laptop computer). Acknowledge this as a valid point but encourage them to distinguish between something charged from the mains as opposed to something that uses batteries that are already charged. Discuss rechargeable batteries too.</p>
3.		<p>These stats date from April – June 2020. For up to date information on energy consumption go to: https://www.gov.uk/government/statistics/electricity-section-5-energy-trends ...and change the data on this slide.</p> <p>If time permits, encourage the pupils to identify the overhead National Grid cable lines around the school and community.</p>
4.		
5.		<p>Now pupils have identified how important energy is, this activity helps them understand that, whilst in most parts of the world a national grid transports electrical power across the whole country, sometimes people living in rural areas do not get electricity. This raises the issues of fairness and equal access to energy.</p>
6.		
7.		<p>This is a good time to discover what pupils know about renewable energy. You may like to show our renewable energy poster at this point. You can download or request a free poster from schools@practicalaction.org.uk.</p>
8.		
9.		<p>The next two slides are intended to promote a discussion on solar power, to find out what the pupils' existing knowledge is and to build upon that.</p>
10.		



11.		<p>This slide leads into the three pupil activities:</p> <ol style="list-style-type: none"> 1. Getting the power 2. How much light? 3. Turning up the power
12.		
13.		<p>It is useful to help pupils understand the difference between using solar panels to produce electricity and using them to produce heat.</p>
14.		<p>Introduce the Sustainable Development Goals, also known as the Global Goals.</p> <p>Ask pupils whether they think that all people in all parts of the world have the same access to energy that we enjoy here in the UK. Explain that a lack of access to energy is one of many problems that trap people in poverty. Introduce the Sustainable Development Goals (SDGs), also known as the Global Goals.</p>
15.		<p>These are the 17 SDGs.</p> <p>You may like to print out this page to give to pupils as well as the Sustainable Development Goals activity sheet, and/or use it for display. There are a lot more images available on the internet.</p>
16.		<p>Explain to pupils that they will be helping a community in a developing country decide what they could use solar energy for.</p> <p>Don't tell them the name of the country yet!</p>
17.		<p>This short quiz give clues to the country the challenge is based on...which will be revealed in the next slide!</p>
18.		<p>This slide promotes discussion to find out what pupils already know about Zimbabwe. You may like to ask them to indicate where it is on a map and globe.</p>
19.		
20.		
21.		<p>Now is a good opportunity to recap knowledge and understanding of the Sustainable Development Goals introduced earlier.</p>
22.		



23.		Divide pupils into small groups and hand out the pupil activity sheets related to the main challenge at this point.
24.		<p>We suggest that pupils present their model to the rest of the class reflecting on how well they worked together, problems they solved etc. (this will be necessary if you are planning for your pupils to gain a CREST award).</p> <p>Hand out the Team feedback sheet at this point. Allow time for pupils to work on their presentations as well as building their model.</p>
25.		The community in Gwanda that this challenge is based on decided to use their entire allocation of solar cells to install a solar-powered irrigation system (ie water pump) . In addition to being able to grow enough food all year round to feed themselves and prevent malnutrition (especially amongst children), any additional foods could be sold at markets bringing additional income.
26.		<p>For more detailed technical information on solar energy, including using solar energy to pump water go to:</p> <p>https://practicalaction.org/schools/technical-briefs-energy/</p>
27.		
28.		<p>CREST The Solar challenge is a great way for pupils to gain a CREST Award. The challenge is aligned to the Discovery Award but can be used to gain a Superstar Award or as the starting point for a Bronze, Silver or Gold Award.</p> <p>Big Bang Fair and Competition Pupils who have taken part in a STEM challenge can enter their work into the Big Bang Competition. This is a great way of pupils showcasing their work to other pupils and adults at a regional Big Bang event.</p> <p>You may also like to look at the Great Science Share and British Science Week initiatives. More information in the Teacher's guide.</p>