

Lesson plan: LIGHT



An exploration of the value of light and the power of the sun to transform lives.

This lesson explores what light means to our lives, what it is like to live in Africa without light, and introduces the idea of solar as a simple solution.

Resources:

- ✓ SolarAid Meet John film (on DVD or YouTube here: bit.ly/1GHO9fb)
- ✓ Light PowerPoint
- ✓ Blindfold
- ✓ Kerosene lamp & solar light (if you have them)
- ✓ Impact case studies
- ✓ Worksheet 1
- ✓ White board & pens

Learning outcomes:

Most pupils will:

- ✓ Explore the way we use light
- ✓ Learn to research, discuss and debate topical issues, problems and events.
- ✓ Understand that resources can be allocated in different ways
- ✓ Think about the lives of people living in other places and times, and people with different values and customs

Time x 1 hour

Stimulus - Life without lights

Use the PowerPoint Presentation to support this lesson.

Slide 1 - film

Watch and discuss the SolarAid film *Meet John*:

- ✓ What does John want to be when he grows up? *An Engineer.*
- ✓ Why is it hard for him to complete his school work? *He needs light to study past 6pm. He has no electricity.*
- ✓ What is kerosene?

Slide 2 - satellite

Show the picture of the world at night, taken by satellite. This demonstrates which areas of the world have the lights on, and therefore who has electricity.

- ✓ Can you identify which areas are in darkness?
- ✓ Why are some areas light and some dark?



Geography link:

Use atlases to locate which continents/countries/areas are in darkness because of the landscape e.g. few people live in the deserts of central Australia, and which places just don't have electricity.

Activities

What would life be like without light? Brainstorm activities your pupils do in the evening past 6pm.

- ✓ Could you do any of these activities without electricity? *Explain that equatorial countries get dark at 6pm.*

Ask a couple of pupils to try and carry out a simple task whilst blindfolded – such as drawing a self-portrait, choosing the right jumper to put on, or pouring and drinking a glass of water without spilling it. This could be extended into a role play.

Slide 3 - consequences

Explain that living in darkness is a reality for 1.6 billion people around the world. Ask pupils to close their eyes and imagine they get home from school and there is no electricity.

- ✓ What would change? What would you not be able to do? What would you use for light?

Discuss in pairs then complete the consequence line activity on the board adding the students own thoughts in as much detail as possible. Discuss how a lack of electricity affects children's education in Africa.

Slide 4 - kerosene

- ✓ Can anyone remember the name of the dangerous light source John used in the film? *A kerosene lamp.*
- ✓ What were some of the problems with it? *Refer to impact case study 1 and demonstrate the kerosene lamp if you have one.*

Slide 5 - the sun

But Africa does have one huge advantage – it is the sunniest place on earth!

Geography link:

Link to students' knowledge of climactic regions around the world – how does it relate to the amount of solar radiation (sun) the different regions get?



Slide 6 - solar panels

The sun's energy can be used to make electricity with solar panels. Demonstrate a solar light if you have one. You can watch a video of someone in Zambia demonstrating a solar product here:

<http://bit.ly/Rmf4WN>.

Science link:

We can send you a classroom solar kit with small panels that can be used to learn about electricity and circuits.

Slide 7 - solar panels helping people around the world

- ✓ What was the name of the charity which helped John? *SolarAid*

Explain that for most of the people who do not have electricity, solar power would be the cheapest and most reliable form of energy. Show the film 'A Long Wait' on the DVD (also linked from slide 6). Explain that SolarAid is a charity that aims to banish the kerosene lamp from Africa by helping people to capture the power of the sun with small solar lamps. Read Case Study 2 of a family that now has solar lamps at home. What was their life like before they had solar power? How has it changed? Discuss and record in a comparison table. Encourage pupils to consider these key themes.

- ✓ **People:** how does it change the way people work and play together?
- ✓ **Environmental:** how does this affect the environment and is it in good or bad ways?
- ✓ **Money:** how does it affect the ways in which people earn a living?

Slide 8 -12 - diary entry

Use slides 8 - 12 to support understanding of how solar can transform lives. In groups, give out Case Studies 3 – 7 to read and discuss. Ask the pupils to put themselves in the shoes of one of the children and write a diary entry, reflecting on the day they got a solar light and how it changed their lives.

Remember to clarify the problem of kerosene lamps but also to identify and celebrate the exciting solution offered by the sun and solar power – this will help inspire your students to want to take action and help student's access solar power in Africa.

In their groups, ask some pupils to read out their diary entries.

Extension: Pupils could turn their diary entries into a short drama. Or ask two volunteers to be hot-seated as a solar expert and an East African child – with the rest of the class asking questions. These are great opportunities for speaking and listening.



Carols by Solar Light



If pupils would like to support a family to get access to a solar light for the first time, a gift of £3 helps one family get a safe, clean solar light.

You can help SolarAid 'Light the Way' by holding a carol service by solar light this winter and fundraising for children in Africa to have a brighter future.

Carols by Solar Light is a great way to turn your winter concert into something even more special. Solar lanterns create a beautiful (and safe!) atmosphere whilst teaching students and parents about the reality faced by children all around the world when they light their homes.

What do we do?

- 1. Sign up and order your solar lights from SolarAid – call 020 7278 0400 and speak to Grace***
- 2. Set a date and advertise it to the whole school community**
- 3. Get practising! We have some song suggestions in our Tips section on our website.**

To help promote your event we can also send you flyers, leaflets and badges, plus everything you need for your students to make their own posters. We can also send you an assembly presentation to teach your students more about SolarAid and Carols by Solar Light.

What's more, any funds raised by your school between 5th November and 5th February will be **DOUBLED** by the UK government as part of SolarAid's 'Light the Way' campaign. Check out our online Impact Calculator to see the benefits that your donation brings to families in Africa... and then times it by two!

For more information on how to take part and top tips on fundraising visit the Light the Way page at: www.solar-aid.org

**Every school to sign up to Carols by Solar Light will be sent a free light. We don't usually give our lights out for free so you'll need to purchase the rest, but all the money you send for them will count in full towards your fundraising total. We're also offering a special discount for schools taking part: each light is £10+pp.*