

**Design a handheld device for
generating electricity
Lesson Plan – Key Stages 2 & 3**

Skills that you'll use

- You will learn about designing for a particular user.
- You will learn about simplifying designs.



Materials needed

- Pencil or pen
- Some paper



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Activity plan

Introduction (5mins)

In countries like Malawi and Zambia there are remote areas where many families live that don't have access to electricity. No sockets to plug things into, no lights to switch on at night. When the sun goes down everything is pitch black.

Families often use kerosene lamps and can spend around half of their income on buying fuel for their kerosene lamps. The lamps are sometimes made from nothing more than tin cans that food comes in and as the kerosene burns they release deadly fumes. Tragically, kerosene lamps can be knocked over by accident and start rapidly spreading house fires.

Henry James, a young designer, heard about this problem and knew that design could find a solution. What he didn't know was how much his solar light solution had to do for a very small amount of money.

Watch the Design Museum's film about the SM100 Solar light designed by Henry and his company InventID.



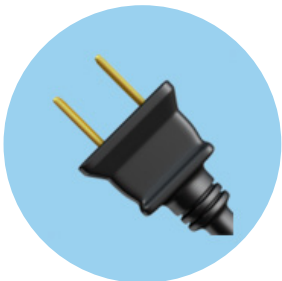
Activity plan

Discuss (5-10mins)

- What things have you done so far today?
- How many of them used electricity?
- Talk about your favourite things to do in the day, how many of them depend on electricity?

Research (10 mins)

- Find five things around your house that use electricity.
- Ask an adult and go online to see if there is an alternative that doesn't use electricity. For example, can you find out how people wash clothes without being able to use a washing machine that can be plugged into the wall?



Activity plan

Activity (20 mins)

Close the blinds or curtains in one room and try to make it as dark as possible.
Can you do a few simple tasks such as drawing a picture or playing with a toy?
You can't use electricity to help you in any way; nothing powered by batteries or mains electricity.
After you have finished, discuss with someone in your home, how difficult it was without any light to help you.

Take a pencil or pen and a piece of paper and think about the tasks you did in darkness. Can you design a solution that would help you to do the task easily? It could be a way of lighting the room without using electricity or a way of making it easier to do something in the dark by making the object easier to use without having to see it. You can't use a solar light as your solution but the weirder and stranger your solution, the better.

Now that you've completed your design why not share it with the Design Museum on social media using **#DesignFromHome?**



Optional task

Extra (ongoing)

Keep a diary of the things that you do today. Next to every entry that requires electricity draw an electrical spark. At the end of the day total up how many electrical sparks you've drawn. Do you think that you could live 'off the grid' with no electricity?

Share your list with the Design Museum on social media with **#DesignFromHome**.

