

**Can you design a  
colour-changing object?  
Lesson Plan – Key Stages 2 & 3**

# Skills that you'll use

- You will learn more about materials and their properties.
- You will identify and solve design problems.



## Materials needed

- Pencil or pen
- Some paper
- Colour pens and pencils (optional)

### Optional task materials

- Scissors
- Glue stick, stapler and/or sellotape



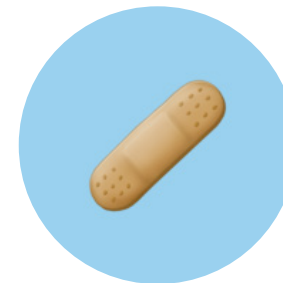
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# Activity plan

## Introduction (5mins)

Everyone loves a sunny day but how can design bring cheer to a rainy day?

This was the question that Emma-Jayne Parkes and Vivian Jaeger asked when they were looking out of the window on a wet day.

What if we made the sort of things you use on a rainy day a little bit more fun? Umbrellas, wellington boots, rain macs and water-proofs could do something exciting when you use them.

That's when Emma-Jayne and Vivian hit upon their big idea; what if they all changed colour when they got wet?!

Watch Emma-Jayne Parkes tell you about Squid London's colour-changing umbrella.



# Activity plan

## **Discuss (5-10mins)**

- What did you think about Emma-Jayne's design?
- Would you use a colour-changing umbrella or wear a colour-changing rain mac?
- What sort of design or picture would you want on your umbrella?
- Where else would you apply colour-changing technology?

## **Research (10 mins)**

Have a look around your home for all of the things that come in contact with water.

Ask permission from an adult and collect five of those things.

A good place to start looking would be the bathroom and the kitchen but don't forget to also look in your room.

What have you collected?



# Activity plan

## Activity (20 mins)

Emma-Jayne's designs change colour when they come in contact with water. The paint on them is called 'Hydro-chromatic' paint. This is quite a big term but 'hydro' basically means water and 'chromatic' means the colour. This makes Emma-Jayne's umbrella a 'smart material', meaning that it changes in some way when we interact with it.

Have a look at the other objects that you've collected.

Write down the name of your five objects.

Now list which of the following they also come in contact with:

- Sunlight
- Heat (even the heat of your hand)
- Cold (cold water for example)
- Sound
- Pressure (like when something is gripped tightly in your hand)
- Any others that you may think of

Now that you've done this, pick your favourite object and use one or more of the things that it comes in contact with to make it more fun or give it an extra function. For example, you could design a toothbrush that slowly changes colour from the heat of your hand to let you know how long you've been brushing your teeth for.

Draw your design and label it to show how it works. These labels are known as annotations.

Colour in your design and share it with the Design Museum on social media using **#DesignFromHome**.

# Optional tasks

## Extra

If you're feeling a bit crafty then also make the packaging for your object. You can use a piece of paper to create this. Make it as fun and eye catching as possible.

Remember what you want people to know about your product, your 'unique selling point' is its special function. This will need to be the main part of the text and the thing that people see first.

Take a photo of your object in the packaging and share it on social media using **#DesignFromHome**.

