

## A Brief History of Plastic



The following resource is designed as a way to take further the learning about plastic pollution by looking into the history of how, when and why plastics became such an attraction for researchers, inventors and manufacturers, and how the material ushered in what became known as the plastics century.

### Description of the activity:

Watch in class the short video '[A Brief History of Plastic](#)', and discuss in class the concepts and facts described in the video with the help of guiding questions.

'[A Brief History of Plastic](#)' is a TED Education video about the invention of plastic, from its early beginnings with the discovery of celluloid, to how it became such widespread material found in most of the products and items we use today.

### Experiences & Outcomes supported by this activity:

SCN 2-20a, SCN 4-20b,  
SOC 1-08a, SOC 2-08a, SOC 3-06a, SOC 3-08a, SOC 4-05a  
TCH 2-05a, TCH 2-07a, TCH 3-05a, TCH 3-07a, TCH 4-05a

### Questions to introduce and sample of potential answers:

#### 1. What problems did the invention of plastic try to solve?

- Cost effectiveness: Natural materials were expensive (tortoiseshell, mother of pearl)
- Safety: Alternatives like celluloid were flammable
- Production with natural materials was time consuming. During WWII quick production was important.
- Convenience: Keeping food fresh so products can be bought from far away
- Use of natural materials depended on animals (i.e. elephants) which meant natural materials were in short supply

#### 2. What sorts of things are made of plastic? Think about your day so far: what items have you used that are made of plastic?

- packaging: bottles, trays, plastic wrap, crisp packets, bags
- clothing: acrylic, pvc leather, nylon, polyester, fleece, buttons
- furniture: hard plastics like chairs, stuffing in mattresses or couches, upholstery
- cosmetics: microbeads, containers, hair brushes, toothbrushes, toothpaste tubes, razors
- etc

### 3. Plastic is strong and flexible and doesn't break down. Why is this both an advantage and a disadvantage?

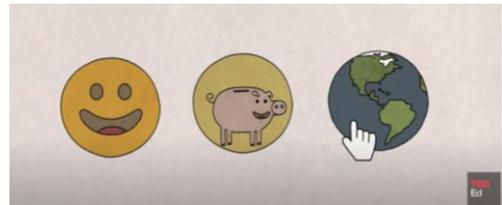
Advantages	Disadvantages
Good for protective packaging	Doesn't biodegrade. Instead, breaks into small pieces causing environmental damage (microplastics).
Makes long lasting products	Used for products that only need to last a short time i.e. plastic bottles.
Can be made into any shape.	Made from fossil fuels which contributes to climate change.

### 4. What can we change to depend less on plastic?

- Use reusable alternatives: water bottles, lunchbox, coffee cup

#### Extensions to the activity:

Think back to this moment in the video, discussing the need to balance convenience, cost effectiveness and the environment.



Plastic is convenient and cost effective, but not good for the environment. Natural materials like ivory are convenient, but not cost effective and cause harm to the environment. Reusable alternatives like metal water bottles are convenient and good for the environment, but are often less cost effective.

The challenge is to find a material that meets all three requirements. This is the question scientists and environmentalists are working on right now.

What do **you** think could meet all three criteria?

Is it possible to have all three at once or will we need to compromise on convenience or cost to protect the environment? Explain how you think this could be done.

	Convenience	Cost Effectiveness	Good for Environment
Plastic	✓	✓	✗
Natural materials	✓	✗	✗
Reusable Alternatives	✓	✗	✓
?	✓	✓	✓