#

KS2 Air pollution: Past and Present

# National Curriculum links

# **History**

# Understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance and use them to make connections, draw contrasts, analyse trends, frame historically-valid questions and create their own structured accounts, including written narratives and analyses

# Gain historical perspective by placing their growing knowledge into different contexts, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.

# Lesson AimTo recognise and identify that air pollutants have been impacting the environment for millions of years and have been made worse through human activity.

# Lesson objectives

Pupils will:

* Be able to identify and describe a variety of air pollutants and their sources from the past to the present day
* Be able to define smog, and describe present day and past instances where smog has been an issue in the UK or worldwide.

# Lesson outcomes:

* Pupils will create a timeline or storyboard poster of air pollutants from pre-history to the present day
* Class create a clean air code – a list of five achievable golden rules that the whole school can follow to improve air quality.

# Key vocabulary

Smog, great smog, air pollution, air quality, air pollution, exhaust, fossil fuel, transport, diesel, pollutants, Clean Air Act, Industrial revolution, roman empire, pre-history

# Resources required

## Air quality source cards and labels– enough cards and headers for up to 6 groups per class

## True / false statement print out for each group

## A3 paper – several sheets per group

## Felt tip pens / pencils

## Glue sticks / scissors

# Introduction

Children will learn about the presence of air pollution from the past through to the present day. There will be opportunities to look at local and international case studies identifying incidences of high air pollution and the impact on the daily lives of individuals i.e. smog in 1952 (London and nationally) and in present day Beijing, China. Children will use their growing air quality knowledge to discuss local air pollution around the school and what they can do to improve local air quality.

# Group / Class activity

| Timings |  Activities | Notes / resources |
| --- | --- | --- |
| 5-10 minutes | **Make a class timeline of air pollution***Working in two large groups or as a class (depending on class size)*Explain to the children that we will be looking at air pollution from the past to the present. Air pollution is nothing new and has been around for a long time and has many causes and sources – which can be manmade or occur naturally in the environment. **Activity**Children should work in teams to put the timeline images in the correct order, from past to present. This can either be pegged up on a washing line or each image can be held by a member of the team. This is a timed activity and groups will have three minutes to complete the task.Once complete ask the children who are not part of the timeline to take a seat. Go through the order and the adjust timeline accordingly to the correct order – see notes. Explain the association with air pollution and each element of the timeline and ask questions to encourage enquiry as you go through each point on the timeline. **For instance:** 10,000BC – Looking at the image – what clues might there be to suggest air pollution was occurring in day to day stone age Britain?50AD – What kind of things might the Romans have been making at the time that would increase the amount of air pollutants in the atmosphere.  | **Resources:*** Large images of different causes of air pollution through history - x1 or x2 sets of images
* String / Pegs (if doing the washing line activity)

**Correct order:**10,000 BC Stone Age – burning fires in the Stone Age. 50AD – Roman times smelting of ore to make denarius, lead smelting for pipes1800-1900 – Industrial revolution1908 – first commercial automobile1945 – first nuclear bomb1952 – great smog of London1956 – clean air act (first international pollution agreement) passed by Winston Churchill1986 – Chernobyl disaster1990 – Environmental protection act and air pollution control by local authorities1997 – First commercial hybrid carTeacher notes available with further details about each timeline period and the connection to air pollution.  |
| 10 minutes15 minutes if watching film | **Making a timeline poster – Air pollution the past to the present***Working in small groups*Ask each group to:* Label each of their picture cards with the correct time and description
* Order timeline cards and create a timeline poster. Check the correct order with each group before they start sticking down.
* Ask groups to annotate their poster with some short sentences about each timeline image’s connection to air pollution.

**If time allows:**Go through the answers and watch the history of air pollution film… <http://www.learnaboutair.com/primary/history.html> | **Resources:** * Glue sticks / scissors
* Large sheets of paper
* Timeline air quality source cards and labels – one set for each group
* Pens and pencils
 |
| 5-10 minutes | **Slide 6: What is smog?** * Ask the children if they notice anything in common between most of these pollution causing events? They are manmade.
* Explain that even smog, which can feel more like weather is mad made too. Introduce the ‘Great Smog of London’. Ask children if they have heard of it before, know anything about it.
* Watch video about great smog of London.
* Explain that this incident was well documented through newspapers at the time – it was a huge environmental disaster that led to the Clean Air Act being passed by William Churchill in 1956.

**Slide 7: Smog in Leicester*** Show the children the slide 7 – ask children to guess where this is… are there any images that look familiar? – It’s Leicester.
* Use the images to play a spot the difference / guess where it is game.
* Explain that smog was common across the whole country, due to excessive burning of coal in open fires, in a heavily populated area, during a cold winter. The cold air hanging over the city trapped the smoke, preventing it from dispersing into the atmosphere and creating the thick hanging fog. Smoke and fog = smog.

**Slide 8: Smog today - Beijing –** a modern day example of the global air pollution crisis. * Smog is still present in our everyday lives – watch the Newsround film to find out how children at an international school in Beijing live.
 | Great smog of London 1952 film<https://londonist.com/london/videos/video-the-great-smog-of-1952> source: Museum of LondonExtra information on Smog:<https://www.nationalgeographic.org/encyclopedia/smog/>Great Smog of London:<https://www.metoffice.gov.uk/learning/learn-about-the-weather/weather-phenomena/case-studies/great-smog> <https://www.museumoflondon.org.uk/discover/londons-past-air> Leicester in the 1950s film: <https://www.youtube.com/watch?v=g4BkyBkQC1M>  |
| 5-10 minutes | **Slides 9-10: Investigating air pollution in the present***Working in pairs or small groups***Activity:** * Make a spider diagram of air pollution sources in the present day – add this to your posters if you have room or use a blank sheet of paper.

Feedback ideas from each group to the whole class. | **Resources:*** Posters created before
* Extra paper
* Pens / pencils
 |
| 5 minutes | **Slide 12: How are we trying to reduce air pollution in the present day?***Class discussion***Discuss:** * What do we know about the impacts of air pollution?

What do we know has been implemented on a small or large scale to improve air quality? |  |
| 5 minutes | **Plenary**As a class recap what the children have learnt today and ask the children to share the Clean Air Code. |  |