## National Curriculum links

## **KS3 Science:** Analysis and evaluation, interpreting observations and data, including identifying patterns and using observations. Earth and atmosphere: the production of carbon dioxide by human activity and the impact on climate

## **KS4 AQA** **Chemistry**: 4.9.2.2 Human activities which contribute to an increase in greenhouse gases in the atmosphere, 4.9.2.4 - The carbon footprint and its reduction

## **KS4 OCR** **Chemistry**: Organic chemistry C6.3d, e

## **KS4 Edexcel Chemistry:** Earth and atmosphere science 8.24, 8.25

## Lesson Aim

## Evaluating the effectiveness of different ways of improving air quality

## Lesson objectives

Students will learn:

## To evaluate current methods of improving air quality

## To compare current methods

## To rank the effectiveness of methods improving air quality

## Key vocabulary

## Air quality action plan (AQAP), pollution levels, sustainable transport, transport emissions, ultra-low emission zones, ultra-low emission vehicles

## Resources required

PowerPoint presentation, method cards, air quality action plans (AQAP), potentially internet access

## Differentiation / expectations

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| **Most pupils will** | **Some pupils will** |
| Recall different methods of improving air quality | Evaluate the best and worst methods |
| Identify methods which are better than others | Propose other methods which may be beneficial |

## Introduction

This lesson will focus on different methods of improving air quality in a city, in this case Leicester. Using real examples in the air quality action plan (AQAP) students will look at the benefits and potential problems of each method. They may need internet access to find out more about some of the methods.

## Group / Class activity

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| **Timings** | **Activities** | **Notes / resources** |
| 2 minutes | **Slides 1-2**  Introduction to learning objectives and outcomes of the session |  |
| 5-10 minutes | **Slides 3-5**  Define what air quality is, why the local authority know it is important and how the air quality action plan has been developed. Then identify the themes of improving air quality | **Air quality action plan (AQAP) -enough copie for students to look at** |
| 30 minutes | Slides 6-11  Describe each of the 5 potential actions within the themes. Make sure students are clear what each one is, and are able to access further information if needed (in AQAP or online)  Students will then identify benefits and potential problems of implementing each action (they can either do one in a group, or multiple actions depending on time) | **Methods of improving quality summaries** |
| 10 minutes | Slide 12  As a class discuss the biggest benefits of each and biggest problems. Which do you think would have the biggest effect for Leicester? There is no right or wrong answer but more about looking at options and evidencing. |  |

## Extension/homework

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| **Activities** | **Notes / resources** |
| **Slide 13**  Students to carry out research:   * Would free public transport for all improve air quality? Give reasons for and against implementing this scheme * Describe how you would tackle air quality in Leicester: one of the current methods or something completely different? * Write to your local MPs and/or councillors asking them about air quality in the city their plans to improve air quality |  |