

# IMPACTS AND POLLUTION

## Activity IPO2

### Theme

Class activity (CA). Students investigate the air quality in their school grounds and consider possible air pollutants in their locality.

### Objectives

Introduces the idea of particles and pollution in the air, investigating the air around us to see how clean it is. Stimulates discussion on the importance of clean air.

### Curricular Strands

SESE, Science and Geography–Environmental awareness and care

Science–Plant and animal life; Processes of life; Science and the environment

### Skills

Questioning, observing, predicting, designing and making, recording and analysing

### Time

15 minutes introduction; 30-35 minutes investigation and analysis

### Links to Green Schools

Air quality in school grounds

# Something in the air?

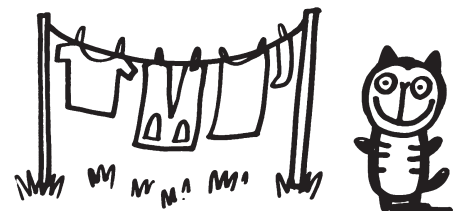
## INVESTIGATING AIR QUALITY

### WHAT YOU NEED

- Cotton wool
- A bowl of water
- Copies of the table attached
- Graph paper
- Vaseline
- Magnifying glass
- Sticky tape
- Cardboard
- Glue
- Paper clips
- Sticky labels

### WHAT YOU DO

- 1 Write (and explain) the term 'air pollution' on the board. Brainstorm with the class what might pollute the air in their school surroundings.
- 2 Ask the students to consider the following questions: Is your school in a city, suburb or rural area? Is there a lot of traffic on the roads beside the school? Do people use smokeless or smoky fuel in their fires at home? Are there a lot of trees in your school grounds? Can you open the windows in your classroom?
- 3 Explain to the class that you are going to do two investigations to determine the amount of air pollution in your surroundings.
- 4 Before carrying out the investigation ask the class to predict where they think the air quality is worst in the school. These predictions can be recorded in copybooks or on the board.



# IMPACTS AND POLLUTION

## Activity IPO2

Continued →

### Investigation 1 Vaseline squares

- 1 Explain that the sticky surface of the Vaseline attracts any dirt/ dust onto the squares, giving an indication of the air quality in the school.
- 2 With the help of the class pick four locations in the classroom and four locations in the school grounds to place Vaseline squares.
- 3 Stick a sheet of graph paper onto cardboard. Smear the graph paper with Vaseline. Thread a paper clip through the top of the square as a hook. Make 8-10 squares.
- 4 Hang 4 squares in the classroom, one each beside the board, at the door, beside the window and in the centre of classroom.
- 5 Hang 4 squares in school grounds, one each in the playground, on a tree, beside the road and in the school garden.
- 6 Leave the squares for 2 days.
- 7 Collect the squares and ask students to use a magnifying glass to count the number of particles (dust and dirt) they can see on each square. They can divide the task up between students, each counting particles in three or four large squares on the graph paper.
- 8 Record the information on the table provided.

### Investigation 2 Leaves and cotton wool

- 1 Discuss with the class how important trees are to our environment. They absorb carbon dioxide from air and release oxygen, which is the part of clean air we need most.
- 2 Ask the class to bring in some leaves from trees near where they live.
- 3 Take the class around the school grounds and collect some leaves from nearby trees.
- 4 Sticky labels can be attached to the back of each leaf with the date and location of the tree written on them (write the information on the label before attaching it to the leaf!).
- 5 Divide the leaves out among the groups. Provide each group with a bowl of water, cotton wool and the attached table.
- 6 Ask students firstly to record what the leaf looks like. Is it dull or shiny? Is it clean or dusty?
- 7 The amount of dirt or dust on a leaf can be assessed by wiping the entire leaf with some damp cotton wool.
- 8 Leave the cotton wool to dry and attach to the chart with sticky tape.

### Questions Investigation 1

- 1 Which Vaseline square had the most dirt or dust on it? Was there a difference between squares in the classroom and school grounds? What would happen if it rained?

### Investigation 2

- 1 Which leaves had the most dirt on them? Is the air cleaner near your school or near where you live?

### Both investigations

- 1 What could be causing the dirt on the leaves and Vaseline squares? Make a list of your suggestions.

# IMPACTS AND POLLUTION

## Activity IP02

### AIR POLLUTION SURVEY Vaseline squares

Classroom	Location	Date	Number of particles
Vaseline square 1			
Vaseline square 2			
Vaseline square 3			
Vaseline square 4			
<b>School grounds</b>			
Vaseline square 1			
Vaseline square 2			
Vaseline square 3			
Vaseline square 4			

IMPACTS AND POLLUTION

Activity IP02

AIR POLLUTION SURVEY

Leaves and cotton wool

Leaf location	Date	How does it look?	Cotton wool sample (fix sample to sheet)