

CALM

Clean Air Living Matters
Exploring Reading

CALM Lesson



Lesson Objectives

- Provide a **Geography** subject enrichment activity for **KS3** pupils
- Session to be provided for up to **30 pupils** (typical class size)
- Pupils to be divided into **groups of 5 or 6** – encouraging teamwork and collaboration
- Indoor & outdoor activities

Lesson Timings

- 00** Short presentation to introduce the air quality subject and set context
- 10** Review map of area and make informed assumptions on AQ
- 20** Observe / Collect Data
- 50** Return to classroom & next steps
- 60** Analyse data
- 75** Create action plans / ‘Urban Air Quality Reduction Proposal’
- 85** Quick share of action plans
- 90** Session ends



Activity 1 & Activity 2

- Work in groups of five or six pupils
- Use AQ sensors, laptops & *phones
- Observe / collect data – using sensors
- Record data – data sheets

National Curriculum Links:

Geography: undertaking a geographical enquiry, asking geographical questions, collecting and recording evidence, recognising how people can improve or damage the environment, explaining their views on a geographical issue, identifying opportunities for their own involvement in managing environments sustainably and communicating in ways appropriate to the task and audience.

What you will need

- Air Gradient AQ sensors
Indoor & Outdoor (installed in advance)
- Portable AQ sensors & *Smartphones
ATMO Tube Pro
- Data sheets (printed and / or XLS)

Measure

- Particulate Matter - PM 2.5 & PM 10
- Overall Air Quality Score (AQS)
- Averages

AQ Mappers - Activity 1 (inside)
Activity 1
Observe Data



5-6

30 Mins



Air Gradient - Indoor & Outdoor Sensors + Dashboard

airgradient ONE



PM2.5 (µg/m³) CO2 (ppm)

Indoor Locations

Location	PM2.5 (µg/m³)	CO2 (ppm)	Temp (°C)	Humidity (%)	Light (lux)	Time
Classroom	12	500	21	65	100	11:15

airgradient OPEN AIR



Outdoor PM2.5 Average (µg/m³)

15°C
71%
0%

Outdoor Locations

Location	PM2.5 (µg/m³)	Temp (°C)	Humidity (%)	Light (lux)	Time
Classroom	12	21	65	100	11:15

AQ Mappers - Activity 2 (outside)

Activity 2

Collect Data



5-6

30 Mins



ATMO Tube Pro

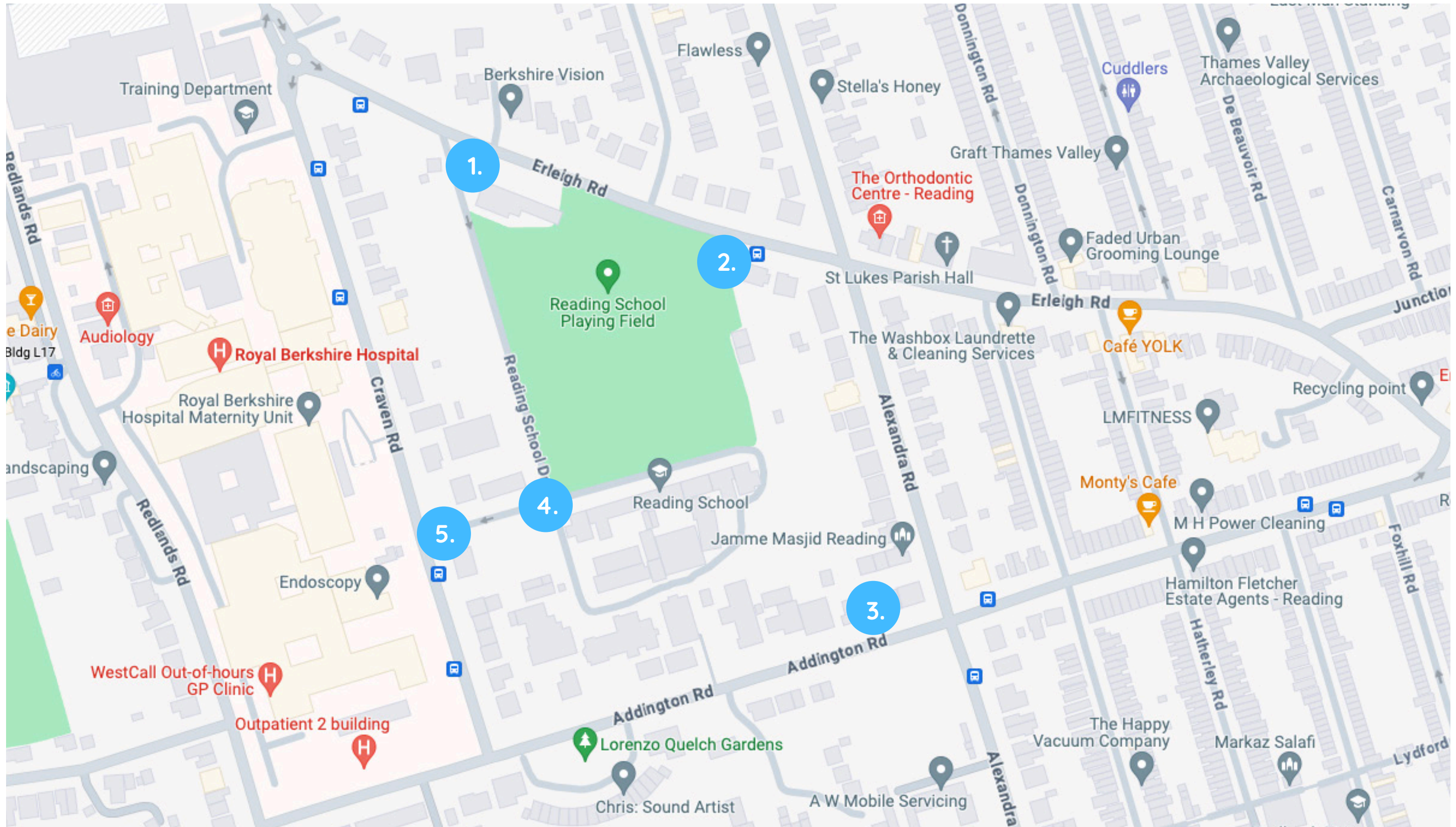


AQ Mappers - Activity 2
Activity 2
Collect Data



Y7-Y9

30 Mins



AQ Mappers - Activity 2
Activity 2
Collect Data



Y7-Y9

30 Mins

Location

Sensor

Location

Sensor

	PM2.5	PM10	AQI
1.			
2.			
3.			
4.			
5.			

	PM2.5	PM10	AQI
1.			
2.			
3.			
4.			
5.			



Activity 3

- Review data collected and output from handheld devices
- Analyse data and draw conclusions from what the data is showing
- Compare outcomes

National Curriculum Links:

Geography: undertaking a geographical enquiry, asking geographical questions, collecting and recording evidence, recognising how people can improve or damage the environment, explaining their views on a geographical issue, identifying opportunities for their own involvement in managing environments sustainably and communicating in ways appropriate to the task and audience.

Discuss

- Discuss what can be done to improve the AQ around the school and the urban environment
- Identify challenges

Act

- Create actionable solutions and outcomes to the challenges identified
- Prepare proposal (Printed template provided)