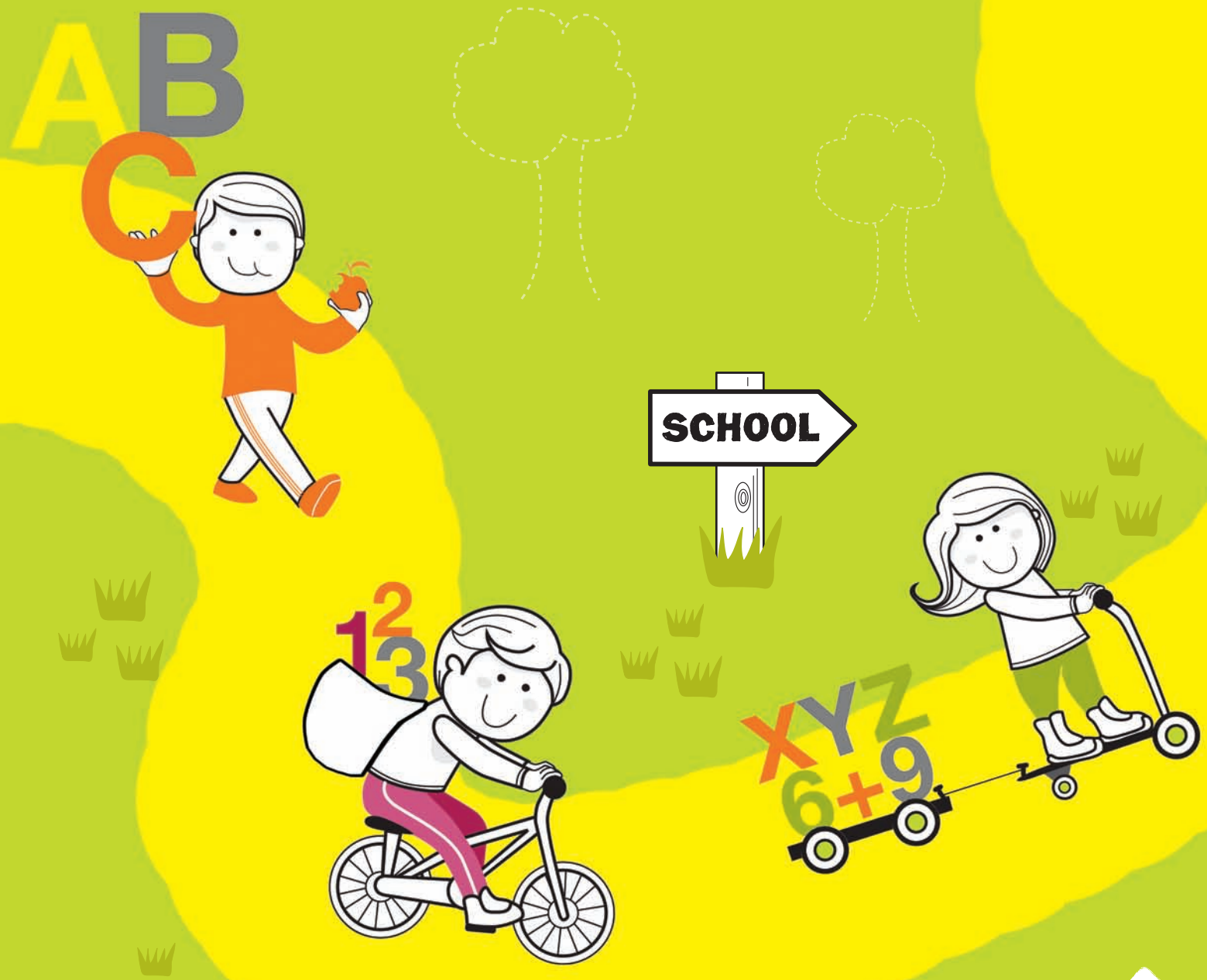
Literacy and Numeracy Framework

Education Resource

Linking to active travel, including walking, cycling and scooting.



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Notes for Teachers

In this document you'll find:

- **28 activities/lessons**
- **15 Literacy activities with full lesson plans for 6 of these. Literacy activities are labelled with letters and run from activity A – M.**
- **13 Numeracy activities with full lesson plans for 4 of these. Numeracy activities are labelled with numbers and run from activity 1 – 13.**

The activities have a quick guide, a full lesson plan if applicable, and any worksheets and resource included. Activities are presented based on a suggested order in which they may be used during a school year but could be used in any order to fit within existing school planning.

September 2013 saw the introduction of the national Literacy and Numeracy Framework (LNF) as a curriculum planning tool.

'All schools will need to place the LNF at the heart of their curriculum planning.'
(LNF Curriculum Planning Guidance, Welsh Government, 2013)

This resource provides teachers with a range of lessons and activity ideas, through which pupils can *'…**apply** the skills and concepts they have learned to complete realistic tasks appropriate for their stage of development.'*
(LNF Curriculum Planning Guidance, Welsh Government, 2013)

What is included?

- 28 suggested activities, 10 of which have in-depth lesson plans, promoting Active and Sustainable Travel with the LNF skills.
- Each activity description shows learning opportunities to each element of the LNF for pupils in **Years 5 and 6**
- Worksheets and resource to support delivery in the classroom

Purpose

- To help schools integrate the LNF into curriculum planning.
- To change attitudes and behaviour towards travel.

Why use this resource?

- Builds pupils' capacity to tackle LNF expectations and national tests.
- Builds teachers' capacity to plan and deliver LNF linked learning
- Supplies resources for LNF coverage.
- Provides evidence LNF is being used to 'integrate literacy and numeracy into (their) teaching – whatever the subject matter'.
  (LNF Curriculum Planning Guidance, Welsh Government, 2013)
- Offers teachers ideas to 'dip into' for inspiration, when considering further LNF opportunities.
- Makes links to curriculum areas, particularly Geography, PSE and ESDGC.
- Can be used as evidence for Healthy Schools and Eco Schools awards.
- Helps tackle congestion and barriers to travel to school.

Who is this resource for?

- This resource is designed for teachers. The aim is to provide a broad array of learning opportunities for pupils in Years 5 and 6, ensuring that there is enough flexibility so that teachers could adapt and use for other ages groups.
- 'Smarter Journeys' / 'Bike It' schools may already be doing similar activities to those included in this resource, but here they are explicitly linked to the skills of the LNF.

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How might this resource be used?

- It is important to remember that the skills included in the Literacy and Numeracy Framework will have previously been taught discretely to pupils. The intention of the LNF is that these skills will then be reinforced across a range of curriculum areas.
- The lesson plans and activity ideas include a suggested approach for delivering the LNF Learning Objectives. However, teachers will be able to use their skills and experience to adapt this resource to make it most suitable for their own school.
- This resource is designed to be used with pupils in Years 5 and 6. Suggested activities could be adapted for pupils in other year groups. However, teachers would need to ensure that the appropriate LNF expectations for the relevant year group were covered.
- This resource is not intended to be a 'context for learning' or a 'scheme of work', although it could be used in that way. However, each activity can be taught in any order (although some of them do naturally follow on from each other) and can be used at any point throughout the school year.
- If you already cover topics such as 'Healthy Living' or 'Travel and Transport' you may find that a number of these activities could be used to compliment what you already have in place.
- **Teaching all 10 lessons** would ensure that at least one part of each Element (Numeracy) / Aspect (Literacy) from the LNF is covered.
- 'Dip into' the lessons / activity ideas and select those that are most beneficial for your pupils.
- 'Practice activities' in the style of the National Tests are included. These take the form of a reading exercise (Reading – 'National Test style' activity) and a Numeracy exercise (Travel Maths – 'National Test style' activity).

Assessment for Learning (AfL) opportunities

Each in-depth lesson plan allows many opportunities for meaningful AfL. Rather than focus on specific strategies that may, or may not, be appropriate within your class / school, it is important to focus on the five main principles of AfL, namely:

Real:AfL

- Learning Objectives and Success Criteria
- Feedback
- Questioning
- Peer Assessment
- Self Assessment

As with all effective AfL, it is important that it is not thought of as something that can be 'added on' to a lesson or 'done at the end'. Each of the five principles of AfL are only truly effective when they are integrated throughout each learning opportunity. Indeed, we should never think of 'doing' AfL – it should, simply, be 'how we teach'.

About Sustrans

Sustrans makes smarter travel choices possible, desirable and inevitable. We're a leading UK charity enabling people to travel by foot, bike or public transport for more of the journeys we make every day.

We work with families, communities, policy-makers and partner organisations so that people are able to choose healthier, cleaner and cheaper journeys, with better places and spaces to move through and live in. It's time we all began making smarter travel choices.

http://www.sustrans.org.uk/wales/what-we-do/education-and-young-people

About this resource

This resource was produced by Sustrans Cymru and Gold Star Education with help from a group of teachers.

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GOLD STAR EDUCATION

Ariennir gan **Lywodraeth Cymru**
Funded by **Welsh Government**

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Feedback to Sustrans

The cost of this resource is £50 (which covers the cost of production). Alternatively, you may have received the resource for free if you have committed to completing and returning the feedback form on pages 5 and 6. If so, please return the feedback form 3 weeks before the end of term to avoid being invoiced for £50.

Contact **schoolswales@sustrans.org.uk**

- **Feedback form (essential)**

Please return this form 3 weeks before the end of the summer term, to give us your thoughts on the resource. Email it to **schoolswales@sustrans.org.uk**

- **Hands up survey (optional)**

This is a survey of how pupils travel to school, to be conducted as part of Activity 1 (Numeracy). Please complete the survey twice, in the first half of the autumn term and the second half of the summer term. This will also give you useful before and after data about how pupils travel to school. Please return these surveys with your feedback form 3 weeks before the end of term.

- **Examples of pupils' work (optional)**

Sustrans would also like to develop case studies to highlight the benefits of this resource to other schools. If your school would like to feature in this, we need examples of pupils' work produced as part of the lessons delivered from this resource. If you would be happy to provide anonymous examples of work, please get in touch.

Please return all forms to:

Sustrans Cymru
123 Bute Street
Cardiff Bay
CF10 5AE

Or email: schoolswales@sustrans.org.uk

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Literacy & Numeracy resource questionnaire

In order to waive the £50 charge for this resource, please complete this feedback form 3 weeks before the end of summer term.

School Name

Your Name

1. How was the resource used in your school?

Number of teachers who used resource ☐ Number of classes who received lessons ☐

Number of pupils who received a lesson ☐

Comments:

2. How easy did teachers find the resource to use?

	Bad				Good
Please circle one number:	1	2	3	4	5

Comments:

3. How effectively did the resource help to deliver the Literacy and Numeracy objectives?

1 2 3 4 5

4. How well did the pupils engage with and enjoy the activities / lessons?

1 2 3 4 5

Comments:

5. "Using this resource has changed pupils' attitudes towards travel"

Strongly disagree ☐ Disagree ☐ Neutral Agree ☐ Strongly agree ☐ (Please tick)

Comments:

Continued >

Literacy & Numeracy resource questionnaire (continued)

6. "Using this resource has changed the way pupils travel to our school"

Strongly disagree ☐ Disagree ☐ Neutral Agree ☐ Strongly agree ☐ (Please tick)

Comments:

7. What were the particular strengths of the resource?

[If commenting on a specific activity, please quote its letter / number]

Comments:

8. Which areas of the resource could be improved or developed further?

[If commenting on a specific activity, please quote its letter / number.]

Comments:

9. Where did you hear about the resource?

Comments:

10. Would you recommend the resource to other schools? YES NO

Comments:

11. Overall, how would you rate the resource?

1 2 3 4 5

Other comments:

Thank you for your feedback. Sustrans is keen to continue to develop its provision of educational resources and welcomes teacher's comments and suggestions at any time.

Please return all forms to:
Sustrans Cymru, 123 Bute Street, Cardiff Bay CF10 5AE
Or email: **schoolswales@sustrans.org.uk**

Sustrans Hands Up Survey

Please take some time to familiarise yourself with the survey form by reading through each of the questions along with the guidance on the other side of the form.

Please complete this survey twice—once near the start of the academic year and again before the end .

Remember:

- **The total for each question should add up to the total number of pupils present**—pupils must answer once for each question

Before you begin the survey please fill in the essential details below:

Date: …… School name:…… No. of pupils in class: ……

Class: ……..... No. of pupils present: ……

Q1. Is there a bicycle you can regularly use? (This can be your own bike, or one you can borrow)	
Response	**Count**
Yes	
No	
Total	

Q2. How do you usually (or most often) travel to school?	
Response	**Count**
Cycle	
Walk	
Scoot/skate	
Park and stride/park and cycle	
Bus	
Train/other	
Car	
Total	

Q3. How often do you cycle to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Q4. How often do you walk to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

* i.e. 'everyday cycling/walking/scooting/driven'

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Q5. How often do you scoot or skate to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Q6. How often are you driven to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Q7. How would you most like to travel to school? (This can be the same way you usually travel to school if you like travelling that way)	
Response	**Count**
Cycle	
Walk	
Scoot/skate	
Park and stride/park and cycle	
Bus	
Train/other	
Car	
Total	

Q8. How often do you ride your bike when not cycling to/from school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Thank you for completing this survey

Literacy
Activities check list

Literacy

ACTIVITIES CHECK LIST

		ORACY	READING		WRITING	
		Developing and presenting information and ideas	Locating, selecting and using information	Responding to what has been read	Organising ideas and information	Writing accurately.
A	Is traffic a problem outside our school?	✔				
B	What's on our patch? Site audit.				✔	✔
C	Why is active travel important?	✔	✔	✔		
D	How can we travel to school sustainably and actively? Test style activity.		✔	✔		
E	What would happen if everyone walked to school?					✔
F	Will people travel actively in the future?				✔	
G	How do other children travel to school? Travel to school around the world.		✔	✔		
H	How can we make a change?	✔			✔	✔
I	Assembly	✔				
J	Tell them all about it!				✔	
K	Travel debate	✔				
L	How do you check your bike?	✔	✔	✔	✔	✔
M	Organise a bike to school day/week.				✔	✔
N	Where shall we go for a walk/ride?	✔			✔	
O	Bling your bike!				✔	

*Blue text indicates full lesson plan included

Is traffic a problem outside our school?

Activity A

Literacy

ORACY

Which LNF outcomes?

Oracy – Developing and presenting information and ideas

Speaking

Year 5

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids.*

Year 6

- Express issues and ideas clearly, using specialist vocabulary and examples.

Listening

Year 5

- Listen to others, asking questions and responding to both the content and the speakers' viewpoints.

Year 6

- Respond to others with questions and comments which focus on reasons, implications and next steps.

Activity ideas

Is traffic a problem outside our school?

- Discuss your school's traffic situation with the class. Pupils share experiences of traffic problems.
- Prepare interviews for different members of the school community (pupils, parents, staff, local residents, business owners, lollipop person).
- Compile questions into a standard interview.
- Pupils interview people. Film or record interviews.
- Share comments.
- Compile a report to deliver to head teacher / governors

Subject links

Geography
ICT

What's on our patch? Site audit

Activity B

Literacy

WRITING

Which LNF outcomes?

Writing – Organising ideas and information

Meaning, purposes, readers

Year 5

- Write with a clear purpose, showing consideration for the reader, *e.g. by choosing appropriate vocabulary and presentational devices.*

Year 6

- Adapt writing style to suit the reader and purpose, *e.g. formal style for unknown reader, simple style for younger readers.*

Structure and organisation

Year 5

- Use features which show the structure of the writing, *e.g. sub-headings, captions.*
- Use images, graphs and illustrations which are clear, relevant and appropriate.

Year 6

- Adapt structures in writing for different contexts, *e.g. reporting an event, investigation or experiment.*
- Write an effective introduction that establishes context and purpose, a suitable balance between facts and viewpoints, a precise conclusion.
- Use paragraphs making links between them.
- Use features and layout which are constructed to present data and ideas clearly.

Writing accurately

Language

Year 5

- Use language appropriate to writing, including standard forms of English.
- Use appropriate vocabulary, including subject-specific words and phrases.

Year 6

- Use language appropriate to writing, including standard forms of English.
- Use varied and appropriate vocabulary, including subject-specific words and phrases.

Activity ideas

What's on our patch? Site audit

- Think about the streets around your school. Look at an internet mapping site. List potential hazards for cyclists and pedestrians, and list features which make it easier to travel by bike or foot.
- Go out to survey the streets immediately around your school, paying particular attention to features which help or hinder active travel to school. Pupils should record what they see using the 'What's on our patch?' checklist, diagrams, maps, notes, tally charts, photos, etc.
- Use information gathered to compile a report (for head teacher / governors / road safety officer) including labelled maps, photos, text and pictures. This could be done using IT.

An example lesson is provided for this activity

This activity works well with:

Activity A – Is traffic a problem outside our school?

Activity H – How can we make a change?

Subject links

Geography

ICT

PSE

What's on our patch?

Lesson Plan | KS2 | Literacy

Learning Objectives: LNF Expectations

Element: Organising ideas and information

Aspect: Meaning, purposes, readers

Year 5:

- Write with a clear purpose, showing consideration for the reader, *e.g. by choosing appropriate vocabulary and presentational devices*.

Year 6:

- Adapt writing style to suit the reader and purpose, *e.g. formal style for unknown reader, simple style for younger readers*.

Aspect: Structure and organisation

Year 5:

- Use features which show the structure of the writing, *e.g. subheadings*, *captions*.
- Use images, graphs and illustrations which are clear, relevant and appropriate.

Year 6:

- Adapt structures in writing for different contexts, *e.g. reporting an event*, *investigation or experiment*.
- Write an effective introduction that establishes context and purpose, a suitable balance between facts and viewpoints, a precise conclusion.
- Use paragraphs making links between them.
- Use features and layout which are constructed to present data and ideas clearly.

Element: Writing accurately

Aspect: Language

Year 5:

- Use language appropriate to writing, including standard forms of English.
- Use appropriate vocabulary, including subject-specific words and phrases.

Year 6:

- Use language appropriate to writing, including standard forms of English.
- Use varied and appropriate vocabulary, including subject-specific words and phrases.

Learning Outcomes

1. Pupils know what features exist around the school area which support or hinder active and sustainable travel.

2. Pupils begin to consider what could be changed in the local environment to encourage active and sustainable travel.
3. Pupils communicate real, relevant information about their locality.
4. This lesson provides an opportunity for pupils to **use and apply** writing skills. They use geography skills to gather information about their locality and communicate this in a report, with a real audience of their head teacher, school governors or parents.

Geography Observe and ask questions about a place; measure, collect and record data.
PSE Importance of personal safety; taking responsibility for safety.

Lesson Outline

Resources

- Map of school area – could be obtained from Internet, e.g. Google Maps
- 'What's on our patch?' checklist (provided)

Engage

Ask pupils to close their eyes and imagine their journey to school in detail. Tell them to identify features of their journey which may hinder or help walkers and cyclists. Pupils recount their journey to a partner.

Develop

- Pupils walk around the school site and streets immediately surrounding it and complete the 'What's on our patch?' checklist.
- Pupils could draw a map and mark features on it or use a print out from an internet mapping site that they can annotate.
- Pupils take photos of key features around the school site to add to a report.
- Pupils produce a report (paper- or IT-based) using the checklist, along with any maps, photos, graphs and other findings. Pupils should consider and use features which make a good report (e.g. headings, subheadings, report structure, paragraphs, labelled graphs and pictures). Pupils must be aware of the purpose of and audience for this report (e.g. head teacher, school governors). See Activity H: 'How can we make a change?'

Reflection

- How safe is our patch? What factors would make me more likely to walk or cycle to school?

Home Learning

- Pupils can take home a copy of the checklist to carry out a survey of the area around their house or street and report back to the class. This could be done in pairs or small groups if friends live on the same street.
- If major hazards or barriers are identified, pupils could use persuasive writing skills to push for action to address them.

Activity B

What's on our patch? Checklist

Questions	Yes/No	Notes
Parking:		
Does the school have a car park?		
Do parents park here, or just staff?		
Is there a safe place for dropping off?		
Do cars park on the pavement?		
Cycling		
Does the school have a secure bike shelter?		
How many bikes can fit in it?		
Can scooters be parked here too?		
Is there a cycle path near the school?		
Is it well marked and maintained?		
Walking		
Is there a manned Zebra/School crossing?		
What is the crossing patrol person's name?		
Are there any big roads to cross?		
Are there traffic lights or an underpass?		
Is there shelter to wait under at school if it is raining?		
How many gates/entrances are there into school?		
Public transport		
Is there a bus stop near the school?		
Do buses run at the right time to get to school?		

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Why is active and sustainable travel important?

Activity C

Literacy

READING

Which LNF outcomes?

Reading – Locating, selecting and using information

Reading strategies

Year 5

- Use information from trusted sources, on-screen and on paper, selecting and downloading as necessary.

Year 6

- Read closely, annotating for specific purposes.

Responding to what has been read

Comprehension

Year 5

- Show understanding of main ideas and significant details in texts, *e.g. mindmapping showing hierarchy of ideas, flowchart identifying a process.*

Year 6

- Show understanding of main ideas and significant details in different texts on the same topic.

Response and analysis

Year 5

- Gather and organise information and ideas from different sources.

Year 6

- Collate and make connections, *e.g. prioritising, categorising, between information and ideas from different sources.*

Oracy – Developing and presenting information and ideas

Speaking

Year 5

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids.*
- Speak clearly, using formal language and projecting voice effectively to a large audience, *e.g. event for parents / carers, presentation to visitors.*

Year 6

- Express issues and ideas clearly, using specialist vocabulary and examples.
- Speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested.

Activity ideas

Why is active and sustainable travel important?

- What is active travel and why is it important? Discuss with class (include walking, cycling, scooting, bus, park and stride).
- Research websites and texts to add to ideas.
- Working in groups, ask pupils to organise ideas and then plan and prepare a presentation about active travel. The presentation could be for younger children, an assembly or parents.
- Pupils could write a report about active travel for the school website, a blog or the local newspaper. The aim would be to persuade people to travel more actively.

An example lesson is provided for this activity

This activity works well with:

Activity D – How can we travel to school sustainably and actively?
Activity I – Assembly
Activity J – Tell them all about it!

Subject links

Geography
ESDGC

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Why is active and sustainable travel important?

 Lesson Plan  KS2  Literacy

Learning Objectives: LNF Expectations

Element: Locating, selecting and using information

Aspect: Reading strategies

Year 5:

- Use information from trusted sources, on-screen and on paper, selecting and downloading as necessary.

Year 6:

- Read closely, annotating for specific purposes.

Element: Responding to what has been read

Aspect: Comprehension

Year 5:

- Show understanding of main ideas and significant details in texts, *e.g. mindmapping showing hierarchy of ideas, flowchart identifying a process*.

Year 6:

- Show understanding of main ideas and significant details in different texts on the same topic.

Aspect: Response and analysis

Year 5:

- Gather and organise information and ideas from different sources.

Year 6:

- Collate and make connections, *e.g. prioritising, categorising*, between information and ideas from different sources.

Element: Developing and presenting information and ideas

Aspect: Speaking

Year 5:

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids*.
- Speak clearly, using formal language and projecting voice effectively to a large audience, *e.g. event for parents / carers, presentation to visitors*.

Year 6:

- Express issues and ideas clearly, using specialist vocabulary and examples.
- Speak clearly, using formal language and varying expression, tone and volume to keep listeners interested.

Learning Outcomes

1. Pupils are able to understand the benefits of active travel.
2. Pupils are able to find and organise information about a given topic.
3. In this activity, pupils use their research skills to gather information about active and sustainable travel, as well as using their literacy and oracy skills to communicate about their findings.

Geography Describe the causes and consequences of how places and environments change.

ESDGC **Themes: Climate Change / Choices and Decisions / Health** Local actions have global effects because of connections between people and places; recognise that individuals and groups can take action to educate and campaign.

Lesson Outline

Resources

- Factsheets gained from www.sustrans.org.uk
- PowerPoint presentation entitled 'Why is active and sustainable travel important?' (Provided on CD, or downloadable from www.sustrans.org.uk/schoolresources)
- Active travel worksheet (provided)

Engage

Think of different ways you can travel. Which ways are:

a) active,

b) sustainable but not active,

c) not sustainable?

Develop

- Set the aim for enquiry: Why is active and sustainable travel important?

Discuss 'What do we know now?' and 'What do we want to know?' In pairs, pupils should use a Know Want Learn chart (KWL) to record their current knowledge. This is a chart divided into three columns labelled K (What We Know), W (What We Wonder) and L (What We Learned). Each pair can add to their KWL chart or draw up a list of questions.

'Where can we find out?' Draw a mind map with the question in the middle. Pairs add to the map, indicating sources where they might find out more information (e.g. read a website, look in a book, listen to an expert, talk to classmates). As they do their research, pupils can record facts and information on their mind map, branching from its source. In pairs, pupils access various sources to find information and take notes.

- Look at the 'Why is active and sustainable travel important?' PowerPoint presentation. This could be done as a class or in pairs. Pupils take notes and add to their mind maps. They could complete the 'Active Travel' worksheet in pairs to point them towards important facts. Photocopy the worksheet provided overleaf.
  Answers: carbon dioxide, exhaust, 27 balloons, trees, carbon dioxide, oxygen, carbon dioxide, greenhouse, warmer/hotter, warmer/hotter, ice, fit, smoking, balanced, less, money, (own choice).
- Provide access to the Sustrans website and / or articles printed from the Sustrans website. Pupils read texts and annotate / make notes to gather and collate the main ideas and useful details. Use the Internet to find other sources of information about active and sustainable travel. Pupils add information to their mind map and / or KWL. Pupils use these to share their findings with the class.

Communicate (can be done in a subsequent session)

Ask 'What's the best way to tell our school community about this?' Pupils decide (or teacher chooses) how to communicate the information. Decide what to include by devising success criteria for this activity (pupils can refer to these during their self-assessment later in the lesson).

Communication methods might include:

- **Presentation or assembly (see Activity I)**
  Plan, practise and then deliver a presentation or assembly. Choose the best ways to inform: write scripts, make visual aids and props, use gestures and practise parts. Share with another class or an invited audience (parents / carers, governors or the whole school).
- **Display design (see Activity J)**
  Design and make a display board for the classroom, corridor or hall that will show information relating to active and sustainable travel. Pupils will need to consider what text, lettering and pictures to include to best inform the school community.
- **Newspaper / website report**
  Write an article about active and sustainable travel. What is it? Why is it important? Does it happen in our school? What could we do to improve things? Consider the main features and style of language used in articles and reports. Once written, the reports could be included in a school newspaper or bulletin to parents, or put on the school website.

Reflect

- List reasons why sustainable and active travel is important.
- Self-assess the presentations / displays / reports with reference to the success criteria.

Home Learning

Pupils carry out a survey of their family / neighbours to find out how they travel to work / school.

Activity C

Active travel worksheet

When cars drive to school, the engine burns fuel and produces a waste gas called _____ which comes out of the car _____.

For every one mile a car drives it produces _____ balloons full of this gas. Since we are burning more and more fuel, the _____ and plants can't keep the planet in balance. They capture _____ and store it and produce _____ which we need.

The excess _____ collects in the Earth's atmosphere and traps the sun's energy in like a _____ This means that the Earth's climate is getting _____. As it gets _____, the _____ caps melt more and our weather becomes more extreme.

Active travel is good for your body because it helps keep you _____ . Eating a _____ diet and not _____ also helps you stay healthy.

The more people who walk and cycle to school the _____ traffic there will be, which means everyone will save time. You'll also save _____ which you can spend on something nice like _____!

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How can we travel to school sustainably and actively?

Reading: National test-style comprehension

Activity D

Literacy

READING

Which LNF outcomes?

Reading – Responding to what has been read

Comprehension

Year 5:

- Show understanding of main ideas and significant details in texts, *e.g. mindmapping showing hierarchy of ideas, flowchart identifying a process.*
- Infer meaning which is not explicitly stated, *e.g. what happens next?, why did he / she do that?*

Year 6:

- Infer ideas which are not explicitly stated, *e.g. writers' viewpoints or attitudes.*

Locating, selecting and using information

Reading strategies

Year 5:

- Use a range of strategies to make meaning from words and sentences, including knowledge of phonics, word roots, word families, syntax, text organisation and prior knowledge of context.
- Use a range of strategies for skimming, *e.g. finding key words, phrases, gist, main ideas, themes.*
- Scan to find specific details using graphic and textual organisers, *e.g. sub-headings, diagrams.*
- Identify features of texts, *e.g. introduction to topic, sequence, illustrations, degree of formality.*

Year 6:

- Use a range of strategies to make meaning from words and sentences, including knowledge of phonics, word roots, word families, syntax, text organisation and prior knowledge of context.
- Use a range of strategies for finding information, *e.g. skimming for gist, scanning for detail.*
- Read closely, annotating for specific purposes.

Activity ideas

How can we travel to school sustainably and actively? – Reading: National test-style activity

National test-style comprehension

- Pupils have 30 second discussion about the question. Quick feedback.
- Read the text as a whole class, in pairs or individually.
- Ensure pupils understand the style of questions.
- Pupils answer questions in pairs or individually (test situation).
- Share answers in pairs and as a class.

This activity works well with:

Activity C – Why is active and sustainable travel important?
Activity I – Assembly

Subject links

PSE
PE

Activity D

Reading: National Test Style Comprehension

Active travel to school

The school journey is a perfect opportunity for you to learn about your local area, develop friendships and gain independence. The average primary school journey is just 1.5 miles, and yet one in five cars on the road each morning are taking children to school. Walking, cycling and scooting will reduce traffic and pollution around the school gates.

They will also help to make you more healthy! Experts say that most children need about an hour of physical activity each day, and a short walk or cycle to school could be part of this. Teachers find that pupils who walk or cycle arrive at school more relaxed, alert and ready to start the day than those who travel by car.

Cycling to school

The biggest concern of adults when it comes to children walking and cycling to school is traffic danger. Nearly half of children surveyed by Sustrans in 2010 wanted to cycle to school, but only 4 per cent were allowed to. Cycling to school helps you to develop road safety skills and learn how to stay safe. As you gain these skills, you can develop independence and discover ways of getting around by yourself.

Of course, an adult can always accompany younger children and help older kids get used to their route until they're ready to travel alone.

Equipment and clothing

Carrying heavy books and equipment is often seen as a reason not to cycle to school. However, these could easily be carried in a small backpack. Your school may even provide you with a locker.

You should be as visible as possible to other road users and pedestrians. Confident road positioning, high-visibility clothing, lights and reflectors are great ways to do this. A white front light, red rear light and reflectors are legal requirements when cycling in the dark. Cycle helmets are designed to give protection from a fall. Though not compulsory, Sustrans recommends you wear them.

Walking to school

Walking to school helps you get to know your local community, develop friendships and improve road sense. By 2050 it is predicted that 70 per cent of girls and 55 per cent of boys will be overweight or obese, but a short walk each day is easy, free and good for your health.

Top tips for walking or cycling to school

- Plan your route (with your parents) in advance, finding quieter roads and cycle paths wherever possible.
- Practise the journey at the weekend when the roads are likely to be quieter.
- Walk or cycle the route with your parents for a few days – all the way at first then, as you become more confident, gradually reduce how far your parents go with you.
- Make sure you know how to deal with any busy junctions or roads.
- Try walking or cycling with a friend.
- Cycle training can be a great way to help you develop skills and increase your confidence on the roads.

How can we travel to school sustainably and actively?

Reading: National Test Style Comprehension

Questions

1. Draw three lines to connect the problem with the solution.

Items to carry to school?	Wear high-visibility clothing
Worried about not being seen?	Practise with your parents
Unsure of the route?	Wear a backpack

2. Find and copy two benefits of active travel to school.

_____

_____

_____

3. According to the text, what does the law say that you must have on your bicycle when cycling in the dark?

Tick two.

Lights ☐ Reflectors ☐ Mud guards ☐ Pump ☐ Helmet ☐

4. Choose the best word, or group of words, to fit the passage and tick your choice.

Walking, cycling or scooting to school is healthy because		***and it is good for the environment because***	
it is a good way to get exercise	☐	*petrol is running out.*	☐
it is great fun	☐	*it cuts down on pollution.*	☐
you get to school more quickly	☐	*it saves you money.*	☐
you can talk to your friends on the way	☐	*it is quieter than travelling in a car.*	☐

5. Look at the text in the box below.

Underline the phrase that tells you pupils who walk or cycle are more prepared for learning.

It will also help to make you more healthy! Experts say that most children need about an hour of physical activity each day, and a short walk or cycle to school could be part of this. Teachers find that pupils who walk and cycle arrive at school more relaxed, alert and ready to start the day than those who travel by car.

6. Number these instructions from 1 to 4 to show the order in which they should be carried out:

One has been done for you.

Ask your parents to ride / walk along with you for the whole route. ☐

Plan a safe route. 1

Cycle / walk on your own. ☐

Ask your parents to ride / walk along with you for some of the route. ☐

7. Put ticks to show which statements are true and which are false.

	True	False
Most primary school children live within 1.5 miles of their school.		
Only 10% of children surveyed by Sustrans were allowed to cycle to school.		
Sustrans thinks that you should wear a helmet when cycling.		
At night time, you should have a white light on the back of your bicycle.		

What would happen if everyone walked to school?

Activity E

Literacy

WRITING

Which LNF outcomes?

Writing – Writing accurately

Grammar, punctuation, spelling, handwriting

Year 5

- Use different sentence structures, including complex sentences showing relationships of time, or cause, *e.g. before you start … , if you do this then …*
- Use conditionals to show hypotheses or possibilities, *e.g. if, might, could.*

Year 6

- Use varied sentence structures for emphasis and effect.

Activity ideas

What would happen if everyone walked to school?

- Use this question to explore the possible ways of travelling to school (both good and bad).
- Discuss the consequences of changing habits. Draw a multi-flow map to show ideas (a map depicting one central event with causes and effects on either side).
- Use 'if' subjunctive to write the sentences needed to reflect on this question.
- You could repeat the above for a variety of questions related to travel to school.

Subject links

Geography
ESDGC

YMUNWCH Â'R MUDIAD
sustrans
JOIN THE MOVEMENT

Will people travel actively in the future?

Activity F

Literacy

WRITING

Which LNF outcomes?

Writing – Organising ideas and information

Meaning, purposes, readers

Year 5

- Expand upon main idea(s) with supporting reasons, information and examples.

Year 6

- Write a comprehensive account of a topic or theme.

Activity ideas

Will people travel actively in the future?

- Discuss problems caused by transport and travel (accidents, pollution, health).
- Consider how things might look in the future if the problems get worse, or if changes are made to attitudes and behaviour.
- Write a news report from 2050 comparing travel then with travel now.
- Ask pupils to consider structure and writing style for newspaper articles.

Subject links

Geography
PSE

How do other children travel to school?

Activity G

Literacy

READING

Which LNF outcomes?

Reading – Locating, selecting and using information

Reading strategies

Year 5

- Use information from trusted sources, on-screen and on paper, selecting and downloading as necessary.

Year 6

- Read closely, annotating for specific purposes

Responding to what has been read

Comprehension

Year 5

- Show understanding of main ideas and significant details in texts, *e.g. mindmapping showing hierarchy of ideas, flowchart identifying a process.*

Year 6

- Show understanding of main ideas and significant details in different texts on the same topic.

Response and analysis

Year 5

- Gather and organise information and ideas from different sources.

Year 6

- Collate and make connections, *e.g. prioritising, categorising*, between information and ideas from different sources.

Activity ideas

How do other children travel to school? Travel to school around the world.

- Home Learning – find out how friends / relatives who go to other schools, maybe in different parts of the UK, travel to school.
- Pupils recall their own journey to school, describing landmarks, common sights, hazards and people they meet along the way.
- Find out how children in other countries travel to school. Research online sources. Visit **www.sustrans.org.uk/schoolresources** for some examples case studies of journeys around the world. International links your school could also be used here. Pupils could share their school journeys electronically with children in other countries.
- Take notes and organise information using mind maps.
- Communicate the information with the class or create a display to share with the school.

Subject links

Geography
PSE

YMUNWCH Â'R MUDIAD
sustrans
JOIN THE MOVEMENT

How can we make a change?

Activity H

Literacy

WRITING

Which LNF outcomes?

Writing – Writing accurately

Language

Year 5
- Use language appropriate to writing, including standard forms of English.
- Use appropriate vocabulary, including subject-specific words and phrases.

Year 6
- Use language appropriate to writing, including standard forms of English.
- Use varied and appropriate vocabulary, including subject-specific words and phrases.

Organising ideas and information

Meaning, purposes, readers

Year 5
- Write with a clear purpose, showing consideration for the reader, *e.g. by choosing appropriate vocabulary and presentational devices.*

Year 6
- Adapt writing style to suit the reader and purpose, *e.g. formal style for unknown reader, simple style for younger readers.*

Structure and organisation

Year 5
- Write an introduction that establishes context, a series of appropriately ordered points and a suitable conclusion.

Year 6
- Write an effective introduction that establishes context and purpose, a suitable balance between facts and viewpoints, a precise conclusion.

Oracy – Developing and presenting information and ideas

Collaboration and discussion

Year 5
- Contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up*.
- Build on and develop the ideas of others in group discussions, *e.g. by asking questions to explore further, offering more ideas.*

Year 6
- Contribute purposefully to group discussion to achieve agreed outcomes.
- Follow up points in group discussions, showing agreement or disagreement giving reasons.

Activity ideas

How can we make a change?

Start a campaign

- Identify an issue which would improve safety or encourage active travel locally (use the 'What's on our patch?' checklist from Activity B to help you if you like).
- Discuss how change could be made. Make a plan.
- Write letters to people with the power to make changes locally (head teacher, governors, local councillors, MP).
- Make persuasive posters to inform local people and drum up support.
- Invite influential people in to listen to presentations, answer questions or hold a debate about the issue.
- At home, make a poster to raise awareness of the campaign.

An example lesson is provided for this activity

This activity works well with:

Activity A – Is traffic a problem outside our school?

Activity B – What's on our patch?

Subject links

ESDGC

PSE

How can we make a change? Start a Campaign

 Lesson Plan  KS2 

Literacy

Learning Objectives: LNF Expectations

Element: Writing Accurately
Aspect: Language

Year 5:
- Use language appropriate to writing, including standard forms of English.
- Use appropriate vocabulary, including subject-specific words and phrases.

Year 6:
- Use language appropriate to writing, including standard forms of English.
- Use varied and appropriate vocabulary, including subject-specific words and phrases.

Element: Organising ideas and information
Aspect: Meaning, purposes, readers

Year 5:
- Write with a clear purpose, showing consideration for the reader, *e.g. by choosing appropriate vocabulary and presentational devices*.

Year 6:
- Adapt writing style to suit the reader and purpose, *e.g. formal style for unknown reader, simple style for younger readers*.

Aspect: Structure and organisation

Year 5:
- Write an introduction that establishes context, a series of appropriately ordered points and a suitable conclusion.

Year 6:
- Write an effective introduction that establishes context and purpose, a suitable balance between facts and viewpoints, a precise conclusion.

Element: Developing and presenting information and ideas
Aspect: Collaboration and discussion

Year 5:
- Contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up*.
- Build on and develop the ideas of others in group discussions, *e.g. by asking questions to explore further, offering more ideas*.

Year 6:
- Contribute purposefully to group discussion to achieve agreed outcomes.
- Follow up points in group discussions, showing agreement or disagreement giving reasons.

Learning Outcomes

1. Pupils take steps to make positive changes to their local area to facilitate sustainable and active travel.
2. Pupils use suitable formal language to campaign for improvements in the local area.
3. In this activity, pupils will be able to **use and apply** the skills of using formal and persuasive language.

Geography Express their own opinions and be aware that people have different points of view about places.

ESDGC **Themes: Climate Change / Choices and Decisions / Health**
Local actions have global effects because of connections between people and places; recognise that individuals and groups can take action to educate and campaign.

Lesson Outline

Resources

- www.sustrans.org.uk
- Maps of local area or online map image

Engage

Present the following scenario (you could choose class members to play the parts):

Gwen travels to school every day with her mum in the car. Gwen really enjoys cycling. She has a new bike. She would love to cycle to school. How could Gwen persuade her mum to change the way she travels to school?

Ask pupils to share ideas in pairs, and then share as a class.

Focus on the idea of *persuading* others to make changes. Pupils suggest other examples of when and how this might happen. Use the question *'How would you persuade the head teacher to make changes in school?'* Talk about the concepts of formal language and persuasive language.

Develop

- Look at a large scale map of the area around the school. Pupils should think about which aspects of the local area could be changed to make travel to school safer, more enjoyable or easier. These might include traffic slowing measures, a pedestrian crossing, cycle lanes, parking restrictions and wider pavements. Mark hazards on the map. *(Tip: pupils could use information from Activity C: 'Why is active and sustainable travel important?' and Activity B: 'What's on our patch?')*

- Present a question for enquiry: *'How can we make a change in our local area to make active and sustainable travel easier?'*

- Choose one aspect that could be the focus of a campaign. Pupils suggest who could make that change happen (e.g. head teacher, school governors, road safety officers, local councillors, MP).

- *What could you do to make change happen?* Pupils work in pairs or groups to map ideas onto a large piece of paper. These might include writing letters or emails, making posters or leaflets to raise awareness, writing an article or blog for the school website or to send to a local newspaper.

- *What language would you need to use?* Pupils add persuasive phrases and formal letter writing terms to their mind maps. Contrast these with the language used in a blog or on a poster.

- Choose the most suitable and practical idea. **Focus on letter or email writing to practise the literacy skills outlined above**. Pupils write letters to school governors, road safety officers, local councillors or their MP explaining the travel situation at school and proposing a change (e.g. a new pedestrian crossing, a cycle path or traffic slowing measures). Pupils feedback from their mind maps to create a list of formal letter writing features and another of persuasive phrases. Display these for the class to see. Pupils can refer to these lists when writing their letters. Pupils should use the features of a formal letter and persuasive language to get their point across (e.g. structure of letter, layout, language used, paragraphs).

- Write or type the letters and actually send them to the person addressed! Wait for a reply.

Reflect

Look at some of the letters and emails on an interactive whiteboard. Challenge pupils to highlight examples of formal language and persuasive phrases in different coloured highlighter.

Consider next steps in the campaign, such as how to get other people involved (e.g. other classes, governors, PTA). How will they know if they have made a difference?

Home Learning

Make a poster to raise awareness of the campaign using informal, persuasive techniques such as catchy phrases, bright colours and rhetorical questions.

Assembly

Activity 1

Literacy

ORACY

Which LNF outcomes?

Oracy – Developing and presenting information and ideas

Speaking

Year 5

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids.*
- Speak clearly, using formal language and projecting voice effectively to a large audience, *e.g. event for parents / carers, presentation to visitors.*

Year 6

- Express issues and ideas clearly, using specialist vocabulary and examples.
- Speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested.

Activity ideas

Assembly

– to raise awareness about active travel

- Plan and prepare an assembly on the topic of active travel, *e.g. 'Be bright, be seen', 'Prepare your bike', 'Why is active and sustainable travel important?'*
- Draw up a 'must include' list and a 'could include' list.
- In groups, pupils choose what they will do for their section of the assembly.
- Groups prepare script and make resources.
- Groups practise.
- Deliver the assembly. Remember to mention active travel and Sustrans!

An example lesson is provided for this activity

This activity works well with:

Activity C – Why is active and sustainable travel important?

Activity D – How can we travel to school sustainably and actively?

Subject links

Thinking skills

YMUNWCH Â'R MUDIAD sustrans JOIN THE MOVEMENT

Assembly

 Lesson Plan  KS2  Literacy

Learning Objectives: LNF Expectations

Element: Developing and presenting information and ideas

Aspect: Speaking

Year 5:

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids*.
- Speak clearly, using formal language and projecting voice effectively to a large audience, *e.g. event for parents / carers, presentation to visitors*.

Year 6:

- Express issues and ideas clearly, using specialist vocabulary and examples.
- Speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested.

Learning Outcomes

1. Pupils will introduce the concept of active travel to the whole school.
2. Encourage more pupils and teachers to take part (and change the journeys they make to school to sustainable journeys).
3. Present information in a clear and lively way.
4. Pupils will be able to **use and apply** the LNF skills outlined above in the delivery of an assembly, using speaking and presenting skills. The assembly could be planned and prepared as a pupil-led enquiry, thus providing opportunities for many thinking skills to be used, or as a more directed, teacher-led activity.

Lesson Outline

Option 1: Pupil-led enquiry – What's the best way to tell the school about active and sustainable travel?

Engage

Ask *How can we change the travel habits and behaviour of our school community?* Ask pupils to generate ideas in pairs and then feed back to the class. Write a list on the whiteboard.

(There is an optional link to Activity 1 in the Numeracy section, looking at data on how pupils travel to school. Draw conclusions about travel at your school.)

Develop

Tell the pupils they are going to focus on the idea of telling the school about active and sustainable travel in an assembly. It will be up to them to plan, prepare and deliver the assembly. You will guide and facilitate but not direct them. This process will develop in different ways in different classes, but might look like this:

1. Sit children in a circle, in front of a whiteboard. Present to them a 'must include' list.

Must include:

- Why active and sustainable travel is important
- Why traffic is a problem
- How everybody can join in by walking, cycling or scooting to school
- Clear explanations
- Loud, clear, expressive voices
- Fun!

Use this list as success criteria

Pupils 'think, pair, share' their ideas for a 'could include' list. Write their suggestions on the whiteboard. These might include a play, a song, a poem, artwork to show or bringing a bike onstage!

2. In groups, in pairs or individually, children choose which part of the assembly they would like to be involved in. Pupils who cannot choose can be assigned a role. There may be some parts in which all will take part.

3. Give pupils time to plan their part in the assembly using thinking techniques such as mind mapping, making lists and drawing diagrams. After 20 minutes, stop to share their progress.

4. Once planning is in place, pupils develop and practise their part of the assembly. This may involve writing scripts, preparing posters or props, practising a song or writing and practising their speaking parts. It is useful to allow a lot of time for this section of the activity.

5. Pupils share their parts of the assembly with the class. Then, under the direction of one of the pupils, practise performing the assembly in order. This part may require more teacher input to keep things in order. Keep practising!

6. Perform the assembly to the school.

Reflect

Evaluate the process by referring to the success criteria devised in the 'must include' list. Refer to the LNF skills. Pupils self- and peer-assess their success in using and applying those skills.

Option 2: Teacher-led preparation

Use the template below to plan your assembly. Explain to the pupils what the assembly will include. Pupils volunteer for, or are assigned, parts.

You will need:

- Three to five pupils to read about the type of transport they use to travel to school
- One pupil to read the narration sentence
- Cardboard signs (pupils can make these) – plain card with simple text, 'Car', 'Walk', 'Bike', etc. (Use the modes of transport you choose to talk about.)

Intro: Play a walking or cycling song as pupils come into assembly, for example, *Bicycle Race* by Queen or *Walking on Sunshine* by Katrina and the Waves.

What is active travel? Choose between 3 and 5 pupils who travel to school using different methods: walking, cycling, scooting, walking bus, bus, car, etc. Work with them to present the best and worst things about that mode of transport. Here are some examples:

Type of transport	Positives	Negatives
Car *When picking a volunteer to present car travel, make sure you pick someone who doesn't mind making car travel seem really bad (so that they don't feel persecuted). Perhaps they only travel by car occasionally. You could use a teacher here instead. This goes down well with pupils!*	• Don't get wet in the rain • It's quicker for people who live further away from the school	• Takes a long time because of congestion • Can cause more accidents – most dangerous mode of transport • Costs a lot of money • Bad for the environment
Cycling	• Quicker than a car • Free • Good for the environment • Good for health	• Need waterproofs if it rains
Walking	• Great to keep fit • Can walk with friends • Free • Good for the environment	• Not as quick as cycling

At the end of the presentations, each pupil presenter holds up a sign saying 'walking', 'cycling', 'car', and so on, according to the method of travel they have just spoken about. Ask 10 pupils to come up to the stage to stand by the sign that describes best how they get to school (you may want to have a sign saying 'other' for modes that aren't covered, such as scooter/skate).

What can we do?
Ask the audience to vote for which is the best by cheering the loudest for their favourite form of transport (make sure car journeys are seen as negative before this

section otherwise the point could be diluted). Each pupil presenter and their volunteers hold their sign up and ask the audience to cheer if they like that mode of transport.

Ask a pupil who is leading the assembly to read an extract that encourages active travel to school and points out its advantages. Finally, finish by encouraging as many pupils as possible to walk, cycle, scoot or travel to school sustainably to help create better journeys to your school.

Home Learning

Gather feedback from pupils and parents who attended the assembly. Record comments and add to a display.

Tell them all about it!

Activity 5

Literacy

WRITING

Which LNF outcomes?

Writing – Organising ideas and information

Meaning, purposes, readers

Year 5

- Use techniques in planning writing, *e.g. mindmapping, sequencing, placemat activities.*

Year 6

- Use a range of strategies to plan writing, *e.g. notes, diagrams, flowcharts.*

Structure and organisation

Year 5

- Use features which show the structure of the writing, *e.g. sub-headings, captions*.
- Use images, graphs and illustrations which are clear, relevant and appropriate.

Year 6

- Adapt structures in writing for different contexts, *e.g. reporting an event, investigation or experiment.*
- Use features and layout which are constructed to present data and ideas clearly.

Activity ideas

Tell them all about it!

- Prepare a display board to inform parents and visitors about active and sustainable travel.
- Create a mind map of the information parents need to know.
- Choose which information to include in the display. Different groups could work on different areas. These could include: *why sustainable and active travel is important; safe routes to school; travel advice for parents; how to check a bike for faults; results of investigations in the numeracy activities, e.g. how far can I walk in ten minutes?*
- Plan how to present the information clearly using text, pictures, photographs and diagrams.
- Create the display and put it in a prominent position on parents' evening or at a school fair.

Travel debate

Activity K

Literacy

ORACY

Which LNF outcomes?

Oracy – Developing and presenting information and ideas

Speaking

Year 5

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids.*

Year 6

- Express issues and ideas clearly, using specialist vocabulary and examples.

Listening

Year 5

- Listen to others, asking questions and responding to both the content and the speakers' viewpoints.

Year 6

- Respond to others with questions and comments which focus on reasons, implications and next steps.

Collaboration and discussion

Year 5

- Contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up.*
- Build on and develop the ideas of others in group discussions, *e.g. by asking questions to explore further, offering more ideas.*

Year 6

- Contribute purposefully to group discussion to achieve agreed outcomes.
- Follow up points in group discussions, showing agreement or disagreement giving reasons.

Activity ideas

Travel debate

- Establish the need for reasons to support opinions in a debate. In pairs, discuss: *'Which are better; scooters or bikes?'* Share opinions with the class. Pupils must have good reasons.
- Present the questions to be debated: *'Should the speed limit be 20 mph in all residential areas?'*
- Put children in groups. Assign a viewpoint to each group (for or against). Together they list reasons to support their opinion.
- Mix the groups up to form new discussion groups. Pupils debate their views in groups.
- Hold class debate.
- Other related questions could include: *'Which is the best way to travel, by car or bike?', 'Which is the best way to travel to school?'*

An example lesson is provided for this activity

Subject links

Geography
PSE

Travel Debate

Lesson Plan | KS2 | Literacy

Learning Objectives: LNF Expectations

Element: Developing and presenting information and ideas

Aspect: Speaking

Year 5:

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids*.

Year 6:

- Express issues and ideas clearly, using specialist vocabulary and examples.

Aspect: Listening

Year 5:

- Listen to others, asking questions and responding to both the content and the speakers' viewpoints.

Year 6:

- Respond to others with questions and comments which focus on reasons, implications and next steps

Aspect: Collaboration and discussion

Year 5:

- Contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up*.
- Build on and develop the ideas of others in group discussions, *e.g. by asking questions to explore further, offering more ideas*.

Year 6:

- Contribute purposefully to group discussion to achieve agreed outcomes.
- Follow up points in group discussions, showing agreement or disagreement giving reasons.

Learning Outcomes

1. Pupils to be able to research information from a range of sources and use it to present a reasoned argument.
2. Pupils to be able to appreciate that others can hold different opinions, and to consider why they have the opinions they do.
3. This activity provides pupils with the opportunity to **use and apply** the skills of expressing their opinions with reasons and listening to the opinions of others.

PSE Skills – form personal opinions and make informed decisions; explore personal values.

Lesson Outline

Resources

- Labels depicting a bike, a scooter, a person walking, a horse, a space-hopper and a sleigh
- Travel debate text – Should the speed limit be 20 mph in all residential areas?
- Internet access – research 'for' and 'against' evidence via suggested websites

Engage

In a playground, hall or classroom cleared of tables, pupils stand in a circle. Place the labels depicting a horse, a space-hopper and a sleigh in different parts of the room. Pose the question: '*Would you rather travel to school on a horse, a space-hopper or a sleigh?'* Children indicate their preference by standing around the label which matches their choice. Remind pupils that they must have good reasons for their opinions. In their groups, they share their reasons for choosing that mode of transport. Pupils in each group have the opportunity to share their reasons with the class. Once representatives from all three groups have spoken, pupils have the opportunity to change groups if they have been convinced by the reasons of others.

Do the same for the question: '*Would you rather travel to school by bike, scooter or by walking?'*

Develop

- Present the issue to be debated: **Should the speed limit be 20 mph in all residential areas?** Read the travel debate stimulus text – this could be done in a previous lesson as a comprehension exercise using the questions provided.
- Talk to pupils about debating / discursive writing; ask children what this will involve (choosing a 'for' or 'against' viewpoint, thinking of reasons, expressing opinions, listening and responding to others).
- Put pupils in groups of four. Assign each group a 'for 20 mph limits' or 'against 20 mph limits' viewpoint. Ensure you have an equal number of pupils for each viewpoint. Each group then writes a list of reasons to support their viewpoint. They can use the text for ideas. Remind pupils that all group members will need to be very familiar with all the reasons.
- Split each group in two and pair each half with half of another group with an opposing viewpoint. Each group will now have two pupils in favour of and two pupils against 20 mph limits. The new groups then discuss the issue, presenting their opinions, giving their reasons and listening and responding to their classmates. Some groups may need to be facilitated by the teacher if the discussion runs dry.
- Sit pupils in a circle. Hold a class debate on the question. Let children volunteer their opinions and choose who speaks next. Facilitate the debate and encourage pupils to link their comments to the comments of others. Hold a final

vote. *What do you really think? Should all streets in residential areas have a 20 mph speed limit?*

Reflect

- Peer-assessment: Who did the best presentation of the case for and against? What made it good?
- What makes you change your opinion?
- The same format could be used to debate or discuss the following:
  'It is better to drive to school than cycle?'

Home Learning

- Ask parents their opinions on the issues above – would they like their streets to have a 20 mph speed limit? Record their answers and reasons in writing to share with the class when back in school.

Travel Debate

Reading: Reading Comprehension

Should the speed limit be 20 mph in all residential streets?

Reading comprehension exercise plus further supporting information for a debate.

Implementing a 20 mph speed limit can be done without the use of costly and complex traffic calming measures. Many local authorities across the UK, including Portsmouth, Bristol and Edinburgh, have already introduced area-wide 20 mph speed limits in residential areas. Other areas, such as Islington, are now adopting a 20 mph limit on main roads too where people live, work and shop. Here we try to answer some of the most frequently asked questions about 20 mph limits.

Won't it take me longer to get around at 20 mph?

Not necessarily. Lower speeds increase road capacities, as the bunching effect at junctions is reduced as traffic flow improves. That's why urban motorways are often 40 or 50 mph, as opposed to 70 mph. Even an urban journey of three miles, taking 30 minutes in a 30 mph limit, was shown to only increase to 33 minutes in a 20 mph setting.

Limits vs zones?

Implementing 20 mph does not necessarily entail the use of physical traffic calming which, while effective, is costly and can be unpopular. This is where a crucial distinction between zones (requiring traffic calming) and limits (requiring only signage) needs to be emphasised.

We recommend changing the default speed limit across whole areas in order to make the quickest and most cost-effective strides towards 20 mph across our villages, towns and cities.

If, following the introduction of a lower speed limit, there are ongoing concerns about localised compliance, these can be addressed through targeted enforcement or design features following the principles set out in our Naked Streets policy paper.

Do car drivers want a 20 mph speed limit?

The 2011 British Attitudes Survey demonstrates that well over two-thirds of us, including motorists, would like a 20 mph speed limit in the streets where we live. In Portsmouth, over 40 per cent of respondents stated that since the introduction of 20 mph there has been a safer environment for walking and cycling. Around a third of respondents noticed an increase in pedestrian and cyclist activities in the local area.

Can 20 mph speed limits be enforced?

The evidence is that drivers drop their speed when a 20 mph limit is introduced. 20 mph should become largely self-enforcing as good drivers obeying the limit will act as a restraint on others exceeding it. In Portsmouth, in streets where average speeds were previously higher than 24 mph, decreased limits have helped reduce speed by an average of 6.3 mph (http://www.dft.gov.uk/publications/speed-limits-portsmouth/). This occurred without the need for any extra police enforcement. However, where necessary, the police are obliged to enforce all speed limits. A spokesperson for the Association of Chief Police Officers recently made their position clear stating, "The police will punish all offences no matter what or where they are, this includes 20 mph".

How can local authorities afford to introduce 20 mph in this economic climate?

Road traffic collisions are an enormous drain on the economy, costing the UK £18 billion every year. The 20 mph zones in London are already estimated to be saving more than £20 million in crash prevention costs annually. The cost of road signs is remarkably low. For example, Portsmouth converted 1,200 streets to 20 mph for just over £500,000 – far cheaper than the alternative ideas put forward, which came to £2.2 million. It's roughly seven times more cost-effective, in terms of speed reduction achieved, to introduce a 20 mph limit across a wide area than to spend the same sum on isolated, physically calmed zones.

Original text:

http://www.livingstreets.org.uk/make-a-change/urgent-actions/show-you-love-20-mph/20-mph-myth-buster

Travel Debate

Reading: Reading Comprehension

Questions

1. How many minutes did a three mile journey in a 20mph urban area increase by compared to a 30mph area?

2. Find and list two ways in which motorists speed can be reduced:

3. According to the text, how many British people would like 20mph limits on the streets where they live?

4. Use the information from the text to finish this sentence.

"The police will...

5. Look at the text in the box below. Underline the phrase that tells you about the economic savings of 20mph in London.

Road traffic collisions are an enormous drain on the economy, costing the UK £18 billion every year. The 20 mph zones in London are already estimated to be saving more than £20 million in crash prevention costs annually. The cost of road signs is remarkably low. For example, Portsmouth converted 1,200 streets to 20 mph for just over £500,000 – far cheaper than the alternative ideas put forward, which came to £2.2 million.

How do you check your bike?

Activity L

Literacy

READING

Which LNF outcomes?

Reading – Responding to what has been read

Comprehension

Year 5

- Show understanding of main ideas and significant details in texts, *e.g. mindmapping showing hierarchy of ideas, flowchart identifying a process.*

Locating, selecting and using information

Reading strategies

Year 5

- Identify features of texts, *e.g. introduction to topic, sequence, illustrations, degree of formality.*

Oracy – Developing and presenting information and ideas

Speaking

Year 5

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids.*
- Speak clearly, using formal language and projecting voice effectively to a large audience, *e.g. event for parents / carers, presentation to visitors.*

Year 6

- Express issues and ideas clearly, using specialist vocabulary and examples.
- Speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested.

Writing – Writing accurately

Language

Year 5

- Use appropriate vocabulary, including subject-specific words and phrases.

Year 6

- Use varied and appropriate vocabulary, including subject-specific words and phrases.

Organising ideas and information

Structure and organisation

Year 5

- Use features which show the structure of the writing, *e.g. sub-headings, captions.*

Year 6

- Adapt structures in writing for different contexts, *e.g. reporting an event, investigation or experiment.*

Activity ideas

How do you check your bike?

- Find out how to carry out basic cycle checks (M check, ABC check, puncture repair). Read a text or listen to an expert.
- Draw a flow chart showing the stages of the process in boxes, linked by arrows.
- Use this as a plan to teach a younger child how to do it.
- Or write a set of instructions for a younger child or parent.

Organise a bike to school day/week

Activity M

Literacy

WRITING

Which LNF outcomes?

Writing - Organising ideas and information

Meaning, purposes, readers

Year 5

- Write with a clear purpose, showing consideration for the reader, *e.g. by choosing appropriate vocabulary and presentational devices.*

Year 6

- Adapt writing style to suit the reader and purpose, *e.g. formal style for unknown reader, simple style for younger readers.*

Structure and organisation

Year 5

- Write an introduction that establishes context, a series of appropriately ordered points and a suitable conclusion.

Year 6

- Write an effective introduction that establishes context and purpose, a suitable balance between facts and viewpoints, a precise conclusion.

Writing accurately

Language

Years 5 and 6

- Use language appropriate to writing, including standard forms of English

Activity ideas

Organise a bike to school day/week

- Choose a cycling event to hold (bike to school week / a regular weekly cycle to school day / the 'Big Pedal', **wwww.bigpedal.org.uk**).
- Write a letter to children and parents explaining what will happen and why. Encourage children's use of formal letter writing.
- Create posters to advertise the event. Encourage children's use of persuasive language.

Subject links

Thinking Skills

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Where Shall we go for a walk / ride?

Activity 2

Literacy

WRITING

Which LNF outcomes?

Writing – Organising ideas and information

Meaning, purposes, readers

Year 5

- Use techniques in planning writing, *e.g. mindmapping, sequencing, placemat activities.*

Year 6

- Use a range of strategies to plan writing, *e.g. notes, diagrams, flowcharts.*

Oracy – Developing and presenting information and ideas

Speaking

Year 5

- Explain information and ideas, exploring and using ways to be convincing, *e.g. use of vocabulary, gesture, visual aids.*
- Speak clearly, using formal language and projecting voice effectively to a large audience, *e.g. event for parents / carers, presentation to visitors*.

Year 6

- Express issues and ideas clearly, using specialist vocabulary and examples.
- Speak clearly, using formal language and varying expression, tone and volume, to keep listeners interested.

Activity ideas

Where shall we go for a walk / ride?

Pupils plan a walk or bike ride near their school:

- Look at maps of the area around the school. In groups, choose a route.
- Identify hazards, measure the distance and estimate the time it will take.
- Produce a flow map of the route.
- Present the plan to the class.
- The best route will be the one used for a class / school walk or cycle.

This activity works well with:

Activity 2 – What is the safest way to walk / cycle to school?

Subject links

Geography

Thinking Skills

Bling your bike!

Activity 0

Literacy

WRITING

Which LNF outcomes?

Writing – Organising ideas and information

Structure and organisation

Year 5

- Use features which show the structure of the writing, *e.g. sub headings, captions.*
- Use images, graphs and illustrations which are clear, relevant and appropriate.

Year 6

- Adapt structures in writing for different contexts, *e.g. reporting an event, investigation or experiment.*

Activity ideas

Bling your bike!

Highlight the importance of being seen when cycling by holding a whole-school event:

- Discuss the importance of being seen when cycling, especially in the dark.
- Hold a 'bling your bike' day at school, where pupils decorate their bikes and themselves to see who can be the brightest. Show off the bikes and award prizes.
- Pupils act as 'reporters', taking notes and photographs of the entries and winners.
- Pupils write a report of the event. It could be shared on the school website.

This activity works well with:

Activity M – Organise a bike to school day / week

Activity 9 – Bike Breakfast

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Numeracy

Activities check list

Numeracy

ACTIVITIES CHECK LIST

		Developing numerical reasoning	Using number skills	Using measuring skill	Using data skills
1	How do you travel to school? Hands up survey.	✔			✔
2	What is the safest way to walk/cycle to school? Safer routes mapping lesson.	✔		✔	
3	How far do you travel to school?	✔	✔		
4	How many steps do you take on your way to school?	✔	✔		
5	How long does it take you to travel to school?			✔	✔
6	How far do you walk in ten minutes?	✔			
7	What is the average number of children who walk/cycle to school each week?				✔
8	What is the carbon footprint of your journey to school?		✔		
9	Bike breakfast	✔			
10	Travel Maths	✔			
11	How big is your bike?			✔	
12	Which activity gets your heart beating fastest?				✔
13	Bike shop problems.		✔		

*Blue text indicates full lesson plan included

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How do you travel to school? Hands up survey

Activity 1

Numeracy

USING DATA SKILLS

Which LNF outcomes?

Using data skills

Collect and record data
Present and analyse data
Interpret results

Years 5 and 6

- Represent data using:
  - lists, tally charts, tables, diagrams and frequency tables;
  - bar charts, grouped data charts, line graphs and conversion graphs.
- Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts).
- Use mean, median, mode and range to describe a data set.

Developing numerical reasoning

Identify processes and connections

Years 5 and 6

- Transfer mathematical skills to a variety of contexts and everyday situations.

Represent and communicate

Years 5 and 6

- Explain results and procedures clearly using mathematical language.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Review

Years 5 and 6

- Draw conclusions from data and recognise that some conclusions may be misleading or uncertain.

Activity ideas

How do you travel to school? Hands up survey

- Use the survey provided to collect school travel data.
- Groups of pupils go to each class in school to conduct the survey (works best with Years 3 to 6)
- Each group collates the data collected in frequency charts. Tip: focus on one question.
- Create a frequency graph.
- Collate data into a table for the whole school.
- Group the data.
- Discuss the data – draw conclusions about travel in your school.

An example lesson is provided for this activity

This activity works well with:

Activity C – Why is active and sustainable travel important?

Subject links

Geography

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How do you travel to school? Hands up survey

Lesson Plan | KS2 | Numeracy

Learning Objectives: LNF Expectations

Strand: **Using data skills**
Element: **Collect and record data**
Present and analyse data
Interpret results

Years 5 and 6:

- Represent data using:
  - lists, tally charts, tables, diagrams and frequency tables;
  - bar charts, grouped data charts, line graphs and conversion graphs.
- Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts).
- Use mean, median, mode and range to describe a data set.

Strand: **Developing numerical reasoning**
Element: **Identify processes and connections**

Years 5 and 6:

- Transfer mathematical skills to a variety of contexts and everyday situations.

Element: **Represent and communicate**

Years 5 and 6:

- Explain results and procedures clearly using mathematical language.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Element: **Review**

Years 5 and 6:

- Draw conclusions from data and recognise that some conclusions may be misleading or uncertain.

Learning Outcomes

1. Pupils fully understand the habits and routines of journeys to school in order to be able to make informed decisions about which kind of transport is most appropriate.
2. Pupils gather, present and interpret real data (also useful as evidence for Healthy Schools, Eco Schools, Bike It or Smarter Journeys).
3. This activity provides opportunities for pupils to **use and apply** data handling skills.

Geography Observe and ask questions about a place; measure, collect and record data.

Activity 1

Lesson Outline

Resources

- Travel survey, devised by Sustrans (hands up survey)
- Labels marked ‘car’, ‘walk’, ‘cycle’ and ‘scoot’
- Squared paper or maths books

Engage

In a playground or hall make a physical graph. Place labels marked *‘car’*, *‘walk’*, *‘cycle’* and *‘scoot’* on a line (x axis). Ask ‘*How did you travel to school today?’* Pupils then stand in a line next to the corresponding label. Identify the most and least common. Ask ‘*How would you most like to travel to school?’* Pupils stand in the corresponding line. Identify the most and least popular. Ask ‘*What does this tell us?’*

Develop

Collect the travel survey data as a class by asking children to put their hands up in response to the questions. Pupils can be responsible for reading out the questions and counting the hands up in response. Pupils should only raise their hand once per question.

Choose pairs of children to go to each class for Years 3 to 6 in the school to carry out the hands up survey. Meanwhile, recap on data-handling vocabulary (tally, frequency chart, frequency line graph, axes, mean, median, mode) and skills (drawing a table, drawing axes, drawing on the line not in the box when creating a frequency line graph).

When the pupils conducting the surveys return, divide the class into groups of two or three. Focus on question 2: ‘*How do you usually travel to school?’* Give each group a copy of the completed survey for one class (it may be necessary to photocopy). Pupils collate the data into a frequency chart. Pupils then use their frequency chart to create a frequency line graph.

Reflect

Groups exchange graphs. Pupils look closely at data and interpret what it tells us. Pupils can then feed back to the class. Ask ‘*What do we now know about travel at our school?’* Reflect on why there may be a big difference between responses to questions 2 and 7.

Extend

- Make frequency charts and frequency line graphs for the other questions in the survey, particularly question 7: *‘How would you like to travel to school?’*
- Interpret data from the other questions and analyse what it tells us.
- Collate the data from all the classes surveyed and work out mean, median and mode averages.

Home Learning

- Discuss the findings of the survey with parents.

- Ask parents to answer a short questionnaire stating why they choose to encourage their children to travel to school in they way that they do.
- With parents, devise a plan to start introducing other ways of travelling to school (e.g. cycling, walking) that they may not have tried before.

Sustrans Hands Up Survey

Please take some time to familiarise yourself with the survey form by reading through each of the questions along with the guidance on the other side of the form.

Please complete this survey twice—once near the start of the academic year and again before the end .

Remember:

- **The total for each question should add up to the total number of pupils present**—pupils must answer once for each question

Before you begin the survey please fill in the essential details below:

Date: …… School name:…… No. of pupils in class: ……

Class: ……..... No. of pupils present: ……

Q1. Is there a bicycle you can regularly use? (This can be your own bike, or one you can borrow)	
Response	**Count**
Yes	
No	
Total	

Q2. How do you usually (or most often) travel to school?	
Response	**Count**
Cycle	
Walk	
Scoot/skate	
Park and stride/park and cycle	
Bus	
Train/other	
Car	
Total	

Q3. How often do you cycle to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Q4. How often do you walk to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

* i.e. 'everyday cycling/walking/scooting/driven'

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Q5. How often do you scoot or skate to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Q6. How often are you driven to school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Q7. How would you most like to travel to school? (This can be the same way you usually travel to school if you like travelling that way)	
Response	**Count**
Cycle	
Walk	
Scoot/skate	
Park and stride/park and cycle	
Bus	
Train/other	
Car	
Total	

Q8. How often do you ride your bike when not cycling to/from school?	
Response	**Count**
Three or more times a week*	
Once or twice a week	
Once or twice a month	
A few times a year	
Never	
Total	

Thank you for completing this survey

What is the safest way to walk / cycle to school? Safer routes mapping lesson

Activity 2

Numeracy

USING MEASURING SKILLS

Which LNF outcomes?

Using measuring skills
Angle and position

Year 5
- Use coordinates to specify location.

Year 6
- Use grid references to specify location.

Developing numerical reasoning
Identify processes and connections

Years 5 and 6
- Transfer mathematical skills to a variety of contexts and everyday situations.

Activity ideas

What is the safest way to walk / cycle to school? – Safer routes mapping lesson.

- Look at large scale maps of your locality (e.g. you can use an internet mapping site such as google maps, or contact your local authority for local area maps). Identify your school and an example pupils' house.
- Give out maps and ask pupils to identify their houses and the school using grid coordinates. Ask them to note the grid coordinates of their houses and the school.
- Pupils mark their route to school.
- What are the hazards on their journey? Is there a safer way they could travel?
- Mark the new route on the map.
- Do the same for other routes – to friends' houses, to the shops, to the park, etc.
- Reflect on why some routes are safer, and on the benefits of active travel.

An example lesson is provided for this activity

This activity works well with:

Activity 3 – How far do you travel to school?
Activity 4 – How many steps do you take on your way to school?
Activity 5 – How long does it take you to travel to school?

Subject links

Geography
PSE

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What is the safest way to walk / cycle to school? Safer routes mapping lesson

Lesson Plan | KS2 | Numeracy

Learning Objectives: LNF Expectations

Strand: Using measuring skills

Element: Angle and position

Year 5:

- Use coordinates to specify location.

Year 6:

- Use grid references to specify location.

Strand: Developing numerical reasoning

Element: Identify processes and connections

Years 5 and 6:

- Transfer mathematical skills to a variety of contexts and everyday situations.

Learning Outcomes

1. Pupils can use a map to locate place and plot routes.
2. Pupils think about different modes of travel and their advantages and disadvantages.
3. This activity provides the opportunity to **use and apply** numeracy skills relating to measurement, scale and coordinates**.** Pupils will become more familiar with their local area and learn to identify safe routes to use when travelling to school.

Geography Locating places, environments and patterns.

Lesson Outline

Resources

- PowerPoint presentation on maps entitled ‘Safer Routes Presentation’ (either available on CD or as a download from www.sustrans.org.uk/schoolresources)
- A3 printouts of catchment map from local council

It may be beneficial to run this lesson at around the same time as the provision of National Standard Cycle Training for pupils in Year 5 or 6 so they have a safe route where they can put into practice the on-road skills they learn.

Engage

Show a map on an interactive whiteboard (you could use Google Maps or get a map from your local authority, e.g. Cardiff Cycle Map). Show the area around your school, zoomed in as much as possible. Ask '*Where is this?'* Gradually zoom out until pupils identify the location.

- Locate your school and some of the pupils' homes on the map.
- Look at the Safer Routes Presentation (either available on CD or as a download from www.sustrans.org.uk/schoolresources).

Develop

Organise pupils into pairs. Distribute maps of the local area – give time for pupils to orientate themselves with the map. Find NSEW, the scale, map features, coordinates. Recall how to use coordinates.

Task 1: Find local landmarks, features and places on the map. Describe their position using **coordinates**. Choose places familiar to children. Start with the school.

Ask pupils: *What is a route?* It's a way of getting from A to B. *Are there different ways to get from A to B?* Explain that planning a safe route means thinking about different ways to get to a location. In pairs, pupils list features of a safer route and then feedback to class. Add the list to the whiteboard to refer to later.

Task 2: In pairs, look at the maps. Ask pupils to find where they live and mark it in colour. Repeat with the school. Ask pupils to plot the route they use to travel from their house to school.

Task 3: Pupils identify hazards that may occur along their route. Can they plan a safer route (refer to the safer routes features list to check it is a safer route). This could be repeated for other routes, e.g. routes to a friend's house or to the park.

Reflect

Look at the routes pupils have come up with. Highlight good features, referring to the features on the safer routes list. Which routes are better for cycling? Why are cycling and walking preferable to car use?

Extension

You could include measuring distance in this lesson by using the technique employed in Activity 3 (using string to measure distance and working out the total distance by using the map's scale).

Home Learning

Ask pupils to look at the map with their parents / carers and try out the new route.

How far do you travel to school?

Activity 3

Numeracy

USING NUMBER SKILLS

Which LNF outcomes?

Using number skills

Use number facts and relationships

Year 5

- Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8 and 10 and use to solve division problems.
- Multiply and divide numbers and decimals by 10 and 100.

Year 6

- Read and write numbers to 1 million and numbers to 3 decimal places.
- Use mental strategies to recall multiplication tables up to 10 x 10 and use to solve division problems.
- Multiply numbers and decimals by a multiple of 10, *e.g. 15 x 30, 1.4 cm x 20*.

Calculate using mental and written methods

Year 5

- Add and subtract 3-digit numbers using an appropriate mental or written method.
- Multiply and divide 3-digit numbers by a single-digit number.

Year 6

- Multiply 2- and 3-digit numbers by a 2-digit number.

Estimate and check

Years 5 and 6

- Check answers using inverse operations.

Year 5

- Estimate by rounding to the nearest 10, 100 or 1000.

Year 6

- Estimate by rounding to the nearest 10, 100, 1000 or whole number.

Developing numerical reasoning

Identify processes and connections

Years 5 and 6

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units

Activity ideas

How far do you travel to school?

Investigate the lengths of journeys to school taken by your class. Work out how many times you travel to school and back home in a week, month and year.

- Map routes to school on large scale maps.
- Measure the length of the routes using string and the scale of the map.
- Devise a method to work out how far you travel in a week, a month and a year (calculators could be used).
- Use a map to see where you would get to if you travelled this distance in a straight line.
- Compile data from your class into a chart to compare it.
- Plenary: is it sometimes better to take a longer route? When might it be better? (e.g. when travelling actively and benefitting your health and the environment.)

An example lesson is provided for this activity

Subject links

Geography

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How far do you travel to school?

Lesson Plan | KS2 | Numeracy

Learning Objectives: LNF Expectations

Strand: Using Number Skills

Element: Use number facts and relationships

Year 5:

- Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8 and 10 and use to solve division problems.
- Multiply and divide numbers and decimals by 10 and 100.

Year 6:

- Read and write numbers to 1 million and numbers to 3 decimal places.
- Use mental strategies to recall multiplication tables up to 10 x 10 and use to solve division problems.
- Multiply numbers and decimals by a multiple of 10, *e.g. 15 x 30, 1.4 cm x 20*.

Element: Calculate using mental and written methods

Year 5:

- Add and subtract 3-digit numbers using an appropriate mental or written method.
- Multiply and divide 3-digit numbers by a single-digit number.

Year 6:

- Multiply 2- and 3-digit numbers by a 2-digit number.

Element: Estimate and check

Years 5 and 6:

- Check answers using inverse operations.

Year 5:

- Estimate by rounding to the nearest 10, 100 or 1000.

Year 6:

- Estimate by rounding to the nearest 10, 100, 1000 or whole number.

Strand: Developing numerical reasoning

Element: Identify processes and connections

Years 5 and 6:

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units.

Learning Outcomes

1. Pupils apply their **numeracy** skills and knowledge to the real life context of active and sustainable travel.
2. Pupils are aware of how short journeys travelled regularly can amount to much longer distances.
3. Pupils consider the consequences of their regular travel choices.
4. In this investigation the pupils **use and apply** skills of estimating length, measuring, and using a scale on a map to find the distance they travel to school. To focus on reasoning, pupils need to devise a method for calculating how far they travel in a week, month and year of journeys to school. To focus on number skills as outlined above, pupils apply the method to their own travel circumstances.

Lesson Outline

Resources

- Large scale map of local area (could use internet maps such as Google Maps)
- String, ruler

Engage

Look at the large scale maps of the local area on the whiteboard. Find one pupil's house on the map. How far is this house from school? Pupils estimate the distance. They do the same for their own home.

Develop

Pupils identify the route they take to school and then measure the distance they travel. Use string or thread to measure the route taken. Hold the length up to the scale of the map. Use the scale to calculate the distance travelled.

Present the question '*How far do you travel on your journey to school each year?'*

In mixed ability pairs, the pupils think of a way to work this out. They need to identify the strategies and calculations needed and explain their reasoning.

Using the example of a school journey being 1 km, pupils suggest ways to work out what that adds up to *each day, each week, each year?* (Remember, pupils travel both to and from school, so journeys would be doubled.) It will be useful for the pupils to know that we attend school 39 weeks of the year.

Pupils make their suggestions, using words, informal written methods and mathematical diagrams.

If necessary, model the calculation needed using multiplication strategies learned in previous maths lessons:

1 km x 2 (there and back) = 2 km = distance travelled each day

2 km x 5 days = 10 km = distance travelled each week

39 weeks x 10 km = 390 km = distance travelled in a year

In pairs, pupils calculate the same for a journey of 1.5 km. Pupils share methods and answers with another pair.

Pupils then work individually to use the same method to calculate the distance they personally travel on school journeys each year. Some pupils may need to round their distance to facilitate calculation.

Reflect

Share the distances travelled. Create a chart showing travel distances for the whole class. Who travels furthest each year?

Discuss the consequences of travelling these distances by car (cost, congestion, pollution), or by bike / on foot (cheaper, less traffic, better for the environment, good daily exercise).

Extend

Where would you get to if you travelled this distance in a straight line? Use maps of Wales to find out.

What is the average distance travelled in our class? Remember how to work out mean, median and mode averages.

This activity works well with:

- Activity 4 – How many steps do you take on your way to school?
- Activity 5 – How long does it take you to travel to school?
- Activity 6 – How far do you walk in ten minutes?

How many steps do you take on your way to school?

Activity 4

Numeracy

DEVELOPING NUMERICAL REASONING

Which LNF outcomes?

Developing numerical reasoning

Identify processes and connections

Years 5 and 6

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units.

Represent and communicate

Years 5 and 6

- Explain results and procedures clearly using mathematical language.
- Refine informal methods of recording written calculations, moving to formal methods of calculation when developmentally ready.
- Use appropriate notation, symbols and units of measurement.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Review

Years 5 and 6

- Select from an increasing range of checking strategies to decide if answers are reasonable.
- Interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.

Using number skills

Calculate using mental and written methods

Year 5

- Add and subtract 3-digit numbers using an appropriate mental or written method.
- Multiply and divide 3-digit numbers by a single-digit number.

Year 6

- Add and subtract numbers using whole numbers and decimals.
- Multiply 2- and 3-digit numbers by a 2-digit number.

Activity ideas

How many steps do you take on your way to school?

Maths investigation:

- Pupils use maps of locality to measure the distance they travel to school. (It would be useful to deliver Activity 3 - How far do you travel to school? first.)
- Pairs or groups devise a method to answer the question (introduce pedometers).
- In playground, pupils mark out a track of a chosen distance.
- Holding a pedometer, one child walks the track.
- Pupils use the data from the pedometer and the distances of their journeys to school to calculate how many steps they take on their way to school.

This could be extended into: *How may steps do I take if I run to school?*

Subject links

PE
PSE

How long does it take you to travel to school?

Activity 5

Numeracy

USING MEASURING SKILLS

Which LNF outcomes?

Using measuring skills

Time

Year 5

- Read and use analogue and digital clocks.
- Time events in minutes and seconds, and order the results.
- Carry out practical activities involving timed events and explain which unit of time is the most appropriate.

Year 6

- Use and interpret timetables and schedules to plan events and activities and make calculations as part of the planning process.
- Estimate how long a journey takes.

Using data skills

Collect and record data

Present and analyse data

Interpret results

Years 5 and 6

- Represent data using:

- lists, tally charts, tables, diagrams and frequency tables;
- bar charts, grouped data charts, line graphs and conversion graphs.

- Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts).
- Use mean, median, mode and range to describe a data set.

Activity ideas

How long does it take you to travel to school?

- Prepare a table showing the time taken for various children to travel to school. Who gets to school quickest? How long do they spend travelling each week, month and year?
- Work out your own journey time. How long do you spend travelling each day, week, month and year?
- Collect real data from your group about travel times. Collate in a table. Make a graph.
- Collate data about the travel times of the whole class. Group the data. Create a frequency chart.
- Calculate average travel times.

Subject links

PSE

How far do you walk in ten minutes?

Activity 6

Numeracy

DEVELOPING NUMERICAL REASONING

Which LNF outcomes?

Developing numerical reasoning

Identify processes and connections

Years 5 and 6

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units.

Represent and communicate

Years 5 and 6

- Explain results and procedures clearly using mathematical language.
- Refine informal methods of recording written calculations, moving to formal methods of calculation when developmentally ready.
- Use appropriate notation, symbols and units of measurement.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Review

Years 5 and 6

- Select from an increasing range of checking strategies to decide if answers are reasonable.
- Interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.

Activity ideas

How far do you walk in ten minutes?

Maths investigation

- In pairs, pupils discuss how to answer the question.
- Share ideas and devise a method for enquiry.
- In the playground, pupils measure out a chosen distance. One pupil walks the distance normally while another times ten minutes. Keep a tally of the number of lengths walked. Multiply the chosen length to arrive at an answer to the question.

Or

- Do it for one minute and multiply by ten

This could be adapted into other investigations such as: *How long would it take me to walk 1.5 km?*

Subject links

Geography

What is the average number of children who walk / cycle to school each week?

Activity 7

Numeracy

USING DATA SKILLS

Which LNF outcomes?

Using data skills

Collect and record data
Present and analyse data
Interpret results

Years 5 and 6

- Represent data using:
  – lists, tally charts, tables, diagrams and frequency tables;
  – bar charts, grouped data charts, line graphs and conversion graphs.
- Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts).
- Use mean, median, mode and range to describe a data set.

Activity ideas

What is the average number of children who walk / cycle to school each week?

- Collect data about cycling to school for a week. Keep a tally of the number of bikes in the bike shed each day.
- Use a week's data to calculate the average number of children who cycled to school that week.
- Collect the data for a longer period. Use the data to calculate the average number of children in school who cycle during a term.

Subject links

Geography

What is the carbon footprint of your journey to school?

Activity 8

Numeracy

USING NUMBER SKILLS

Which LNF outcomes?

Using number skills

Calculate using mental and written methods

Year 5

- Multiply and divide 3-digit numbers by a single-digit number.

Year 6

- Multiply 2- and 3-digit numbers by a 2-digit number.
- Divide 3-digit numbers by a 2-digit number

Activity ideas

What is the carbon footprint of your journey to school?

- Discuss what a carbon footprint is and the need to keep it low.
- Use carbon footprint data (provided) to calculate the carbon footprint of a car ride to school (this could be a calculator lesson).
- Multiply to find the carbon footprint for a month, year and a whole school career.
- Compare to the carbon footprint of a pupil who cycles / walks to school.

Formula:

CO_2 produced (g/km) = Distance travelled x g/km

Volume CO_2 (Cubic metres, m^3) = Volume (m^3) x 2 [actual is 1.9769]

Travel data:

Average Petrol car 209.5 g/km

Average Diesel car 198.7 g/km

Rail 60g/km per person

Bus 89 g/km per person

Aeroplane 158 g/km per person

Subject links

Geography
ESDGC

Bike Breakfast

Activity 9

Numeracy

DEVELOPING NUMERICAL REASONING

Which LNF outcomes?

Developing numerical reasoning

Identify processes and connections

Years 5 and 6

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units.

Represent and communicate

Years 5 and 6

- Explain results and procedures clearly using mathematical language.
- Refine informal methods of recording written calculations, moving to formal methods of calculation when developmentally ready.
- Use appropriate notation, symbols and units of measurement.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Review

Years 5 and 6

- Select from an increasing range of checking strategies to decide if answers are reasonable.
- Interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.

Activity ideas

Bike Breakfast

Use cross-curricular skills to plan an event.

Plan a Bike Breakfast (where children receive a breakfast if they cycle to school):

- Survey children in school to estimate the number who might attend.
- Use the figures to estimate the food needed.
- Calculate costs and devise a budget to present to the head teacher.
- Advertise the event (an opportunity for using literacy skills).
- Hold the event. Keep a record of attendees. Group data and show attendance in a block graph. Work out the average number of pupils attending.
- Evaluate the success of the event and identify needs for the next one.

For more information on how to run a Bike Breakfast visit:
www.sustrans.org.uk/schoolresources

Subject links

Thinking Skills

YMUNWCH Â'R MUDIAD
sustrans
JOIN THE MOVEMENT

Travel Maths

Activity 10

Numeracy

DEVELOPING NUMERICAL REASONING

Which LNF outcomes?

Developing numerical reasoning

Identify processes and connections

Years 5 and 6

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units.

Represent and communicate

Years 5 and 6

- Explain results and procedures clearly using mathematical language.
- Refine informal methods of recording written calculations, moving to formal methods of calculation when developmentally ready.
- Use appropriate notation, symbols and units of measurement.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Review

Years 5 and 6

- Select from an increasing range of checking strategies to decide if answers are reasonable.
- Interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.
- Draw conclusions from data and recognise that some conclusions may be misleading or uncertain.

Activity ideas

Travel Maths

Reasoning test

- Use pictures to discuss sustainable and active travel to school.
- Use the test questions provided. Pupils complete the questions (this can be done as a test or one by one).
- Discuss the problems, particularly how to solve them and how to show reasoning.

An example lesson is provided for this activity

This activity works well with:

Activity 13 – Bike shop problems

Subject links

Geography
ESDGC
PSE

Travel Maths

Lesson Plan | KS2 | Numeracy

Learning Objectives: LNF Expectations

Strand: Developing Numerical Reasoning

Element: Identify processes and connections

Years 5 and 6:

- Transfer mathematical skills to a variety of contexts and everyday situations.
- Identify the appropriate steps and information needed to complete the task or reach a solution.
- Select appropriate mathematics and techniques to use.
- Select and use suitable instruments and units of measurement.
- Choose an appropriate mental or written strategy and know when it is appropriate to use a calculator.
- Estimate and visualise size when measuring and use the correct units.

Element: Represent and communicate

Years 5 and 6:

- Explain results and procedures clearly using mathematical language.
- Refine informal methods of recording written calculations, moving to formal methods of calculation when developmentally ready.
- Use appropriate notation, symbols and units of measurement.
- Select and construct appropriate charts, diagrams and graphs with suitable scales.

Element: Review

Years 5 and 6:

- Select from an increasing range of checking strategies to decide if answers are reasonable.
- Interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible.
- Draw conclusions from data and recognise that some conclusions may be misleading or uncertain.

Learning Outcomes

1. Pupils apply their numeracy skills and knowledge to the real life context of active and sustainable travel.
2. Pupils are able to identify and explain the information and strategies they need to solve problems.
3. In this activity, pupils have the opportunity to **use and apply** all their numeracy skills. Questions in this activity have been written in the style of national numeracy tests, in particular, problem-solving and reasoning. They can be used to familiarise pupils with the style of testing. This could be done in a test situation or as part of a maths lesson.

Lesson Outline

Resources

- Pictures of active travel
- Questions in the style national numeracy tests (provided)

Engage

Show pictures to engage on the topic of active travel. Ask pupils for comments / questions about what they see. If they have done other activities in this resource they should identify the issue of travel and the consequences of different ways of travelling. If not, you can elicit this using questions such as *Why has he chosen to cycle? How long will it take her to get to school? What effect is his journey having on the local environment?* This encourages their learning to be contextual and applied to real life settings.

Develop

Use the questions in the style of the national numeracy tests (provided). This part of the activity could be done in pairs, with pupils sharing and discussing answers, or individually, in test conditions.

Read through the questions as a class. Ensure that pupils understand what is required of them in each question. For example, what is the question for which they need to provide an answer? How much of their reasoning do they need to show?

Pupils suggest what a good answer may look like (using, for example, mathematical diagrams, informal calculations, formal written methods and word explanations). The class could complete the first question together and then discuss the answer so that pupils have an idea of the kind of information they need to show in their other answers. At this stage, it is important to refer to previous learning in maths and numeracy lessons and recall how they have shown their reasoning when solving problems in the past.

Pupils answer the questions, recording their reasoning as required.

Reflect

Look at the answers one by one. Share good examples of showing reasoning and workings out. This could be done using a visualiser, if you have one. Pupils explain why they have chosen certain methods.

In 30 seconds, pairs of pupils list ways in which reasoning could be shown when answering similar questions (e.g. mathematical diagrams, informal written calculations, formal written methods, explanatory sentences, formulae).

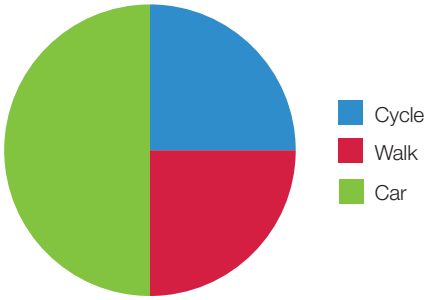
Travel Maths

National Numeracy tests

Questions

1. Look at this pie chart:

Travel to school
Cardiff Bay Primary School



Forty children cycled to school.

How many children are there **altogether** in Cardiff Bay Primary School?

200 children attend Sustrans Primary School.

Three times as many children cycle to Sustrans Primary School, compared to those that cycle to Cardiff Bay Primary School.

At Sustrans Primary School, how many children **do not** cycle?

2. Dafydd's journey to school is 1.5 km.

Activity 10

He goes to school for **39 weeks** each year.

How many km does he travel on his school journeys in a year?

3. This frequency chart shows the number of children that cycled to school, in each class, last week at Sustrans Primary School.

Class 3	5
Class 4	6
Class 5	
Class 6	14

The **mean average** of the children that cycled was 8.

How many children in Class 5 cycled to school?

Activity 10

4. Nerys is saving to buy herself a new bike. She would like to buy this one:

She already has £65.00.

How much is left to save?

Her dad says that he will give her £5.00 a week if she washes the car and keeps the garden tidy.

How long will it take her to save enough money to buy the bike?

5.

Dylan walks to school. He walks **250 metres** in a minute.

His sister, Bronwen, cycles to school. She cycles **500 metres** in a minute.

School is **1.5 km** from their house.

Dylan leaves the house at **8.45 am**. Bronwen leaves a little later at **8.47 am**.

Who will arrive at school first?

How big is your bike?

Activity 11

Numeracy

USING MEASURING SKILLS

Which LNF outcomes?

Using Measuring skills

Length

Year 5

- Use measuring instruments with 10 equal divisions between each major unit, and record using decimal notation, *e.g. 4.2cm, 1.3kg.*
- Make use of conversions, *e.g. 1/4 of a km = 250m.*

Year 6

- Read and interpret scales or divisions on a range of measuring instruments.
- Record measurements in different ways, *e.g. 1.3kg = 1kg 300g.*

Activity ideas

How big is your bike?

- Pupils use measuring skills to measure different parts of a bike.
- Convert measurements into different units of measurement.
- Pupils investigate heights of saddles in relation to height of child.
- At home – check seat height is correct.
- Extension: Pupils measure the diameter of various bike wheels and use this information to work out the radius. Can they think of ways to measure the circumference of the wheels?

Subject links

PSE

Which activity gets your heart beating fastest?

Activity 12

Numeracy

USING DATA SKILLS

Which LNF outcomes?

Using data skills

Collect and record data
Present and analyse data
Interpret results

Years 5 and 6

- Represent data using:
  - lists, tally charts, tables, diagrams and frequency tables;
  - bar charts, grouped data charts, line graphs and conversion graphs.
- Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts).

Activity ideas

Which activity gets your heart beating fastest?

A PE healthy heart enquiry into the effects of different activities on pulse rate.

- Discuss what happens when the body is active. What counts as active? Which activities get you most active?
- Plan the enquiry to compare walking, cycling, jogging, scooting, etc.
- Record pulse rates before, during and after each activity and after a cool down period.
- Each pupil creates a line graph to show how their pulse rate changes before, during and after each activity.
- Collate class / group data in a table, showing pulse rates during each activity.
- Use the table to draw conclusions to answer the enquiry question.

Subject links

Science
PE

Using number skills

Activity 13

Which LNF outcomes?

Using number skills
Manage money

Year 5
- Add and subtract totals less than £100 using correct notation, *e.g. £28.18 + £33.45*.

Year 6
- Use the terms profit and loss in buying and selling activities and make calculations for this.

Activity ideas

Bike shop problems
Solve problems in the context of a bike shop. You could use a local bike shop catalogue or a website to get some real figures, or create your own 'shop' on a display board.

Questions could include:
- How much would it cost to buy an inner tube, a set of lights and a pump?
- What's the difference in price between a red bike and a white bike?
- I have £10 and need to get new brake pads and a bell. Can I afford them?
- The bike shop buys 5 helmets for £50. They sell all of them for £15 each. How much profit have they made?
- Challenge pupils to use the price lists to devise their own bike shop problems.

Subject links

PSE