Activity Description	National Curriculum of Wales Links
Activity 1: Calculate your carbon footprint Pupils use information about personal travel and home energy usage to calculate their own carbon footprint.	**Welsh and English Curriculum:** Strand: **Oracy** Elements: **Developing and presenting information and ideas** Aspects: **Speaking** Year 3 • explain information and ideas using relevant vocabulary • organise what they say so that listeners can understand Year 4 • explain information and ideas using supportive resources • organise talk so that different audiences can follow what is being said Year 5 • explain information and ideas, exploring and using ways to be convincing • speak clearly, using formal language and projecting voice effectively to a large audience Year 6 • express issues and ideas clearly , using specialist vocabulary and examples • speak clearly, using formal language, varying expression, tone and volume, to keep listeners interested Aspects: **Listening** Year 3 : • listen carefully and make connections between what they are learning and what they already know Year 4: • listen carefully to presentations and show understanding of main points Year 5: • listen carefully to presentations using techniques to remember the main points, Year 6: • listen carefully to presentations and show understanding of the speakers' conclusions or opinions Aspects: **Collaboration and Discussion** Year 3: • contribute to group discussions, sharing ideas and information

Year 4
- contribute to group discussion and help everyone take part

Year 5
- contribute to group discussion, taking responsibility for completing the task well

Year 6
- contribute purposefully to group discussion to achieve agreed outcomes

Maths Curriculum:

Strand: **Developing numerical reasoning**

Elements: **Identifying processes and connections**

Years 3-6:
- 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

Strands: **Using number skills**

Elements: **Calculate using mental and written methods**

Year 3:
- use mental strategies to add and subtract 2 digit numbers

Year 4:
- add a 2-digit number to, and subtract a 2-digit number from, a 3-digit number using an appropriate mental or written method

Year 5:
-

Year 6:
- add and subtract numbers using whole numbers and decimals

Elements: **Estimate and Check**

Year 3:
- check subtraction using addition

Year 4 – 6:
- check answers using inverse operations

Science Curriculum:

Programme of Study: **Skills**

Communication: Pupils should be given opportunities to:
1. search for, access and select relevant scientific information, from a range of sources, including ICT
2. communicate clearly by speech, writing, drawings, diagrams, charts, tables, bar charts, line graphs, videos, and ICT packages, using relevant scientific vocabulary
3. use standard measures and S.I. units, *e.g. kg, s, N, m.*

Enquiry: Pupils should be given opportunities to carry out different types of enquiry, *e.g. pattern-seeking, exploring, classifying and identifying, making things, fair testing, using and applying models*, by:

Planning: Pupils turn ideas suggested to them, and their own ideas, into a form that can be investigated. They outline the planned approach/method recognising, deciding upon and giving some justification for each of the following when appropriate:
3. where and how to find relevant information and ideas

Reflecting: Pupils think about what they have done in order to consolidate learning and transfer skills, knowledge and understanding to other contexts by:
6. linking the learning to similar situations, within and outside school.

How things work: Pupils should use and develop their skills, knowledge and understanding by investigating the science behind everyday things:
They should be given opportunities to study:
1. uses of electricity and its control in simple circuits

Links to the following KS2 science range of study
- Interdependence of organisms
- The sustainable Earth

	Geography Curriculum Programme of study: **Range** Pupils develop their geographical skills, knowledge and understanding through learning about places, environments and issues. Pupils should be given opportunities to: - study: – living in my world: caring for places and environments and the importance of being a global citizen **Investigating**: Pupils should be given opportunities to: 2. measure, collect and record data through carrying out practical investigations and fieldwork, and using secondary sources, *e.g. use instruments to measure rainfall, use GIS, design questionnaires* **ICT Curriculum** Programme of study: **Range** Pupils should be given opportunities to: - use ICT tools and suitable information sources safely and legally, in accordance with LEA/school guidelines - use ICT sources of information and non-ICT sources of information - use ICT to further their understanding of information they have retrieved and processed - store and retrieve information they have found or created **PSE Curriculum** Learning outcomes: **Skills** **Developing thinking**: Learners should be given opportunities to: - identify links between cause and effect **Developing Communication**: Learners should be given opportunities to: - listen carefully, question and respond to others - express their views and ideas confidently through a range of appropriate methods

	• contribute to class discussions and take part in debates **Developing ICT:** Learners should be given opportunities to: • find and develop information and ideas • create and present information and ideas • use ICT safely with appropriate support and guidance **Developing number:** Learners should be given opportunities to: • select data from given information presented in a range of numerical and graphical ways • gather information in a variety of ways, including simple questionnaires or databases to support understanding of PSE-related issues. **Sustainable development and global citizenship** Learners should be given opportunities to: • appreciate the natural world as a source of inspiration • take an active interest in varied aspects of life in school and the wider environment and to understand: • how the environment can be affected by the decisions we make individually and collectively • that local actions have global effects because of connections between places and people
Activity 2: What is low-carbon energy? Pupils explore and discuss the differences between fossil fuels and low carbon energies and investigate their suitability for different parts of the UK, based on the landscape and climate of the area.	**Welsh and English Curriculum:** Strand: **Oracy** Elements: **Developing and presenting information and ideas** Aspects: **Speaking** Year 3 • explain information and ideas using relevant vocabulary • organise what they say so that listeners can understand Year 4 • explain information and ideas using supportive resources • organise talk so that different audiences can follow what is being said

Year 5
- explain information and ideas, exploring and using ways to be convincing
- speak clearly, using formal language and projecting voice effectively to a large audience

Year 6
- express issues and ideas clearly , using specialist vocabulary and examples
- speak clearly, using formal language, varying expression, tone and volume, to keep listeners interested

Aspects: **Listening**

Year 3 :
- listen carefully and make connections between what they are learning and what they already know

Year 4:
- listen carefully to presentations and show understanding of main points

Year 5:
- listen carefully to presentations using techniques to remember the main points,

Year 6:
- listen carefully to presentations and show understanding of the speakers' conclusions or opinions

Aspects: **Collaboration and Discussion**

Year 3:
- contribute to group discussions, sharing ideas and information

Year 4
- contribute to group discussion and help everyone take part

Year 5
- contribute to group discussion, taking responsibility for completing the task well

Year 6
- contribute purposefully to group discussion to achieve agreed outcomes

Elements: **Responding to what has been read**
Aspects: **Response and analysis**

Year 3
- use information from texts in their discussion or writing

Year 4

- select and use information and ideas from texts

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

Science Curriculum:

Programme of Study: **Skills**

Communication:

Pupils should be given opportunities to:

- search for, access and select relevant scientific information, from a range of sources, including ICT

Enquiry:

Pupils should be given opportunities to carry out different types of enquiry, *e.g. pattern-seeking, exploring, classifying and identifying, making things, fair testing, using and applying models*, by:

Planning: Pupils turn ideas suggested to them, and their own ideas, into a form that can be investigated. They outline the planned approach/method recognising, deciding upon and giving some justification for each of the following when appropriate:

- predictions using some previous knowledge and understanding
- where and how to find relevant information and ideas

Developing

Pupils follow the planned approach/method, revise it where necessary, and where appropriate:

- make comparisons and identify and describe trends or patterns in data and information
- pupils use some prior knowledge to explain links between cause and effect when concluding

How things work:

Pupils should use and develop their skills, knowledge and understanding by investigating the science behind everyday things, *e.g. toys, musical instruments and electrical devices,* the way they are constructed and work.

They should be given opportunities to study:

- the uses of electricity and its control in simple circuits

The Sustainable Earth:

Pupils should use and develop their skills, knowledge and understanding by comparing the Earth with other planets, investigating materials around them and considering the importance of recycling.

They should be given opportunities to study:

- the properties of materials relating to their uses
- how some materials are formed or produced
- a consideration of what waste is and what happens to local waste that can be recycled and that which cannot be recycled.

Links to the following KS2 science range of study

      Interdependence of organisms

      The sustainable Earth

Geography Curriculum

Programme of study: **Skills**

Locating places, environments and patterns :

Pupils should be given opportunities to

- use maps, imagery and ICT to find and present locational information,

Understanding places, environments and processes

Pupils should be given opportunities to:

- describe the causes and consequences of how places and environments change, *e.g. by season; from past to present; the need for sustainability.*

Range

Pupils develop their geographical skills, knowledge and understanding through learning about places, environments and issues.

Pupils should be given opportunities to:

- study
  - living in Wales: their local area* and an investigation of at least one aspect of the geography of the whole of Wales, *e.g. national parks, where people live*
  - living in my world: caring for places and environments and the importance of being a global citizen

- Carry out
  - investigations of 'geography in the news', topical events and issues in the local area and the wider world

Communicating:
Pupils should be given opportunities to
- express their own opinions and be aware that people have different points of view about places, environments and geographical issues, *e.g. about wind farms, fair trade*

PSE Curriculum
Learning Outcomes: **Skills**
Developing thinking:
Learners should be given opportunities to:
- identify links between cause and effect

Developing Communication:
Learners should be given opportunities to:
- listen carefully, question and respond to others
- express their views and ideas confidently through a range of appropriate methods
- contribute to class discussions and take part in debates

Developing ICT:
Learners should be given opportunities to:
- find and develop information and ideas
- create and present information and ideas
- use ICT safely with appropriate support and guidance

Working with others:
Learners should be given opportunities to:
- work cooperatively to solve problems

	Improving own learning: Learners should be given opportunities to: • experience various learning styles and recognise the ways in which they learn best • develop practical skills necessary for everyday life.
Activity 3: How much low-carbon energy do we use? Pupils research energy sources across the UK and discuss their advantages and disadvantages.	**Welsh and English Curriculum:** Strand: **Oracy** Elements: **Developing and presenting information and ideas** Aspects: **Speaking** Year 3 • explain information and ideas using relevant vocabulary • organise what they say so that listeners can understand Year 4 • explain information and ideas using supportive resources • organise talk so that different audiences can follow what is being said Year 5 • explain information and ideas, exploring and using ways to be convincing • speak clearly, using formal language and projecting voice effectively to a large audience Year 6 • express issues and ideas clearly , using specialist vocabulary and examples • speak clearly, using formal language, varying expression, tone and volume, to keep listeners interested Aspects: **Listening** Year 3 : • listen carefully and make connections between what they are learning and what they already know Year 4: • listen carefully to presentations and show understanding of main points Year 5: • listen carefully to presentations using techniques to remember the main points, Year 6: • listen carefully to presentations and show understanding of the speakers' conclusions or opinions

Aspects: **Collaboration and Discussion**
Year 3:
- contribute to group discussions, sharing ideas and information

Year 4
- contribute to group discussion and help everyone take part

Year 5
- contribute to group discussion, taking responsibility for completing the task well

Year 6
- contribute purposefully to group discussion to achieve agreed outcomes

Strand: **Reading**
Elements: **Locating, selecting and using information**
Aspects: **Reading strategies**
Year 3
- read short information texts independently with concentration
- look for specific information in texts using contents, indexes, glossaries, dictionaries
- use visual clues, *e.g. illustration, photographs, diagrams and charts,* to enhance understanding
- locate information on web pages using screen features, *e.g. toolbars, side bars, headings, arrows*

Year 4
- read texts, including those with few visual clues, independently with concentration
- scan for specific information using a variety of features in texts, *e.g. titles, illustrations, key words*
- find information and ideas from web pages, using different search methods, considering which are the most efficient methods

Year 5
- read extended texts independently for sustained periods
- use a range of strategies for skimming, *e.g. finding key words or phrases, gist, main ideas, themes*
- use information from trusted sources, on-screen and on paper, selecting and downloading as necessary

Year 6
- read complex texts independently for sustained periods
- use a range of strategies for finding information, *e.g. skimming for gist, scanning for detail*
- use internet searches carefully, deciding which sources to read and believe

Elements: **Responding to what has been read**

Aspects: **Response and analysis**

Year 3:

- use information from texts in their discussion or writing

Year 4

- select and use information and ideas from texts

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
- distinguish between facts, theories and opinions

Maths Curriculum:

Strand: **Developing numerical reasoning**

Elements: **Represent and communicate**

Years 3 - 6

- explain results and procedures clearly using mathematical language
- select and construct appropriate carts, diagram and graphs with suitable scales

Elements: **Review**

Years 3 - 6

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

Strand: **Using data skills**

Elements: **Collect and record data, Present and analyse data, Interpret data**

Years 3 – 4

- represent data using:
    - lists, tally charts, tables and diagrams
    - bar charts and bar line graphs labelled in 2s, 5s and 10s
- extract and interpret information from charts, timetables, diagrams and graphs.

Year 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

Geography Curriculum

Programme of study: **Skills**

Locating places, environments and patterns :

Pupils should be given opportunities to:

- use maps, imagery and ICT to find and present locational information, *e.g. draw sketch maps using symbols and keys. Interpret maps, and photographs including oblique, aerial and satellite images*

Understanding places, environments and processes

Pupils should be given opportunities to:

- identify similarities and differences to describe, compare and contrast places and environments
- describe the causes and consequences of how places and environments change, *e.g. by season; from past to present; the need for sustainability.*

Range:

Pupils develop their geographical skills, knowledge and understanding through learning about places, environments and issues.

Pupils should be given opportunities to:

- study
    - living in Wales: their local area and an investigation of at least one aspect of the geography of the whole of Wales, *e.g. national parks, where people live*
    - living in my world: caring for places and environments and the importance of being a global citizen

	Investigating: Pupils should be given opportunities to: • observe and ask questions about a place, environment or a geographical issue, *e.g. Why does it flood? How and why is our village changing?* • organise and analyse evidence, develop ideas to find answers and draw conclusions, *e.g. use a data spreadsheet, compare weather data* **Communicating:** Pupils should be given opportunities to: • express their own opinions and be aware that people have different points of view about places, environments and geographical issues, *e.g. about wind farms, fair trade* • make decisions about geographical issues by distinguishing between fact and opinion and considering different arguments, *e.g. a traffic problem* • communicate findings in a variety of ways, *e.g. using geographical terms, annotated photographs, maps, diagrams, or ICT.* ## Science Curriculum: Programme of Study: **Skills** **Communication**: Pupils should be given opportunities to: • search for, access and select relevant scientific information, from a range of sources, including ICT • communicate clearly by speech, writing, drawings, diagrams, charts, tables, bar charts, line graphs, videos, and ICT packages, using relevant scientific vocabulary **Enquiry:** Pupils should be given opportunities to carry out different types of enquiry, *e.g. pattern-seeking, exploring, classifying and identifying, making things, fair testing, using and applying models*, by: **Planning**: Pupils turn ideas suggested to them, and their own ideas, into a form that can be investigated. They outline the planned approach/method recognising, deciding upon and giving some justification for each of the following when appropriate: • the choice of success criteria • where and how to find relevant information and ideas

Range:
Interdependence of organisms
Pupils should use and develop their skills, knowledge and understanding by investigating how animals and plants are independent yet rely on each other for survival.
They should be given opportunities to study:
- the environmental factors that affect what grows and lives in those two environments, *e.g. sunlight, water availability, temperature*
- how humans affect the local environment, *e.g. litter, water pollution, noise pollution*.

Developing:
Pupils follow the planned approach/method, revise it where necessary, and where appropriate:
- make comparisons and identify and describe trends or patterns in data and information
- use some prior knowledge to explain links between cause and effect when concluding

Links to the following KS2 science programme of study
- Interdependence of organisms
- The sustainable Earth

PSE Curriculum
Learning outcomes: **Skills**
Developing thinking:
Learners should be given opportunities to:
- identify links between cause and effect
- form personal opinions and make informed decisions

Developing Communication:
Learners should be given opportunities to:
- listen carefully, question and respond to others
- express their views and ideas confidently through a range of appropriate methods
- contribute to class discussions and take part in debates

	Developing ICT: Learners should be given opportunities to: • use ICT safely with appropriate support and guidance **Developing number:** Learners should be given opportunities to: • select data from given information presented in a range of numerical and graphical ways • gather information in a variety of ways, including simple questionnaires or databases to support understanding of PSE-related issues. **Sustainable development and global citizenship** Learners should be given opportunities to: • appreciate the natural world as a source of inspiration • take an active interest in varied aspects of life in school and the wider environment **Working with others:** Learners should be given opportunities to: • work cooperatively to solve problems **Improving own learning:** Learners should be given opportunities to: • experience various learning styles and recognise the ways in which they learn best
Activity 4: How does nuclear energy work? Pupils explore the nuclear energy process and key scientific concepts such as atoms, neutrons and nuclear fission.	**Welsh and English Curriculum:** Strand: **Oracy** Elements: **Developing and presenting information and ideas** Aspects: **Speaking** Year 3 • explain information and ideas using relevant vocabulary • organise what they say so that listeners can understand Year 4 • explain information and ideas using supportive resources • organise talk so that different audiences can follow what is being said

Year 5
- explain information and ideas, exploring and using ways to be convincing
- speak clearly, using formal language and projecting voice effectively to a large audience

Year 6
- express issues and ideas clearly , using specialist vocabulary and examples
- speak clearly, using formal language, varying expression, tone and volume, to keep listeners interested

Aspects: **Listening**

Year 3 :
- listen carefully and make connections between what they are learning and what they already know

Year 4:
- listen carefully to presentations and show understanding of main points

Year 5:
- listen carefully to presentations using techniques to remember the main points,

Year 6:
- listen carefully to presentations and show understanding of the speakers' conclusions or opinions

Aspects: **Collaboration and Discussion**

Year 3:
- contribute to group discussions, sharing ideas and information

Year 4
- contribute to group discussion and help everyone take part

Year 5
- contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up*

Year 6
- contribute purposefully to group discussion to achieve agreed outcomes

Science Curriculum:

Programme of Study: **Skills**
Communication:
Pupils should be given opportunities to:

	1. search for, access and select relevant scientific information, from a range of sources, including ICT **Range:** **Interdependence of organisms** Pupils should use and develop their skills, knowledge and understanding by investigating how animals and plants are independent yet rely on each other for survival. They should be given opportunities to study: • how humans affect the local environment, *e.g. litter, water pollution, noise pollution* **The Sustainable Earth**: Pupils should use and develop their skills, knowledge and understanding by comparing the Earth with other planets, investigating materials around them and considering the importance of recycling. They should be given opportunities to study: • the properties of materials relating to their uses • how some materials are formed or produced • a consideration of what waste is and what happens to local waste that can be recycled and that which cannot be recycled. **Reflecting**: Pupils think about what they have done in order to consolidate learning and transfer skills, knowledge and understanding to other contexts by: • deciding whether the approach/method was successful • describing how they have learned and identifying the ways that worked the best **How things work:** Pupils should use and develop their skills, knowledge and understanding by investigating the science behind everyday things, *e.g. toys, musical instruments and electrical devices,* the way they are constructed and work. They should be given opportunities to study: • the uses of electricity and its control in simple circuits Links to the following KS2 science programme of study • Interdependence of organisms • The sustainable Earth

ICT Curriculum

Programme of study: **Range**

Pupils should be given opportunities to:

- use ICT tools and suitable information sources safely and legally, in accordance with LEA/school guidelines
- use ICT sources of information and non-ICT sources of information
- use ICT to further their understanding of information they have retrieved and processed
- use ICT to explore and to solve problems in the context of work across a variety of subjects
- store and retrieve information they have found or created
- evaluate their work and learning

Create and communicate information

Pupils should be given opportunities to:

1. create and communicate information in the form of text, images and sound, using a range of ICT hardware and software
2. create a range of presentations combining a variety of information and media, *e.g. a poster combining text and graphics, a multimedia presentation*
3. share and exchange information safely through electronic means, *e.g. use of e-mail, virtual learning environments*

PSE Curriculum

Learning outcomes: **Skills**

Developing thinking:

Learners should be given opportunities to:

- distinguish between 'facts', beliefs and opinions
- form personal opinions and make informed decisions

Developing Communication:

Learners should be given opportunities to:

- listen carefully, question and respond to others
- express their views and ideas confidently through a range of appropriate methods
- contribute to class discussions and take part in debates

	Developing ICT: Learners should be given opportunities to: • find and develop information and ideas • create and present information and ideas • use ICT safely with appropriate support and guidance. **Working with others:** Learners should be given opportunities to: • work cooperatively to solve problems **Sustainable development and global citizenship** Learners should be given opportunities to: • appreciate the natural world as a source of inspiration • take an active interest in varied aspects of life in school and the wider environment
Activity 5: How you can save the planet Pupils begin to identify the different forms that energy can take and how it can be lost or wasted, leading to discussions on how best to save energy.	**Welsh and English Curriculum:** Strand: **Oracy** Elements: **Developing and presenting information and ideas** Aspects: **Speaking** Year 3 • explain information and ideas using relevant vocabulary • organise what they say so that listeners can understand Year 4 • explain information and ideas using supportive resources • organise talk so that different audiences can follow what is being said Year 5 • explain information and ideas, exploring and using ways to be convincing • speak clearly, using formal language and projecting voice effectively to a large audience Year 6 • express issues and ideas clearly , using specialist vocabulary and examples

- speak clearly, using formal language, varying expression, tone and volume, to keep listeners interested

Aspects: **Listening**
Year 3 :
- listen carefully and make connections between what they are learning and what they already know

Year 4:
- listen carefully to presentations and show understanding of main points

Year 5:
- listen carefully to presentations using techniques to remember the main points,

Year 6:
- listen carefully to presentations and show understanding of the speakers' conclusions or opinions

Aspects: **Collaboration and Discussion**
Year 3:
- contribute to group discussions, sharing ideas and information
Year 4
- contribute to group discussion and help everyone take part
Year 5
- contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up*
Year 6
- contribute purposefully to group discussion to achieve agreed outcomes

Maths Curriculum:
Strand: **Developing numerical reasoning**
Elements: **Represent and communicate**
Years 3 - 6
- explain results and procedures clearly using mathematical language
- select and construct appropriate carts, diagram and graphs with suitable scales

Elements: **Review**
Years 3 - 6

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

Strand: **Using data skills**
Elements: **Collect and record data, Present and analyse data, Interpret data**
Years 3 – 4

- represent data using:
  - lists, tally charts, tables and diagrams
  - bar charts and bar line graphs labelled in 2s, 5s and 10s

Year 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

Science Curriculum:

Programme of Study: **Skills**
Communication:
Pupils should be given opportunities to:

1. search for, access and select relevant scientific information, from a range of sources, including ICT
2. communicate clearly by speech, writing, drawings, diagrams, charts, tables, bar charts, line graphs, videos, and ICT packages, using relevant scientific vocabulary

Developing:
Pupils follow the planned approach/method, revise it where necessary, and where appropriate:

4. make comparisons and identify and describe trends or patterns in data and information
5. use some prior knowledge to explain links between cause and effect when concluding

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Reflecting: Pupils think about what they have done in order to consolidate learning and transfer skills, knowledge and understanding to other contexts by:

    6.   link the learning to similar situations, within and outside school

How things work:

Pupils should use and develop their skills, knowledge and understanding by investigating the science behind everyday things, *e.g. toys, musical instruments and electrical devices,* the way they are constructed and work.

They should be given opportunities to study:

    1.   the uses of electricity and its control in simple circuits

    2.   forces of different kinds, e.g. gravity magnetic and friction, including air resistance

    3.   the ways in which forces can affect movement and how forces can be compared

Enquiry:

Pupils should be given opportunities to carry out different types of enquiry, *e.g. pattern-seeking, exploring, classifying and identifying, making things, fair testing, using and applying models*, by:

Planning: Pupils turn ideas suggested to them, and their own ideas, into a form that can be investigated. They outline the planned approach/method recognising, deciding upon and giving some justification for each of the following when appropriate:

- the choice of success criteria
- predictions using some previous knowledge and understanding
- where and how to find relevant information and ideas

Range:

Interdependence of organisms

Pupils should use and develop their skills, knowledge and understanding by investigating how animals and plants are independent yet rely on each other for survival.

They should be given opportunities to study:

- the environmental factors that affect what grows and lives in those two environments, *e.g. sunlight, water availability, temperature*
- how humans affect the local environment, *e.g. litter, water pollution, noise pollution*.

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The Sustainable Earth:

Pupils should use and develop their skills, knowledge and understanding by comparing the Earth with other planets, investigating materials around them and considering the importance of recycling.

They should be given opportunities to study:

- a comparison of the features and properties of some natural and made materials
- the properties of materials relating to their uses
- how some materials are formed or produced
- a consideration of what waste is and what happens to local waste that can be recycled and that which cannot be recycled

Links to the following KS2 science programmes of study:

- The sustainable Earth

ICT Curriculum

Programme of study: **Skills**

Find and analyse information

Pupils should be given opportunities to:

1. discuss the purpose of their tasks, the intended audiences and the resources needed
2. find information from a variety of sources for a defined purpose
3. select suitable information and make simple judgements about sources of information

Programme of study: **Range**

Pupils should be given opportunities to:

- use ICT tools and suitable information sources safely and legally, in accordance with LEA/school guidelines
- use ICT sources of information and non-ICT sources of information
- use ICT to further their understanding of information they have retrieved and processed
- use ICT to explore and to solve problems in the context of work across a variety of subjects
- store and retrieve information they have found or created
- evaluate their work and learning

Create and communicate information

Pupils should be given opportunities to:

- create and communicate information in the form of text, images and sound, using a range of ICT hardware and software
- create a range of presentations combining a variety of information and media, *e.g. a poster combining text and graphics, a multimedia presentation*

PSE Curriculum

Learning outcomes: **Skills**

Developing thinking:

Learners should be given opportunities to:

- identify links between cause and effect
- form personal opinions and make informed decisions

Developing Communication:

Learners should be given opportunities to:

- listen carefully, question and respond to others
- express their views and ideas confidently through a range of appropriate methods
- contribute to class discussions and take part in debates

Developing ICT:

Learners should be given opportunities to:

- find and develop information and ideas
- create and present information and ideas
- use ICT safely with appropriate support and guidance.

Working with others:

Learners should be given opportunities to:

- work cooperatively to solve problems

	Sustainable development and global citizenship Learners should be given opportunities to: • take an active interest in varied aspects of life in school and the wider environment and to understand: • how the environment can be affected by the decisions we make individually and collectively **Range:** **Active citizenship** Learners should be given opportunities to understand: • the importance of democratic decision-making
Activity 6: Power your school with low-carbon energy Pupils design, construct and test their own anemometer, evaluating its effectiveness. They then use it to help explore the suitability of constructing a wind turbine within the school grounds.	# Welsh and English Curriculum: Strand: **Oracy** Elements: **Developing and presenting information and ideas** Aspects: **Speaking** Year 3 • explain information and ideas using relevant vocabulary • organise what they say so that listeners can understand Year 4 • explain information and ideas using supportive resources • organise talk so that different audiences can follow what is being said Year 5 • explain information and ideas, exploring and using ways to be convincing • speak clearly, using formal language and projecting voice effectively to a large audience Year 6 • express issues and ideas clearly , using specialist vocabulary and examples • speak clearly, using formal language, varying expression, tone and volume, to keep listeners interested

	Aspects: **Listening**
	 Year 3 :
	    • listen carefully and make connections between what they are learning and what they already know
	
	 Year 4:
	    • listen carefully to presentations and show understanding of main points
	
	 Year 5:
	    • listen carefully to presentations using techniques to remember the main points,
	
	 Year 6:
	    • listen carefully to presentations and show understanding of the speakers' conclusions or opinions
	    •
	
	 Aspects: **Collaboration and Discussion**
	 Year 3:
	    • contribute to group discussions, sharing ideas and information
	 Year 4
	    • contribute to group discussion and help everyone take part
	 Year 5
	    • contribute to group discussion, taking some responsibility for completing the task well, *e.g. introducing relevant ideas, summing up*
	 Year 6
	    • contribute purposefully to group discussion to achieve agreed outcomes
	
	 Maths Curriculum:
	 Strand: **Developing numerical reasoning**
	 Elements: **Identify processes and connections**
	 Years 3 - 6
	    • transfer mathematical skills to a variety of contexts and everyday situations
	    • select and use suitable instruments and units of measurement

Elements: **Represent and communicate**

Years 3 – 6

- explain results and procedures clearly using mathematical language
- use appropriate notation, symbols and units of measurement

Elements: **Review**

Years 3 – 6

- 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

Strand: **Using measuring skills**

Elements: **Time**

Year 3

- calculate start times, finish times and durations using hours, 30-minute intervals and 15-minute intervals

Year 4

- calculate start times, finish times and durations using 5-minute intervals

Year 5

- carry out practical activities involving timed events and explain which unit of time is the most appropriate

Year 6

- time events in minutes and seconds to the nearest tenth of a second

Strand: **Using data skills**

Elements: **Collect and record data, Present and analyse data, Interpret data**

Year 3

- represent data using:
    - lists, tally charts, tables and diagrams
    - bar charts and bar line graphs labelled in 2s, 5s and 10s
    - pictograms where one symbol represents more than one unit using a key
    - Venn and Carroll diagrams
- extract and interpret information from charts, timetables, diagrams and graphs.

Year 4
- represent data using:
  - lists, tally charts, tables and diagrams
  - bar charts and bar line graphs labelled in 2s, 5s and 10s
  - pictograms where one symbol represents more than one unit using a key
  - Venn and Carroll diagrams
- extract and interpret information from charts, timetables, diagrams and graphs.

Year 5
- 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

Year 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

Science Curriculum:
Programme of Study: **Skills**
Communication:
Pupils should be given opportunities to:
- search for, access and select relevant scientific information, from a range of sources, including ICT
- communicate clearly by speech, writing, drawings, diagrams, charts, tables, bar charts, line graphs, videos, and ICT packages, using relevant scientific vocabulary

| | **Developing**: Pupils follow the planned approach/method, revise it where necessary, and where appropriate:
• use apparatus and equipment correctly and safely
• make careful observations and accurate measurements, using digital and ICT equipment at times
• check observations and measurements by repeating them in order to collect reliable data
• make comparisons and identify and describe trends or patterns in data and information
• use some prior knowledge to explain links between cause and effect when concluding

Reflecting:
Pupils think about what they have done in order to consolidate learning and transfer skills, knowledge and understanding to other contexts by:
• beginning to evaluate outcomes against success criteria
• deciding whether the approach/method was successful
• describing any amendments made to the planned approach/method
• suggesting how the approach/method could have been improved
• describing how they have learned and identifying the ways that worked the best
• Linking the learning to similar situations, within and outside school.

How things work:
Pupils should use and develop their skills, knowledge and understanding by investigating the science behind everyday things. They should be given opportunities to study:
• the uses of electricity and its control in simple circuits
• forces of different kinds, e.g. gravity magnetic and friction, including air resistance
• the ways in which forces can affect movement and how forces can be compared

Enquiry:
Pupils should be given opportunities to carry out different types of enquiry, *e.g. pattern-seeking, exploring, classifying and identifying, making things, fair testing, using and applying models*, by:
Planning: Pupils turn ideas suggested to them, and their own ideas, into a form that can be investigated. They outline the planned approach/method recognising, deciding upon and giving some justification for each of the following when appropriate:
• the choice of success criteria |

- predictions using some previous knowledge and understanding
- where and how to find relevant information and ideas
- when carrying out a fair test, the key variables that need to be controlled and how to change the independent variable whilst keeping other key variables the same
- the observations or measurements that need to be made
- the equipment and techniques required for the enquiry
- any hazards and risks to themselves and others.

Links to the following KS2 science programme of study
- Interdependence of organisms
- The sustainable Earth

ICT Curriculum
Programme of study: **Skills**
Find and analyse information
Pupils should be given opportunities to:
- discuss the purpose of their tasks, the intended audiences and the resources needed
- find information from a variety of sources for a defined purpose
- produce and use databases to ask and answer questions, *e.g. search, sort and graph*
- investigate the effect of changing variables in models and/or simulations to ask and answer 'what if…?' type questions.

Programme of study: **Range**
Pupils should be given opportunities to:
- use ICT tools and suitable information sources safely and legally, in accordance with LEA/school guidelines
- use ICT sources of information and non-ICT sources of information
- use ICT to further their understanding of information they have retrieved and processed
- use ICT to explore and to solve problems in the context of work across a variety of subjects
- store and retrieve information they have found or created
- evaluate their work and learning

Create and communicate information

Pupils should be given opportunities to:

- create and communicate information in the form of text, images and sound, using a range of ICT hardware and software
- create a range of presentations combining a variety of information and media, *e.g. a poster combining text and graphics, a multimedia presentation*

Design and technology KS2:

Programme of study: **Skills**

Designing:

Pupils should be given opportunities to:

- investigate how existing products look and function as a source of ideas for their own products, *e.g. examine a range of products related to their task, toys, healthy eating*
- develop a simple specification indicating their intentions and approach
- demonstrate their creative thinking when considering and recording solutions to problems that arise during their designing and making, *e.g. realise that it would be quicker and easier to use ready-made materials, components and ingredients rather than make their own*
- develop and communicate their design ideas in a variety of ways, using ICT and models where appropriate.
- consider the safety, reliability and sustainability of their activities/products, *e.g. consider how use or misuse of their products might cause injury, damage or poor health*
- evaluate their design ideas as they develop, considering the needs of the user.

Making:

Pupils should be given opportunities to:

- work to their specification/recipe to make products
- choose appropriate materials, ingredients, equipment, tools/utensils and techniques, from a range made available to them
- measure, mark out, cut, shape, join, weigh and mix a range of materials and ingredients, using appropriate tools/utensils, equipment and techniques
- discuss their products, and evaluate their work, e.g. explain why and how they made their product and what they think about its function, features, performance.

	Range: Pupils should be given opportunities to develop their design and technology capability through: - tasks in which they explore and investigate simple products in order to acquire technological knowledge and understanding that can be applied in their designing and making - tasks in which they learn about the responsible use of materials, considering issues of sustainability - tasks in which they develop and practise particular skills and techniques that can be applied in their designing and making - tasks in which they design and make products, focusing on different contexts and materials.