

Curriculum for Wales	AoLE Focus	SCIENCE AND TECHNOLOGY					
	Our School Curriculum Vision	Within the Taff Bargoed Learning Partnership, our learners will be provided with experiences that will allow them to; Recognise their importance as a global citizen and take responsibility for their environment and wider world; developing their understanding of organic and inorganic science. They will apply experience, skills and knowledge to develop ideas independently. Authentic contexts will fuel their curiosity and provide opportunities to question, observe, challenge and create solutions to problems. As individuals, our learners will foster a respect for emerging technologies; relating it to their everyday lives. Through the various areas explored, learners will combine their skills and understanding to achieve their potential.					
	Progression Step	I					
Knowledge – ‘Learn ABOUT’						Experience – ‘Learn FROM’	
Within our Curriculum, a focus is given to Pupil interest in contributing to the learning that is taking place, in order to develop a child-centred approach. However there is a range of expected knowledge that we aim to develop Pupils Skills through.						Pupils will be provided with an opportunity to experience:-	
In Nursery, Pupils will learn about ... <ul style="list-style-type: none">How plants and animals are living things which growExploring the properties of materials and choose different materials for a particular purpose.Learn about the world around them including technological developmentsEveryday technology including simple interfaces and touch screen based resourcesSimple construction		In Reception, Pupils will learn about ... <ul style="list-style-type: none">How plants and animals are living things which growExploring the properties of materials and choose different materials for a particular purpose.Learn about the world around them including technological developmentsEveryday technology including simple interfaces and touch screen based resourcesSimple construction		In Year 1 Pupils will learn about ... <ul style="list-style-type: none">How plants and animals are living things which growExploring the properties of materials and choose different materials for a particular purpose.Learn about the world around them including technological developmentsThe use of technology outside of school, including E-Safety and staying safe online.How technology can be used for processing and storing information, including simple animationSimple elements of computer science including an introduction to coding.How different mechanisms produce different types of movements/turns – up, down, left, rightExplore the mechanisms making something roll e.g. a wheels and axels.		<ul style="list-style-type: none">Identify, follow and begin to create sequences and patterns in everyday activities.Scientific ideas in real life situations –both inside and outside of the classroom.Use and experience a wide range of technology resources and have some experience of using these first handUnderstand how technology and science affect us in our everyday worldDevelop a simple understanding of engineering and how this is used in everyday lifeOpportunities to engage in design and construction activities and experiences	
SKILLS – ‘Learn TO’							
Through our Curriculum for Expressive Arts , our pupils will develop as Ambitious, Capable Learners, Healthy confident Individuals, Ethical, informed Citizens & Enterprising, Creative contributors. Enrichment and Experiences within this AoLE, at our School, will include opportunities for Pupils to;							
What Matters Statement		Descriptions of Learning	What this looks like in NURSERY :	What this looks like in RECEPTION :	What this looks like in YEAR 1 :		
Being curious and searching for answers is essential to understanding and predicting phenomena	Through opportunities to;	I.1 I can show curiosity and question how things work.	<ul style="list-style-type: none">Begin to ask simple questions about the world around them.Begin to show curiosity in the world around them.Be given simple opportunities to explore how things work e.g. through a discovery table looking at everyday objects.	<ul style="list-style-type: none">Show curiosity in the world around them; both natural and man-madeAsk questions about the world around them, beginning to show an awareness of where to find answersExplore, practically, how things work.	<ul style="list-style-type: none">Generate questions about the world they live in as a basis of developing their curiosityBe provided with opportunities to develop and independently explore various aspects to discover answers to their questions.Explore, in a variety of ways, how things work.		
		I.2 I can explore the environment, make observations and communicate	<ul style="list-style-type: none">Explore their class/school environment and, with support, begin to make simple observationsWith support, communicate their findings simply e.g. through early mark making, digital photos/evidence.	<ul style="list-style-type: none">Explore the school/local environment and make simple observations about what they discoverCommunicate their findings and ideas using simple formats including the use of IT/digital portfolios	<ul style="list-style-type: none">Explore their local and wider environment making observations about what they discoverCommunicate their ideas using a range of methods with increasing confidence.		

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Design thinking and engineering offer technical and creative ways to meet society's needs and wants.	Through opportunities to;	I.3 I can design what I make and communicate about what I am making.	<ul style="list-style-type: none"> Begin to consider basic design ideas before making something e.g. deciding as a group which fruits should go into a fruit kebab. In simple terms, talk about what they have made, talking about their favourite part/features. 	<ul style="list-style-type: none"> With support, create a simple design for a product/item before making. Begin to consider, in simple terms, key features of a design With growing confidence, communicate both orally and in written form, about their designs. 	<ul style="list-style-type: none"> Create a simple design idea for an item before making/creating it Consider key elements of a design such as ingredients or materials needed Communicate about what they are making, explaining their ideas simply.
		I.4 I can safely use simple tools, materials and equipment to construct and deconstruct.	<ul style="list-style-type: none"> With support, begin to handle and explore a range of basic tools/equipment that can be used during construction Be provided with regular opportunities to engage in practical constructions activities within the classroom e.g. construction area With support, begin to develop an initial awareness of staying safe e.g. when using scissors 	<ul style="list-style-type: none"> Handle and use, with growing independence, a range of tools/equipment when carrying out construction/deconstruction tasks Engage in construction opportunities within the classroom, using a range of different construction resources. Begin to develop an awareness of safety when using equipment/tools. 	<ul style="list-style-type: none"> Confidently use a range of different tools/equipment to carry out construction/deconstruction activities Use a range of resources/equipment to create and construct items/structures Know how to stay safe when using simple tools/equipment independently e.g. using scissors safely in the creative area.
		I.5 I can explore the properties of materials and choose different materials for a	<ul style="list-style-type: none"> Handle and discover a range of materials Describe properties simply of various materials 	<ul style="list-style-type: none"> Handle and explore a range of materials Describe appearance and texture, as well as simple properties Decide on a material to use for a simple purpose. 	<ul style="list-style-type: none"> Use different materials as part of a project Consider purpose and appropriate materials as well as design. Make models using reclaimed materials.
		I.6 I can identify, follow and begin to create sequences and patterns in everyday activities.	<ul style="list-style-type: none"> Identify and create simple repeating patterns using concrete equipment e.g. beads, printing etc. Be able to complete or continue a simple sequence using their own choice e.g. creating a sequence of coloured cars in a line 	<ul style="list-style-type: none"> Begin to create a pattern/sequence using concrete resources Take part in independent activities involving sequencing or pattern making Begin to develop an understanding of 'sequence' using a digital resource, with support e.g. programming a beebot to carry out a movement sequence. 	<ul style="list-style-type: none"> Be able to identify patterns/sequences within their environment and across the curriculum e.g. exploring a pattern of movement when carrying out a movement routine Create a pattern/sequence using concrete resources With increasing confidence, use a range of digital resources to create a sequence/pattern –e.g. programming a beebot to move around a course, creating repeating pattern artwork using a digital package.

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The world around us is full of living things which depend on each other for survival.	Through opportunities to;	I.7 I can recognise that plants and animals are living things which grow.	<ul style="list-style-type: none"> Recognise and name some common plants and animals that live in the local environment Identify key parts of a plant – leaf, root, stem, flower Recognise that plants need specific things to grow Identify and locate some parts of the body (human or animal) Identify key elements needed for animals/humans to grow. 	<ul style="list-style-type: none"> Name and recognise some common plants and animals that live in the local environment Recognise that plants need water and sunlight to grow Know that plants produce seeds Locate body parts, including sense organs Recognise changes that take place as animals get older – they grow and reproduce. Use observations to identify differences between humans and other animals. 	<ul style="list-style-type: none"> Describe some basic conditions for survival of animals and plants Identify some types of food that makes up their diet Describe some differences they observe e.g. between a baby and adult (including animals and humans) Recognise that animals produce young Explain difference between living and non-living things in terms of characteristics such as movement and growth Provide simple explanations for changes in living things such as diet affecting animals or lack of water and light on plants.
		I.8 I can identify, follow and begin to create sequences and patterns in everyday activities.	<ul style="list-style-type: none"> Identify and create simple repeating patterns using concrete equipment e.g. beads, printing etc. Begin to explore pattern in the natural world Be able to complete or continue a simple sequence using their own choice e.g. creating a sequence of coloured cars in a line 	<ul style="list-style-type: none"> Begin to create a pattern/sequence using concrete resources Explore pattern in the natural world and use this within their own work e.g. leaf printing Take part in independent activities involving sequencing or pattern making Begin to develop an understanding of 'sequence' using a digital resource, with support e.g. programming a beebot to carry out a movement sequence. 	<ul style="list-style-type: none"> Be able to identify patterns/sequences within their environment and across the curriculum e.g. exploring a pattern of movement when carrying out a movement routine, patterns in nature Create a pattern/sequence using concrete resources With increasing confidence, use a range of digital resources to create a sequence/pattern –e.g. programming a beebot to move around a course, creating repeating pattern artwork using a digital package.

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Matter and the way it behaves defines our universe and shapes our lives	Through opportunities to;	I.9 I can explore the properties of materials and choose different materials for a particular use.	<ul style="list-style-type: none"> Handle and discover a range of materials Describe properties simply of various materials 	<ul style="list-style-type: none"> Handle and explore a range of materials Describe appearance and texture, as well as simple properties Decide on a material to use for a simple purpose. 	<ul style="list-style-type: none"> Use different materials as part of a project Consider purpose and appropriate materials as well as design. Make models using reclaimed materials.
		I.10 I can identify, follow and begin to create sequences and patterns in everyday activities.	<ul style="list-style-type: none"> Identify and create simple repeating patterns using concrete equipment e.g. beads, printing etc. Begin to explore pattern in the natural world Be able to complete or continue a simple sequence using their own choice e.g. creating a sequence of coloured cars in a line 	<ul style="list-style-type: none"> Begin to create a pattern/sequence using concrete resources Explore pattern in the natural world and use this within their own work e.g. leaf printing Take part in independent activities involving sequencing or pattern making Begin to develop an understanding of 'sequence' using a digital resource, with support e.g. programming a beebot to carry out a movement sequence. 	<ul style="list-style-type: none"> Be able to identify patterns/sequences within their environment and across the curriculum e.g. exploring a pattern of movement when carrying out a movement routine, patterns in nature Create a pattern/sequence using concrete resources With increasing confidence, use a range of digital resources to create a sequence/pattern –e.g. programming a beebot to move around a course, creating repeating pattern artwork using a digital package.

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Forces and energy provide a foundation for understanding our universe.	Through opportunities to;	I.I.I I can identify, follow and begin to create sequences and patterns in everyday activities.	<ul style="list-style-type: none"> Identify and create simple repeating patterns using concrete equipment e.g. beads, printing etc. Begin to explore pattern in the natural world Be able to complete or continue a simple sequence using their own choice e.g. creating a sequence of coloured cars in a line 	<ul style="list-style-type: none"> Begin to create a pattern/sequence using concrete resources Explore pattern in the natural world and use this within their own work e.g. leaf printing Take part in independent activities involving sequencing or pattern making Begin to develop an understanding of 'sequence' using a digital resource, with support e.g. programming a beebot to carry out a movement sequence. 	<ul style="list-style-type: none"> Be able to identify patterns/sequences within their environment and across the curriculum e.g. exploring a pattern of movement when carrying out a movement routine, patterns in nature Create a pattern/sequence using concrete resources With increasing confidence, use a range of digital resources to create a sequence/pattern –e.g. programming a beebot to move around a course, creating repeating pattern artwork using a digital package.

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Computation is the Foundation for our digital world.	Through opportunities to;	I.12 I can identify, follow and begin to create sequences and patterns in everyday activities.	<ul style="list-style-type: none"> Identify and create simple repeating patterns using concrete equipment e.g. beads, printing etc. Begin to explore pattern in the natural world 	<ul style="list-style-type: none"> Begin to create a pattern/sequence using concrete resources Explore pattern in the natural world and use this within their own work e.g. leaf printing Take part in independent activities involving sequencing or pattern making Begin to develop an understanding of 'sequence' using a digital resource, with support e.g. programming a beebot to carry out a movement sequence. 	<ul style="list-style-type: none"> Be able to identify patterns/sequences within their environment and across the curriculum e.g. exploring a pattern of movement when carrying out a movement routine, patterns in nature Create a pattern/sequence using concrete resources With increasing confidence, use a range of digital resources to create a sequence/pattern –e.g. programming a beebot to move around a course, creating repeating pattern artwork using a digital package.
		I.13 I am beginning to follow a sequence of instructions	<ul style="list-style-type: none"> Be able to complete or continue a simple sequence using their own choice e.g. creating a sequence of coloured cars in a line 	<ul style="list-style-type: none"> Take part in independent activities involving sequencing or pattern making Begin to develop an understanding of 'sequence' using a digital resource, with support e.g. programming a beebot to carry out a movement sequence. 	<ul style="list-style-type: none"> Create a pattern/sequence using concrete resources With increasing confidence, use a range of digital resources to create a sequence/pattern –e.g. programming a beebot to move around a course, creating repeating pattern artwork using a digital package.
		I.14 I can experiment with and identify uses of a range of computing technology in the world around me.	<ul style="list-style-type: none"> Begin to explore technology in our everyday lives – e.g. mobiles, TV, tablets, microwaves Engage with interactive technology within the classroom to carry out a range of tasks Experience a growing range of simple technology and computing resources at School 	<ul style="list-style-type: none"> Identify simple examples of how technology is used in our everyday lives Be provided with opportunities to experiment and use a wide range of technology and use this to access a range of programs/platforms for completing a task. Experience a range of technology resources at school, developing an initial awareness of staying safe. 	<ul style="list-style-type: none"> Provide examples of how technology impacts on our everyday lives – giving some simple benefits and drawbacks of the reliance on technology. Use, with increasing confidence, a range of IT resources to complete various tasks within the classroom (both structured and independently) Begin to develop a basic understanding of computing in the world around them.