

Computing in the Foundation Stage

With the update to the Early Years Framework, computing was removed from the Early Years curriculum. However, we are required to ensure children's 'school readiness' and 'give them a broad range of knowledge and skills that provide the right foundation for good future progress through school and life' - Statutory Framework for EYFS September 2021. "Computational Thinking is at the heart of the computing curriculum and children will only be ready for this subject if we provide them with foundational experiences. The problem solving of Computational Thinking closely aligns with the Characteristics of Effective Learning. So, by aligning EYFS provision to Computational Thinking, we use the same vocabulary as used by our colleagues in KS1, and ensure progression," Barefoot Computing 2025.

'Computational Thinking' is a set of problem-solving skills that we can use in everyday life. These can be seen in the table below:

	EYFS Computational Thinking Skills	Simple Definition
Concepts	Logical reasoning	Anticipating and explaining
	Abstraction	Naming and labelling, working out what is important, sticking to the main theme, ignoring what is not important, creating a summary
	Pattern	Grouping things, comparing, spotting similarities and differences, working out rules
	Algorithms and Decomposition	Responding to instructions, ordering things, sequencing things, introducing storylines, working out different ways to do things, breaking problems down into steps
Approaches	Tinkering	Playing and exploring
	Creating	Creating, checking and fixing things
	Collaboration	Playing and working collaboratively
	Persevering	Not giving up

Computational Thinking is taught through an unplugged approach, meaning that it does not require computers. The problem-solving skills are instead acquired through hands on, practical and exciting activities in which pupils have to tap into their Computational Thinking in order to complete them.

As a school, we will be developing the Computational Thinking skills through the activities in the overview below.

Term	Concept / Approach	Early Learning Goal and Development Matters links	Activity
Autumn Autumn Garlands	Logical reasoning Pattern Creating	<p>ELG: Creating with Materials</p> <ul style="list-style-type: none"> - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; <p>ELG: Fine Motor Skills</p> <ul style="list-style-type: none"> - Use a range of small tools, including scissors, paint brushes and cutlery; <p>Active Learning</p> <ul style="list-style-type: none"> - Respond to new experiences that you bring to their attention <p>Creating and thinking critically</p> <ul style="list-style-type: none"> - Review their progress as they try to achieve a goal. Check how well they are doing. <p>Mathematics</p> <ul style="list-style-type: none"> - Continue, copy and create repeating patterns. - Make patterns with varying rules (including AB, ABB and ABBC) and objects and invite children to continue the pattern. <p>Understanding the world</p> <ul style="list-style-type: none"> - Explore the natural world around them. 	<p>Children print a range of autumn objects (leaves, pine cones, acorns etc.) on to long strips of paper. Once dry, the strips are stapled into garland crowns.</p> <p>Key Questions</p> <ul style="list-style-type: none"> • Which objects shall we choose? • How did you make that? • Does anything need changing? • What do you like about yours? • I wonder how it could be better? • Which objects are repeated? • Which object is first? • What do we need next? • How do we know?
Autumn Leaf Labyrinths	Algorithms and Decomposition Logical Reasoning Creating	<p>ELG: Building Relationships</p> <ul style="list-style-type: none"> - Work and play cooperatively and take turns with others; <p>ELG: Gross Motor Skills</p> <ul style="list-style-type: none"> - Negotiate space and obstacles safely, with consideration for themselves and others; <p>Understanding the world</p> <ul style="list-style-type: none"> - Understand the effect of changing seasons on the natural world around them. <p>Playing and exploring</p> <ul style="list-style-type: none"> - Make independent choices. - Do things independently that they have been previously taught. - Respond to new experiences that you bring to their attention. 	<p>Children collect piles of leaves and use these to create a leaf maze. This can be life size for the children to use, or on a smaller scale for toy vehicles to be steered through.</p> <p>Key Questions</p> <ul style="list-style-type: none"> • What do we need to do to create the maze? • What do we need to use? • What do we need to do first? • Where will the entrance / middle be? • Which part shall we do next? • I think this path should go here... Do you agree? • Who is going to do this part? / Whose turn is it? • Which path will you take? Why?

Spring (Winter) Let's Make an Igloo	Logical Reasoning Decomposition Tinkering Collaborating Persevering	<p>ELG: Building Relationships</p> <ul style="list-style-type: none"> - Work and play cooperatively and take turns with others; <p>ELG: Fine Motor Skills</p> <ul style="list-style-type: none"> - Use a range of small tools, including scissors, paint brushes and cutlery; <p>ELG: The Natural World</p> <ul style="list-style-type: none"> - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. <p>Understanding the world</p> <ul style="list-style-type: none"> - Recognise some environments that are different to the one in which they live. 	<p>Children experiment with materials and resources provided (sugar cubes, marshmallows, cotton wool, glue, cocktail sticks) to work out how to create an igloo structure that will stay up.</p> <p>Key Questions</p> <ul style="list-style-type: none"> • What do we need? • Which material will you use? / Why? • What shall we make first? • What are you going to do next? • Where shall we put this piece? • How can we get this to balance? • What should I use to make this? • What have you found out? • How do you know that? • What happened? / Did that surprise you? / Why? • Will this stay up? / Why? / Why not?
Spring Junk Scarecrow	Abstraction Tinkering Creating Collaboration	<p>ELG: The Natural World</p> <ul style="list-style-type: none"> - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. <p>ELG: Creating with Materials</p> <ul style="list-style-type: none"> - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; - Share their creations, explaining the process they have used; <p>Understanding the world</p> <ul style="list-style-type: none"> - Understand the effect of changing seasons on the natural world around them. - Explore the natural world around them. <p>Expressive arts and design</p> <p>Create collaboratively, sharing ideas, resources and skills</p>	<p>Children look at a range of pictures of scarecrows and then draw their own including main features (head, hat, shirt, straw etc.) Then in groups, children make a junk model scarecrow.</p> <p>Key Questions</p> <ul style="list-style-type: none"> is the same about all the scarecrows? is different about them? ones do you think look the best? / Why? colours are they wearing? size / clothes colour important? are you going to include in your scarecrow picture? an you join the pieces together? will the head stay up? sing this work? / Why / Why not? id you make that? do you like about yours?

<p>Summer Colour Collections</p>	<p>Pattern Creating Persevering</p>	<p>Active Learning</p> <ul style="list-style-type: none"> - Bring their own interests and fascinations into early years settings. - Respond to new experiences that you bring to their attention. <p>Creating and thinking critically</p> <ul style="list-style-type: none"> - Help children to extend their ideas through sustained discussion that goes beyond what they, and you, have noticed. <p>Communication and Language</p> <ul style="list-style-type: none"> - Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. <p>Mathematics</p> <ul style="list-style-type: none"> - Count objects, actions and sounds. - Compare numbers. 	<p>Children go for a walk and collect objects (flowers, leaves, grass, pine cones etc.) These objects are then grouped by the children and used to form a pictogram.</p> <p>Key Questions</p> <ul style="list-style-type: none"> • I wonder how many different colour/ size / shape objects we can find? • Can you find an object which is red/ round etc.? • What do you notice about the objects we have collected? • I wonder how many different coloured objects we have? • Are any of the objects the same colour? • Can you organise the objects into the different colour groups? • Which colour do we have a lot of? • Which colour do we have very little of? • When I make a tower of these colours, which tower is the tallest? • How many (yellow) objects do I have? • Can you show me how to count them? • Can you show me how to make a tower of the object? • In which tower do I place this object? • I wonder which tower will have the most objects in when we finish...
<p>Summer Summer Catcher</p>	<p>Pattern Tinkering Creating</p>	<p>Creating and thinking critically</p> <ul style="list-style-type: none"> - Help children to extend their ideas through sustained discussion that goes beyond what they, and you, have noticed. <p>Communication and Language</p> <ul style="list-style-type: none"> - Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. <p>Mathematics</p> <ul style="list-style-type: none"> - Count objects, actions and sounds. - Compare numbers. 	<p>Children use the objects from their pictograms to create a summer catcher. Using a paper plate with the middle cut out and a clear, sticky wallet/sticky back plastic in its place – children arrange their objects into a pattern.</p> <p>Key Questions</p> <ul style="list-style-type: none"> • How could you arrange your objects to make a pattern? • Will you break pieces apart? • Can you make a repeated pattern of colour/object/size? • Do you think this will look good here? / Why? / Why not?