



Tregolls Academy Progression of Substantive & Dicipinary Knowledge



At Tregolls Academy, we aim to develop eager, motivated and curious learners that can reflect on the past and make meaningful links to the present day.

Our DT curriculum holds our curriculum drivers at its core: **C**uriosity, **A**spiration, **R**esilience and **E**xcellence. At Tregolls Academy, we **CARE**.

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, form and function.</p> <p>Children share their creations, explaining the process they have used.</p> <p>Make use of props and materials when role playing</p>	<p>Mechanisms: Moving storybooks</p> <p>Textiles: Puppets</p> <p>Mechanisms: Wheels and axels</p> <p>Nutrition: Fruit Smoothies</p>	<p>Mechanisms: Moving monsters</p> <p>Structures: Baby Bear's Chair Cooking and</p> <p>Nutrition: A Balanced diet</p>	<p>Textiles: applique and cross stitch (Egyptian Collars) Cooking and</p> <p>Nutrition: Eating seasonally (tarts)</p> <p>Structures: Constructing a castle</p> <p>Digital World: Wearable Technology</p>	<p>Textiles: Fastenings (book sleeve)</p> <p>Cooking and Nutrition: Biscuits (Christmas)</p> <p>Mechanisms: Slingshot cars</p> <p>Structure: Mini Greenhouse</p>	<p>Mechanical: Pop-up books</p> <p>Structures: Bridges</p> <p>Cooking and nutrition: What could be healthier?</p>	<p>Electrical : Steady Hand Game Cooking and</p> <p>Nutrition: Come dine with me</p> <p>Digital: Navigating the world</p> <p>Textiles: Waistcoats</p>

EYFS

In EYFS, design and technology learning begins in 'Expressive arts and design' where children begin to explore, use and a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. In Physical Development (Moving and Handling) Children handle equipment and tools effectively.

Adapting the curriculum for pupils with SEND in design and technology

Design and technology is an essential means of creative expression that can boost self-esteem and give learners the agency needed to develop and communicate their personal ideas, observations, and creations. It lends learners opportunities to develop both individually and collaboratively, designing naturally encourages learners to problem solve, to be self-critical, to make decisions and to take risks within their learning. The encouragement of self-expression and exploration supports learners to embrace 'the happy accident' and 'learn through their mistakes'.

- Adaptive teaching takes place.
- The tools available are carefully considered for children with physical disabilities.
- Encourage a culture of experimentation, with no one right way to do something
- For sensory needs, consider when alternative materials or tools may need to be offered
- Teachers identify and break down the components of the subject curriculum into manageable chunks for pupils who find learning more difficult, particularly those with cognition and learning needs. These may be smaller 'steps' than those taken by other pupils to avoid overloading the working memory.
- A variety of additional scaffolds may be used in lessons, such vocabulary banks, additional visual stimuli or adult support.

Substantive Knowledge:

Substantive & Disciplinary Concepts						
Term 3 – Structures						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Baby Bear's Chair <ul style="list-style-type: none"> • To know that a structure is something which has been formed or made from parts. • To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. • To know that a 'strong' structure is one which does not break easily. • To know that a 'stiff' structure or material is one which does not bend easily 			Building Bridges <ul style="list-style-type: none"> • To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges. • To know that properties are words that describe the form and function of materials. • To understand why material selection is important based on their properties. • To understand the material (functional and aesthetic) properties of wood. 	
Disciplinary Concepts						
		Baby Bear's Chair <ul style="list-style-type: none"> • Generating and communicating ideas using sketching and modelling. • Learning about different types of structures, found in the natural world and in everyday objects. • Making a structure according to design criteria. • Creating joints and structures from paper/card and tape. • Building a strong and stiff structure by folding paper. 			Building Bridges <ul style="list-style-type: none"> • Know what beams and pillars are and how they are used in bridge construction • Learn how to test the strength of different beam shapes using paper and card. • Be able to explain what a truss is and how trusses make bridges stronger. • Know how to identify the three types of trusses commonly used in bridge design. • Be able to use paper straws to build truss bridges 	

		<ul style="list-style-type: none"> • Exploring the features of structures. • Comparing the stability of different shapes. • Testing the strength of their own structures. • Identifying the weakest part of a structure • Evaluating the strength, stiffness and stability of their own structure. 			<ul style="list-style-type: none"> • Know how arches work to make bridges stronger. • Be able to test and make an arch frame. • Be able to learn about how suspension bridges use tension forces to work. • Design, make and evaluate a prototype suspension bridge using a scale of 1:100 according to specific design criteria. 	
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