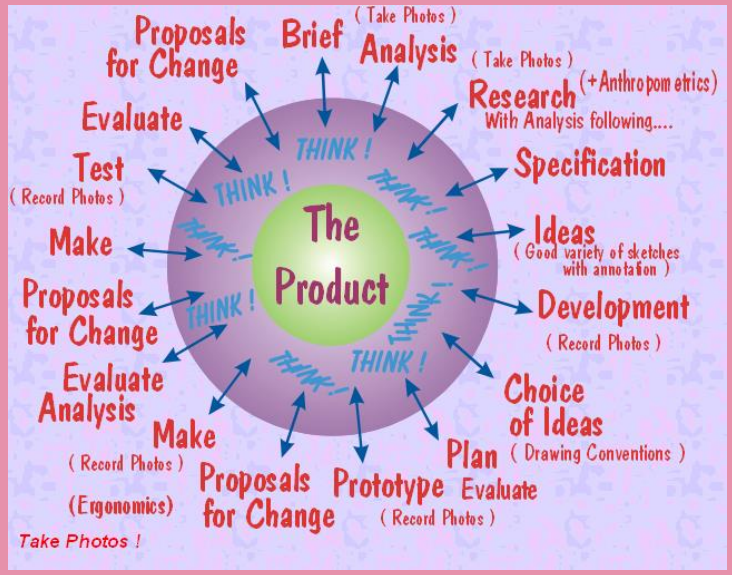
2019

Curriculum Skills and Progression Map
Design Technology



Nebula
where stars are born

The Nebula Federation

Hainford V.c Primary School

D&T Curriculum Skills and Progression Map
Key language in red

DESIGN TECHNOLOGY: AGE RELATED STATUTORY COVERAGE	
KEY STAGE ONE LEARNING	**KEY STAGE TWO LEARNING**
Design • Design purposeful, functional, appealing products based on design criteria • Generate, develop, model and communicate their ideas through talking, • drawing, templates, mock-ups and ICT **Make** • Select from and use a range of tools and equipment to perform practical tasks • Select from and use a wide range of materials and components, including • construction materials, textiles, ingredients **Evaluate** • Explore and evaluate a range of existing products • Evaluate ideas / products against design criteria **Technical knowledge** • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms in their products. • Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from.	**Design** • Use research and develop criteria to inform the design of innovative, functional, appealing products that are fit for purpose • Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** • Select from and use a wider range of tools and equipment to perform practical tasks accurately • Select from and use a wider range of materials and components **Evaluate** • Investigate and analyse a range of existing products • Evaluate ideas and products against own design criteria and consider the views of others • Understand how key events and individuals have helped shape the world **Technical knowledge** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply understanding of computing to program, monitor and control products. • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

	• Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Hainford School Technical Knowledge LTP overview

	Class 1		Class 2		Class 3		
	A	B	A		A	B	C
Tech Knowledge: **Building structures**	Class structure: Robot (strength) Tape vs glue Group robots: cutting / materials	Class structure: Making a Lego school (fixing and joining)	**Building**: strong and stable Anglo-Saxon home (wood/sticks) – <u>free standing</u>	**Building:** Boat (life) that is <u>water resistant</u> and <u>buoyant</u> – sail across a calm then stormy tank of water Build:	**Building:** Viking longboat (model size) – raising sail <u>Scaling / accuracy of measurement</u>	**Structure**: Neolithic hut (art straws) linked with STEM (strengthening& reinforcing) Moving	**Structure:** design and make a bridge to support a weight
Tech Knowledge (*Strengthening, Mechanisms, Computing Electrical*)	Reflective band (road-safety): joining and materials	Build playground equipment: See-saw (balance) Swing: Slide: slippery W. Hat: spin Split pins: Moving arms for a puppet show	Sliders in a picture book	<u>Catapult with levers</u>: - make a Roman inspired catapult that shoots rocks	• Pulleys (raising a sail) • Cams & Gears (moving shadow puppet) • Computing (game – micro-bit)	• Make a motorised vehicle • Electric cars (batteries) Goblin racer	<u>Levers and linkages</u>: Moving animals
Tech Knowledge: **Cooking**	Ourselves: Healthy eating Where does our food come from? (fruit) **Make**: Fruit salad	**Make**: sandwiches	**Make**: Savoury dish (rice) Explore balanced diet and the origins of ingredients	**Make**: (as a class) Jewish bread (Shabbat)	**Make:** design a Mexican feast (savoury)	**Make:** Sweet or savoury bread (medieval)	**Make:** Spring rolls Explore balanced diet

D&T Curriculum Skills and Progression Map
Key language in red

Skills Map – Design Technology		
Early Years – Design Technology		
Developing, Planning and Communicating Ideas	**Working with tools, equipment, materials and components to make quality products**	**Evaluating processes and products**
• Can they use appropriate senses to explore and describe objects? • Can they think of some ideas of their own? • Can they plan how best to approach a task? **DESIGN AND DEVELOP** • Can they talk about what they want to make?	• Can they explain what they are making? • Can they select appropriate resources and tools? • Can they explain which tools are they using and why? • Can they use tools safely? • Can they use tools to manipulate materials? **MAKING** • Can they use a variety of tools and materials to make models.	• Can they begin to describe how their product works? • Can they change their strategy as needed? **PRODUCT AND EVALUATION** • Can they be excited about what they have made?

Skills Map – D&T		
Years 1 to 3		
Year 1	**Year 2**	**Year 3**
PLANNING • Can they identify the key features of an existing product? • Can they explain their ideas orally? • Generate ideas from their own experience • Talk about their ideas and say what will be done • Describe what they want to do using pictures and words • Make lists of materials they will need	**PLANNING** • Can they generate ideas through comparing existing products? • Can they choose an appropriate tool and material and explain their choices? • Can they describe their design by using pictures, diagrams, and words? • Generate ideas, and plan what to do next, using their experience of materials and components • Say how the product will be useful to the user • Draw pictures with labels, with some text	**PLANNING** • Investigate a range of products to see how they work • Can they plan their design, using more accurate diagrams and labels? • Can they choose the most appropriate tools and materials and explain their choices? (*sometimes in words*) • Can they plan the equipment/ tools needed and give reasons why? • Can they start to order the main stages of making their product? • Can they identify a design criteria and establish a purpose/ audience for their product? • Can they use what they know about the properties of materials

D&T Curriculum Skills and Progression Map
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MAKING • Can they explain what they are making? • Can they select appropriate resources and tools? • Can they explain which tools are they using and why? • Can they use tools safely? • Know the features of some familiar products • Join two materials together, often with glue • Cut with greater care, sometimes with help • Make simple models, not necessarily with a purpose • Use simple construction kits – e.g. Lego • Know about basic hygiene and safety **EVALUATING** • Can they describe how their product works? • Can they identify success and next steps • Know how some moving objects work • Use simple terms to talk about their own and others' work • Identify materials and mechanisms in familiar products • Know the benefits of fruit and vegetables	**MAKING** • Can they join materials/ components together in different ways? • Can they measure materials to use in a model or structure? • Can they use joining, folding or rolling to make it stronger? • Begin to select tools for folding, joining, rolling • Measure out and cut different materials • Use a simple template for cutting out • Practise skills before using them • Use simple finishing techniques • Understand and use the terms ingredient and component • Understand some of the main rules of food hygiene • Can they begin to use a simple stitch? **EVALUATING** • Can they assess how well their product works? • If they did it again, can they explain what they would improve? • Use like and dislike when evaluating or describing • Explain why some products are useful • Recognise what they have done well and talk about what could be improved • Seek out the views and judgements of others • Predict how changes will improve the finished product	• Ensure that plans are realistic and appropriate for the aim • Make use of ICT to plan ideas **MAKING** • Can they make sensible choices of which material to use for their construction? • Can they make their structure stronger, stiffer or more stable? • Can they use equipment and tools accurately and safely? • Can they select the most appropriate materials, tools and techniques to use? • Can they manipulate materials using a range of tools and equipment? • Can they measure, cut and assemble with increasing accuracy? • Make the finished product neat and tidy • Start to think about their ideas as they make progress and be willing to make changes if this helps them to improve their work? • Can they explain how they could change their design to make it better? • Can they begin to use a range of simple stitches? • Can they explain about the importance of food hygiene **EVALUATING** • Be clear about their ideas when asked • Can alter and adapt original plans following discussion and evaluation • Recognise what has gone well, but suggest further improvements for the finished article • Suggest which elements they would do better in the future • Identify where evaluation has led to improvements • Understand safe food storage

D&T Curriculum Skills and Progression Map
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Skills Map – D&T		
Class 3		
Year 4	**Year 5**	**Year 6**
PLANNING • Form initial ideas inspired by their observations of existing products. • Sketch design ideas labelled with possible materials. • Revise ideas to create a final design, considering their intended purpose. • Work on preliminary studies to test different materials, tools and equipment. • Think ahead and make some simple plans (e.g. safety, equipment, techniques). **MAKING** • Select appropriate materials, tools and techniques to use. • Use equipment and tools, following guidance to increase accuracy and safety. • Measure and cut accurately using tools and equipment (e.g. cm, scissors, metric measures) • Improve how the product looks. • Use different techniques, tools and materials for joining. • Understand how mechanisms work and use them in their products (e.g. wheels, axles, hinges and levers).	**PLANNING** • Form initial ideas and criteria based on their research (e.g. online, adverts, existing products…) • Sketch design ideas labelled with possible materials, methods and mechanisms. • Revise ideas to create a final design, considering their design criteria and intended purpose. • Work on preliminary studies to make prototypes and to choose appropriate materials, tools and equipment. • Create a step by step plan. **MAKING** • Select the most effective materials, tools and techniques to use. • Use a range of tools and equipment independently and accurately, within established safety parameters. • Measure and cut more precisely using more challenging tools (mm, knives, imperial measures). • Make sure that products are finished carefully and neatly. • Strengthen joins using different techniques, tools and materials.	**PLANNING** • Form initial ideas and criteria based on their research, including with the target audience (e.g. online, questionnaires, observations…) • Sketch design ideas labelled with explanations of their methods and mechanisms. • Revise ideas to create a final design, considering their design criteria, target audience and intended purpose. • When making prototypes, choose appropriate materials, tools and equipment. • Create a detailed step by step plan. **MAKING** • Select the most effective materials, tools and techniques to use. • Use a range of tools and equipment independently and accurately, within established safety parameters. • Measure accurately by scaling and using proportions (e.g. half recipe, scale model…). • Make sure that products are finished carefully, paying attention to precise details. • Strengthen joins, especially corners, using different techniques, tools and materials. • Understand how mechanisms work and use them in their products, including ones controlled

EVALUATING • Carry out a test before making final changes to their product. • Identify whether their product has met the intended purpose. • Share what they like and dislike about their product. • Comment on different aspects of their product (e.g. texture, flavour, function, appearance …).	• Understand how mechanisms work and use them in their products, including ones controlled electronically (e.g. wheels, axles, hinges and levers). **EVALUATING** • Test their product and improve it to make sure that it is effective and fit for purpose. • Identify whether their product has met their design criteria and intended purpose. • Identify what is good and what could be improved about their product. • Evaluate different aspects of their product (e.g. texture, flavour, function, appearance …).	electronically (e.g. wheels, axles, hinges and levers). **EVALUATING** • Continuously test their product and improve it to check that it is effective and fit for purpose. • Identify whether their product has met their design criteria, intended purpose and target audience. • Justify how their product has met design criteria and identify what could be improved. • Evaluate different methods, skills and aspects of their product (e.g. joining, finishing, strengthening, texture, flavour, function, appearance …).
Greater Depth		
Can they critique their own and others' products and methods throughout the learning process to support each other with making a product that is fit for purpose?	Can they confidently discuss the effectiveness of the methods and equipment they chose and the adaptations they made to ensure their product is fit for purpose?	Can they demonstrate control over the design, making and evaluating process by managing their time effectively, continuously making improvements, critiquing their choices and referring to their criteria to ensure their product is fit for purpose?