

Progression in Design and Technology

Intent:

Design and technology (DT) prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think creatively to improve the quality of life. The subject calls for pupils to become creative problem solvers both as individuals and as members of a team. They must look for needs, wants and opportunities, responding to them by developing a range of design ideas for making products and systems. In their designing and making, pupils combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so they reflect on, learn from and evaluate present and past design technology, its uses and effects. Through DT all pupils can develop innovation and become informed users of products.

The aims for Design and Technology are:

- Develop children's design and making skills, encouraging creativity and innovation.
- Develop confidence in using a range of tools, materials and components safely.
- Encourage children to develop a knowledge and understanding of technological processes, products and their manufacture, and their contribution to our society.

Implementation:

- 1 Curriculum drivers (the Arts and Possibilities) shape our curriculum breadth in Design and Technology. They are derived from an exploration of the backgrounds of our students, our beliefs about high quality education and our values. They are used to ensure we give our students appropriate and ambitious curriculum opportunities.
- 2 Cultural capital gives our students the vital background knowledge required to be informed and thoughtful members of our community who understand and believe in British values.
- 3 Curriculum breadth is shaped by our curriculum drivers, cultural capital, subject topics and our ambition for students to study the best of what has been thought and said by many generations of academics and scholars.
- 4 Our curriculum distinguishes between subject topics and 'threshold concepts'. Subject topics are the specific aspects of subjects that are studied.
- 5 **Threshold concepts** tie together the subject topics into meaningful schema. The same concepts are explored in a wide breadth of topics. Through this 're-visiting' of the curriculum, students return to the same concepts over and over and gradually build understanding of them. In Design and Technology, these threshold concepts are; **Master practical/technical knowledge, Design, make, evaluate and improve, and Take inspiration from design throughout history.**
- 6 **Knowledge categories:** These categories help students to relate each topic to previously studied topics and to form strong, meaningful schema. In Design and Technology these knowledge categories include: **Food, Materials, Textiles, Electricals and Electronics, Computing, Construction, and Mechanics.**
- 7 Cognitive science tell us that working memory is limited and that cognitive load is too high if students are rushed through content. This limits the acquisition of long-term memory. Cognitive science also tells us that in order for students to become creative thinkers, or have a greater depth of understanding they must first master the basics, which takes time.

- 8 **Milestones:** For each of the threshold concepts three Milestones, each of which includes the procedural and Knowledge categories in each subject give students a way of expressing their understanding of the threshold concepts. Milestone 1 is taught across Years 1 and 2, milestone 2 is taught across Year 3 and 4 and milestone 3 is taught across Year 5 and Year 6.
- 9 **Cognitive Domains:** Within each Milestone, students gradually progress in their procedural fluency and semantic strength through three cognitive domains: basic, advancing and deep. The goal for students is to display sustained mastery at the 'advancing' stage of understanding by the end of each milestone and for the most able to have a greater depth of understanding at the 'deep' stage.

Progression through the Cognitive Domains		
Basic	Advancing	Deep
Acquiring knowledge.	Applying knowledge.	Reasoning with knowledge.
Knowledge is explicit and unconnected.	Knowledge is explicit and connected.	Knowledge is connected and tacit.
Relying on working memory.	Drawing on long-term memory, freeing working memory to consider application.	Relies on long-term memory, freeing working memory to be inventive.
Procedures processed one at a time with conscious effort.	Procedures being automatic.	Automatic recall of procedures.
Understands only in the context in which the materials are presented.	Sees underlying concepts between familiar contexts.	Uses conceptual understanding in unfamiliar situations.
New information does not readily stick. Schemes are limited.	New information is linked to prior knowledge. Schemas are strong.	Readily assimilates new information into rapidly expanding schemas.
Struggles to search for problem solutions. Relies on means-end analysis.	Combines searching for problem solutions with means-end analysis.	Draws on a vast store of problem solutions.
Requires explicit instructions and models.	Uses models effectively.	Prefers discovery approaches to learning.

- 10 **Key vocabulary** - move the learning from basic to deep and show progression through the milestones.
- 11 **Pedagogical Content Knowledge and Strategies:** As part of our progression model we use a different pedagogical style in each of the cognitive domains of basic, advancing and deep. This is based on the research of Sweller, Kirschner and Rosenshine who argue to direct instruction in the early stages of learning and discovery-based approaches later. We use direct instruction in the basic domain and problem-based discovery in the deep domain. This is called the reversal effect.
- 12 Also, as part of our progression model we use POP tasks (Proof of Progress) which shows our curriculum expectations in each cognitive domain.
- 13 Our curriculum design is based on evidence from cognitive science; three main principles underpin it:
- Learning is most effective with spaced repetition.
 - Interleaving helps pupils to discriminate between topics and aids long-term retention.
 - Retrieval of previously learned content is frequent and regular, which increases both storage and retrieval strength.
- 14 In addition to the three principles we also understand that learning is invisible in the short-term and that sustained mastery takes time.
- 15 Our content is subject specific. We make intra-curricular links to strengthen schema.
- 16 Continuous provision, in the form of daily routines, replaces the teaching of some aspects of the curriculum and, in other cases, provides retrieval practice for previously learned content.

Milestone 1 Key Stage 1	Milestone 2 Lower Key Stage 2	Milestone 3 Upper Key Stage 2
Food		
<ul style="list-style-type: none"> • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients. 	<ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Measure ingredients to the nearest gram accurately. • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). 	<ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Demonstrate a range of baking and cooking techniques. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
Materials		
<ul style="list-style-type: none"> • Cut materials safely using tools provided. • Measure and mark out to the nearest centimetre. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). • Demonstrate a range of joining techniques (such as gluing, 	<ul style="list-style-type: none"> • Cut materials accurately and safely by selecting appropriate tools. • Measure and mark out to the nearest millimetre. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Select appropriate joining techniques. 	<ul style="list-style-type: none"> • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

hinges or combining materials to strengthen).		
Textiles		
<ul style="list-style-type: none"> • Shape textiles using templates. • Join textiles using running stitch. • Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). 	<ul style="list-style-type: none"> • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles. 	<ul style="list-style-type: none"> • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).
Electricals and Electronics		
<ul style="list-style-type: none"> • Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). 	<ul style="list-style-type: none"> • Create series and parallel circuits 	<ul style="list-style-type: none"> • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).
Computing		
<ul style="list-style-type: none"> • Model designs using software. 	<ul style="list-style-type: none"> • Control and monitor models using software designed for this purpose. 	<ul style="list-style-type: none"> • Write code to control and monitor models or products.

Construction		
<ul style="list-style-type: none"> • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. 	<ul style="list-style-type: none"> • Choose suitable techniques to construct products or to repair items. • Strengthen materials using suitable techniques. 	<ul style="list-style-type: none"> • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).
Mechanics		
<ul style="list-style-type: none"> • Create products using levers, wheels and winding mechanisms. 	<ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). 	<ul style="list-style-type: none"> • Convert rotary motion to linear using cams. • Use innovative combinations of electronics (or computing) and mechanics in product designs.
Design process		
<ul style="list-style-type: none"> • Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. • Use software to design. 	<ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). 	<ul style="list-style-type: none"> • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Make products through stages of prototypes, making continual refinements.

	<ul style="list-style-type: none"> • Refine work and techniques as work progresses, continually evaluating the product design. • Use software to design and represent product designs. 	<ul style="list-style-type: none"> • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
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Design inspiration

<ul style="list-style-type: none"> • Explore objects and designs to identify likes and dislikes of the designs. • Suggest improvements to existing designs. • Explore how products have been created. 	<ul style="list-style-type: none"> • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. • Disassemble products to understand how they work 	<ul style="list-style-type: none"> • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience.
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Progression in Design and Technology Vocabulary

Milestone 1 Key Stage 1

Milestone 2 Lower Key Stage 2

Milestone 3 Upper Key Stage 2

Food

Design:

- Own ideas
- Design
- Product
- Move/s
- Simple plan
- Making/make
- Pictures
- Words

- Think
- Idea
- Plan
- Choose
- Best tools
- Reasons
- Describe
- Pictures
- Diagram/s
- Models
- Develop
- Starting point

Make:

- Ideas
- Make
- Product
- Moves
- Choose
- Resources
- Tools
- Explain
- Structure/model
- Strong/er
- Tidy
- Arrange
- Construction

- Choose
- Tools
- Materials
- Explain
- Join
- Components
- Different ways
- Measure
- Model
- Structure
- Movement

Evaluate:

- Describe
- Explain
- Working well
- Not working well

- Chosen materials
- Textiles
- What went well
- Consider
- How
- Improvements

- Cut
- Safely

Design:

- Design
- Criteria
- Product
- Attractive
- Step-by-step plan
- Order
- Equipment
- Tools
- Describe
- Labelled
- Sketch
- Realistic

Make:

- Follow
- Plan
- Equipment
- Materials
- Select
- Appropriate
- Tools
- Techniques
- Product
- Electrical component
- Mechanical component
- Accurate
- Measure
- Cut
- Holes
- Shape
- Mould

Evaluate:

- Influence
- Designers
- Produce
- Plan
- Explain
- Persevere
- Adapt
- Original
- Communicate
- Idea/s
- Sketch
- Draw
- Annotated
- Suggest
- Improvements

- Tools
- Task
- Knowledge
- Material
- Best outcome
- Attempt
- Product
- Strong
- Measure
- Accurate
- Advanced techniques
- Shape
- Mould
- Finishing
- Awareness of audience

Design:

- Range of ideas
- Collect information
- Different sources
- Produce
- Detailed
- Step-by-step plan
- Explain
- Appeal
- Specific audience
- Product
- Design
- Pulleys
- Gears
- Users view
- Suggest
- Alternative plans
- Positives
- Drawbacks

Make:

- Use
- Market research
- Inform
- Plans/planning
- Ideas
- Follow
- Refine
- Justify plan
- Convince
- Culture
- Society
- Designs
- Constraints
- Relation to audience

<ul style="list-style-type: none"> • Describe • Wash • Clean • Surfaces • Decorate • Weigh • Ingredients • Recipe • Describe • Explain • Hygiene/hygienic • Kitchen 	<ul style="list-style-type: none"> • Explain • How • Improve • Know • Why • Has been successful • Has not been successful • Change • Make design even better if... 	<ul style="list-style-type: none"> • Evaluate • Suggest • Improve • Purpose • Appearance • Altered • Check/ing • Successful 	<ul style="list-style-type: none"> • Tools • Equipment • Competently • Make • Prototype • Final piece • Pulleys • Gears • Persevere • Stages of making • Process • Accurate • Measurement • Precise • Strong • Fit for purpose • Refine • Improve • Mouldable materials <p>Evaluate:</p> <ul style="list-style-type: none"> • Suggest • Alternative plans • Positive features • Drawbacks • Evaluate • Appearance • Function • Original criteria • Check/ing • Best it can be • Fit for purpose • Strong • Explain • Refine • Test 	<ul style="list-style-type: none"> • Use • Make • Specific tool • Specific task • Correctly • Safely • Explain • Specific action • Change work • Precise • Accurate • Hide joints • Improve
	<ul style="list-style-type: none"> • Describe • Food • Ingredients • Weigh • Follow recipe • Create dish • Healthy • Unhealthy • Harvesting • Equipment • Safely • Product • Attractive • Grow • Plants • Herbs • Seed • Hygiene • Hygienic • Safe • Creative • Present well 			<ul style="list-style-type: none"> • Test • Evaluate • Explain • How • Know • Clear criteria • Decide • Fit for purpose • Improve • Evaluate resources • Justify • Selected materials

- Hygiene
- Hygienic
- Safe
- Kitchen
- Collect
- Prepare
- Meal
- Ingredients
- Season
- Harvest/ing
- Present well
- Explain
- Storage
- Ingredients
- Create meal
- Savoury
- Sweet
- Grow

Materials

Design:

- Own ideas
- Design
- Product
- Move/s
- Simple plan
- Making/make
- Pictures
- Words

- Think
- Idea
- Plan
- Choose
- Best tools
- Reasons
- Describe
- Pictures
- Diagram/s
- Models
- Develop
- Starting point

Make:

- Ideas
- Make
- Product
- Move
- Choose
- Resources
- Tools
- Explain
- Structure/model
- Strong/er
- Tidy
- Arrange
- Construction

- Choose
- Tools
- Materials
- Explain
- Join
- Components
- Different ways
- Measure
- Model
- Structure
- Movement

Design:

- Design
- Criteria
- Product
- Attractive
- Step-by-step plan
- Order
- Equipment
- Tools
- Describe
- Labelled
- Sketch
- Realistic

- Influence
- Designers
- Produce
- Plan
- Explain
- Persevere
- Adapt
- Original
- Communicate
- Idea/s
- Sketch
- Draw
- Annotated
- Suggest
- Improvements

Make:

- Follow
- Plan
- Equipment
- Materials
- Select
- Appropriate
- Tools
- Techniques
- Product
- Electrical component
- Mechanical component
- Accurate
- Measure
- Cut
- Holes
- Shape
- Mould

- Tools
- Task
- Knowledge
- Material
- Best outcome
- Attempt
- Product
- Strong
- Measure
- Accurate
- Advanced techniques
- Shape
- Mould
- Finishing
- Awareness of audience

Design:

- Range of ideas
- Collect information
- Different sources
- Produce
- Detailed
- Step-by-step plan
- Explain
- Appeal
- Specific audience
- Product
- Design
- Pulleys
- Gears
- Users view
- Suggest
- Alternative plans
- Positives
- Drawbacks

- Use
- Market research
- Inform
- Plans/planning
- Ideas
- Follow
- Refine
- Justify plan
- Convince
- Culture
- Society
- Designs
- Constraints
- Relation to audience

Make:

Evaluate:

- Describe
- Explain
- Working well
- Not working well

- Chosen materials
- Textiles
- What went well
- Consider
- How
- Improvements

- Measure
- Model or structure
- Joining
- Folding
- Rolling
- Stronger
- Make
- Model
- Stronger

Evaluate:

- Explain
- How
- Improve
- Know
- Why
- Has been successful

- Evaluate
- Suggest
- Improve
- Purpose
- Appearance

- Has not been successful
- Change
- Make design even better if...

- Altered
- Check/ing
- Successful

- Strengthen
- Product
- Stiffening
- Reinforce
- Structure

- Tools
- Equipment
- Competently
- Make
- Prototype
- Final piece
- Pulleys
- Gears
- Persevere
- Stages of making
- Process
- Accurate
- Measurement
- Precise
- Strong
- Fit for purpose
- Refine
- Improve
- Mouldable materials

- Use
- Make
- Specific tool
- Specific task
- Correctly
- Safely
- Explain
- Specific action
- Change work
- Precise
- Accurate
- Hide joints
- Improve

Evaluate:

- Suggest
- Alternative plans
- Positive features
- Drawbacks
- Evaluate
- Appearance
- Function
- Original criteria
- Check/ing
- Best it can be
- Fit for purpose
- Strong
- Explain
- Refine
- Test

- Test
- Evaluate
- Explain
- How
- Know
- Clear criteria
- Decide
- Fit for purpose
- Improve
- Evaluate resources
- Justify
- Selected materials

Textiles

Design:

Design:

Design:

- Own ideas
- Design
- Product
- Move/s
- Simple plan
- Making/make
- Pictures
- Words

- Think
- Idea
- Plan
- Choose
- Best tools
- Reasons
- Describe
- Pictures
- Diagram/s
- Models
- Develop
- Starting point

- Design
- Criteria
- Product
- Attractive
- Step-by-step plan
- Order
- Equipment
- Tools
- Describe
- Labelled
- Sketch
- Realistic

- Influence
- Designers
- Produce
- Plan
- Explain
- Persuade
- Adapt
- Original
- Communicate
- Idea/s
- Sketch
- Draw
- Annotated
- Suggest
- Improvements

- Range of ideas
- Collect information
- Different sources
- Produce
- Detailed
- Step-by-step plan
- Explain
- Appeal
- Specific audience
- Product
- Design
- Pulleys
- Gears
- Users view
- Suggest
- Alternative plans
- Positives
- Drawbacks

- Use
- Market research
- Inform
- Plans/planning
- Ideas
- Follow
- Refine
- Justify plan
- Convince
- Culture
- Society
- Designs
- Constraints
- Relation to audience

Make:

- Ideas
- Make
- Product
- Move
- Choose
- Resources
- Tools
- Explain
- Structure/model
- Strong/or
- Tidy
- Arrange
- Construction

- Choose
- Tools
- Materials
- Explain
- Join
- Components
- Different ways
- Measure
- Model
- Structure
- Movement

Make:

- Follow
- Plan
- Equipment
- Materials
- Select
- Appropriate
- Tools
- Techniques
- Product
- Electrical component
- Mechanical component
- Accurate
- Measure
- Cut
- Holes
- Shape
- Mould

- Tools
- Task
- Knowledge
- Material
- Best outcome
- Attempt
- Product
- Strong
- Measure
- Accurate
- Advanced techniques
- Shape
- Mould
- Finishing
- Awareness of audience

Make:

- Tools
- Equipment
- Competently
- Make
- Prototype
- Final piece
- Pulleys
- Gears
- Persevere
- Stages of making
- Process
- Accurate
- Measurement
- Precise
- Strong
- Fit for purpose
- Refine
- Improve
- Mouldable materials

- Use
- Make
- Specific tool
- Specific task
- Correctly
- Safely
- Explain
- Specific action
- Change work
- Precise
- Accurate
- Hide joints
- Improve

Evaluate:

- Describe
- Explain
- Working well
- Not working well

- Chosen materials
- Textiles
- What went well
- Consider
- How
- Improvements

Evaluate:

- Explain
- How
- Improve
- Know
- Why
- Has been successful

- Evaluate
- Suggest
- Improve
- Purpose
- Appearance

- Has not been successful
- Change
- Make design even better if...

- Altered
- Check/ing
- Successful

Evaluate:

- Textile
- Feel
- Glue
- Measure
- Join
- Cut

- Join
- Choose
- Appearance
- Qualities
- Make
- Product
- strong

	<ul style="list-style-type: none"> • Devise • Template 	<ul style="list-style-type: none"> • Suggest • Alternative plans • Positive features • Drawbacks • Evaluate • Appearance • Function • Original criteria • Check/ing • Best it can be • Fit for purpose • Strong • Explain • Refine • Test 	<ul style="list-style-type: none"> • Test • Evaluate • Explain • How • Know • Clear criteria • Decide • Fit for purpose • Improve • Evaluate resources • Justify • Selected materials
Electricals and Electronics			
Design:	Design:	Design:	

- Choose
- Textiles
- Make
- Attractive
- Strong
- Prototype
- Joining techniques
- Rolling
- Folding
- Concentinaing
- Reinforce

<ul style="list-style-type: none"> • Own ideas • Design • Product • Move/s • Simple plan • Making/make • Pictures • Words 	<ul style="list-style-type: none"> • Think • Idea • Plan • Choose • Best tools • Reasons • Describe • Pictures • Diagram/s • Models • Develop • Starting point 	<ul style="list-style-type: none"> • Design • Criteria • Product • Attractive • Step-by-step plan • Order • Equipment • Tools • Describe • Labelled • Sketch • Realistic 	<ul style="list-style-type: none"> • Influence • Designers • Produce • Plan • Explain • Persuade • Adapt • Original • Communicate • Idea/s • Sketch • Draw • Annotated • Suggest • Improvements 	<ul style="list-style-type: none"> • Range of ideas • Collect information • Different sources • Produce • Detailed • Step-by-step plan • Explain • Appeal • Specific audience • Product • Design • Pulleys • Gears • Users view • Suggest • Alternative plans • Positives • Drawbacks 	<ul style="list-style-type: none"> • Use • Market research • Inform • Plans/planning • Ideas • Follow • Refine • Justify plan • Convince • Culture • Society • Designs • Constraints • Relation to audience
<p>Make:</p> <ul style="list-style-type: none"> • Ideas • Make • Product • Move • Choose • Resources • Tools • Explain • Structure/model • Strong/or • Tidy • Arrange • Construction 	<ul style="list-style-type: none"> • Choose • Tools • Materials • Explain • Join • Components • Different ways • Measure • Model • Structure • Movement 	<p>Make:</p> <ul style="list-style-type: none"> • Follow • Plan • Equipment • Materials • Select • Appropriate • Tools • Techniques • Product • Electrical component • Mechanical component • Accurate • Measure • Cut • Holes • Shape • Mould 	<ul style="list-style-type: none"> • Tools • Task • Knowledge • Material • Best outcome • Attempt • Product • Strong • Measure • Accurate • Advanced techniques • Shape • Mould • Finishing • Awareness of audience 	<p>Make:</p> <ul style="list-style-type: none"> • Tools • Equipment • Competently • Make • Prototype • Final piece • Pulleys • Gears • Persevere • Stages of making • Process • Accurate • Measurement • Precise • Strong • Fit for purpose • Refine • Improve • Mouldable materials 	<ul style="list-style-type: none"> • Use • Make • Specific tool • Specific task • Correctly • Safely • Explain • Specific action • Change work • Precise • Accurate • Hide joints • Improve
<p>Evaluate:</p> <ul style="list-style-type: none"> • Describe • Explain • Working well • Not working well 	<ul style="list-style-type: none"> • Chosen materials • Textiles • What went well • Consider • How • Improvements 	<p>Evaluate:</p> <ul style="list-style-type: none"> • Explain • How • Improve • Know • Why • Has been successful 	<ul style="list-style-type: none"> • Evaluate • Suggest • Improve • Purpose • Appearance 	<p>Evaluate:</p> <ul style="list-style-type: none"> • Altered • Check/ing • Successful 	
		<ul style="list-style-type: none"> • Has not been successful • Change • Make design even better if... 			

- Suggest
- Alternative plans
- Positive features
- Drawbacks
- Evaluate
- Appearance
- Function
- Original criteria
- Check/ing
- Best it can be
- Fit for purpose
- Strong
- Explain
- Refine
- Test

- Test
- Evaluate
- Explain
- How
- Know
- Clear criteria
- Decide
- Fit for purpose
- Improve
- Evaluate resources
- Justify
- Selected materials

Computing

Design:

- Own ideas
- Design
- Product
- Make/s
- Simple plan
- Making/make
- Pictures
- Words

- Think
- Idea
- Plan
- Choose
- Best tools
- Reasons
- Describe
- Pictures
- Diagram/s
- Models
- Develop
- Starting point

Make:

- Ideas
- Make
- Product
- Make
- Choose
- Resources
- Tools
- Explain
- Structure/model
- Strong/er
- Tidy
- Arrange
- Construction

- Choose
- Tools
- Materials
- Explain
- Join
- Components
- Different ways
- Measure
- Model
- Structure
- Movement

Design:

- Design
- Criteria
- Product
- Attractive
- Step-by-step plan
- Order
- Equipment
- Tools
- Describe
- Labelled
- Sketch
- Realistic

Make:

- Influence
- Designers
- Produce
- Plan
- Explain
- Persevere
- Adapt
- Original
- Communicate
- Ideas/s
- Sketch
- Draw
- Annotated
- Suggest
- Improvements

Design:

- Range of ideas
- Collect information
- Different sources
- Produce
- Detailed
- Step-by-step plan
- Explain
- Appeal
- Specific audience
- Product
- Design
- Pulleys
- Gears
- Users view
- Suggest
- Alternative plans
- Positives
- Drawbacks

Make:

- Use
- Market research
- Inform
- Plans/planning
- Ideas
- Follow
- Refine
- Justify plan
- Convince
- Culture
- Society
- Designs
- Constraints
- Relation to audience

<p>Evaluate:</p> <ul style="list-style-type: none"> Describe Explain Working well Not working well <hr/> <ul style="list-style-type: none"> Chosen materials Textiles What went well Consider How Improvements 	<ul style="list-style-type: none"> Follow Plans Equipment Materials Select Appropriate Tools Techniques Product Electrical component Mechanical component Accurate Measure Cut Files Shape Mould <p>Evaluate:</p> <ul style="list-style-type: none"> Explain How Improve Know Why Has been successful Has not been successful Change Make design even better if... 	<ul style="list-style-type: none"> Tools Task Knowledge Material Best outcome Attempt Product Strong Measure Accurate Advanced techniques Shape Mould Finishing Awareness of audience <p>Evaluate:</p> <ul style="list-style-type: none"> Evaluate Suggest Improve Purpose Appearance Altered Check/ing Successful 	<ul style="list-style-type: none"> Tools Equipment Competently Make Prototype Final piece Pulleys Gears Persevere Stages of making Process Accurate Measurement Precise Strong Fit for purpose Refine Improve Mouldable materials <p>Evaluate:</p> <ul style="list-style-type: none"> Suggest Alternative plans Positive features Drawbacks Evaluate Appearance Function Original criteria Check/ing Best it can be Fit for purpose Strong Explain Refine Test 	<ul style="list-style-type: none"> Use Make Specific tool Specific task Correctly Safely Explain Specific action Change work Precise Accurate Hide joints Improve 	<ul style="list-style-type: none"> Test Evaluate Explain How Know Clear criteria Decide Fit for purpose Improve Evaluate resources Justify Selected materials 	<ul style="list-style-type: none"> Use Make Specific tool Specific task Correctly Safely Explain Specific action Change work Precise Accurate Hide joints Improve 	<ul style="list-style-type: none"> Test Evaluate Explain How Know Clear criteria Decide Fit for purpose Improve Evaluate resources Justify Selected materials
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Construction

Design:

Design:

Design:

<ul style="list-style-type: none"> • Own ideas • Design • Product • Move/s • Simple plan • Making/make • Pictures • Words 	<ul style="list-style-type: none"> • Think • Idea • Plan • Choose • Best tools • Reasons • Describe • Pictures • Diagram/s • Models • Develop • Starting point 	<ul style="list-style-type: none"> • Design • Criteria • Product • Attractive • Step-by-step plan • Order • Equipment • Tools • Describe • Labelled • Sketch • Realistic 	<ul style="list-style-type: none"> • Influence • Designers • Produce • Plan • Explain • Persuade • Adapt • Original • Communicate • Idea/s • Sketch • Draw • Annotated • Suggest • Improvements 	<ul style="list-style-type: none"> • Range of ideas • Collect information • Different sources • Produce • Detailed • Step-by-step plan • Explain • Appeal • Specific audience • Product • Design • Pulleys • Gears • Users view • Suggest • Alternative plans • Positives • Drawbacks 	<ul style="list-style-type: none"> • Use • Market research • Inform • Plans/planning • Ideas • Follow • Refine • Justify plan • Convince • Culture • Society • Designs • Constraints • Relation to audience
<p>Make:</p> <ul style="list-style-type: none"> • Ideas • Make • Product • Move • Choose • Resources • Tools • Explain • Structure/model • Strong/or • Tidy • Arrange • Construction 	<ul style="list-style-type: none"> • Choose • Tools • Materials • Explain • Join • Components • Different ways • Measure • Model • Structure • Movement 	<p>Make:</p> <ul style="list-style-type: none"> • Follow • Plan • Equipment • Materials • Select • Appropriate • Tools • Techniques • Product • Electrical component • Mechanical component • Accurate • Measure • Cut • Holes • Shape • Mould 	<ul style="list-style-type: none"> • Tools • Task • Knowledge • Material • Best outcome • Attempt • Product • Strong • Measure • Accurate • Advanced techniques • Shape • Mould • Finishing • Awareness of audience 	<p>Make:</p> <ul style="list-style-type: none"> • Tools • Equipment • Competently • Make • Prototype • Final piece • Pulleys • Gears • Persevere • Stages of making • Process • Accurate • Measurement • Precise • Strong • Fit for purpose • Refine • Improve • Mouldable materials 	<ul style="list-style-type: none"> • Use • Make • Specific tool • Specific task • Correctly • Safely • Explain • Specific action • Change work • Precise • Accurate • Hide joints • Improve
<p>Evaluate:</p> <ul style="list-style-type: none"> • Describe • Explain • Working well • Not working well 	<ul style="list-style-type: none"> • Chosen materials • Textiles • What went well • Consider • How • Improvements 	<p>Evaluate:</p> <ul style="list-style-type: none"> • Explain • How • Improve • Know • Why • Has been successful 	<ul style="list-style-type: none"> • Evaluate • Suggest • Improve • Purpose • Appearance 	<p>Evaluate:</p> <ul style="list-style-type: none"> • Altered • Check/ing • Successful 	
		<ul style="list-style-type: none"> • Has not been successful • Change • Make design even better if... 			

- Suggest
 - Alternative plans
 - Positive features
 - Drawbacks
 - Evaluate
 - Appearance
 - Function
 - Original criteria
 - Check/ing
 - Best it can be
 - Fit for purpose
 - Strong
 - Explain
 - Refine
 - Test
- Test
 - Evaluate
 - Explain
 - How
 - Know
 - Clear criteria
 - Decide
 - Fit for purpose
 - Improve
 - Evaluate resources
 - Justify
 - Selected materials

Mechanics

Design:

- Own ideas
- Design
- Product
- Move/s
- Simple plan
- Making/make
- Pictures
- Words

- Think
- Idea
- Plan
- Choose
- Best tools
- Reasons
- Describe
- Pictures
- Diagram/s
- Models
- Develop
- Starting point

Make:

- Ideas
- Make
- Product
- Move/s
- Choose
- Resources
- Tools
- Explain
- Structure/model
- Strong/er
- Tidy
- Arrange
- Construction

- Choose
- Tools
- Materials
- Explain
- Join
- Components
- Different ways
- Measure
- Model
- Structure
- Movement

Design:

- Design
- Criteria
- Product
- Attractive
- Step-by-step plan
- Order
- Equipment
- Tools
- Describe
- Labelled
- Sketch
- Realistic

Make:

- Influence
- Designers
- Produce
- Plan
- Explain
- Persevere
- Adapt
- Original
- Communicate
- Ideas/s
- Sketch
- Draw
- Annotated
- Suggest
- Improvements

Design:

- Range of ideas
- Collect information
- Different sources
- Produce
- Detailed
- Step-by-step plan
- Explain
- Appeal
- Specific audience
- Product
- Design
- Pulleys
- Gears
- Users view
- Suggest
- Alternative plans
- Positives
- Drawbacks

Make:

- Use
- Market research
- Inform
- Plans/planning
- Ideas
- Follow
- Refine
- Justify plan
- Convince
- Culture
- Society
- Designs
- Constraints
- Relation to audience

Evaluate:

- Describe
- Explain
- Working well
- Not working well

- Chosen materials
- Textiles
- What went well
- Consider
- How
- Improvements

- Move
- Cut
- Materials
- Scissors
- Describe
- Sliders
- Join
- Moving
- Add

- Follow
- Plans
- Equipment
- Materials
- Select
- Appropriate
- Tools
- Techniques
- Product
- Electrical component
- Mechanical component
- Accurate
- Measure
- Cut
- Holes
- Shape
- Mould

- Tools
- Task
- Knowledge
- Material
- Best outcome
- Attempt
- Product
- Strong
- Measure
- Accurate
- Advanced techniques
- Shape
- Mould
- Finishing
- Awareness of audience

Evaluate:

- Explain
- How
- Improve
- Know
- Why
- Has been successful

- Evaluate
- Suggest
- Improve
- Purpose
- Appearance

- Has not been successful
- Change
- Make design even better if...

- Altered
- Check/ing
- Successful

- Make
- Product
- Components
- Choose
- Material
- Suitability
- Appearance
- Strengthen
- Stiffen
- Cams
- Levers
- Linkages
- Lights
- Switches
- Buzzers
- Electrical systems
- Add
- Circuits

- Tools
- Equipment
- Competently
- Make
- Prototype
- Final piece
- Pulleys
- Gears
- Persevere
- Stages of making
- Process
- Accurate
- Measurement
- Precise
- Strong
- Fit for purpose
- Refine
- Improve
- Mouldable materials

- Use
- Make
- Specific tool
- Specific task
- Correctly
- Safely
- Explain
- Specific action
- Change work
- Precise
- Accurate
- Hide joints
- Improve

Evaluate:

- Suggest
- Alternative plans
- Positive features
- Drawbacks
- Evaluate
- Appearance
- Function
- Original criteria
- Check/ing
- Best it can be
- Fit for purpose
- Strong
- Explain
- Refine
- Test

- Test
- Evaluate
- Explain
- How
- Know
- Clear criteria
- Decide
- Fit for purpose
- Improve
- Evaluate resources
- Justify
- Selected materials

- Cams
- Linkages
- Computer
- Computer-aided design

	<ul style="list-style-type: none"> • Technology • Computer • Design • Model • Programme 	<ul style="list-style-type: none"> • Monitor • Control • Enhance a given product • Circuit • Adding a circuit • Improve their product • Electrical system • Switch • Bulb • Motor • Wire
Note		
<p>Items in green are subject-specific vocabulary.</p>		
<p>How do we prepare children for KS3?</p>	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy,</p>	<p>During Design and Technology networks we discuss transition and projects which may aid transition.</p> <p>Address misconceptions early before they reach secondary- these can be done through re-visits</p>

	<p>agriculture (including horticulture) and fashion].</p> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.</p>	
<p>New EYFS ELG</p>	<p>Development matters 3 and 4-year olds</p> <p>Communication and Language - Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?”</p> <p>Understand a question or instruction that has two parts, such as “Get your coat and wait at the door”</p> <p>Be able to express a point of view and to debate when they disagree with an adult or a friend, using words as well as actions.</p> <p>Physical Development- Make healthy choices about food, drink, activity and toothbrushing.</p>	<p>Development matters Reception</p> <p>Personal, Social and Emotional development –</p> <p>Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.</p> <p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</p> <p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>Communication and Language –</p> <p>Learn new vocabulary.</p> <p>Ask questions to find out more and to check what has been said to them.</p> <p>Articulate their ideas and thoughts in well-formed sentences.</p> <p>Describe events in some detail.</p> <p>Use talk to work out problems and organise thinking and activities.</p>

	<p>Use large-muscle movements to wave flags and streamers, paint and make marks.</p> <p>Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel.</p> <p>Use one-handed tools and equipment, for example, making snips in paper with scissors.</p> <p>Use a comfortable grip with good control when holding pens and pencils.</p> <p>Mathematics –</p> <p>Make comparisons between objects relating to size, length, weight and capacity.</p> <p>Combine shapes to make new ones – an arch, a bigger triangle etc.</p> <p>Understanding the world- Use all their senses in hands-on exploration of natural materials.</p> <p>Explore collections of materials with similar and/or different properties.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Explore how things work.</p> <p>Talk about the differences between materials and changes they notice.</p>	<p>Explain how things work and why they might happen.</p> <p>Use new vocabulary in different contexts.</p> <p>Physical Development</p> <p>Know and talk about the different factors that support their overall health and wellbeing:</p> <ul style="list-style-type: none"> - regular physical activity - healthy eating - toothbrushing <p>Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases.</p> <p>Use a range of small tools, including scissors, paintbrushes and cutlery.</p> <p>Begin to show accuracy and care when drawing.</p> <p>Understanding the world-</p> <ul style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. <p>Expressive Art and Design –</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used.</p>
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Explore and talk about different forces they can feel.

Expressive Art and Design –

Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.

Explore different materials freely, in order to develop their ideas about how to use them and what to make.

Develop their own ideas and then decide which materials to use to express them.

Join different materials and explore different textures.