Textiles
Electricals, Electronics and Computing
Construction
Mechanics
Food
Materials

Mechanics Curriculum Progression

HARTLEY BROOK PRIMARY ACADEMY
Astrea Academy Trust
INSPIRING BEYOND MEASURE

Early Years Foundation Stage

Expressive Arts and Design: Exploring Media and Materials: They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Expressive Arts and Design: Being Imaginative: Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.

Primary Curriculum

	Term 1	Term 2	Term 3
1	**Food** Cut, peal or grate; measure or weigh & assemble or cook	**Mechanics** Levers, wheels and winding	**Textiles** Seam allowance, joining & selecting appropriate techniques to decorate materials
2	**Materials** Cutting and shaping ; measure and mark (cm) & joining techniques	**Construction** Drilling, screwing, gluing and nailing	**Electricals, Electronics and Computing** EE- Diagnose faults in battery operated devices C- Model designs using software
3	**Textiles** Shape using templates; running stitch & colour and decorate textiles	**Food** Prepare, measure to the nearest gram; follow a recipe & assemble or cook (controlling temp)	**Mechanics** Scientific knowledge of the transference of forces
4	**Construction** Choosing suitable techniques to construct and strengthen	**Electricals, Electronics and Computing** EE- Create series and parallel circuits C- Control and monitor models using software	**Materials** Cut with precision and refine; qualities of materials
5	**Mechanics** Convert rotary motion to linear & innovative combinations of electronics and mechanics in product design	**Textiles** Create objects that employ a seam allowance; use a combination of stitching techniques & create visual and tactile effects	**Food** Storage and handling; measure accurately; ratio; baking and cooking techniques & create and refine recipes
6	**Electricals, Electronics and Computing** EE- create circuits	**Materials** Accurate cutting; measure and mark (mm), cuts within the perimeter of the material, selecting joining techniques	**Construction** Develop a range of practical skills to create products

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Year One

Food	Mechanics	Textiles

Coverage

Mechanics
- Create products using levers, wheels and winding mechanisms.

To design, make, evaluate and improve
- Design products that have a clear purpose and an intended user.
- Make products, refining the design as work progresses.
- Use software to design.

To take inspiration from design throughout history
- Explore objects and designs to identify likes and dislikes of the designs.
- Suggest improvements to existing designs.
- Explore how products have been created.

Concept Mapping

Planning

Overarching Question

Mechanics Curriculum Progression

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INSPIRING BEYOND MEASURE

Year Three

Textiles	Food	Mechanics

Coverage

Mechanics
• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).

To design, make, evaluate and improve
• Design with purpose by identifying opportunities to design.
• Make products by working efficiently (such as by carefully selecting materials).
• Refine work and techniques as work progresses, continually evaluating the product design.
• Use software to design and represent product designs.

To take inspiration from design throughout history
• 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.

Concept Mapping

Overarching Question

Planning

Mechanics Curriculum Progression

HARTLEY BROOK PRIMARY ACADEMY
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INSPIRING BEYOND MEASURE

Year Five

Mechanics	Textiles	Food

Coverage

Mechanics
• Convert rotary motion to linear using cams.
• Use innovative combinations of electronics (or computing) and mechanics in product designs.

To design, make, evaluate and improve
• 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.
• Ensure products have a high quality finish, using art skills where appropriate.
• Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.

To take inspiration from design throughout history
• 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.

Overarching Question

Concept Mapping

Planning