# Design and Technology – Year 3

## Content- Textiles- 2D and 3D products

## Big Question: How is innovation important when designing new products?

| NC objectives - **areas of study** | End point of area of study | Vocabulary | | |
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| | | Basic | Adventurous | Technical |
| 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 relevant contexts. When designing and making, pupils should be taught to:<br><br>-Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.<br>-Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.<br>-Select from and use a wider range of tools and equipment to perform practical tasks accurately.<br>-Select from and use a wider range of materials and components. Including construction materials and textiles.<br>-Investigate and analyse a range of existing products. | **<u>Textiles</u>**<br>Children will have investigated a range of 3D textile products and have been given the opportunity to disassemble the products to understand the templates and patterns that have been used. They will also be able to identify a range of stitching techniques E.g. running stitch (retrieval year 2), backstitch and blanket stitch.<br>Children know how to strengthen, stiffen and reinforce existing fabrics.<br>They understand how to securely join two pieces of fabric together.<br>Children know and use the technical vocabulary relevant to the project. (See Tier 3 Vocabulary list)<br>Children understand the need for patterns and seam allowances.<br>Children will have explored and practiced some stitching techniques- back stitch, backward and running stitch.<br>When exploring a range of textile products they will able to identify a fabrics such as bonded, woven, knitted and felted.<br>They will be able to identify some decorative finishing techniques and use these in their final product. This could include adding applique with glue or stitching, adding buttons or Velcro. Children will have included at least one on their product.<br>Children will be able to cut out templates with some accuracy, using the techniques from year 2. This will be done with less or no support. | Fabrics, names of fabrics, zip, button, structure, finishing technique, strength, template, stitch, measure, mark out, | Structure, weakness, stitch, template, function, aesthetics, prototype, fastenings, | Strengthen, stiffen, reinforce, seam allowance, innovation, toile, |

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| -Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.<br>-Understand how key events and individuals in design and technology have helped shape the world. | | | | |

## Knowledge

### Substantive Knowledge

Textiles- Concept- Innovation

**Lesson 1:**

**LO: To understand how to strengthen, stiffen and reinforce existing fabrics.**

**Vocabulary-strengthen, stiffen, function, and reinforce**

Children to be given opportunities to investigate a range of textile products that have a selection of stitches, joins, fabrics and finishing techniques. Some apron textile products to be included for children to begin to develop knowledge of this product and purpose (different types e.g. waist apron, pinafore, cobbler apron). Encourage children to think about the development of fastening through times e.g. Velcro and then the zips. Give children the opportunity to disassemble appropriate textile products to gain an understanding of pattern, 3D shapes and seam allowances. Children could also be given opportunity to draw textile pattern after disassembly to understand the 2D shapes that are used to create 3D products.

**Questions to consider:**

What is its purpose?
Which one is most suited to its purpose?
What properties/characteristics does the fabric have?
Why has this fabric been chosen?

### Disciplinary Knowledge

**Each lesson: Tell chn-** Today we are going to be designers. This will involve the children conducting their own research analysing existing products or speaking to users to create an innovative design- think outside the box, links to occupations/users or current fashion trends. Children will then have to sketch out their ideas on paper and label key elements, colour selections and materials to be used before creating the product. Children will be encouraged to design and make products that are outside the box and original whilst beginning to create their own design criteria so own products will fit and be innovated.

*(Ideas could include designing an apron)*

*Design criteria can be created by the children but using a type of unique theme- e.g. nature etc)*

Throughout the unit, children will draw upon other subject disciples such as Mathematics and Science. E.g. creating nets of shapes, measuring seam allowances using mm, inches, compare and discuss suitability of fabric choices and particular uses. Children will also draw upon art concept of `expression` to investigate visuals, colour of patterns, decorative techniques and purposes.

Children to follow the four aspects of Design and Technology- research, design, make and evaluate whilst building upon technical knowledge to make their finished product.

How has the fabric been joined together? How effective are its fastenings? How has it been decorated? Does its decoration have a purpose? What would the 2-D pattern piece look like? What are its measurements? How might you change the product

How has the fabric been stiffened, strengthen and reinforced E.g. interfacing and stitching? Why is this important? Discuss how fabrics can tear/fray e.g. corners of an apron pocket, if pocket is too full then apron corners could tear.

**Lesson 2:**

**LO: To know how to securely join two pieces of fabric together.**

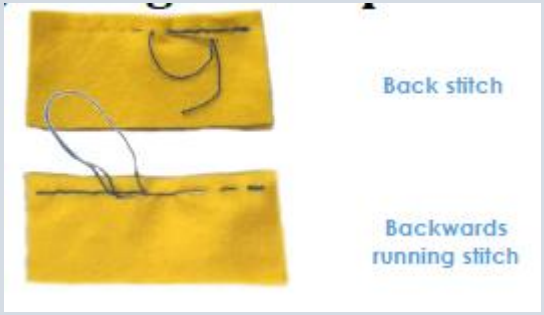
**LO: To understand the importance of a seam allowance.**

**Vocabulary-seam allowance, template, stitch**

(Retrieval from year 2- Running stitch and other joining techniques such as gluing, pinning and stapling.)

Children to be given opportunities to join two pieces of fabrics together. Draw upon knowledge from year 2 of creating 2D shapes for templates to join together. Children to revisit running stitch. After children to learn backwards stitch to join two pieces of fabrics together. Whilst joining fabrics, demonstrate to the children how to create a seam allowance and the purpose of a seam allowances. E.g. to stop fabric from fraying but to also give product a tidy finish- no raw edges.

Children to then be taught the blanket stitch- this stitch is to be used for decorative purposes but also joining two fabrics together.




**Lesson 3:**

**LO: To know how to design an innovative product.**

**Vocabulary- innovation, toile, prototype, fastenings**

(Retrieval year 2- Use of pattern templates to support design and making process)

Introduce concept `innovation` and discuss meaning. Explain to children that they are to create an apron using an innovative decorative design. Ask the children to create a range of sketches and annotated ideas, constantly encouraging creative thinking. Children to produce mock ups (toile) using paper and articulate designs. E.g. creating an apron for a chef but include one large pocket and stitch divided pockets to hold spoons, tea towel, pen, recipe card, button to hang tea towel on etc. To support making process, children could work together in groups to make one product and share different roles.

**Lesson 4:**

**LO: To know how to make and join textile product using the appropriate tools.**

**Vocabulary-assemble, seam allowance**

Children to be given the opportunity to make their final product in groups. Children to designate roles e.g. measure, mark out, cut template, stitch pieces of fabric together with a seam allowance. Children to assemble product using knowledge learnt so far.

**Lesson 5:**

**LO: To know fastening and decorative techniques to create a innovative product.**

**Vocabulary- fastenings, decorative, innovative**

Children to continue making their product. If children wish to strengthen elements such as pockets, encourage children to use knowledge from previous lesson of using stitching to strength or other materials to strengthen.

Children can then be given time to add decorative designs and fastening. E.g. buttons, Velcro, zips, gluing patterns or use of blanket/running stitch.

Throughout making process, children to use design to ensure they are on track to create final product. Have they adapted product? If so why?

Set goals for my work.

**Lesson 6:**

**LO: To understand the importance of testing a product and gathering feedback from users to aid the evaluation process.**

**Vocabulary- Recap all vocabulary from the unit**

Evaluate as the process is undertaken and the final product in relation to the design brief and criteria. The product should be tested by the intended user and for its purpose and others' views sought to help with identifying possible improvements.

Reviewing and evaluating created things.

## Concepts

| Functionality | Authenticity | Innovation | Significance |
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| | | When designing and making, pupils need some scope to be original with their thinking.<br>Projects that encourage innovation lead to a range of design ideas and products being developed and are characterised by engaging open-ended starting points for learning.<br><br>• Respond creatively and imaginatively to design briefs and problems. | |

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| | | demonstrate some originality when designing and making?<br>•Learn how to take creative risks.<br>• Understand the meaning of 'innovation' within design and technology.<br>•Understand how innovation is an important part of the process of designing and making products. | |

## ASSESSMENT

**KNOW MORE, REMEMBER MORE, DO MORE...**

In this unit of learning, progress has been made when a learner knows more. This 'distance travelled' from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit.