Learning journey	Design Technology	Textiles – cushion / bag / money container	Year 5 – Autumn 1	

Building on prior learning	Theme overview	Preparing for future learning	Vocabulary	
In Year 3, children will learn to: **Design**: •Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. •Produce annotated sketches, prototypes, final product sketches and pattern pieces. **Making:** •Plan the main stages of making. •Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. •Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. **Evaluating**: •Investigate a range of 3-D textile products relevant to the project. •Test their product against the original design criteria and with the intended user. •Take into account others' views. •Understand how a key event/individual has influenced the development of the chosen product and/or fabric. **Technical skills:** •Know how to strengthen, stiffen and reinforce existing fabrics. •Understand how to securely join two pieces of fabric together. •Understand the need for patterns and seam allowances. •Know and use technical vocabulary relevant to the project.	**The pupils will know:** How different fabrics and fastenings can be used to create and decorate a product. **The pupils will study:** How patterns and proto-types can be used to create a product. **They will learn:** How to make seams, using a seam allowance. **They will investigate:** Different products which are already on the market and use this research to design their own product.	In KS3, children will learn to: **Design** •develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations • develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools **Make** • select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture • select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties **Evaluate** • analyse the work of past and present professionals and others to develop and broaden their understanding • investigate new and emerging technologies • test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups • understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists **Technical knowledge** • understand and use the properties of materials and the performance of structural elements to achieve functioning solutions	Key vocabulary that the children will be taught / use during the unit: seam seam allowance wadding reinforce right side wrong side hem template pattern pieces name of textiles names of fastenings used iron transfer paper pins needles thread pinking shears fastenings	design criteria annotate design decisions functionality innovation authentic user purpose evaluate mock-up prototype

NC coverage and HWJS skills development

National curriculum coverage for Design and Technology

Pupils should be taught to:

Key stage 2

Design

use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose

Make

select from and use a wider range of materials and components

Evaluate

investigate and analyse a range of existing products

Technical knowledge

apply their understanding of how to strengthen, stiffen and reinforce more complex structures

HWJS skills development

Design:

- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.
- Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

Making:

- Produce detailed lists of equipment and fabrics relevant to their tasks.
- Formulate step-by-step plans and, if appropriate, allocate tasks within a team.

Knowledge organisers

This contains the key knowledge that the children will be taught during the unit of work – this should match up with the knowledge organiser overview

1. Year Groups

Years 5/6

2. Aspect of D&T

Textiles

Focus

Combining different fabric shapes

4. What could children design, make and evaluate?

tablet case mobile phone carrier shopping bag insulating bag hat/cap garden tool belt slippers sandals fabric advent calendar fabric door stop other – specify

5. Intended users

themselves younger children older children teenagers parents school grandparents teachers gardeners other – specify

6. Purpose of products

celebration educational interests hobbies environmental lifestyle religious protection other – specify

7. Links to topics and themes

Clothing Hot and Cold Communication Festivals Celebrations Weather Sustainability Our School Environment other – specify

8. Possible contexts

home school leisure culture enterprise environment local community other – specify

9. Project title

Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose). To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 10, 12 and 14.

16. Possible resources

existing textile products for investigation and deconstruction linked to their product

wide selection of textiles including reclaimed and reusable fabrics, dipryl

pins, needles, thread, measuring tape, left/right handed fabric scissors, pinking shears iron, iron transfer paper, sewing machine

range of fastenings, materials for insulating or strengthening e.g. bubble wrap, wadding, interfacing

finishing materials e.g. sequins, buttons, fabric paints

17. Key vocabulary

seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces

name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper

design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype

3. Key learning in design and technology

Prior learning

- Experience of basic stitching, joining textiles and finishing techniques.
- Experience of making and using simple pattern pieces.

Designing

- Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.
- Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.
- Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.

Making

- Produce detailed lists of equipment and fabrics relevant to their tasks.
- Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

Evaluating

- Investigate and analyse textile products linked to their final product.
- Compare the final product to the original design specification.
- Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve their work.

Technical knowledge and understanding

- A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
- Fabrics can be strengthened, stiffened and reinforced where appropriate.

10. Investigative and Evaluative Activities (IEAs)

- Children investigate, analyse and evaluate a range of existing products which have been produced by combining fabric shapes. Investigate work by designers and their impact on fabrics and products. Use questions to develop children's understanding e.g. *Is the product functional or decorative? Who would use this product? What is its purpose? What design decisions have been made? Do the textiles used match the intended purpose? What components have been used to enhance the appearance? To what extent is the design innovative?*
- Children investigate and analyse how existing products have been constructed. Children disassemble a product and evaluate what the fabric shapes look like, how the parts have been joined, how the product has been strengthen and stiffened, what fastenings have been used and why.
- Children investigate properties of textiles through investigation e.g. exploring insulating properties, water resistance, wear and strength of textiles.

11. Related learning in other subjects

- **Spoken language** – ask questions, formulate, articulate and justify answers, arguments and opinions. Consider and evaluate different viewpoints.
- **Science** – work scientifically investigating properties of fabrics. Children plan different types of scientific enquiries to answer questions.
- **History** – significant person/people in their locality linked to textiles and products e.g. William Morris, Amanda Wakeley.

12. Focused Tasks (FTs)

- Develop skills of threading needles and joining textiles using a range of stitches. This activity must build upon children's earlier experiences of stitches e.g. improving appearance and consistency of stitches and introducing new stitches. If available, demonstrate and allow children to use sewing machines to join fabric with close adult supervision.
- Develop skills of sewing textiles by joining right side together and making seams. Children should investigate how to sew and shape curved edges by snipping seams, how to tack or attach wadding or stiffening and learn how to start and finish off a row of stitches.
- Develop skills of 2-D paper pattern making using grid or tracing paper to create a 3-D dipryl mock-up of a chosen product. Remind/teach how to pin a pattern on to fabric ensuring limited wastage, how to leave a seam allowance and different cutting techniques.
- Develop skills of computer-aided design (CAD) by using on-line pattern making software to generate pattern pieces. Investigate using art packages on the computer to design prints that can be applied to textiles using iron transfer paper.

13. Related learning in other subjects

- **Mathematics** – apply knowledge of how 2-D nets can be formed into 3-D shapes; apply skills of accurate measuring using standard units i.e. cm/mm.
- **Art and design** – investigate methods of adding colour, pattern and texture on to textiles and how to make their own textiles through weaving or felt making.
- **Computing** – children express themselves and develop ideas using a range of information and communication technology resources.

18. Key competencies

problem-solving teamwork negotiation consumer awareness organisation motivation persuasion leadership perseverance other – specify

19. Health and safety

Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task. Risk assessments should be carried out prior to undertaking this project.

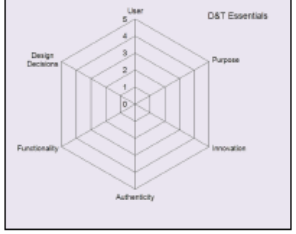
14. Design, Make and Evaluate Assignment (DMEA)

- Set an authentic and meaningful design brief. Children generate ideas by carrying out research using e.g. surveys, interviews, questionnaires and the web. Children develop a simple design specification for their product.
- Communicate ideas through detailed, annotated drawings from different perspectives and/or computer-aided design. Drawings should indicate design decisions made, the methods of strengthening, the type of fabrics to be used and the types of stitching that will be incorporated.
- Produce step-by-step plans, lists of tools equipment, fabrics and components needed. Allocate tasks within a team if appropriate.
- Make high quality products applying knowledge, understanding and skills from IEAs and FTs. Incorporate simple computer-aided manufacture (CAM) if appropriate e.g. printing on fabric. Children use a range of decorating techniques to ensure a well-finished final product that matches the intended user and purpose.
- Evaluate both as the children proceed with their work and the final product in use, comparing the final product to the original design specification. Critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for intended user and purpose, considering others' opinions. Communicate the evaluation in various forms e.g. writing for a particular purpose, giving a well-structured oral evaluation, speaking clearly and fluently.

15. Related learning in other subjects

- **Art and design** – use and apply drawing skills.
- **Writing and computing** – write and record a radio advert, making use of persuasive writing features, sound effects and music to promote the final product or event it is advertising.
- **Computing** – children express themselves and develop ideas using a range of information and communication technology resources.
- **Spoken language** – consider and evaluate others' viewpoints. Give a well-structured oral evaluation to include relevant technical vocabulary.

20. Overall potential of project



•Select from and use a range of tools and equipment to make products that are accurately assembled and well finished.
•Work within the constraints of time, resources and cost.

Evaluating:

•Investigate and analyse textile products linked to their final product.
•Compare the final product to the original design specification.
•Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
•Consider the views of others to improve their work.

Technical skills:

•A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.
•Fabrics can be strengthened, stiffened and reinforced where appropriate.

Years 5/6

Textiles

Combining different fabric shapes

Instant CPD

Tips for teachers

- ✓ Choose fabrics carefully. Shiny, heavyweight or fabrics that fray easily are often difficult to work with and can be frustrating. Have fabric cut into manageable sizes.
- ✓ Investigate using materials other than fabrics e.g. for handles. Plastic bags can be cut into strips and plaited.
- ✓ To make the activity more manageable limit the choice of decorating techniques.
- ✓ Keep scissors for fabric only.
- ✓ Make sure that you have plenty of pins and needles for children to use.
- ✓ Arrange zones in the class where children will find materials and resources.
- ✓ Ensure children have a basic understanding of stitching techniques, threading needles, starting and finishing off.
- ✓ Make mock-ups, then alter and refine and go back to initial design ideas to amend as necessary e.g. change measurements. Ensure the children keep all their modifications as part of the ongoing evaluation and for their final evaluation.
- ✓ Enlist the help of a local textile designer if available.
- ✓ Children can make their own demonstration videos to show e.g. how to join in different ways or how to complete a range of stitches. Different groups could show how to do different tasks and then share them.
- ✓ If using sewing machines, either hand or electric, make sure that their use is very closely supervised, using, for example, trained adult volunteers. If this cannot be achieved, children can tack the fabric together and an adult can use the machine.

Useful resources at www.data.org.uk:

- Designer bags
- Designing with textiles
- Recycling to sell
- Butterflies in My Tummy designing activities
- CPD Resources Primary INSET Guides

Other useful web-based resources

- http://education.staffordshire.gov.uk/Curriculum/Subjectareas/DesignandTechnology/Primary/Support/Datafile/
- www.wildginger.com

D&T Association publications:

- Primary Helpsheet – Unit 6B Slippers
- Primary Lesson plans – Unit 6B Slippers

Please note that these publications are based on previous National Curricula.

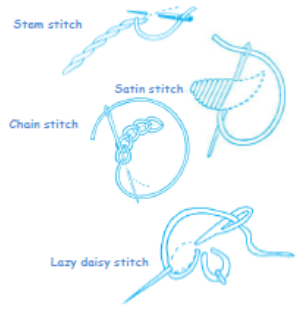
Teaching aids

Possible fasteners

Children may want to use a fastener which should be appropriate for the purpose for the product.

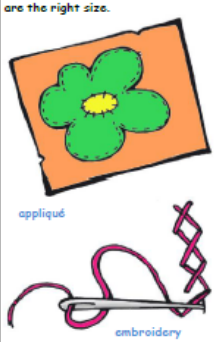
Stitches

Children can use different stitches to decorate their products.



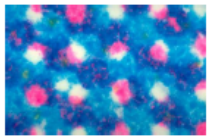
Using stitches as a finish for the product

The children could design their finish for their product using a variety of appropriate stitches. They could draw enlarged examples of e.g. insects, flowers, animals and then decide which stitch would be best for each part. Use square paper for a grid to ensure the stitches are in the right place and are the right size.



Tie dye

Children could decorate their fabric before they make up their product by tie dyeing.



The key to success is to tie the fabric very tightly with e.g. rubber bands or string so that the dye is prevented from reaching that part of the fabric.

Designing, making and evaluating a belt for garden tools

An iterative process is the relationship between a pupil's ideas and how they are communicated and clarified through activity. This is an example of how the iterative design and make process might be experienced by an individual pupil during this project:

THOUGHT	ACTION
What are the features of a successful product? What features do I need to include in a functional, innovative and authentic product?	Researching, investigating, disassembling and evaluating existing products and consulting 'real life' designers
What knowledge and skills do I need to be able to design and make a good quality product?	Investigating and practising using a range of methods to join fabrics together and making judgments about the strength and appropriateness of each technique Practising finishing techniques and, if possible, learning to use a sewing machine
How do I make a paper pattern for the product I want to produce?	Creating a 2-D paper pattern with a seam allowance
What design decisions do I need to make? How can I communicate my ideas for my product in an effective way?	Developing ideas through research, working drawings, computer-aided design, discussion, paper mock-ups and modelling
How will I show innovation? Who will be the user of my product and what are their needs, wants and values? What will be the purpose of my product?	Thinking about the user and purpose and developing specifications for products Formulating a clear plan of work and allocating tasks if appropriate
More thoughts... appraising, reflecting, refining	Constantly self-evaluating and making changes if the product is not fulfilling the specification
Does my product meet the needs and wants of the user? Is it appealing and does it fulfill a purpose? Is it innovative?	Testing final products with the intended user and making an evaluation of how successful they are

Glossary

- **Mock up** - quick 3-D modelling using easy to work and cheaper materials and temporary joints. Useful for checking proportions and scale.
- **Pattern or template** - a shape drawn to exact shape and size, used to assist in cutting out.
- **Seam allowance** - extra fabric allowed for joining together - 15mm for domestic patterns.
- **Specification** - describes what a product has to do.
- **Tacking** - large running stitches to hold pieces of fabric together temporarily.
- **Working drawing** - detailed drawing contains all information needed to make a product but is updated as changes are made.

Connections / deepening understanding	RADE	Assessment	
	UNCRC – article 24		
Assessment recording for the unit - checking the level of pitch of the work			
Key skill(s)/ knowledge to be assessed by the end of the unit	**Lower attaining**	**Middle attaining**	**Higher attaining**
Key skills: **Designing** •***Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.*** •Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design. •Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.	**The pupils can** Develop a simple idea for a product through discussion and research. Create a simple prototype of their product. Develop a drawing of their idea.	**The pupils can** Use pre-existing products, research and discussion to develop ideas for a product. Create a prototype of their final design and discuss how this helps them to make changes to their final idea before making their product.	**The pupils can** Produce a number of ideas and explain why they decide on their final idea. Create a prototype which allows them to consider the pros and cons of their ideas before deciding on a final product.
Key skills: **Making** •Produce detailed lists of equipment and fabrics relevant to their tasks. •Formulate step-by-step plans and, if appropriate, allocate tasks within a team. •***Select from and use a range of tools and equipment to make products that are accurately assembled and well finished.*** •Work within the constraints of time, resources and cost.	**The pupils can** List of materials and equipment they will need to make their product. Explain verbally how they will make parts of their product.	**The pupils can** Explain the fabrics, fastenings and equipment choices they have made in order to create their product. Explain their predicted processes through a step-by-step plan.	**The pupils can** Select their fabrics, fastenings and equipment and competently explain why they have made these choices. Create a step-by-step plan to show how their product will be made and annotate this as they make it to show changes.
Key skills: **Evaluating** •Investigate and analyse textile products linked to their final product. •Compare the final product to the original design specification. •Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. •Consider the views of others to improve their work.	**The pupils can** Discuss the pros and cons of pre-existing products and use this to help them create their own ideas. Talk about their design with peers to consider any changes they want to make before they start.	**The pupils can** Discuss different, pre-made products and their preferences. Consider the different components were made and why fabrics and fastenings were chosen. Talk about the purpose and intended user of the product.	**The pupils can** Competently discuss a range of pre-made products, including their intended user, component parts, aesthetic qualities and how they were made. Consider how each product is different and why this is, including: intended user, age appropriateness, materials, fastenings, etc.
Key knowledge : **Technical Skills** •***A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.*** •***Fabrics can be strengthened, stiffened and reinforced where appropriate.***	**The pupils can** Thread a needle. Sew using a simple running stitch, to secure two pieces of fabric. Use a simple pattern.	**The pupils can** Begin by securing their thread in the material, sew a run of stitches and securely finish their sewing at the end of the run. Use stitching for decoration. Create a simple pattern, allowing for seams. Strengthen fabric were appropriate.	**The pupils can** Thread a needle, sew effectively and finish off at the end of their sewing. Create a pattern which supports the making of their final product, allowing for seams, and decorative aspects of their product.