

1. Year Groups

Year 5

2. Aspect of D&T

Textiles

Focus

Combining different fabric shapes

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.

4. What could children design, make and evaluate?

Reusable shopping bags with an environmental message

7. Links to topics and themes

Sustainability & Environment

Global Warming unit in Year 5 Geography

Possible visit to plastic product museum at Bournemouth University (See KC for details)

5. Intended users

Parents, grandparents to use when shopping and spread an environmental message to others.

8. Possible contexts

home school leisure culture enterprise environment local community

6. Purpose of products

educational environmental lifestyle practical

9. Project title

Design, make and evaluate a reusable shopping bag for a parent or grandparent to reduce the need for disposable plastic shopping bags.

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 people in UK linked to textiles and products e.g. William Morris, Cath Kidston.

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.

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.

10. Investigative and Evaluative Activities (IEAs) (Look at work of Ecoist – see link 1)

- Children investigate, analyse and evaluate a range of existing bags 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?*
- Look at range of textiles such as *T-shirts, pillowcases, sheets, sacks* – *could these be repurposed? Explore whether these items can be recycled to make a reusable bag for shopping.*
- 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 strengthened 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.

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.

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 bag
- 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.

16. Possible resources

existing textile based bags (and particularly shopping bags) for investigation and deconstruction linked to their product

wide selection of textiles including reclaimed, recycled 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

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.

20. Web resources for teachers

Examples of reusable bags

- 1) <https://inhabitat.com/sustainable-style-ecoist-handbags-inhabitat-shop/>
- 2) https://www.amazon.co.uk/s?k=reusable+shopping+bag&hvadid=80539258264651&hvbm=be&hvdev=c&hvqmt=e&tag=mh0a9-21&ref=pd_sl_56mychio8b_e
- 3) <https://www.crazybags.co.uk/product-category/reusable-shopping-bags/>
- 4) <https://www.cafepress.com/+environmental-messages+bags>

Impact of plastic bags

- 5) <https://www.reusethisbag.com/articles/plastic-shopping-bags-environmental-impact/>
- 6) <https://www.ukessays.com/essays/environmental-sciences/environmental-impact-of-plastic-bags-environmental-sciences-essay.php>