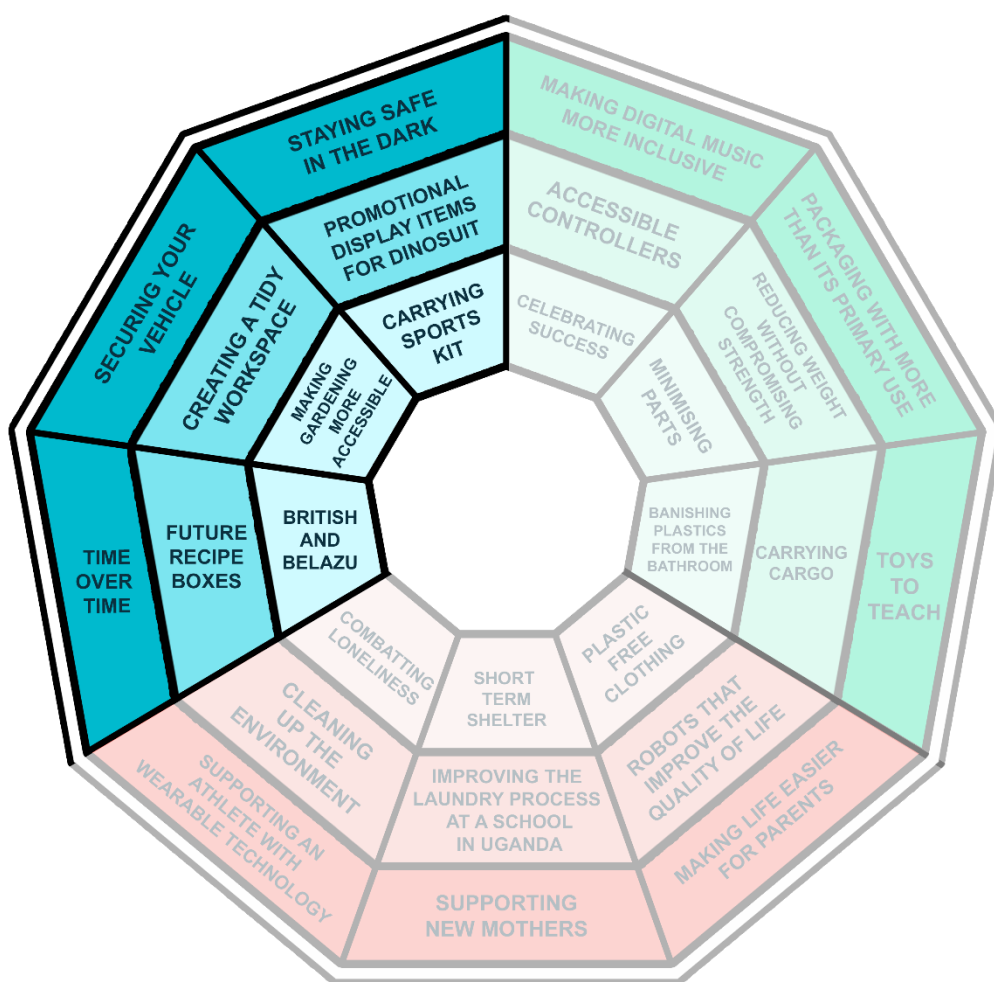


INSPIRED BY INDUSTRY

Carrying sports kit

#InspiredbyGola



Gola®

Introduction

This context has been put together to explore relatively simple textiles' work, but using a sports context that is hoped will excite and engage most students. Whilst it is likely that most will design and make a simplistic sports bag, 'carrying sports kit' can be opening up to potentially wider outcomes and innovation. Sports kit could also be linked to other wider areas such as yoga, pilates, dance etc. It is hoped that students will have heard of / seen Gola, but you may want to show their products via the internet, especially their legacy and revival during the Britpop era!

Materials

It is envisaged that the brief will be approached mainly through using fabrics and associated materials. It lends itself well to exploring a range of fabric properties and gaining a deeper knowledge and understanding about natural and synthetic fibres and their working properties. Using some fabric samples to join / work with can be a useful activity, even if the final outcomes may be limited to what is in stock / readily available. As mentioned in the context, if possible, you could explore utilising old fabrics and repurposing them for this brief. Maybe the PE department has old kit, bibs etc. they can donate to remain in-keeping with the sports' theme.

In addition, there are likely to be a number of other materials using in bags that can be explored also. For example, it opens up good classroom discussions regarding plastic vs metal zips, clips, buckles etc.

Potential outcomes

Although the outcomes are prototypes they will still require testing. You may decide to focus on students creating their own patterns for their bags, and so creating arguably a more challenging outcome. Alternatively, by providing them with a pattern, the focus may be more on adapting and finishing skills.

Examples may include (but not be limited to):

Drawstring gym bags, tote bags, multi-compartment bags, sling bag, duffle bags.

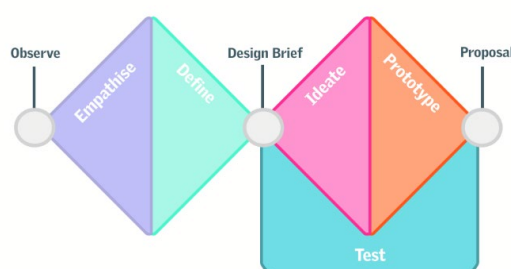
Although we are obviously looking to produce working outcomes, there is also an opportunity to explore a range of skills with regards to fixtures and fastenings, fabric types, design presentations, colour theory and more.

At the time of launch, Gola are offering to make a sample of their favourite student-designed bag. Check out the D&T Association website for further information.

Consider sharing work on social media using the hashtag #InspiredbyGola

Design cycle

The design cycle shown can be worked through in a range of orders. It's advised that the areas are revisited throughout the process depending on your time. We advise that a graphical representation of thinking convergent and then divergent may be shown to your students.



The following are some tips as to the type of activities you could do with your students.

Empathize stage

- Students should be introduced to this term if not already familiar.
- Access to users is good here. Whilst students may play sports themselves, to empathize with others, you may want to insist they choose a client who plays a sport / activity they are unfamiliar with. Consider linking with a local sports club and possibly gaining some useful publicity from the collaboration also.
- At the start of the context, students should be thinking wide with their thoughts, exploring the problem and not deciding too soon what they 'want to make', but observing what the outcome needs to do, the conditions it is likely to be used in and the requirements of the product.
- Consider having a few patterns of bags to select from, depending on the ability of your students.
- You may want to limit the size of the bag / activity. A bag to carry the vast array of kit required for some sports may be very costly and time-consuming.
- For a challenge, smaller can often be harder – think storage for something tiny such as darts – this may also open opportunities for mixed material outcomes.
- Trying various aspects as a group can also be useful – using and analysing existing equipment for example, then sharing thoughts and feedback.
- Collaboration software such as Miro, or Google/Microsoft collaboration can be good to use to collate ideas from all.
- Students should get as much information to help them later in the challenge. They may present this in any way they wish.
- Gola have a website [here](#) that may help to show a range of their work.
- Having students take apart / unpick bags / clothing to gain a greater understanding of pattern construction is useful. Ask the school community if they have any unwanted products to use.

Define stage

- This is where students try to get the real root of the problem and decide what they are going to do, and who for.
- There may be a whole range of problems identified. Identifying the user and their needs/interests as well as associated constraints or barriers may help.
- For this stage, you may possibly constrain it to ensure students are working with materials and processes you wish to cover in the unit of work. There will still be plenty of opportunity for designs, testing, iteration etc.
- Having students explore simple construction techniques (depending on experience) at this stage may be wise. There may be an element of students designing solutions that are unlikely to be made with the constraints of skill-level and time available, and so understanding complexities and limitations at an early stage can help with the ideate stage.
- It is also important for you as a teacher to define the main focus of the unit of work and constrain accordingly.
- Consider getting a handling collection, such as the [one available on the D&T Association website](#) to explore.

Ideate stage

- For the ideation stage, you may be drawing on existing ideas (e.g., improving an existing product / using an existing pattern) rather than starting from scratch.
- Consider giving students the initial freedom of how to approach their ideas. For example, it may be CAD, a paper/Dipryl prototype or a sketch. Giving students autonomy of how to approach their designs will prevent them feeling restricted. Working in groups can help generate creative ideas.
- You may wish to show students examples of existing products / bags and what you believe is possible for them to make.
- Consider pre-making and demonstrating/testing a few designs so they can envisage what the outcome is likely to be. These can form a good product analysis exercise where they can suggest alterations such as contrasting stitching, different fabrics, pocket sizes etc.
- Changes / improvements can be through annotated photographs or sketches.
- Encourage students to annotate elements of their drawings – things like WHY it's that big, WHY it's that shape, WHY they have chosen that fastening...
- A range of techniques such as 2D, 3D, Exploded and cross sections are good.
- CAD programs such as Photoshop may also be of great use here. If you can get access to a stylus, these programs can allow you to draw your design digitally, if not, consider drawing on paper and scanning into the software to then colour, render etc.

Prototype stage

- Getting students to realise when and why to make a prototype is key. What are they looking to prove / disprove? The prototype shouldn't be just the final outcome, but instead a number may be produced throughout the unit to test different things such as how to hold the drawstring to the bag...
- The following are all suitable CAD programs which could be used for 3D elements such as zip pulls, keychains and buckles:
 - [AUTODESK](#) free for schools/students
 - [CREO](#) free for schools/students (PC only)
 - [FREECAD](#) free for schools/students
 - [ONSHAPE](#) free for schools/students
 - [SKETCHUP](#) free for schools/students
 - [SOLIDEDGE](#) free for schools/students
 - [SOLIDWORKS](#) discount available for schools/students
- There are some good Autodesk Fusion tutorials [HERE](#) and TinkerCad [HERE](#)
- The following are all suitable graphics programs which could be used for the main concepts:
 - [PHOTOSHOP](#) discount available for schools/students
 - [ILLUSTRATOR](#) discount available for schools/students
 - [SERIF AFFINITY](#) free for schools/students
 - [COREL DRAW](#) discount available for schools/students
- Consider asking sportspeople / users to give some feedback on the prototypes, as they are being developed and at the testing stage.
- Whilst the CAD models produced may be fairly simplistic in their nature, it is an opportunity to explore different techniques with students such as adding interfacing, piping, attaching buckles, rivets etc.

- Investigating properties of fabrics lends itself well to this context. Students will naturally test items in the next stage, and so learning about a range of properties is useful.
- Scale models can be made and tested if size is an issue (although too small and it may be tricky to sew).
- Consider using Dipryl as a method of making prototypes due to it not tearing or fraying (and being relatively inexpensive).
- If sewing and access to machines is difficult, for some prototypes you may wish to consider adhesives as an alternative for mock-ups.

Test stage

- Although this is the final stage of the design cycle, encourage students to evaluate throughout and act on their feedback (and consider the feedback of others too). It is not a final thing, but a step to improve further.
- Test in as many different scenarios as possible to ensure you get realistic feedback. Observe how users are interacting with the product and use these observations to add more detail to your questions for feedback.
- Be sure to record the testing results, either in data form, written test or use digital audio and video to record. You may wish to get students to do wear-tests and lab-tests.
- With testing it is important to ensure safety at all times as products may react in unexpected ways. For example, if students are to test the strength of a clip by hanging weights from it, get the students to attempt to write a risk assessment for the test. This will be similar to what is done in science, and ensure they adhere to all relevant PPE and safety procedures when carrying out supervised tests.
- Draw on approaches from science here. It may be worth speaking with a science colleague to replicate how students predict and record experiments. Doing this using similar methods will help to reinforce the learning.

Focused Tasks

'AI'	'Marker rendering'	'Digital rendering'
Use AI programs such as Canva and Newarc AI to design bags or add detail to students' designs, making them appear more realistic. This can be in the form of adding fabric surface finishes to a sketch.	Using pre-printed templates, use marker pens to explore tone and shade, creating a quick representation of what the final outcome may look like.	Use a prepared line drawing sheet / document to try out different colour combinations for the bags and shoes. Now try the same approach with your own designs, creating a line drawing and exploring different digital rendering techniques.
'Logo decoration'	'Hardware'	'Patterns'
As shown in the image bank slides, Gola uses a range of techniques to portray their logo. Using techniques such as applique, embroidery and printing, students can experiment with.	Practice adding a range of fixtures and fastenings to fabrics. These may include buckles, press studs, rivets, zips, buttons, Velcro and more.	Using old bags, unpick them to see how they are constructed of different pieces. Get students to create their own pattern pieces based on this. Some students may be able to visualise and experiment with paper patterns purely by eye, without the need to deconstruct.

Investigative and Evaluative Activities

'Product / company evolution'	'Product disassembly'	'Fabric source'
It's important for every company to evolve to make sure they stay relevant, and their products are desirable. Investigate a company or a sports team and research how their products (or sports kit e.g. football shirt) has evolved over time. Use images and annotate to explain changes in fabrics, colours, details, shape/style and more. Are any linked to the advancements in technology or any particular moment in time?	Using an old bag, pick it apart and display in a graphical way, showing all the pieces and components that have gone into making the item. List the materials used.	Investigate the process of producing some common fabrics. As a group, choose a range of commonly-used fabric types and investigate how they have been produced. What are the fabrics' main properties?

