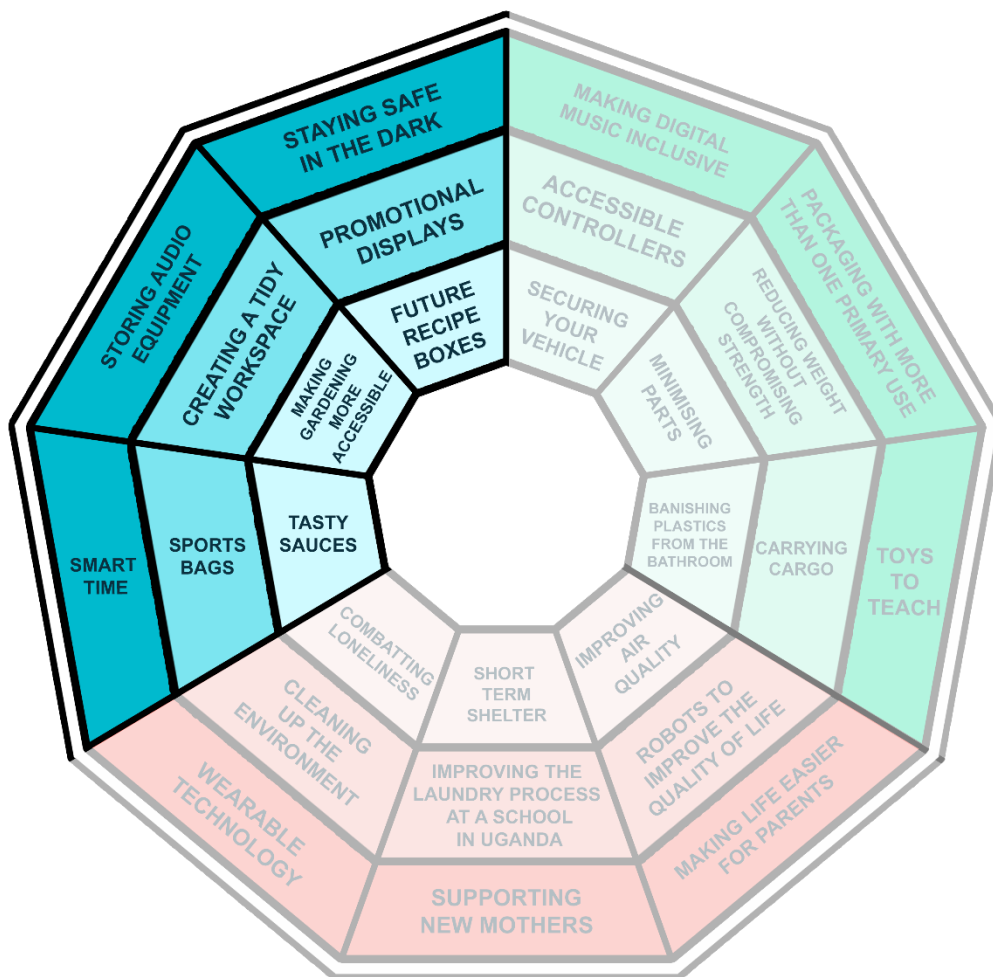


INSPIRED BY INDUSTRY

Promotional display items for Dinosuit

#InspiredbyDinosuit



DINOSUIT™
WEARABLE FOSSIL KIT

BUILD YOUR OWN WEARABLE DINOSAUR!

Introduction

This context has been created to allow for a range of opportunities for students to explore point of sale, display and exhibition material through the development of a promotional display items for Dinosuit.

Materials

Whilst not exclusive to, this context provides good opportunities to explore the use of paper and board for prototyping promotional or display items. Fundamental to this though is the exploration of card and graphics. This context also encourages exploration of moving elements and mechanical components to create animated display materials. There is an opportunity to explore classification of materials e.g. hardwoods, softwoods, thermoplastics and thermosetting plastics as part of a material selection process.

Potential outcomes

The outcomes could cover a wide range of graphics-based outcomes such as posters, greetings cards and packaging that make use of CAD, CAM and digital imaging technologies. However, they could also develop display units, pop up stalls or even exhibition stands.

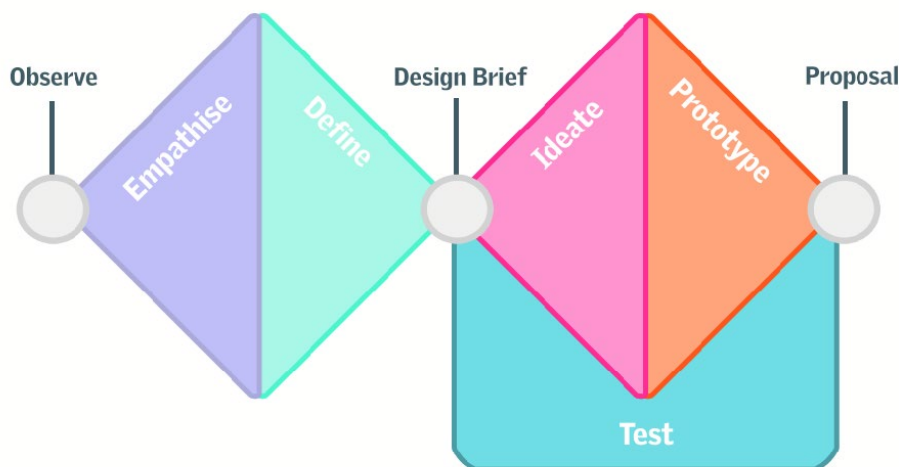
As this is aimed at the first year of secondary level study, more support and scaffolding may be needed but it is important that students are given some freedom within this context and so outcomes should vary between students. You may choose to limit the class to one aspect of promotion such as 2D outcomes (cards, posters), or encourage students to work in teams to produce different promotional items for a complete exhibition display.

There is an opportunity to explore cardboard engineering and mechanical systems to create structural displays with animated or interactive elements to really bring the product to life. It is likely students will have explored mechanical systems in the form of linkages at primary school – check their experience and prior knowledge to build on.

Consider sharing work on social media using the hashtag #InspiredbyDinosuit

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, similar to this 'Double Diamond' diagram.



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 but, for less able students, you could provide additional research and support.
- 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 is happening.
- This observation may be a video, a chart, or an interview and should allow them to spot 'problems' or identify new design opportunities.
- If gaining access to research is hard, you may want to provide a range of data or physical materials for the group so they can get on with the task.
- As a group note down all the potential issues you see – don't think at all about solutions yet, or even if they are able to be solved using technology – this is just a stage to highlight issues and concerns. It may be things like lifestyle, age, dietary requirements etc.
- Students can get information to help them later on in the challenge. Research is not always done at the beginning of the project; it is wherever you need further information.
- Consider trying to get existing promotional material from a local store / supermarket. Especially around seasonal times (Halloween, Christmas) there may be products they discard afterwards that are good to use / explore.
- Consider buying one for the class to explore / try out. For teachers of this context, you can purchase at a lower price on the D&T Association store [here](#).

Define stage

- This is where students try to get the real root of the problem and decide what they are going to do.
- There may be a whole range of 'users' identified (parent, child, store-keeper), but define the precise problem they are tackling. You may want to get them to back up the reason it is important.
- This is a good opportunity to introduce contextual challenges to students and get them to consider all aspects of the problem. It will undoubtedly need some support from you as a teacher. Please get students to share their thinking as clearly as they are able.
- Get students to create a design brief and, where relevant, a simple product design specification. Consider using columns such as 'Essential', 'Desirable' and 'Definitely not'.

Ideate stage

- Ideas for promotional materials may be based on adapting existing products for students to begin with but do consider how more able students can develop their own designs.
- Encourage students to think wide initially. No ideas are too silly, too big.
- Ideas can also be produced through making. Get students experimenting with paper and card from their initial ideas. You may wish to do this first, rather than sketching. Using the mechanisms on the presentations (slide 32) may be a good starting point.

Consider preparing a number of strips of card pre-cut for modelling, easily done using a paper-trimmer. Holes can be made with a sharp pencil poked into modelling clay / Blue-tac or using a hole punch or paper-drill.

- The packaging can also feature a visual element and opens opportunities for developing graphics using digital and traditional methods. Maybe a display stand for boxes can be replicated and structures explored and/or material properties investigated, choosing relevant materials for the task.
- There are a range of videos on YouTube to help students with sketching techniques. [HERE](#)
- Product design sketching tutorials can be found [HERE](#)
- The Design Museum have some nice, short, case-study videos [HERE](#)
- Students should be encouraged to sketch on anything to hand – envelopes, packaging etc. This may be a good method to stop students potentially being daunted by blank paper.
- Annotation may be things they like, things they are not happy with and explanation of parts that are not clear from the picture.
- A range of techniques such as 2D and 3D drawing are good.
- Research may be needed at this stage. Consider a handling collection of other promotional items or displays.
- Ideas don't have to be revolutionary and completely new. A product can be an evolution or improvement of an existing solution. Maybe they can start with an existing product and improve it.
- Encourage students to 'disassemble' existing items to see how they have been created and constructed. This may be tabs, slots etc. Consider a crash-bottom box or similar as a quick way to construct a package.

Prototype stage

- The prototyping stage will be revisited several times in this unit. Consider when students use CAD/CAM (if at all) and when is available to them. Laser-cutting card can be quick and easy and allows for a good iterative process.
- Whilst brass split-pins are good for quick prototypes, consider other fixings that could be used. Small [plastic snap rivets](#) may create a neater finish?
- You may also want to explore different materials for final prototypes such as greyboard, corrugated card, corraflute, foam board etc. It is an opportunity to introduce different materials studied at GCSE and explore working characteristics.
WARNING: Check the material suitability before attempting to laser-cut any material as they may release harmful fumes and/or damage the machine.
- Experimenting with different finishing methods could also be approached here. Engraving and rubbing wax crayon or paint into the engrave can create a nice finish to represent scales. Possibly painting first and engraving away paint creates a negative version of this. Engraving onto laserable rubber to create a stamp (like block printing) is another method that works well. Printing a scaled pattern and sticking to card before then cutting can help introduce the idea of 'bleed' in commercial printing/cutting.
- Throughout the process, ensure students follow procedures for health and safety and understand the process of risk assessment.

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.
- Third-party testing can be really useful. If you are able to test with a local toy store or museum this can bring real kudos to the work.
- When testing moving elements it is good to video it if possible to see how pieces interact with each other. Students can commentate over the top and can be uploaded to a digital portfolio.

Focused tasks

<u>'Slot together kits'</u>	<u>'CAD'</u>	<u>'CAM'</u>	<u>'Digital sketching'</u>
Using existing slot together kits, explore how the techniques can be used to make a glue and tool-free display.	Use CAD to create simple flat shapes that can be rearranged to create the display.	Learn how CAD models can be converted to shapes that can be printed or cut out using a laser or vinyl cutter.	If you have tablets or digital software, encourage development of ideas by sketching over existing photos, models or sketches.

Investigative and Evaluative Activities

<u>'Reverse engineer'</u>	<u>'Success criteria'</u>	<u>'Values'</u>	<u>'Structural testing'</u>
Dinosuit encourage reworking existing ideas by sketching over them. You could take this further by disassembling an existing display to see how they have been engineered.	Investigate displays that have been used to successfully sell toys and products aimed at children. What features do they have that make them successful?	Dinosuit require their promotional material to consider the values of those who are buying. Conduct research into what appeals to the buyers by using interviews, polls or questionnaires.	How well do displays cope with being stored, transported and built. Explore a range of cardboard structures to see which are the strongest and most durable.

