



A MUSEUM
OF DISCOVERY.

Flex

DESIGN CHALLENGE

Teacher Resource Kit

MOD.

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Introduction to MOD.

MOD. is a futuristic museum of discovery. It's a place to be and be inspired by ideas at the intersection of science, art, and innovation.

Our exhibitions are designed for people aged 15-25, showcasing how research shapes our understanding of the world around us to inform our futures.

MOD. is like no other museum experience in Australia. We bring together researchers, industries, and students to push boundaries, explore, and be inspired.

We present one in-gallery and one online exhibition each year, along with a program of workshops, talks and events.



Introduction to the Design Challenge

MOD. is committed to fostering the participation of young people in each of our exhibitions.

As part of our exhibition FLEX (17 January - late November 2023), we are inviting secondary school students to contribute to the content of this exhibition by creating either visual designs or artefacts for display in our gallery spaces, which answer the question:

HOW MIGHT WE OVERCOME LIMITS SO THAT HUMANS CAN THRIVE IN THE NEXT 50 YEARS?

You might want to think about how over the next 50 years our bodies might break out of the limits of life on earth to explore new environments in space, or in virtual environments, and the types of challenges this brings. Or how we overcome limits imposed by changing climates or availability of resources. Or a design solution for the problem of how we might repair, regenerate or augment our bodies in the future.

Schools and/or individual students are invited to design a speculative new product or service in response to this question. It might take the form of a machine, app, promotional campaign, or even a solution we haven't even thought of before! Your design outcome can be developed for 2D or 3D display including digital plans, 3D prototypes, models or speculative promotional material like a poster.

Rather than being a competition, the project enables creative contributions from schools, educators and students to be featured within the exhibition.

Intellectual Property and Publicity

Intellectual Property will be retained by the school or student; however, in signing our registration form, parents/caregivers, students and teachers are allowing us a perpetual and unrestricted licence to display the work in MOD. and show images and film of the work on MOD. and UniSA digital channels.

Learning Objectives

In the Design Challenge, students are learning to:

- Develop an original idea and research information;
- Develop team-work, time management and planning skills;
- Recommend a solution that considers available resources and constraints;
- Test ideas/prototypes, and analyse and reflect on their effectiveness;
- Communicate ideas through multiple models, including written and visual/spatial modes;
- Demonstrate practical and/or technical skills through working with a particular medium or technology;
- Understand the use of design thinking and processes to deliver a product.



Project Schedule

The project schedule is as follows:

January-March:

Expressions of interest open to register for project
[Click here to register](#)

May:

Design Thinking Workshop (online)

June-August:

Monthly zoom drop in times with MOD. team for project feedback and tips

7 September:

Submission of final design solutions to MOD.

Late September:

Chosen submissions selected for inclusion and display in FLEX Exhibition (on display till late November 2023).

Learning Tasks for Student Groups

1. Establish student teams, and identify team values and expectations;
2. Identify and describe a problem relating to the design challenge theme of FLEX;
3. Research the problem (Who else has looked at this? What is already known?);
4. Generate ideas - multiple ways of finding a solution;
- 5a. Design a solution and produce evidence (written report, digital design, video) for their design,
OR
- 5b. Build and test a prototype solution;
6. Evaluate prototype (Is it working? Can it be fixed or improved?);
- 7a. Produce document or short video summarising final design approach,
OR
- 7b. Produce final design product (3D model, labelled diagram, or working prototype);
8. Submit to MOD. for review and inclusion in the exhibition FLEX.

The Design Thinking Process

From the IDEO U model:

1. Frame a Question

Inspire the team to think about your end users (who you're designing a solution for) and what they actually need.

2. Gather Inspiration

Go out into the world and seek inspiration by observing and discovering what people really need.

3. Generate Ideas

Use the inspiration you gather to help push past the obvious to come up with fresh solutions to your problem.

4. Make Ideas Tangible

Build rough prototypes and find what's working and what's not.

5. Test to Learn

Test your prototypes, gather feedback, and iterate.

6. Share the Story

Once you've arrived at the right solution, craft and share the story to introduce

Creative Thinking Tools

There are many tools and frameworks available to get students thinking about an issue and generating new ideas. They may involve forcing a connection between two seemingly unrelated ideas (associative thinking) or may be about modifying an existing idea.

Techniques like reverse thinking, in which the opposite question is instead explored, can yield effective solutions and also be a lot of fun. E.g. instead of generating ideas about how to make a playground safer, we could ask how it could be made more dangerous.

SCAMPER is a creative thinking technique designed to help solve problems and formulate solutions from existing ideas. You could consider individual parts or functions of the design or consider it as a whole, as you apply each action/verb to your design or system.

Creative Thinking Tools

The following questions are adapted from the SCAMPER creative thinking tool:

S - SUBSTITUTE

What materials or ideas could be swapped or substituted?

C - COMBINE

Which aspects could be combined to create something new?

A - ADAPT

How could the work or idea be adapted to serve another use?

M - MODIFY

What could be added to improve the work or idea, what aspects could be highlighted?

P - PUT TO ANOTHER USE

Can the work or idea be used for another purpose altogether?

E - ELIMINATE

Which elements could be eliminated or how can the work be simplified?

R - REVERSE

What does the exact opposite of the idea, goal or solution look like?

More Creative Thinking Tools

- Harvard Project Zero's Agency by Design, focuses on maker-centred learning, providing useful tools or “thinking routines” for exploring and brainstorming around complex systems, and complement any design framework.
- The DIY Toolkit from NESTA provides simple, quick strategies “to invent, adopt or adapt ideas” and generate solutions for meeting goals for social development.



Photograph: Kate Bowman

FAQ

Q: Is this project available to primary school students?

Unfortunately, it is only open to classes from year 7 – 12. However, you are welcome to use these resources in your own classrooms.

Q: Is there any limit on the number of teams or students who can participate?

No. A school can register for one student or many students / classes. Participants don't have to come from one subject area, they can be cross-disciplinary and may even be an extra-curricular group or club.

Q: What should our design solution include?

Your imagination is the limit, as long as it is presentable in a flat 2D way, or is limited to a physical prototype or model no larger than 12cm cubed. This might include sketches, technical drawings, collages, painting, comic, illustration etc. The artwork specs must be TIFF at 300dpi in landscape or portrait format.

NB: Should your design be selected for digital or physical display, MOD. is responsible for printing and making it gallery ready.

Q. Do I need to register to participate?

Yes, it is essential that you register as we need to be able to get in touch with you with updates. However, by registering you are under no obligation to submit anything. [Register here.](#)



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