Zoos Victoria’s STEM Design Challenge engages Year 3-10 students through real-world scenarios at the zoo. In this unique program, students will find solutions to complex problems using their STEM skills, knowledge and an engineering framework called Design Thinking.

**What is Design Thinking?**

Design thinking is a process where a need is identified and a design solution is developed. The process helps students understand a problem, generate ideas and refine a design based on evaluation and testing.

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| **Understand**  Be caring, ask questions and  define the challenge | **Ideate**  Imagine creative solutions to  the challenge | **Prototype**  Show your idea  by using  what’s available | **Test and Refine**  Test, share, evaluate and improve  your prototype |

**How do I fit the STEM Design Challenge into my curriculum?**

There are many ways to teach STEM. The STEM Design Challenge will help you use a transdisciplinary approach - students apply knowledge and skills from two or more learning areas to solve a real-world problem.

**How long does the Challenge run for?**

Each Challenge theme runs over two terms. Some teachers use this program as the centre of a whole-term unit. Others use it as part of a special program that runs for 1-3 weeks. This Teaching Guide will help you walk your students through each stage of Design Thinking at your own pace.

**What is a prototype?**

A prototype is a visual representation of an idea. Prototypes can be 3D models that are tested through feedback. Prototypes can also be in a workable format that can be physically tested.

**Do I need special materials or a STEM lab for the prototypes?**

Not at all. Just like people who work in STEM, students should use any of the materials available to them to create their prototype e.g. recycled materials, 3D printer

**How many prototypes should my class make?**

The number of prototypes is up to you. If you want to participate in the STEM Design Challenge competition (optional), you will need to assign teams of up to six students to build prototypes.

**What support is provided to help me teach this program?**

Your Teaching Guide has activities to help you teach each stage of Design Thinking. The Design Brief will start you off and outline expectations. Your Healesville Sanctuary educator will be able answer student questions. Zoos Victoria’s website and YouTube channel also provide information for student research. You are welcome to use the Judging Criteria as part of your assessment.