**Design Brief**

**Understand – be caring, ask questions and define the challenge**

**Meet Your User: Dan Harley**

I’m Dan and I’m a threatened species scientist at Healesville Sanctuary. My job is to help possums and parrots in the wild. My team and I research, gather data, do health checks on animals and write reports. Our research helps Zoos Victoria and its partners evaluate the health of forests and wildlife. Sometimes we discover that there are not enough tree hollows for possums and parrots to nest in. We have to put up nest boxes that have been made by Healesville Sanctuary for animals to use.

**My team and I need:**

1. A new nest box design to help Leadbeater’s Possums thrive in the wild
2. A new nest box design to help Swift Parrots thrive in the wild

**Your nest box needs to:**

* Act and feel like a tree hollow
* Have an entrance that lets the possum or parrot in, and keeps predators out
* Protects a possum or parrot from storms and bad weather
* Have enough room to hold at least three possums or parrots
* Be made out of materials that will last in a forest habitat

****You will research possums, parrots and nest boxes when you visit Healesville Sanctuary.

**Ideate –** **imagine creative solutions**

It’s time to choose which challenge you’d like to solve. Work in a team of up to 6 people and brainstorm your ideas to solve the challenge. Choose one idea to try.

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**Prototype – show your idea by using what’s available**

A prototype shows your idea to other people. It can be a 3D model or you can make a workable prototype that can be tested. Use what you’ve got at school and home.

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**Test and Refine – test, share, evaluate and improve your prototype**

Test your prototype by explaining it to other people or test your prototype in a real situation.

The goal is to get feedback so you can then improve your prototype.

**Share Your Idea**

If you would like to share your idea with us, enter the Design Challenge competition. Create a video of up to 2 minutes that explains your learning and how your prototype works.

**Judging Criteria**

**This Judging Criteria will be used for the STEM Design Challenge competition.**

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| **Criteria** | **1 Point** | **2 Points** | **3 Points** | **4 Points** |
| **1. Understand**  What is the challenge and who is the user? | Neither the challenge nor the user was described. | The challenge or the needs of the user was described. | Both the challenge and the needs of the user were described. | The challenge and the needs of the user were described, including personal insights that showed deep thinking. |
| **2. Ideate**  What were your ideas and how did you decide which one to prototype? | The process of ideation was not described. | Limited description of the process of ideation. | The process of ideation was described, along with a few ideas. | The process of ideation was described, including how a decision was reached on what idea to prototype. |
| **3. Prototype**  How did you create your prototype and how will it help the user solve the challenge? | The prototype was not complete. | The process of creating the prototype or how it works was described. | Both the process of creating the prototype and how it works was described. | Both the process of creating the prototype and how how it works was described in detail e.g. material, safety |
| **4. Test and Refine**  How did you test your prototype and what modifications did/could you make? | No testing or refining of prototype was described. | The testing or the refinement of the prototype was described. | Both the testing and the refinement of the prototype was desribed. | Both the testing and the refinement of the prototype was described, including detailed description of modifications. |
| **5. Bonus Points** | | | | |
| - Description of how STEM knowledge and skills were applied  - Demonstration of creative thinking  - Demonstration of team work  - Suitability of prototype for the user  - Sustainability of materials used | | | | |