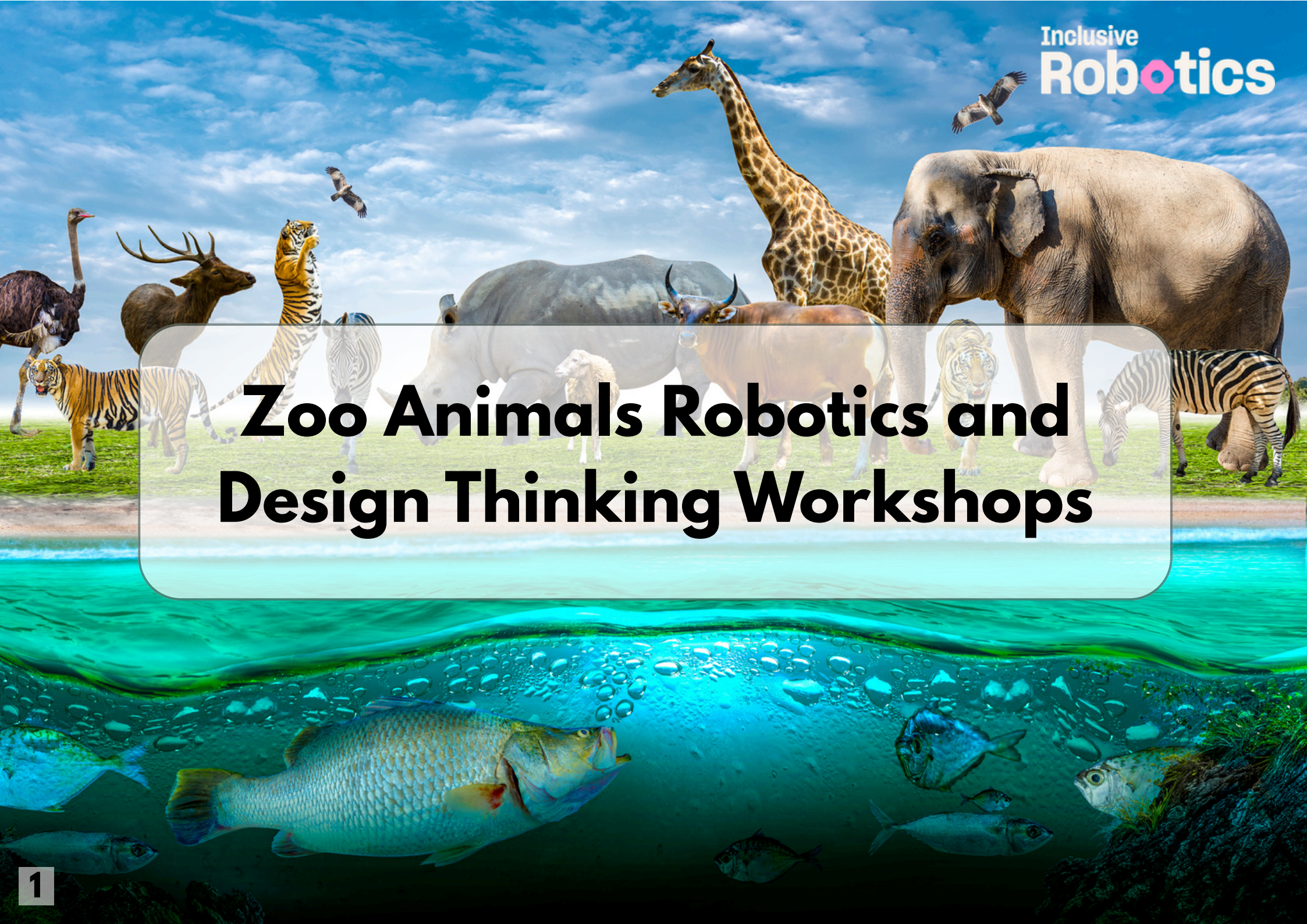

Inclusive
Robotics
Zoo Animals Robotics and Design Thinking Workshops



STEM: SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS

WEEK 1 **BRINGING ZOO ANIMALS TO LIFE WITH AUGMENTED REALITY.**

Use QuiverVision to observe zoo animals up close , ask questions and make connections.

WEEKS 2-3 **ROBOT ZOO ADVENTURES**

Use robots to navigate a zoo map. Practise seqyuencing, directional language and debugging skills.

WEEK 4-6 **ZOO TRANSPORT STEM CHALLENGE**

Investigate the recent relocation of the elephants from Melbourne Zoo to Werribee Open Range Zoo. Design a transport vehicle to suit a specific animal's needs.

WEEKS 7-8 **SCRATCH JNR ANIMATION**

Create an animated story showing an animal travelling to a new habitat.

WEEK 9 **CELEBRATION AND SHOWCASE**

Complete Scratch Jnr animations and participate in a showcase of robot challenges, zoo vehicle prototypes and digital animations.



OBSERVING ZOO ANIMALS WITH QuiverVision

My favourite animal to see at the zoo is:

Something I noticed when observing animals using augmented reality today:

A question I have about zoo animals:

UNPLUGGED CODING CHALLENGE

Help the zoo keeper reach the animals!

Use the coding arrows to create a sequence of instructions

Coding key:

↑ Forward

← Left

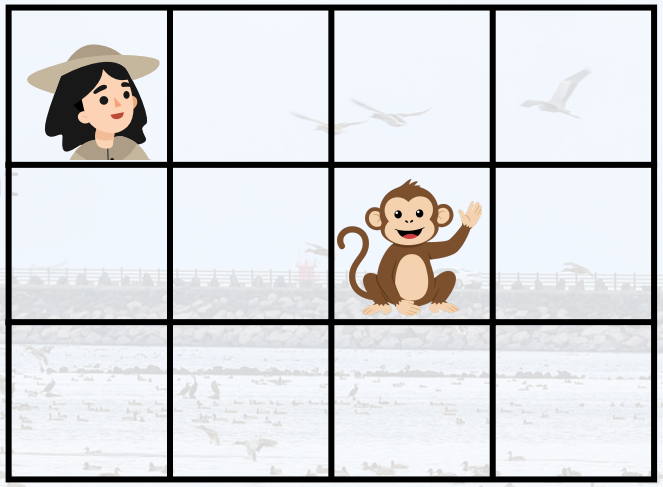
↓ Backward

→



Challenge 1

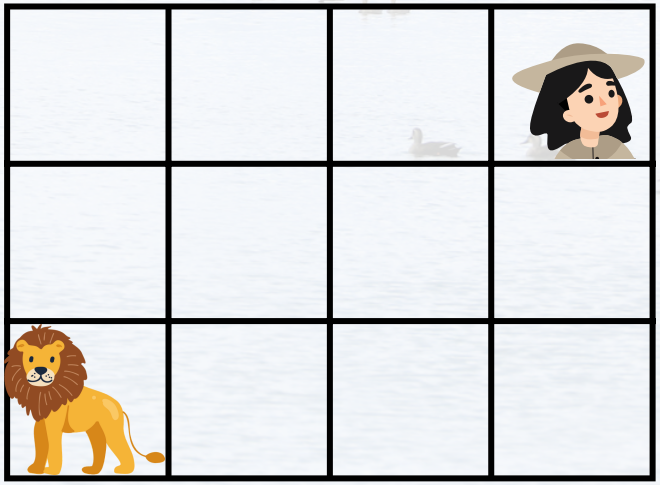
Draw arrows to help the zookeeper reach the monkey.



MY CODE:

Challenge 2

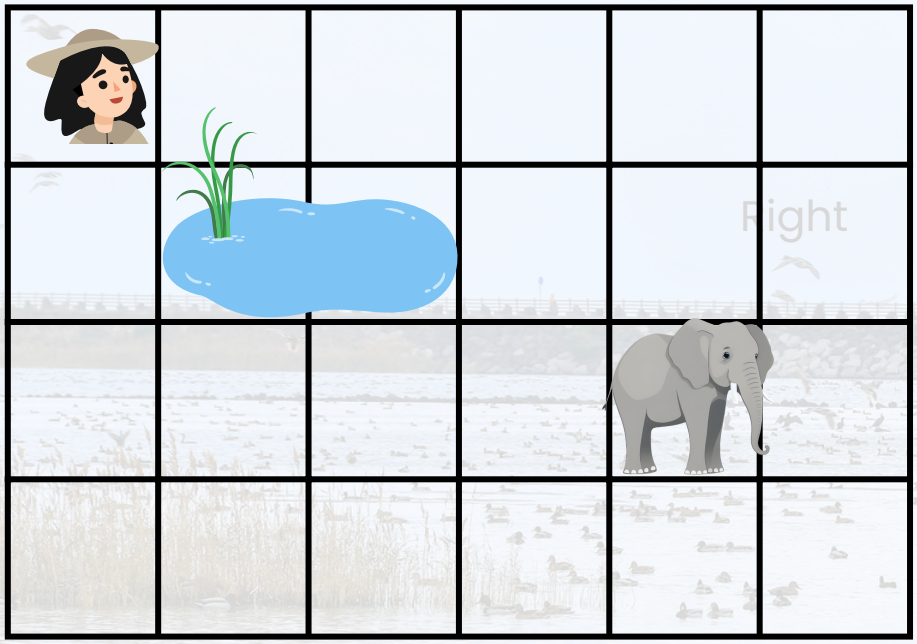
Visit the lion. Can you find the shortest path?



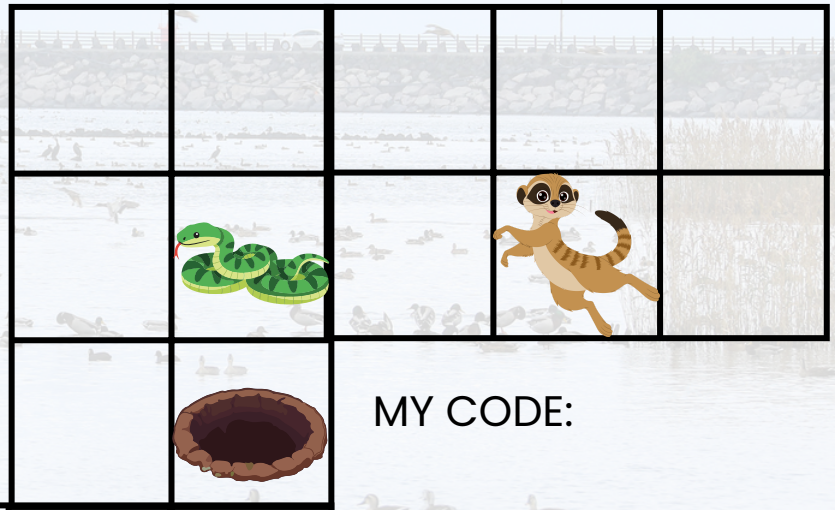
MY CODE:

UNPLUGGED CODING CHALLENGE

Challenge 3 Help the zookeeper reach the elephant but avoid the pond!

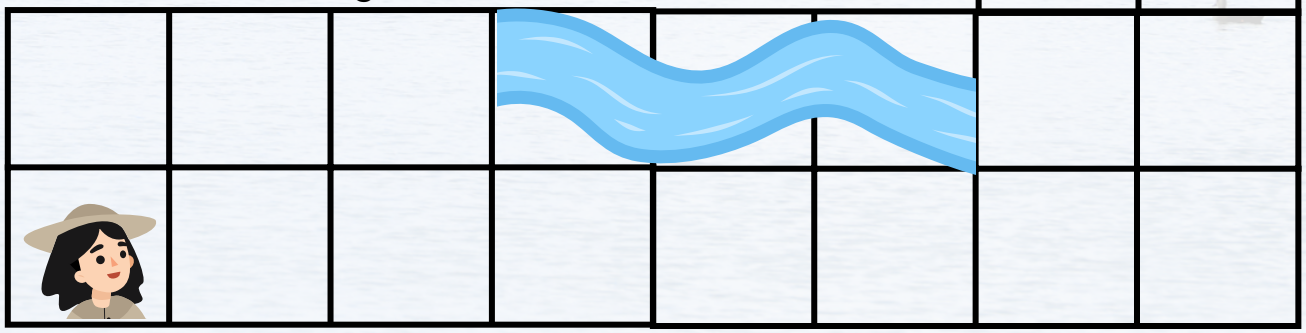


MY CODE:



MY CODE:

Challenge 4 Now avoid all obsaacles to get to the meercat.



UNPLUGGED CODING CHALLENGE

Challenge 5 Create your own challenge for a friend



MY CODE:

ZOO TRANSPORT VEHICLE DESIGN CHALLENGE

I am working with:

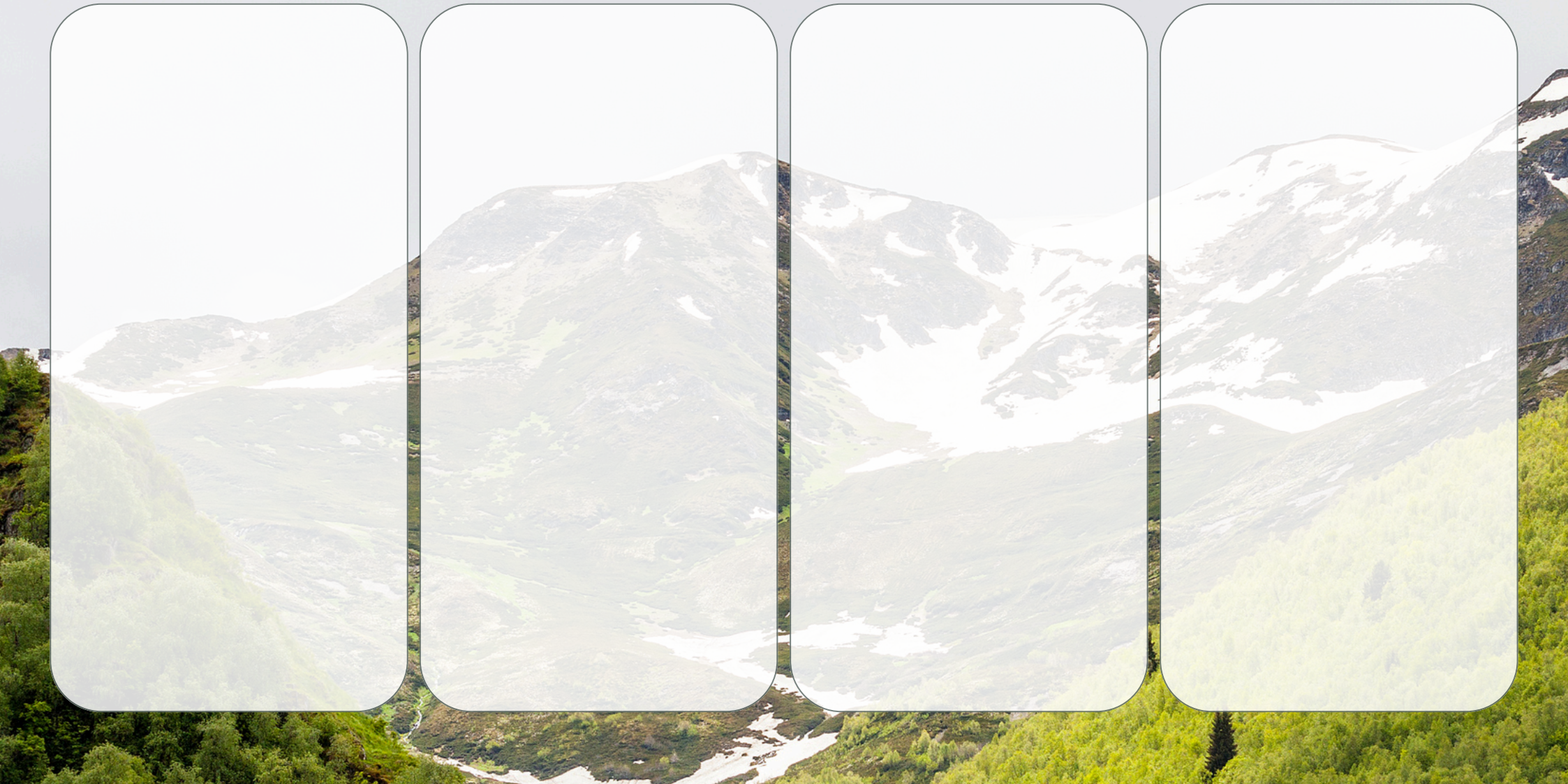
The animal we are deisgning a vehicle for:

Our Plan

ZOO TRANSPORT VEHICLE DESIGN CHALLENGE



ZOO ANIMATION STORYBOARD



NOTES AND SKETCHES





Victorian Curriculum Links

Science

Strand	Content Descriptor	How it Links
Science Understanding: Biological Science	Plants and animals have external features that perform different functions to enable their survival; in plants these features include roots, stems, leaves, flowers, fruit, bulbs, trunks and branches while different features in animals enable them to move, breathe, eat and respond to their environment. VC2S2U03	Students use augmented reality to observe zoo animals up close. They notice features such as trunks, tails and claws and talk about how these help each animal survive.
Science Understanding: Biological Science	Plants and animals have basic needs, including air, water, food and shelter; the places where they live meet those needs. VC2S2U02	Students explore how an animal's needs must be met when it moves to a new habitat, such as the elephants' move from Melbourne Zoo to Werribee Open Range Zoo, and show this in their animations.

Design & Technologies and Digital Technologies

Strand	Content Descriptor	How it Links
Technologies and Society	How familiar products, services and environments are designed and produced by people to meet personal or local community needs and sustainability. VC2TDE2S01	Students learn how zookeepers and designers plan transport and habitats that meet the needs of animals at local zoos.
Engineering Principles and Systems	Explore how technologies affect movement in products and systems. VC2TDE2C01	Students design and build a transport vehicle prototype, testing how wheels and other parts help it move an animal safely.
Creating Designed Solutions	Explore, generate and communicate design ideas through describing, drawing or modelling, using manual and digital tools. VC2TDE2D02	Students plan, draw and model a vehicle to suit a specific animal's needs, and share their prototypes at the showcase.
Creating Digital Solutions	Follow, describe and represent algorithms involving a sequence of steps, branching (decisions) and iteration (repetition) needed to solve simple problems. VC2TDI2C02	Students use directional arrows to code sequences in unplugged challenges, then program robots to move around a zoo map, debugging their code when it doesn't work.

References

McGuirk, R. (2025, February 13). Elephants trumpet, squeak and flap their ears after their complex move across an Australian city. Associated Press. https://www.wsls.com/news/world/2025/02/13/elephants-trumpet-squeak-and-flap-their-ears-after-their-complex-move-across-an-australian-city/

Zoos Victoria. (n.d.-a). Elephant move FAQs. http://zoo.org.au/elephant-move-faqs

Zoos Victoria. (n.d.-b). Melbourne Zoo. https://www.zoo.org.au/melbourne/

Zoos Victoria. (n.d.-c). Werribee Open Range Zoo. https://www.zoo.org.au/werribee/