# STEM Focus Robotics Activity:

# Park Rangers!

### Story Starter

Many animals in our community are endangered species and need our help to stay safe. Places like Elsey National Park and Nitmiluk National Park are homes to many special animals. I wonder if you could think of some popular or local cultural places and list them. Some of these animals are in danger because their homes are being destroyed by activities like logging, farming, and construction. This means the animals have fewer places to live, find food, and stay safe. We need to find new ways to protect these animals and make sure they have a safe place to live.

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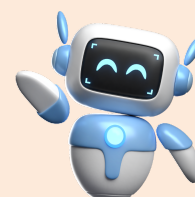
# Park Rangers in Action

## Design your Local Area
### as a Story Map

- Can you think about all the special places in our community where the animals live?
- What makes these places special for the animals? Why do they live there?
- Can you draw these places on a map?
- How will you show these areas in your drawing?
- Can you also make some of these places using things like cardboard, paper, and other recycled materials?

### Role Play

You are a Park Ranger. Code your Robot to travel to these places in your area where it can track, monitor, and help protect these endangered species.

## Extension Activity

Today, is your first day as a Park Ranger. Can you design your own robot?

What features will your robot need to keep these animals safe?
- *Will it need cameras to see the animals?*
- *Should it have sensors to find the animals and check their health?*
- *Could it have tools to help protect the animals' homes from being destroyed?*

How can your robot you and others in your community to protect these animals?
- *Will it have an alarm system to alert you when an animal is in danger?*
- *Can it give information about the endangered animals?*
- *How can it use technology to talk to people?*

What tools will your robot need to monitor and protect these animals?
- *Does it need tracking devices to follow the animals?*
- *Will it have a navigation system? Can you ask a community member or family member what navigation system do they use when they are in the Park or in the Bush?*
- *Can it use drones to see the area from above?*

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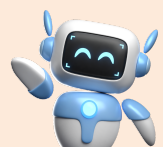
Here are some pictures of drones. What do you notice about them? How could your robot use these to cover large areas quickly?

# Curriculum Links

## Years F-2:

- Living things live in different places where their needs are met (ACSSU211)
- People use science in their daily lives, including when caring for their environment and living things (ACSHE022)
- Describe position and movement (ACMMG010)
- Give and follow directions to familiar locations (ACMMG023)
- Interpret simple maps of familiar locations and identify the relative positions of key features (ACMMG044)
- Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs (ACTDEK001)
- Generate, develop and record design ideas through describing, drawing and modelling (ACTDEP006)
- Sequence steps for making designed solutions and working collaboratively (ACTDEP009)
- Use materials, components, tools, equipment and techniques to safely make designed solutions (ACTDEP007)

## Year 3/4:

- Living things depend on each other and the environment to survive (ACSSU073)
- Science knowledge helps people to understand the effect of their actions (ACSHE062)
- Use simple scales, legends and directions to interpret information contained in basic maps (ACMMG090)
- Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs (ACTDEK010)
- Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (ACTDEP015)
- Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment (ACTDEP017)
- Plan a sequence of production steps when making designed solutions individually and collaboratively (ACTDEP018)

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