



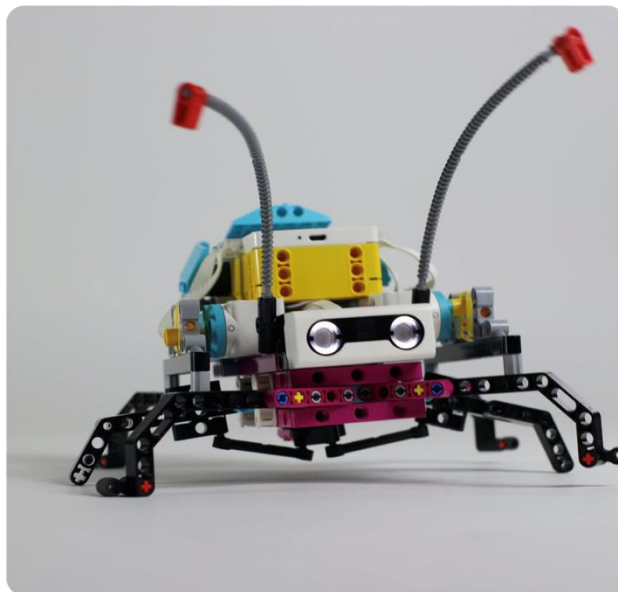
Spike Prime Competition 2023

‘Robotic Creatures’

A Virtual Competition

Term 1 and 2, 2023

Information Pack



PLATINUM NATIONAL SPONSOR



Important Information

Key Dates	
Location	Virtual
Key Dates	<p>Monday, February 20th 7:30pm Melbourne/Sydney Time – Virtual Competition Launch Zoom Link: https://sgcs.zoom.us/j/9339666437</p> <p>Registrations are due Friday, June 9th</p> <p>Entries are due Friday, June 9th</p> <p>Virtual Presentation of Awards – 7.30 pm Wednesday, June 21st</p>
Registration	<p>Online team registration at https://enter.robocupjunior.org.au/ from Monday February 20th</p> <p>Teams must register online by 9pm Friday 9th June 2023</p> <p>Participation Deed Forms are mandatory: https://www.robocupjunior.org.au/wp-content/uploads/2021/05/Participation-Deed-2021-v1.pdf</p>
Entry Fee	An entry fee of \$20.00 per team will be charged. Online payments only via method specified on the invoice/registration system.

Teams and Eligibility	
Eligibility	Open to all primary and secondary school students Parents and teachers are welcome to attend on the Presentation Evening.
Brief	As an engineer in one of Australia’s top robotics laboratories, you are told about a new and exciting research opportunity to develop a new robotic creature. To be part of the research team, you must present the prototype of your idea via video and technical paper, to showcase how it works and the special features it has.
Team Limits	There are no ‘teams per school’ limits. Teams are limited to a maximum of four members .
Specifications	<ol style="list-style-type: none"> 1. This needs to be your own design. You are encouraged to research and find examples of what others have already done, but your final product should be your own: not a copy of someone else’s idea. 2. You will create a diary to show evidence of: <ol style="list-style-type: none"> a. The research you did, b. How you came up with the idea for your design (try brainstorms, flowcharts, drawings, etc), c. Planning your design and program (justify why you made the decisions you made), d. Pictures of your build along the way, e. Anything else you want to share about your design.

	<ol style="list-style-type: none"> 3. Your robot will not be remote controlled, you should use hardware and write a program that enables it to be autonomous. 4. The robot should have features that can be found in the animal(s) that you are imitating (eg the way it moves, the skills it has). 5. You're absolutely welcome to decorate your robot to make it look more like the animal(s) you're trying to imitate. Just make sure that you don't spend all your time on decorating and forget about the programming! 6. You need to use a Spike Prime kit for the base model of your robot. You can use other non-electronic Lego parts to build your robot however all sensors and motors need to be from the Spike Prime kit or the Spike Expansion kit. 7. Don't forget to have fun and be creative!!
Submissions	<p>This should include:</p> <ol style="list-style-type: none"> 1. a video (max 3 minutes) of you demonstrating your robot as it shows off its animalistic features. <ol style="list-style-type: none"> a. Include an introduction where each team member discusses their role in the team, b. A discussion about why you think your robot is a good example of a biorobot, did you use motors, sensors, LEGO® elements and how do they add interest? c. Describe the features that you built/programmed into the robot, and why they're special d. Each team member should discuss what they found the hardest, and what they enjoyed the most about this challenge. e. Your robot in action. Zoom in and out to show your new biorobotic in action. 2. A learning journal (.pdf is best) with all your supporting evidence, outlined in (2.) in the specifications. It is helpful for us if you include photos of the robot in this document so we can see how well it has been built or shared link to your Google Doc/Slides/ Folder with all your supporting evidence, outlined in (2) in the specifications. (Make sure sharing permissions are working.)
Resources	<p>Example LEGO builds:</p> <p>https://bit.ly/puppy_ev3</p> <p>https://bit.ly/robot_arm_ev3</p> <p>https://bit.ly/eleph_ev3</p> <p>https://bit.ly/insect_ev3</p> <p>https://bit.ly/gorilla_ev3</p> <p>https://bit.ly/turtle_ev3</p> <p>YouTube videos on Biorobotics:</p> <p>https://bit.ly/biorobotics_harvard - Biorobotic overview</p> <p>https://bit.ly/biorobots_tested - Interviews of biomechanical engineers</p> <p>https://bit.ly/salamander_ted - TED Talks on the salamander robot</p> <p>https://bit.ly/spot_mini_ted - TED Talks on 'Spot' the robot dog</p> <p>Boston Dynamics - A company that is very involved in bio robotics: check out their website and some of the videos they have on the robots they have developed.</p>

<https://www.bostondynamics.com/>

Hatch website: <https://sites.google.com/view/biobots/home>

Our Mission Statement

RoboCup Junior Australia aspires to be a popular educational activity of excellence. During the 20th century, science and technology have made exponential strides into the bettering of people's lives, but at the same time left many problems to solve. In the 21st century, it is essential that our cultures evolve in order to cater for new technologies. This is not a problem to be solved by one country or just a few engineers. All concerned people throughout the world must work on its on-going solution. By taking a fresh look at robots as an educational and entertaining medium, it is hoped that RoboCup Junior Australia will contribute to the development of 21st century society.

Our Objectives

1. To encourage young people to take an interest in scientific and technological fields, to cultivate their interest through robotic competitions through hands on creation.
2. RoboCup Junior Australia will help young people to expand their social, intellectual and problem solving skills, helping them to develop into creative and independent adults.
3. To provide a forum that will allow more people to appreciate the co-existence between science, technology and humankind.
4. To create an environment that will encourage people from all over the world to share their experience with science and technology, thereby contributing to its development.
5. To use robotics as a vehicle to foster the development of an internationally-based intellectual cooperative.
6. The emphasis will be on learning and enjoyment rather than competing to win.
7. Participants will be required to share technological developments in order to ensure the improved quality of the competition rather than allow an individual team's dominance.
8. RoboCup Junior Australia is an educational activity which will nurture understanding between different nationalities via the opportunity to compete in an educational robotics competition.
9. RoboCup Junior Australia must remain accessible to students around the world.