

SCIENCE CHALLENGE 2019

Competition
Guidelines



About us



Robogals is a non-for-profit, volunteer-led, organisation that aims to decrease the gender disparity in engineering. Engineering and technology workshops are run free-of-charge to allow young girls to explore these areas.

The Robogals Science Challenge is an outreach initiative run by Robogals Asia Pacific to complement our core workshops by engaging young women to become involved in STEM beyond the classroom.

Challenge information

The Robogals Science Challenge is an Australia-wide STEM competition for girls ages 5-15. It aims to promote innovation and exploration through hands-on projects, which can be completed with a friend, parent, or mentor.

The competition format has two main Challenges. Girls are required to complete at least two Minor Challenges before being eligible for the Major Challenge.

What are Minor Challenges?

A series of mini projects related to various STEM disciplines will be released. Participants should complete at least two before being able to progress to the next stage of the competition.

Alternatively, the girls can attend a Science and Engineering (SED) Day Workshop (held in most Australian states in April and July), which counts as successful completion of two Minor Challenges.

What is a Major Challenge?

The Major Challenge requires participants to create their own research task and produce a video to show their findings. Participants are free to choose a topic within STEM.

What are the age categories?

Participants are entered into one of three age divisions:

Junior: 5 - 8 years of age

Intermediate: 9 - 12 years of age

Senior: 13 - 15 years of age

Entries to the competition are to be submitted online as videos, photos, and writing.

Key dates

4 March	Competition launches, first set of Minor Challenges released
25 March	Second set of Minor Challenges released
15 April	Third set of Minor Challenges released
29 April	Video submission for Major Challenge opens
2 August	Final entry deadline, registration closes
Oct-Nov	Finalists are announced and awarded for their efforts

Competition guidelines

Project guidelines

You may explore any area of science or engineering for your Major Challenge project. You may like to build on one of your Minor Challenges, or you could construct a new experiment.

Video guidelines

You will submit one video as your entry into the Major Challenge.

This is done through an online process, and can feature a mentor and up to 2 mentees, talking about and demonstrating their project. If it is not practical to film the project, your video could show photos together with a narrated explanation of the project.

The video should be at most 4 minutes long and the young girl(s) should do at least 3/4 of the talking.

The mentor's role is primarily to encourage their mentee to participate, and to assist with dangerous tasks (e.g. using a stove or sharp utensils).

Content guidelines

The girl(s) should answer questions in their video relating to what they've learnt, an explanation the choices they've made (their method and equipment), the scientific theories behind their entry, and how their project could potentially be used. For a more detailed breakdown of the questions to be answered, please see Appendix A: Submission Questions.

Judging

What is going to be judged?

The aim of the competition is to promote STEM exploration and encourage scientific communication.

The content that will be judged is:

1. The video, and
2. Answers to the submission questions (outlined in Appendix A).

Entries for the Major Challenge will be ranked, with emphasis on the young girl's work, using a scoring method based on the following:

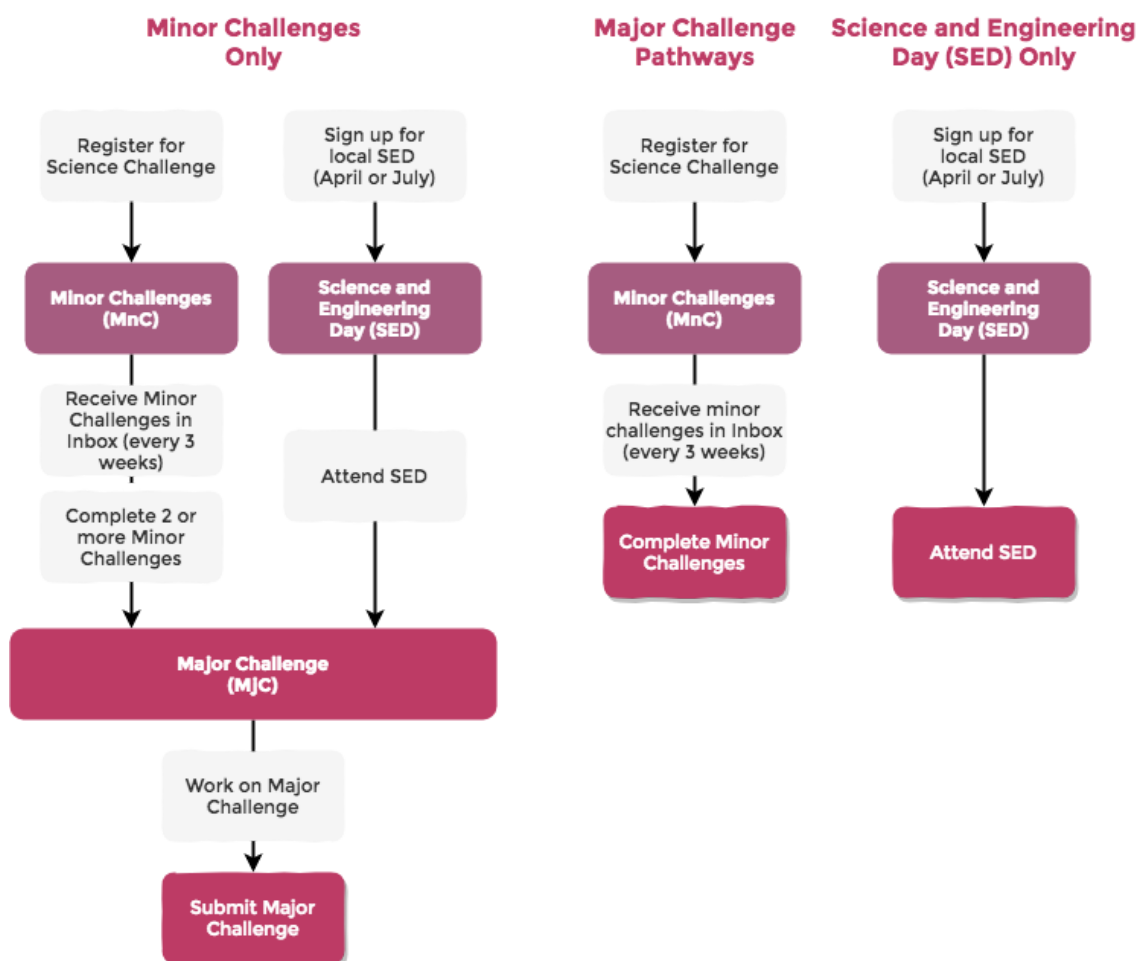
- Creativity of project
- Understanding of the theory behind the project (Intermediate/Senior), and
- Age-appropriate explanations of any formulas/calculations used (Senior).

Registration

There are two pathways to qualify for entry into the Major Challenge:

1. the Minor Challenge (MnC) pathway:
Completion of 2 or more Minor Challenges, which will be sent via email every 3 weeks, and
2. the Science and Engineering Day (SED) pathway:
Attendance at a SED, held in April or July.

While entrants are encouraged to submit a Major Challenge, entrants are welcome to only complete Minor Challenges, and/or attend a Science and Engineering Day (SED).



Awards

Only entrants from Australia will be eligible for awards.

Individual/paired entries

The top 3 groups* in each age category (Junior, Intermediate, and Senior) will be awarded for their efforts, and all participants will receive a certificate of participation.

Schools entries

The top 3 class groups* in each age category (Junior, Intermediate, and Senior) will be awarded for their efforts, and all participants will receive a certificate of participation

*If there are fewer than three entries in any one age category, participation will be granted to the entrants in that division.

Contact

Website www.sciencechallenge.org.au

Email scichal@robogals.org

Facebook fb.com/RobogalsScienceChallenge

Appendix A:

Submission questions

The girl(s) should answer the following questions in their video:

1. What have you learnt from this project?
2. Why have you have participated in the Robogals Science Challenge?
3. Why should other girls also participate in this competition?

The written questionnaire will ask the following questions:

1. Why did you choose this project?
2. What did you enjoy most about the project?
3. What have you learned from the project?
4. How did your project change your understanding of science/engineering?
5. How did your parent or mentor help you?
6. Engineering is the application of science to creations that benefit humanity. If you were an engineer, what would or could you create out of your project?

Entrants into the Intermediate and Senior categories will be asked to address the additional questions on the following page.

Intermediate age group (9-12)

Briefly explain

- the underlying scientific theories behind the project
- why you chose this method and equipment, and
- whether the experiment is repeatable and why.

Senior age group (13-15)

Briefly explain

- the underlying scientific theories behind the project
- why you chose this method and equipment
- whether the experiment is repeatable and why, and
- any formulas or calculations used in the project.