






STEMM

SOLUTIONS



OCT-NOV 2025

FOR GIRLS, FEMME AND NON-BINARY STUDENTS IN GRADES 10, 11 AND 12 TO ENGAGE IN STEMM IN A WAY WHERE THEY CAN DEVELOP SKILLS, IDENTIFY A LOCAL ISSUE THAT IS IMPORTANT TO THEM, AND SHARE THEIR IDEAS ON HOW TO SOLVE THAT ISSUE.



STEMM SOLUTIONS FOR OUR ISLAND

Competition Eligibility

Have you noticed a problem in your local community/Tasmania?

Do you have an idea to solve it using science?



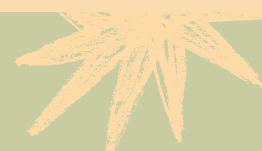
Submit your problem and solution to STEMM Solutions for our island!

The top 3 winners will be featured as guests on our radio show/podcast: **That's What I Call Science**

You are eligible if you:

- ✱ Are in grade 10, 11 or 12 in Tasmania
- ✱ Identify as female, femme or non-binary
- ✱ Are passionate about lutruwita/Tasmania, creativity, problem solving and/or STEMM (Science, Technology, Engineering, Maths or Medicine)

FIND OUT MORE HERE



STEMM SOLUTIONS FOR OUR ISLAND

Competition Guidelines

The STEMM Solutions Task:

1. Identify a problem in your local community or in wider Tasmania
2. Research your problem:
 - What is known about it?
 - Does this problem occur elsewhere in the world?
 - Do any solutions currently exist?
3. Create a **new** solution to the problem using STEMM (science, technology, engineering, mathematics and/or medicine)
4. Pitch your problem and solution to us! Your pitch can be submitted as:
 - A written pitch (Max. 750 words)
 - A video (Max. 2 minutes)
 - A piece of art (accompanied by 100 words)
 - Any other format you can think of! A song, a poem, a dance – it's up to you!

SUBMIT HERE!

**SUBMISSIONS DUE:
9TH NOV. 2025**

If you have any questions, email Tegan
at nowsciencetas@gmail.com



STEMM SOLUTIONS FOR OUR ISLAND

Judging Criteria

HOW WILL WE SELECT THE WINNERS?

Your pitch will be judged by three prominent Tasmanian scientists/STEMM professionals and science communicators, as well as a staff member from Enterprize Spark. They will select the winners based on the following criteria:



Originality of the problem/solution

Is the problem you have identified unique and/or is your solution novel?



Creativity of presentation

Have you presented your pitch in an engaging and creative way?



Quality of content/sources

Have you researched your topic using reputable sources? Do you logically present your ideas?



Strength of argument/ideas

Is your argument clear, strong and convincing?



Feasibility of solution

How realistic is your solution? Have you identified the road blocks you might encounter if you were to actually implement your solution?

HOW TO GET STARTED

Science Communication and Pitching Resources

Here you can find resources to help you get started & develop your entry:

- **Enterprize Spark pitching course:** Sign-up for free here: <https://learn.enterprize.space/courses/Spark-2025-Student-Portal> *(please see the next page for important details about this resource)*
- **How scientists conduct research:** Learn about what steps scientists take when defining a STEMM problem and how they figure out a solution. Scroll down to read further.
- **Science Communication 101:** Learn the basics of being a good science communicator to deliver the best pitch possible! Scroll down to read further.
- **Tasmanian STEMM stories:** Need some inspiration on what your pitch could be about, check out some local stories of STEMM in Tasmania. Scroll down to read further.
- **Spotting misinformation:** When researching your problem, you'll need to know how to best spot misinformation. Check out these That's What I Call Science podcast episodes:
 1. Fact Vs. Fiction: Why do people believe fake news
 2. Fact Vs. Fiction: The role of tech in spreading fake news
 3. Fact Vs. Fiction: Our future generation look at the facts



HOW TO GET STARTED

Science Communication and Pitching Resources

Important notes about using the Enterprize Spark pitching course:

- When you sign up, instead of putting the name of your school please write 'STEMM Solutions for Our Island' in the school category.
- This course is to help you through the process of developing an idea to pitching it. You do not need to submit the final task at the end.
- This portal is not where you submit your entry to our competition, please submit your entry via the google form linked in this document.



HOW SCIENTISTS CONDUCT RESEARCH

A Guide for Year 11/12 Students in lutruwita/Tasmania

“

Research isn't just for scientists in labs; it's a creative way to solve problems and explore the world around you!

”

Step 1: Identify a Problem and Ask Your Question

Research starts with curiosity. To solve a problem in your local community or in lutruwita/Tasmania, you can start by thinking about issues that matter to you.



Brainstorming Local Issues: What problems do you see or hear about in Tasmania? Consider issues related to climate change, agriculture, marine ecosystems, health, or technology. For example, a problem could be "pollution in waterways" or "the impact of invasive species on native Tasmanian wildlife."



Developing a Research Question: A problem is broad, but a research question is specific. It should be answerable through investigation. For example, if the problem is pollution, a question could be: "What is the primary source of pollution in the Derwent River estuary, and what are its effects on local biodiversity/human health?"

Step 2: Choose Your STEMM Field(s), Data, and Methodologies

To best determine what kind of data you will collect and the methodologies (the methods and processes) you'll use to gather that data, you might want to identify the most relevant STEMM Field(s).

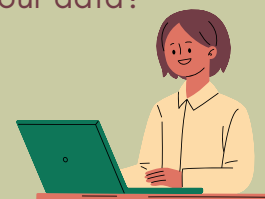
STEMM Field(s):

Using the Derwent River example, you might need Biological Science (to study the ecosystem), Chemistry (to analyse the water chemistry), and Health Science (to analyse effects on human health).

Data: What kind of information would you need? You can use quantitative 'primary' data (numbers, like the amount of plastic collected) or qualitative data (observations or descriptions, like noting the types of plastic). You can also use existing secondary data, such as government reports on river health.

Methodologies: How could you collect your data?

- Scientific Experiment
- Observational Study
- Surveys or Interviews
- Case Study



Note: We don't expect you to collect or analyse data, but you should think about what data you would need in real life if you were to implement your solution.

HOW SCIENTISTS CONDUCT RESEARCH

A Guide for Year 11/12 Students in lutruwita/Tasmania

Step 3: Justify Your Solution

Once you have an idea, you need to convince your audience that it's the best approach. This is where you demonstrate your critical thinking and justify your choices.

Submission formats may include 1) Written piece; 2) Artwork accompanied by small written piece; or 3) Video.



Feasibility: Is your solution practical? Have you considered the possible roadblocks and what are your suggestions to overcome them?

Effectiveness: Explain why your chosen methods will lead to a solution. For instance, "We chose an observational study because it allows us to track over time, providing a more accurate account than a single-day collection."



Innovation: Does your solution offer a new perspective or a creative approach to the problem? We encourage unique submission formats like poems, short stories, and art pieces, so think about how you can present your idea in a fresh way!



Relevance to Tasmania: Emphasize how your solution directly benefits the Tasmanian community or environment.

Additional Resources

Teachers: Your science or math teacher is an excellent first point of contact. They can provide guidance on structuring your project, offer feedback on your ideas, and help you find other useful resources.

Google Scholar: A free search engine for scholarly literature. It's a great place to find research papers and academic articles on your topic.
<https://scholar.google.com/>

"That's What I Call Science" Podcast: The very podcast that will feature the top submissions! Listen to past episodes to hear how Tasmanian researchers are tackling fascinating problems. This is a fantastic way to get inspiration for your own project and learn how to present a scientific idea in a compelling way.
<https://thatsscience.org/episodes/>

Local News and Media: Keep an eye on local news outlets like the ABC Tasmania website and the Tasmanian Times for stories on environmental issues, health initiatives, or tech startups in the state. These can be great sources of inspiration for a local problem to solve.

SCIENCE COMMUNICATION 101:

A Guide for Year 11/12 Students in lutruwita/Tasmania

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The greatest scientists are always artists as well.

-Albert Einstein

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Question 1: Who is your audience?

Before you can even begin communicating your idea, you need to know who you are talking to. How you communicate to your group of friends will be different to how you communicate to the public or to your teachers. When you have decided who your audience is, you can then determine the type of language and media you should use to communicate your research.

Question 2: What is your message?

STEMM research topics are often broad and complex which makes communicating them hard! When you are communicating your idea or topic, you need have a specific and clear message. Think about the main piece of information you want your audience to learn from your pitch. Make sure your language is accessible – don't use jargon that your audience won't understand and try to explain your solution in simple terms.



Question 3: What is the most effective way to communicate your science?

Science communication isn't just about the words you use – it's also about the format you present it in (e.g. a talk, a news article, a video) and the material you use to support your presentation (e.g. graphs and figures, pictures of your experiment, music). The way you choose to present your research should align with who your audience is. If you are communicating to young people, you might choose to communicate through an Instagram or TikTok reel, for example. Including visual aids can help your audience stay engaged and retain information.

Sometimes the most important thing you need to be a good science communicator is just **PASSION!** If someone sees how dedicated and interested you are in your science, they will be motivated to learn from you!

SCIENCE COMMUNICATION 101:

A Guide for Year 11/12 Students in lutruwita/Tasmania

Tips and Tricks

Once you have answered those questions, you should have a solid idea of who your audience is, what your message is and the best format for communicating your idea. That is your foundation. The next step is trying to get your audience to care about your research. Here are some tips and tricks to help you:



Tell a Story: Whilst facts and science-based evidence are crucial in communicating your research, you shouldn't just be recounting facts. Turn your research into a narrative arc – start with your problem, the journey to figuring out a solution and end with what you discovered/a conclusion.



Be Yourself: You need to build trust with your audience so that they listen to you and care about the research you are communicating. A good way to build trust is to be authentic and genuine.



Have Fun: When you are having fun, your audience will also have fun. Science communication should be an opportunity to excite other people about science and to help people learn something new. Whilst the science you are communicating is serious, allow yourself to be creative!

Additional Resources

Here are some links of different science communication projects that can inspire your own pitch!

A Song of Our Warming Planet: This YouTube video is a piece of music that communicates global warming: <https://www.youtube.com/watch?v=5t08CLczdK4> .

The Conversation Article: This article discusses the problem of a declining Eastern Quoll population in Tasmania and what can be done to solve this problem: <https://theconversation.com/eastern-quolls-edge-closer-to-extinction-but-its-not-too-late-to-save-them-65882>.

YouTube Videos: Check out this video by Dr. Kirsten Banks on mini-moons. Dr. Banks uses a range of visuals to help communicate her message. https://youtu.be/lfEOqNqq278?si=GZchQWsXAX_mdXd4

"That's What I Call Science" Podcast: The very podcast that will feature the top submissions! Listen to past episodes to hear how Tasmanian researchers are tackling fascinating problems. This is a fantastic way to get inspiration for your own project and to listen to scientists communicate their own research. <https://thatsscience.org/episodes/>

TASMANIAN STEMM STORIES

A Guide for Year 11/12 Students in lutruwita/Tasmania

Nobel Prize Winner

Did you know that Tasmania is home to a Nobel Prize winner? Dr. Elizabeth Blackburn, born in Hobart, won the 2009 Nobel Prize in Physiology or Medicine for her research into chromosomes. Chromosomes store DNA and are found at the center of cells. Elizabeth made three discoveries that contributed to winning the prize:

1. She discovered that the “cap” (or telomere) at the end of each chromosome has it’s own particular DNA;
2. She then discovered that the DNA in this cap helps protect the chromosome, and;
3. She also discovered the enzyme telomerase which creates the telomere.



Two other scientists worked on this research with Elizabeth: Dr. Jack Szostak and Dr. Carol Greider.



Tassie Scientists and Tassie Devils

STEMM Solutions for Our Island is all about solving local problems with unique solutions – just like the team of Tassie scientists working together to cure Tasmanian devils of the Devil Facial Tumor Disease (DFTD). In 2009, Professor Greg Woods at the University of Tasmania’s Menzie’s Institute for Medical Research began researching this disease. The local Tasmanian Devil population has declined by 82% because of this disease.



Over time, scientists have discovered that the reason why DFTD is so prolific is because of factors like: (1) the lack of genetic diversity in the North-West devil population, (2) it can easily spread between the faces of devils because they bite each other when defending their food, and (3) the cancer originated in a call that the immune system usually doesn’t respond to.

Different types of chemotherapy treatments have been trialled to treat the disease, however, none of them have worked yet. Scientists are continuing to work together to find a treatment for the cancer. Treatments can be administered to large populations of the devils through bait traps, where the vaccine is carried in the bait. DFTD is a complex problem but through collaborative and interdisciplinary research, scientists have worked together to better understand and fight the disease.