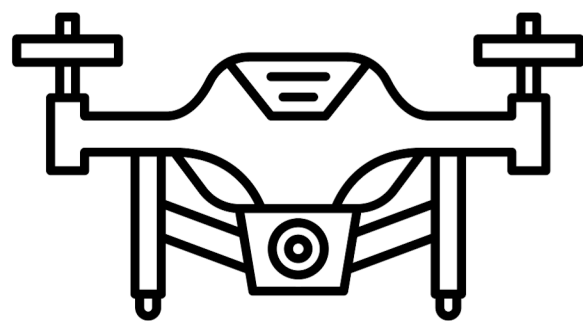
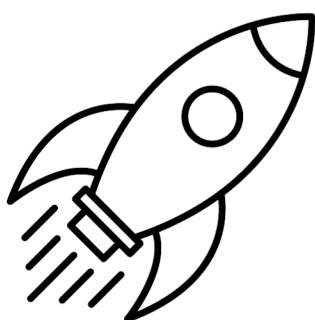
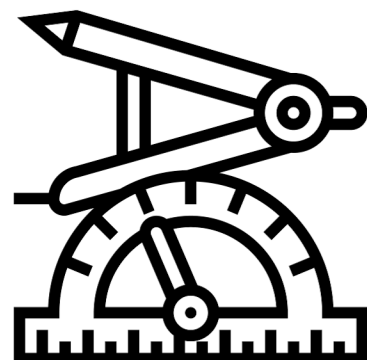
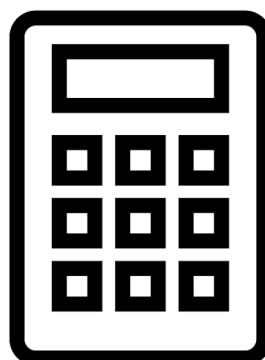
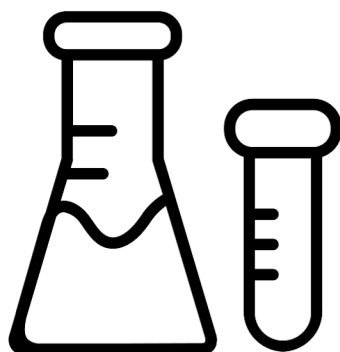


Finding the ME in STEM



Vinuri's student activity pack

Imagining the Future

Let us take you on an incredible journey into the world of space exploration with the Callistan Cycle.

The Callistan Cycle is a series of five short stories from our Imagining the Future series that explore STEM areas like robotics, AI, climate change and resource management.

You can read, watch or listen to each story, for free.



Far Out! by Lili Wilkinson

As the seconds count down to the launch of humanity's first family into deep space, young stargazer Stella is sure that today is going to be the most exciting day of her life. But she has no idea of just HOW exciting and terrifying and important it will be. And what it will mean for the future of interstellar travel.

Join the Kaufmanns as they go FAR OUT! in a story that explores space and robotics.



SCAN ME



Calculating Apple Pie by Melissa Keil

Kal and her sister Arche are hurtling through space towards Callisto in a ship shaped like a beluga whale that is the size of a city block. Arche does something a bit (very!) reckless to try to help her sister feel a little less homesick.

Calculating Apple Pie explores future food production and coding and how tampering with it can cause serious real-world problems.



SCAN ME



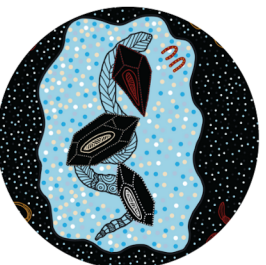
Semper by Rebecca Lim

Shang travelled to Callisto on the Hohmann transfer from Earth, which took almost six years. She sacrificed everything for the chance to explore distant moons for resources and critical minerals, but gets paired with a Drobo called Semper that always wants to play, like a real dog. Shang doesn't have time for games, so why has she been paired with such a useless Drobo?

Semper explores robotics, AI and mineral exploration.



SCAN ME



Proof by Gary Lonesborough

Tanner has been noticing that lots of people in his town on the lunar outpost on Callisto are getting sick. What is causing this mysterious illness plaguing his community? Tanner's sister Rachel thinks she knows what's causing it and takes Tanner on an eye-opening adventure where they discover a lot more than just the cause of the illness.

Proof explores filtration, waste management and environmental science.



SCAN ME



Earthbound by Alison Evans

Pen and their father have arrived on Earth. Pen's comms device isn't working, and when Pen tries to fix it, they hear a strange rhythmic sound coming from it. Determined to figure it out, Pen seeks the help of an android to help decipher the mysterious sound.

Earthbound explores transportation and telecommunication.



SCAN ME

Comprehension Questions

What was Vinuri more focused on at school?

As well as being a research scientist, what other jobs does Vinuri have?

1.

2.

What two things is Vinuri not good at?

What is Vinuri trying to inspire students to be?

1.

2.

What does Vinuri love about her job?

What is Vinuri studying for her PhD?

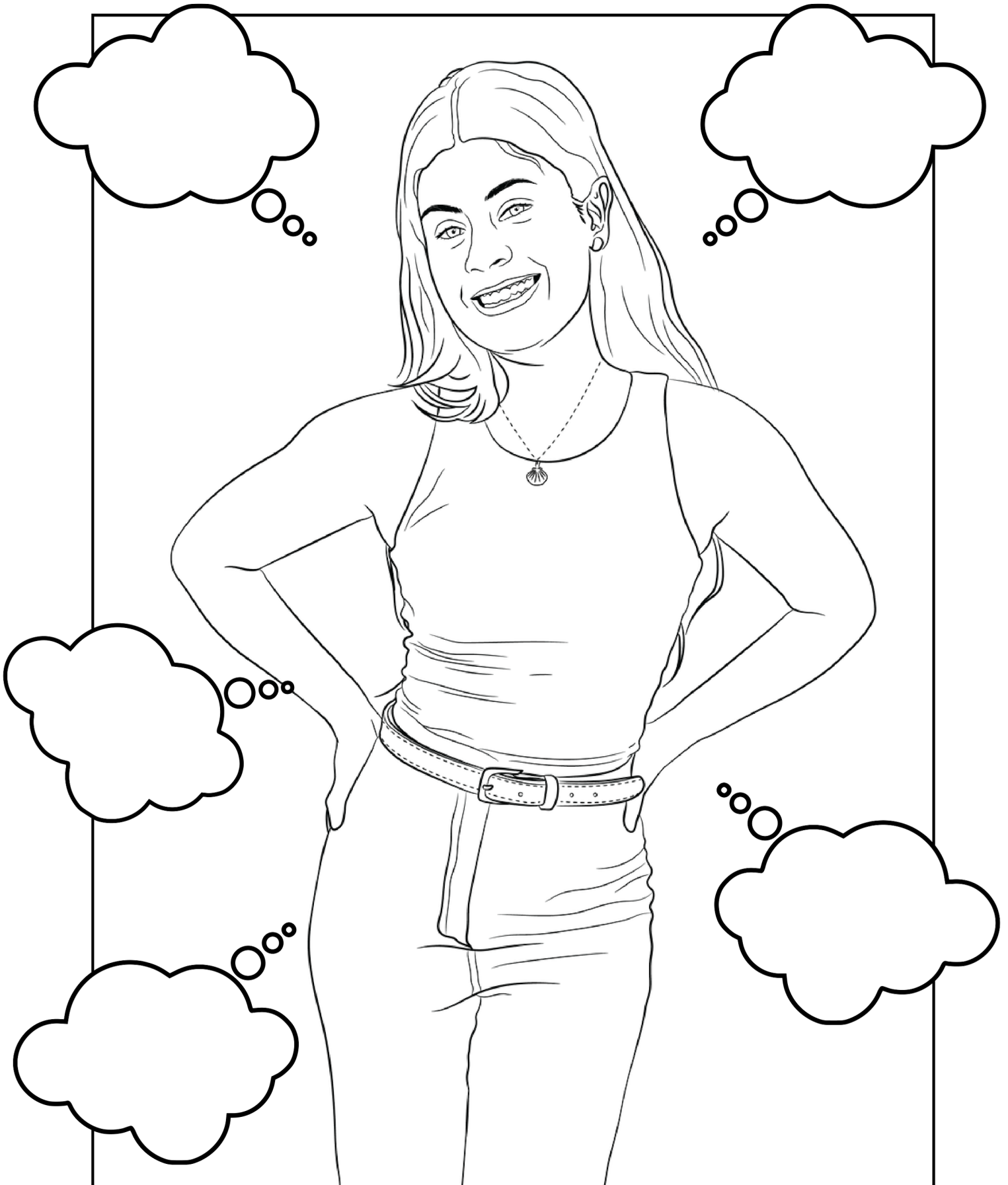
What is Vinuri's main job?

Name two things Vinuri can do.

1.

2.

Meet Vinuri. She's a researcher, scientist, science communicator and space communicator who loves discovering new things. Fill in the bubbles with 5 STEM (Science, Technology, Engineering and Mathematics) skills she uses in her job. Which of these skills do you think is most important? Which do you think would be the hardest to develop? When you've thought of the skills, colour in the rest of the image.



Pathfinder Workwords

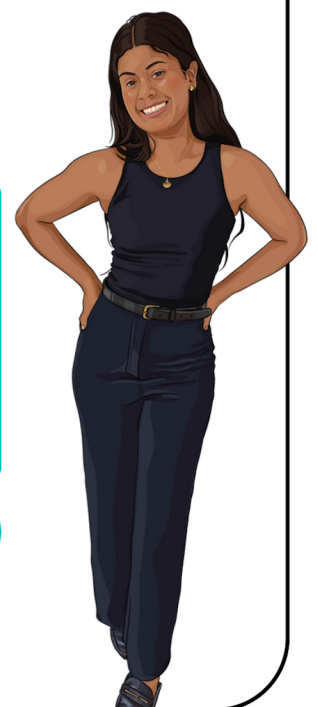
Researcher/Scientist

C T Y G S C X A N H H R E S N K G Y L D S L C
M O T R Z Q T I M M E F I G G L C L I I C T H
J Z N T O A O C Y I I S Q E M S M N S S I V D
C S E C D T V S F Q E C C X U N V J Y C S I N
Q V M Q L V A I T H L G R T H E J O Y O Y T E
T R I Z X U N R T M I C R O S C O P E V H C H
E K R Q X G S O O C S S C T P I B P Y E P T C
C A E N A V P I U B O R I O Y L T P E R I Y R
H O P M B Y W R O A A G C N F G A N V Y L U A
N B X M H Q I Y A N A L Y S I S O S E Z S O E
O L E P B O S Y R T S I M E H C S L T I I F S
L N D R S Q N O I T A V R E S B O W O I C X E
O K R I W H U O C E L I N Q U I R Y N I C S R
G V T C N G N Z V V E F D F L J V N S X B S G
Y Y O O V J J S A X D T J S H D S P S B P E F
J V V I Y A E T Z W B F M Q O V Y E Q B V S D

Find 20 words Vinuri needs to do her job.

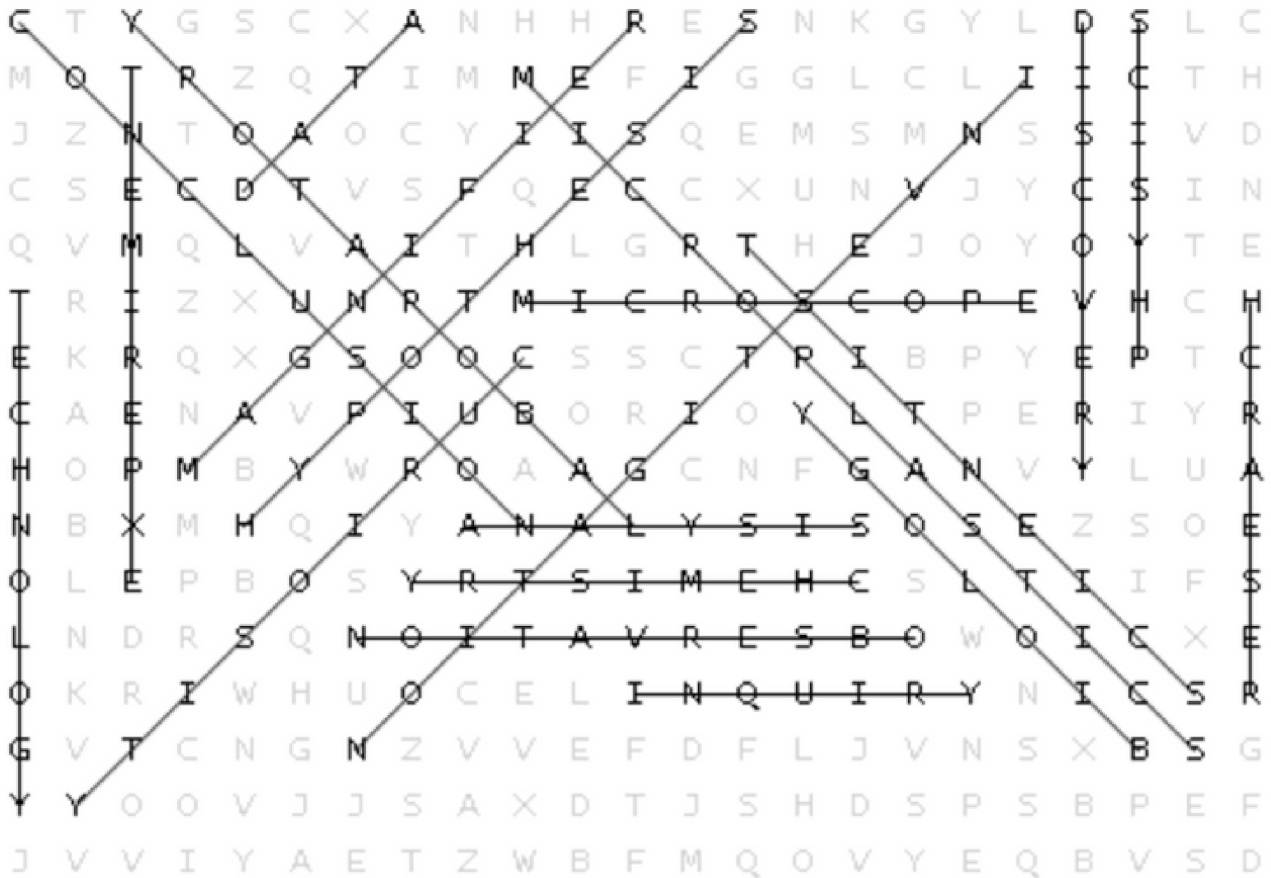
- | | |
|------------------|----------------|
| 1. LABORATORY | 11. DATA |
| 2. EXPERIMENT | 12. ANALYSIS |
| 3. HYPOTHESIS | 13. CONCLUSION |
| 4. MICROSCOPE | 14. TECHNOLOGY |
| 5. MICROPLASTICS | 15. CURIOSITY |
| 6. DISCOVERY | 16. CHEMISTRY |
| 7. INVESTIGATION | 17. BIOLOGY |
| 8. OBSERVATION | 18. PHYSICS |
| 9. SCIENTIST | 19. MAGNIFIER |
| 10. RESEARCH | 20. INQUIRY |

Scan this QR code to find out more about Vinuri



Pathfinder Workwords

Answers



Let's reflect

Were any of these words new to you? Look them up and find out what they mean.

Which of these skills do you think you are best at, or would like to get better at?

1. _____

2. _____

3. _____

Can you think of anything else Vinuri might need to do her job?

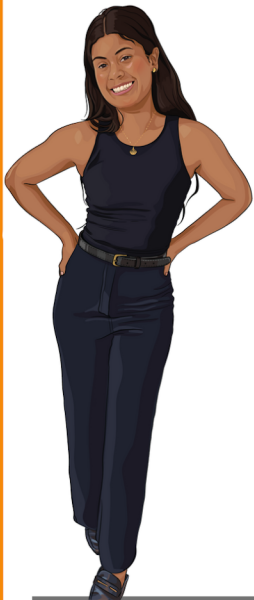
A day in the life of a researcher/scientist

- 7.00am** I wake up ready to tackle my fieldwork day! I quickly get ready and have my breakfast.
- 8.30am** I get to the marina with my colleague Sophie. We have put lots of plastic underwater for 6 months now. Don't worry, they're in cages so the plastic doesn't wash away! I have to take some plastic out of the water today to look at the different bacteria growing on them. I do this once a month for a year. So we pull out two cages- from the berth.
- 9.30am** We have now collected my plastic samples for this month. All the plastics are put in clean tubes and kept on ice. This is so the bacteria on the plastics don't dry out from the heat. Now, the race is on to quickly get my plastic samples into the university freezer for storage.
- 10.00am** I have made it to the university with my plastic samples. I rush into our walk-in -20°C freezer and store my samples. I will process them in the lab on another day because right now I have to get into my office.
- 10.30am** All my friends are in the office today, so I spend a bit of time chatting with everyone and catching up on what everyone has been up to.
- 11.00am** I have responded to all my emails and now I should get some work done. I'm going to do some writing for one of the scientific papers I've been putting off.
- 12.00am** I just finished writing the introduction of my paper. It's on some research I did for my PhD which looks at bacteria living on plastic. I'm planning to submit this paper to Environmental Microbiology soon! I'm getting hungry now.
- 12.30pm** I have my lunch and start preparing for a talk I'm giving soon.
- 1.00pm** I log in to Zoom and catch up with my colleagues at Arludo where I also work as a STEM educator giving talks to students! I quickly go over the slides with my colleagues and we make sure technology is on our side today.
- 2.00pm** I finish giving my virtual talk to students on oceanic threats and marine plastic pollution. This was my biggest audience with Arludo with over 570 students! They asked some interesting questions at the end. I also showed them some microplastics under a digital microscope which was cool. Afterwards I do a debrief with my Arludo colleagues on how everything went and how we can improve the next time. I'm a little tired, but I have to go to our lab meeting!
- 2.30pm** In today's meeting, some of my work friends practiced their talks which they will be presenting at the International Otolith Conference in Chile next week. Otoliths are fish ear bones that grow yearly like tree rings. Marine scientists use otoliths to figure out the age of the fish and to see which environments they have been in. My work friends' presentations were great! It's great to see their latest research findings.
- 4.30pm** Lab meeting is done so it's time to head back to my office and do a bit more writing. I'm starting to feel like I've hit my work capacity for the day. Fieldwork this morning was energy-consuming! But the flexibility in doing the PhD is that I can leave when I want- as long as I get my work done on time. I decide to head out soon and call it a day.
- 5.30pm** I get home, but today is my gym day. So I quickly get ready to go to the gym.
- 7.00pm** Just got back home from the gym and now I'm going to make dinner.
- 8.00pm** I just finished having dinner. Time to watch an episode of Modern Family.
- 9.00pm** Oops, one episode became two! I have showered, and now I'm heading to my room to try to do some meditation.
- 9.30pm** Meditating went great for the first couple of minutes, but then I couldn't concentrate. I check my phone and catch up on my social media
- 10.30pm** Enough scrolling. I need to sleep. Good night!

Researcher/ Scientist

Vinuri is a researcher and scientist who loves to discover things we didn't know before. Travelling overseas and seeing how bad pollution is in other parts of the world inspired her to try to find a solution to the biggest modern threat to our oceans - plastic pollution. Find out more:

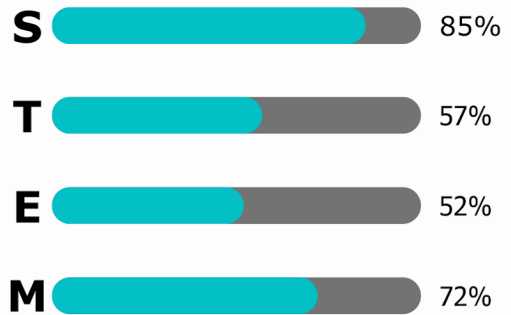
futureyouaustralia.com.au/pathfinders/vinuri



I use my communication skills to talk about my research and plastic pollution in general to students, making them more aware of the reality.

STEM Meter

How much Science, Technology, Engineering and Mathematics (STEM) does this job use?



Source: jobsandskills.gov.au

5 reasons why you should do this job

- 1** You help solve really big problems
- 2** Work with all sorts of interesting people
- 3** Opportunities to keep learning
- 4** Save the ocean
- 5** Teach others how to save the planet

3 STEM skills required for this job

Critical thinking

Science

Problem solving

Subjects to develop these skills

Science, Mathematics, Digital Technology

Science

Design and Technologies, Digital Technology