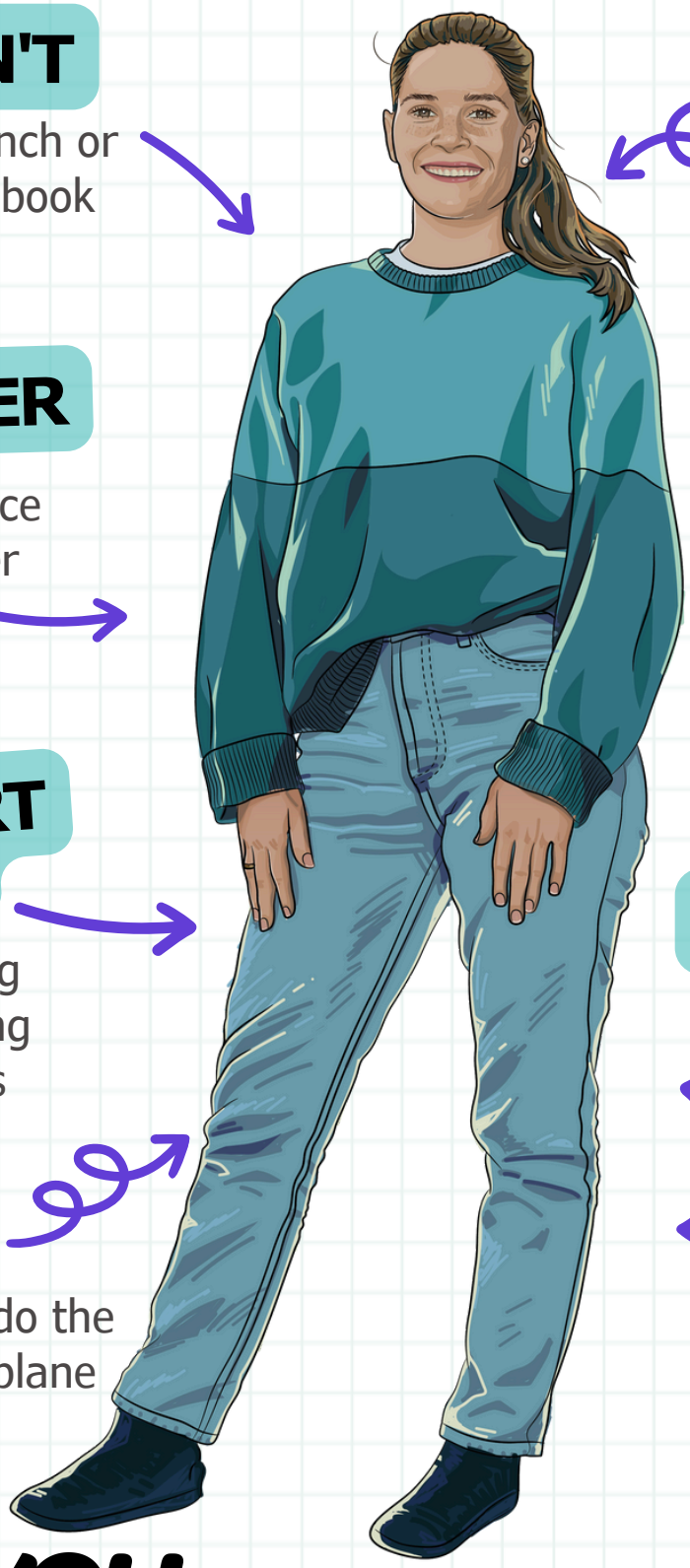
Renee is a Highflyer



CAN'T

speak French or finish a book

LOVES

rocking up at an airport, hiring a plane and flying

CAREER

Aerospace engineer

STUDIED

Bachelor of Aerospace Engineering at Uni

EXPERT ON

solving big engineering problems

GAMECHANGER

joining the Air Force Cadets at 15

CAN

lift weights, do the splits, fly a plane

WANTS TO

become an astronaut and lead a spacecraft project team

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www.futureyouaustralia.com.au/pathfinders/renee

Capability Convos

Australian Curriculum V9.0 links for Years 3 to 7

English
- Language
- Literacy

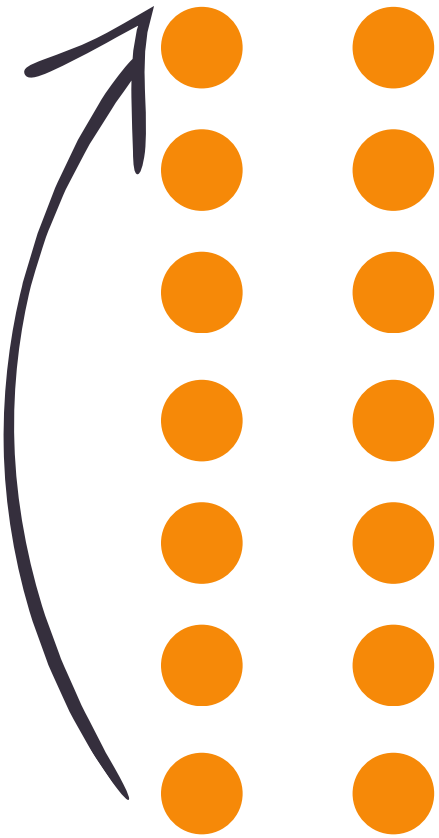
General Capabilities:
- Critical and Creative Thinking
- Personal and Social Capability
- Ethical Understanding
- Literacy

Learning outcomes:

All students will be able to:
- identify some likes, dislikes, strengths, abilities and/or interests when showing a personal preference
- acknowledge that people have different needs, emotions and abilities

In addition, some students will be able to:
- describe the ways they are connected and can contribute to their community groups

Format
- Interactive game with 10 questions
- Easy to play
- Watch Renee's film with the class
- Print the questions
- Play the game
- Modify or include new questions based on students' needs



Scan this QR code to watch my film.

SCAN ME

Instructions for students

Line the class up in two lines facing each other to form pairs. Ask the first question. Once each pair has discussed it, get one line to move one person to their right. The person at the end runs around to the other end of the line. Then you ask the next question and repeat the process until all the questions have been asked.

Renee
Aerospace Engineer

Question 1
What do you think is interesting about Renee's career?

Question 2
What skills does Renee have that you also have, and does she have any skills you don't have that you would like to have?

Question 3
How do you think aerospace engineering has changed over time? How might this career change in the future?

Question 4
Why do you think it's important to find a career that suits your skills and personality?

Question 5
How are your interests and hobbies similar to Renee's career?

Question 6
How do you think Renee's career contributes to society?

Question 7
How could this career be done in a rural or remote setting?

Question 8
Think of some examples of aerospace vehicles that Renee might design or work on.

Question 9
How important to Renee's work is teamwork in the aerospace industry? Think of an example.

Question 10
What do you think would be the biggest challenge in pursuing a career in aerospace engineering?

Comprehension Questions

Australian Curriculum V9.0 links for Years 3 to 7

English
- Literacy

General Capabilities:
- Literacy

Learning outcomes:

All students will be able to:
- Identify that all people have strengths and weaknesses
- Actively think about what is happening in a video while they are watching it
- Apply comprehension strategies to different media formats

In addition, some students will be able to:
- Identify different reasons for doing different jobs

Instructions:

- Format/print the students' question sheets (or load them onto school LMS) and direct students to a copy.
- Read the questions as a class to start, discussing any meanings
- Discuss with the class strategies for being able to answer the questions as the film plays
- Watch Renee's film with the class, encouraging students to answer questions as you go

Adaptation note: Questions can be modified on the PDF to meet students' needs or learning focus areas in your classroom

Comprehension questions

1. Name FOUR things Renee can do.
2. Name two things Renee CAN'T do.
3. What happened when Renee was 15?
4. What did Renee do after she finished her Engineering studies?
5. What is an incredible feeling for Renee?
6. Whose support was very important to Renee?
7. What is Renee's 'high vision'?
8. What does Renee consider 'life-changing'? Why?

Scan this QR code to watch my film.

SCAN ME

Answers:
1. Lift weights, do the splits, fly a plane, solve big engineering problems.
2. Can't speak French, can't finish reading a book.
3. Moved to a new town and joined the local Air Force Cadets program.
4. Put all of her energy into pursuing flying.
5. Flying above buildings and over cities.
6. Her grandparents.
7. To become an astronaut.
8. Exposure to opportunities and to people that do different things actually is life-changing because you can connect or identify with somebody else and that sets you on your mission to creating your own future.

Highflyer

Student name:

Comprehension Questions

Name FOUR things Renee can do.

1.

2.

3.

4.

What happened when Renee was 15?

What is Renee's 'high vision'?

Name TWO things Renee can't do.

1.

2.

What is an incredible feeling for Renee?

What did Renee do after she finished her Engineering studies?

Whose support was very important to Renee?

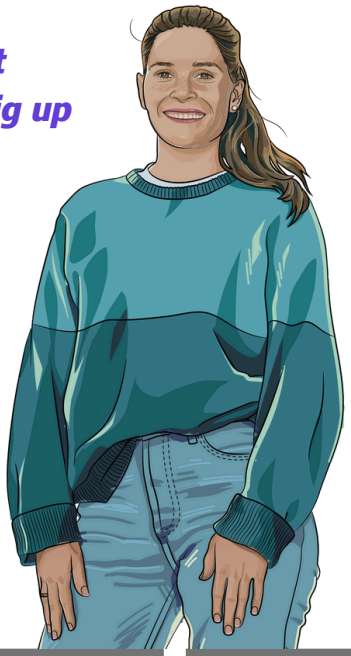
What does Renee consider 'life-changing'? Why?

Aerospace Engineer

Renee is an aerospace engineer. After joining the Air Force Cadets at 15, Renee discovered a passion for the skies. She now works as the First Nations Engagement Manager for Qantas and has her sights set on a career in space. Find out more:

futureyouaustralia.com.au/pathfinders/renee

'How do you get something so big up into the sky?'



STEM Meter

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

S	73%
T	87%
E	87%
M	68%

Source: jobsandskills.gov.au

Job stats and facts

Location: 16% of aerospace engineers live outside capital cities.

Employment pathways:
A bachelor degree in engineering is required, but there are many pathways you can take to get an undergraduate degree. Discover them at myfuture.edu.au

3 STEM skills required for this job	Subjects to develop these skills	3 other jobs that value this skill
Creativity	English, HASS, Science, Technologies, the Arts	Lawyer, Research Scientist, Video Game Designer
Critical thinking	Science, Mathematics, Digital Technology	Analyst, Criminologist, Doctor
Computer skills	Digital Technology	Software Developer, Cybersecurity, Architect

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Other careers related to this line of work

Engineering

Materials Engineer
Nuclear Engineer
Aerodynamic Engineer
Robotics Engineer
Fuel Cell Engineer

Space

Astronaut
Spacecraft Designer
Rocket Scientist
Flight Technician
Payload Specialist

Health

Data Processor
Biomedical Engineer
Orthotists
Prosthetists
Medical Equipment Repair Technician

Education

Higher Education Lecturer
Professor of Engineering

Technical

CAD Technician
Product Designer
Quality Manager
Compliance Officer
Patent Attorney

The world is changing rapidly, and this means the career possibilities available to our kids are wide-ranging and exciting (and probably don't exist yet!).

From traditional vocations to emerging fields, there are countless pathways to be explored.

Parents and teachers can create environments that encourage kids to discover and investigate possible careers that match their skills and interests.

We've included some links to other valuable resources that can help guide career conversations and explorations. Find out more at:

www.futureyouaustralia.com.au/resources/#other

Aerospace Engineer

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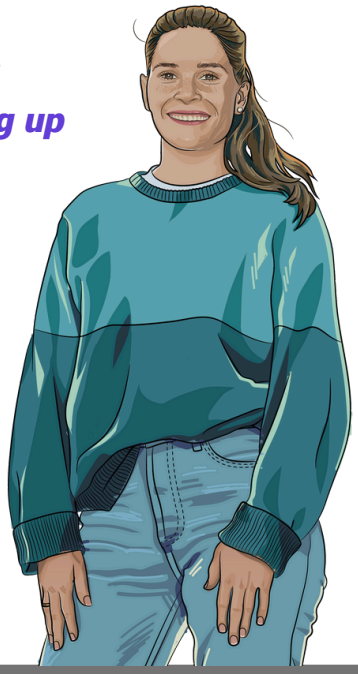


STEM Meter

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

S	73%
T	87%
E	87%
M	68%

Source: jobsandskills.gov.au

5 reasons why you should do this job

1. Make air travel safer
2. Contribute to the exploration of space
3. Improve communication and connection
4. Discover faster ways to travel
5. Develop technology that improves life

3 STEM skills required for this job	Subjects to develop these skills
Creativity	English, HASS, Science, Technologies, the Arts
Critical thinking	Science, Mathematics, Digital Technology
Computer skills	Digital Technology

An example of a day in the life of an aerospace engineer

This is what a typical day could look like if you became an aerospace engineer.

7.00am I'm late getting out of bed today. I was up late last night reading about some exciting new developments in immersive technologies and their application in aerial military operations and for aerospace employee training. Immersive technologies such as virtual reality and augmented reality aid visualisation of navigating systems, air-traffic control, weather airspace information, and many other workflows. These developments help engineers (like me) and pilots to mitigate complex learning mechanisms. I lost track of time as the implications are really interesting. Ooops.

8.00am I grab breakfast at a local cafe on my way to work. Normally I eat breakfast at home, but today I am running late, so need to take all the shortcuts I can. Except when it comes to my job. There are no shortcuts in what I do!

8.30am I arrive at work and get stuck right into it. No time for banter today. I have a LOT to do. I start by catching up on e-mails and checking in with the mechanics to see if they have any questions about the tasks I have requested them to work on through an Engineering Work Order. An Engineering Work Order is an official document that I fill out when I have specific tasks I need the mechanics to work on. I include details about the task, relevant notes about any changes or anything new, and background to support the mechanics to know exactly what they need to do and by when.

9.00am On Wednesday mornings our team of engineers, pilots, maintenance, and the program manager gets together to discuss the status of the project we've been working on. This is an opportunity to get everyone on the same page with the schedule and status of the project.

10.00am After the meeting, I have some exciting new materials to review. Stretched acrylic has recently been found to have fantastic optical quality while being lighter, more cost-effective, and easier to maintain. I've been given a piece of the new material to inspect to ensure it meets our strict requirements in terms of safety and quality. I sit down at my desk and do some desktop research into the chemical composition of the materials and look for any research or data from other organisations about it.
I then log some time with the lab for them to do some testing because I want to be 100% sure about this before I start making any new designs with it. The lab is booked out until next week, so I will have to pop this on hold.

Midday I hold a CDR (Critical Design Review) meeting with key members of the project team and important Aircraft Operations Division and Engineering Branch management to inform them about the new material. This is a really valuable meeting because the attendees can bring up safety concerns that I can then look into to ensure the new material is going to be suitable to use in new aircraft designs.

1.00pm Lunchtime. I made a lasagne for dinner last night and brought the leftovers with me for lunch. I like to make sure I minimise my food waste and carefully plan my meals each week. I sit down with some members of my team and I share with them the exciting developments I read about last night. Some of my other team members also read about them, so it makes for a great lunchtime chat with lots of valuable informatio- sharing.

2.00pm It's time for a site check! I grab my high-vis vest, my steel-capped boots, my hard hat, and my safety earmuffs, then head out to the hangar to inspect the Commercial Crew aircraft modification project I've been leading. I'm a very hands-on person so one of my favourite parts of this job is that I can go out to the hangar, get on the plane, and check measurements or whatever else I need to see in order to better complete my project.

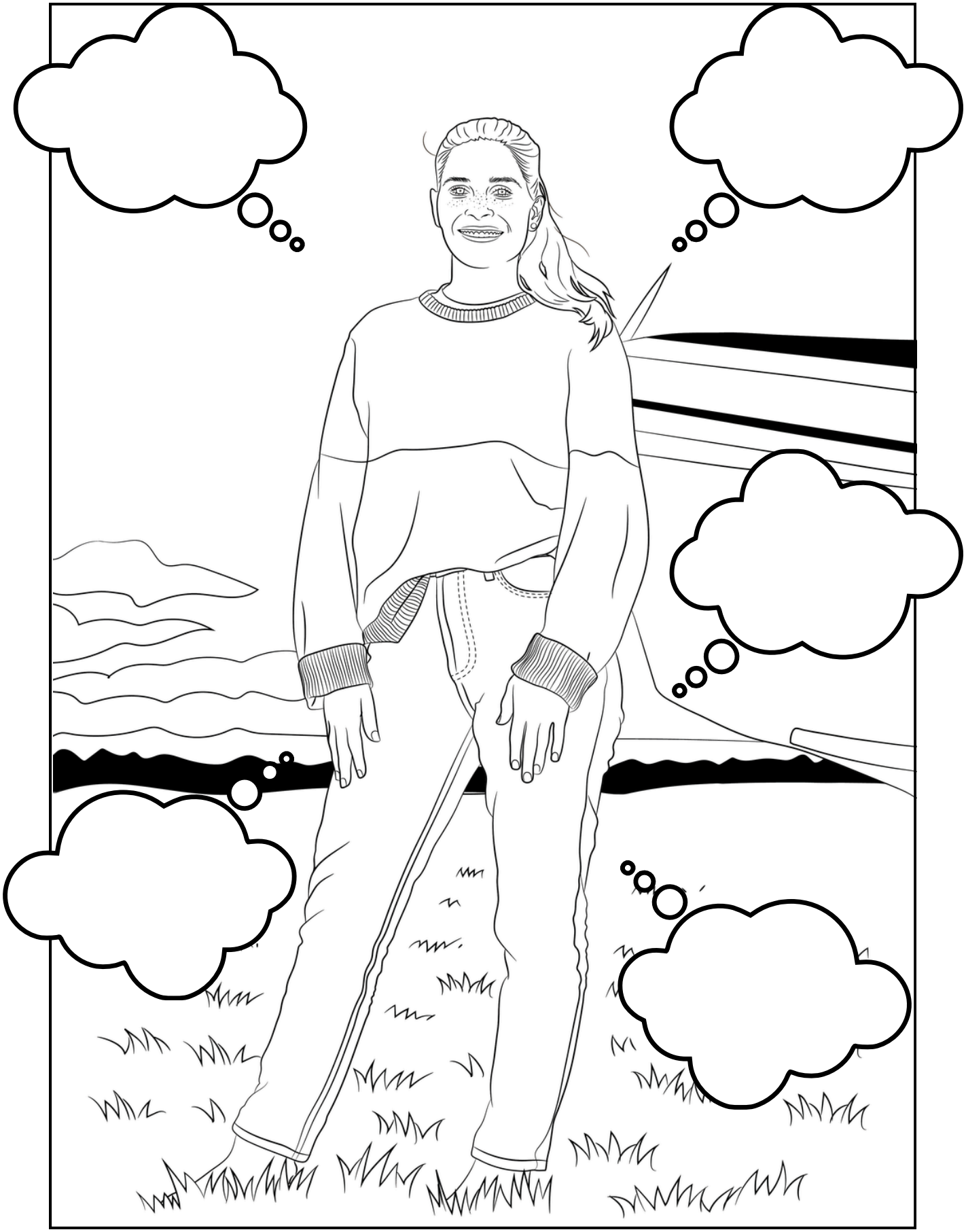
3.00pm I have two aircraft installation drawings to complete so that it is clear to the mechanics where the beds and oxygen tanks I have included in my design should be installed in the aircraft. The mechanics have scheduled this work to start at the end of the month, so I need to ensure these are completed in time for a review from my team next week. I work on these drawings using 3D modelling software. I spend the rest of my day finessing these designs. There are a lot of figures to check, double-check, and triple-check, so this eats up the rest of my day.

6.00pm I leave the office and head to the gym to do some Brazilian juijitsu. It's a really fun sport and requires strategising and forward-thinking, which is right up my alley.

7.30pm It's dinner time. I have had a big day, and I'm starving, so I whip up a nice, warm, vegetarian curry. I make enough to have some leftovers for lunch tomorrow and also make a nice naan bread to go with it.

9.00pm I stayed up way too late last night, so I head to bed early tonight. But before I go to sleep, I check the latest aerospace news… Uh oh…

Meet Renee. She's an aerospace engineer. 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.



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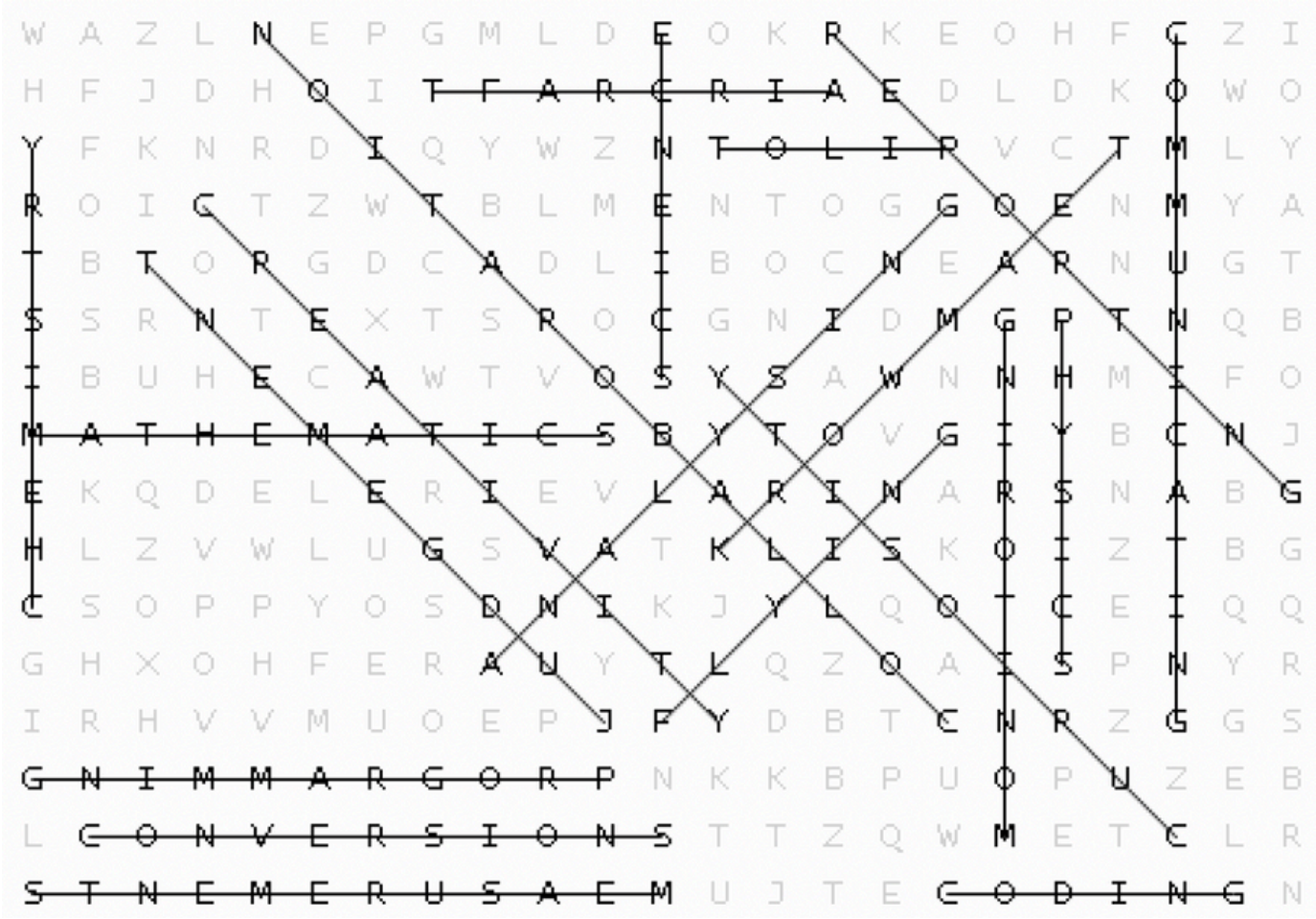
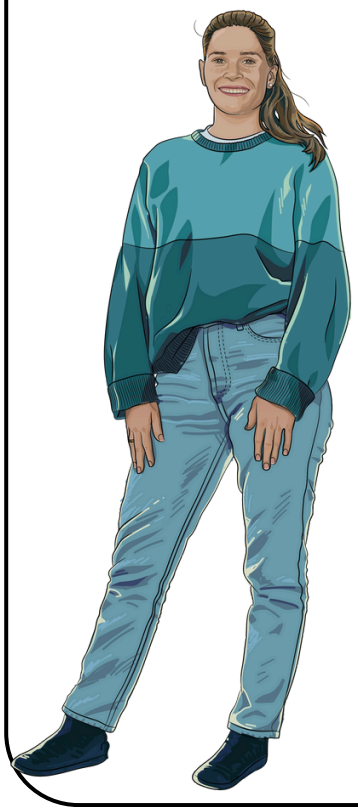
Pathfinder Workwords

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 Renee might need to do her job?

_____

Finish Year 12 - loves planes and space

Office administrator at small aerospace company

Takes an interest in the design side of things

On-the-job learning and study

Associate Degree of Engineering (part time)

Junior technician

Company covers Bachelor of Aerospace Engineering (part-time)

Promoted to aerospace engineer

Joins robotics club at school

Finish Year 12

Bachelor of Aerospace Engineering

Participates in aerospace engineering projects and competitions

Internship at a major aerospace corporation

Propulsion engineer

Masters of Aerospace Engineering

Gets job as aerospace engineer from internship contacts

Joins the Air Force Cadets

Certificate II in Aero Skills (Mechanical)

Finish Year 12 but ATAR too low for Bachelor of Engineering

Diploma of Science, Engineering and Technology at TAFE (full-time)

Bachelor of Aerospace Engineering

Intern at Qantas

Senior analyst

Promoted to aerospace engineer

Fleet technical specialist

Aerospace engineer career pathways

Find out more at www.futureyouaustralia.com.au/resources/#other/

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The educational qualifications and levels outlined in these pathways are intended as general guidelines. To obtain accurate and up-to-date information, explore resources specific to your state or territory, available through websites like *myfuture.edu.au*, *YourCcareer.gov.au* and *australianapprenticeships.gov.au*.

There is also a range of financial support available for students doing apprenticeships or going to university, visit *www.servicesaustralia.gov.au/education* to see what's available.

- Associate Degree of Engineering, Bachelor of Aerospace Engineering: https://www.courseseeker.edu.au/

- Bachelor of Aerospace Engineering, Masters of Aerospace Engineering: https://www.courseseeker.edu.au/

- Certificate II in Aeroskills: https://training.gov.au/training/details/MEA20415
- Diploma of Science, Engineering and Technology, Bachelor of Aerospace Engineering: https://www.courseseeker.edu.au

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Remember, there are countless pathways to the same career. Each child's unique skills, interests, and strengths will guide them on their personal journey to success.