

Thomas is a Cultivator

NOT GOOD AT

meeting deadlines,
dealing with
surprises

LOVES

walking, hiking,
cooking for
friends and family

CAREER

Agronomist and
Molecular
Geneticist

STUDIED

in three different
countries!
Bachelor's, then
Master's, now PhD

EXPERT ON

growing crops
that don't hurt
the planet

WANTS TO

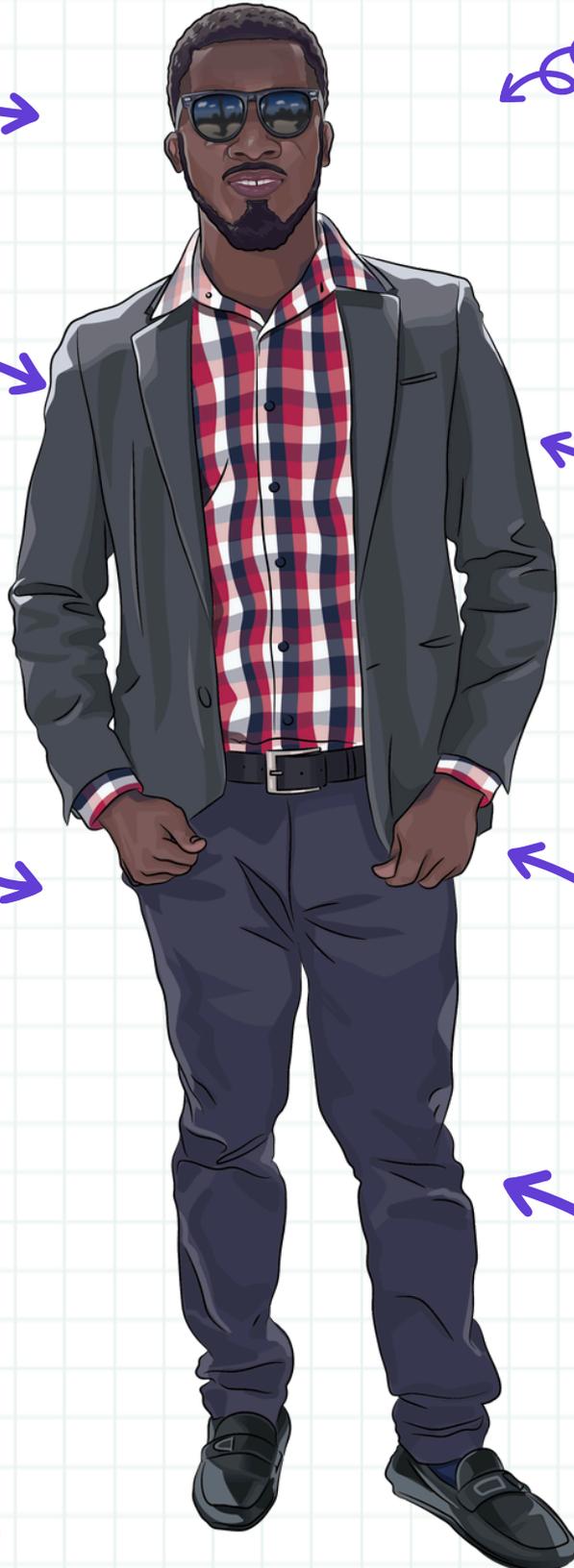
make sure
everyone has
enough to eat

GOOD AT

solving tricky
puzzles, sharing
information

PASSION

sustainable
global food
security



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:

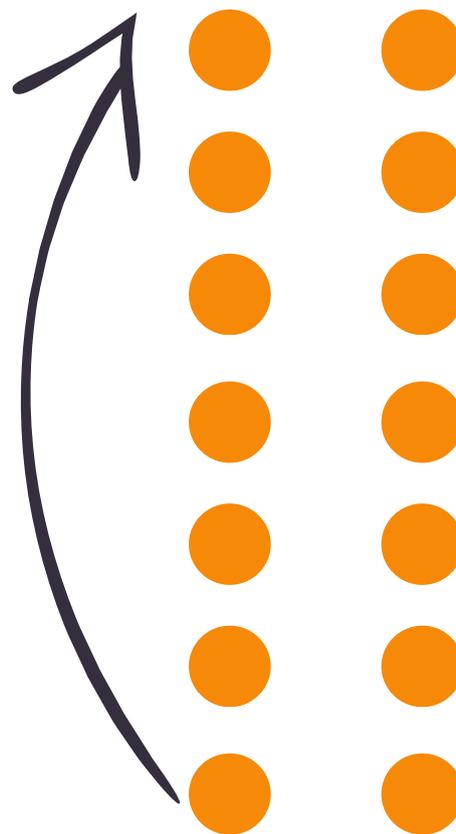
- identify some likes, dislikes, strengths, abilities and/or interests when showing a personal preference
- acknowledge that people have different needs, emotions and abilities

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
- Read about Thomas's job and journey with the class
- Print the questions
- Play the game
- Modify or include new questions based on students' needs



Scan this QR code to find out more about 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.

Thomas

Agronomist and Molecular Geneticist

Question 1

What do you think is interesting about Thomas's career?

Question 2

What skills does Thomas have that you also have, and does he have any skills you don't have that you would like to have?

Question 3

How does smarter farming help build a better world?

Question 4

What do you think would be the biggest challenges about growing food in space?

Question 5

How are your current interests and hobbies similar to Thomas's hobbies and interests?

Question 6

How do you think Thomas's career contributes to society?

Question 7

Why is this career important in a rural or remote location?

Question 8

What kind of tools or technologies do you think Thomas uses in his work?

Question 9

When would teamwork be important in Thomas's line of work? Can you think of an example of when you use teamwork?

Question 10

What kind of food do you think we could grow in a smarter way to help the planet and people?

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 various texts as they read them
- 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 they learn about Thomas.
- Read about Thomas as a 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 two things Thomas is good at.
2. And two things Thomas isn't good at.
3. What does Thomas find to make sure we have enough food in the future?
4. How many countries did Thomas study in?
5. What makes Thomas feel close to nature?
6. What does Thomas use to make sure the world has enough food?
7. What is Thomas trying to figure out the best way to do?
8. How does Thomas solve puzzles about crops?
9. What makes Thomas happy outside of work?
10. What is Thomas' dream?

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Comprehension Questions

Name two things Thomas is good at.

1.

2.

What does Thomas find to make sure we have enough food in the future?

Name two things Thomas isn't good at.

1.

2.

How many countries did Thomas study in?

What does Thomas use to make sure the world has enough food?

What is Thomas trying to figure out the best way to do?

How does Thomas solve puzzles about crops?

What makes Thomas feel close to nature?

What is Thomas' dream?

What makes Thomas happy outside of work?

Comprehension Questions -Answer key

1. Name two things Thomas is good at:

1. Turning tricky science into easy plans.
2. Solving big puzzles.

2. And two things Thomas isn't good at.

1. Stopping himself from making everything perfect.
2. Figuring out how to use science from the lab in the real world.

3. What does Thomas find to make sure we have enough food in the future?

Super strong plants.

4. How many countries did Thomas study in?

Three

5. What makes Thomas feel close to nature?

Walking and hiking.

6. What does Thomas use to make sure the world has enough food?

Smart science.

7. What is Thomas trying to figure out the best way to do?

Grow lots of healthy crops without hurting the planet.

8. How does Thomas solve puzzles about crops?

He looks at their genes, the weather, and the soil, and puts it all together to make the best solution.

9. What makes Thomas happy outside of work?

Finding time to relax and enjoy life outside the lab.

10. What is Thomas' dream?

To make sure strong, healthy crops that can handle tough weather are shared fairly so everyone has enough to eat.

Did you enjoy this free activity? We have lots more related to different STEM careers.
Explore them all at: www.futureyouaustralia.com.au/pathfinders

Agronomist/ Molecular Geneticist

Thomas is an agronomist/molecular geneticist who is working on finding smarter ways to grow food that doesn't harm the planet. Thomas combines cutting-edge science with farming practices to help create a future where everyone has enough to eat.

futureyouaustralia.com.au/pathfinders/thomas



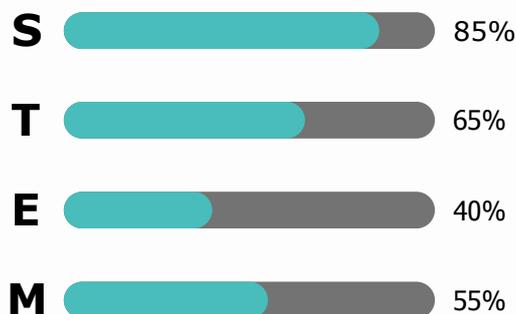
"I help secure nutritious food for people everywhere."



SCAN ME

STEM Meter

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



Source: jobsandskills.gov.au

Job stats and facts

Location: It's estimated 80% of agronomists live outside capital cities, and 5–10% of molecular geneticists live outside capitals cities.

Employment pathways: A bachelor or postgraduate degree in a related field or a vocational education and training (VET) qualification.

3 STEM skills required for this job	Subjects to develop these skills	3 other jobs that value this skill
Biology	Science	Physiotherapist, Zookeeper, Nutritionist
Critical thinking	Science, Mathematics, Digital Technology	Accountant, Security Analyst, Paramedic
Data analysis	Science, Mathematics	Marketing Manager, Property Developer, Psychologist

Other careers related to this line of work

Nature

Beekeeper
Zookeeper
Naturalist
Environmental Engineer
Natural Resource Technician

Food

Food Consultant
Food Safety Officer
Food Toxicologist
Packaging Technologist

Health

Nutritionist
Public Health Official
Quality Assurance Manager
Pathology Associate

Education

Higher Education Lecturer
Museum Curator

Sustainability

Urban Farmer
Sustainability Consultant
Ecologist
Environmental Scientist

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

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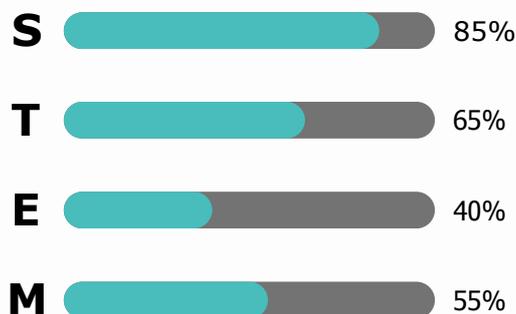


"I help secure nutritious food for people everywhere."



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** Solve problems with creative thinking.
- 2** Work outdoors in nature.
- 3** Travel the world to share knowledge.
- 4** Work with passionate farmers.
- 5** Shape the future through innovation.

3 STEM skills required for this job

Biology

Critical thinking

Data analysis

Subjects to develop these skills

Science

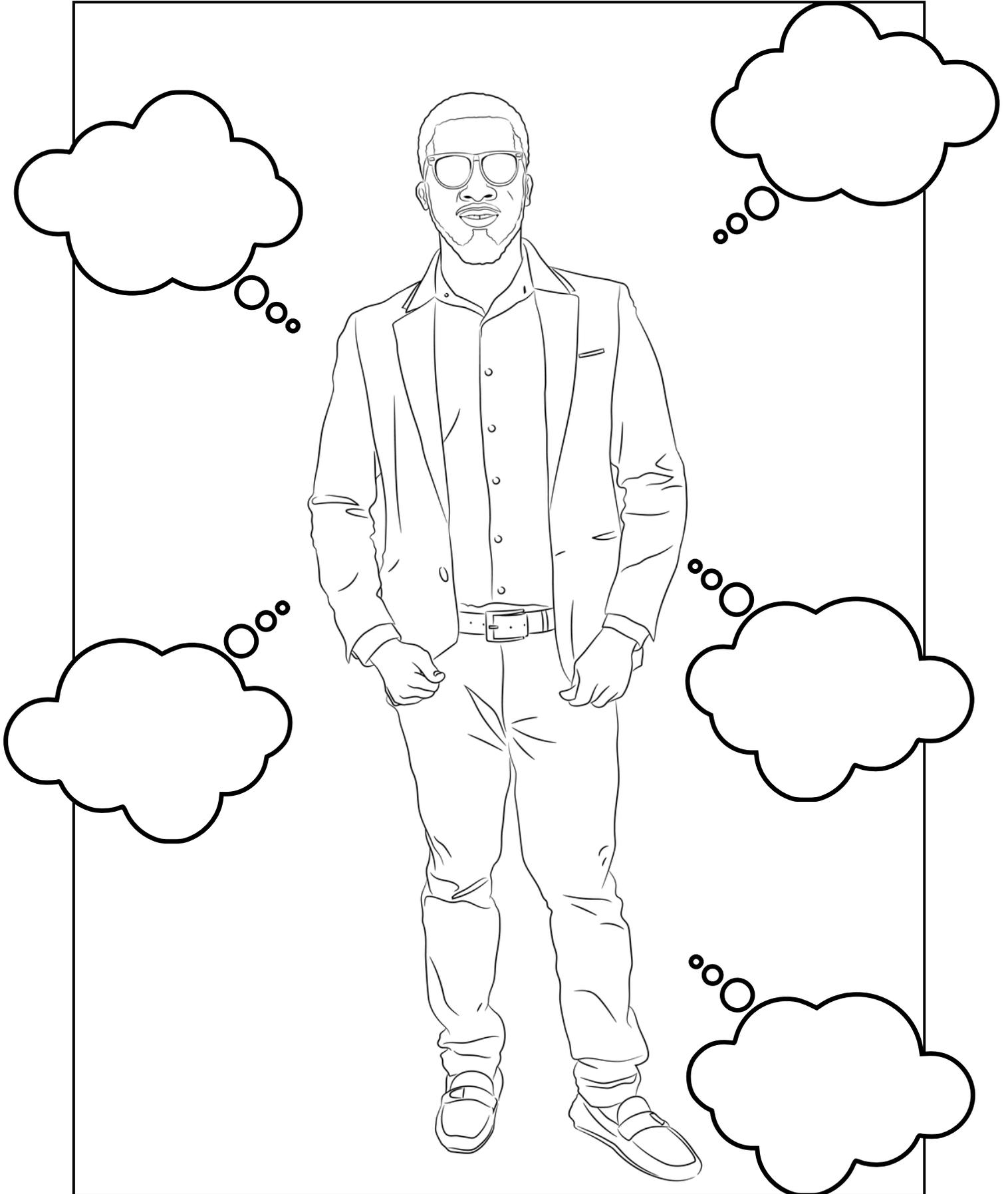
Science, Mathematics, Digital Technology

Science, Mathematics

An example of a day in the life of an agronomist/molecular geneticist

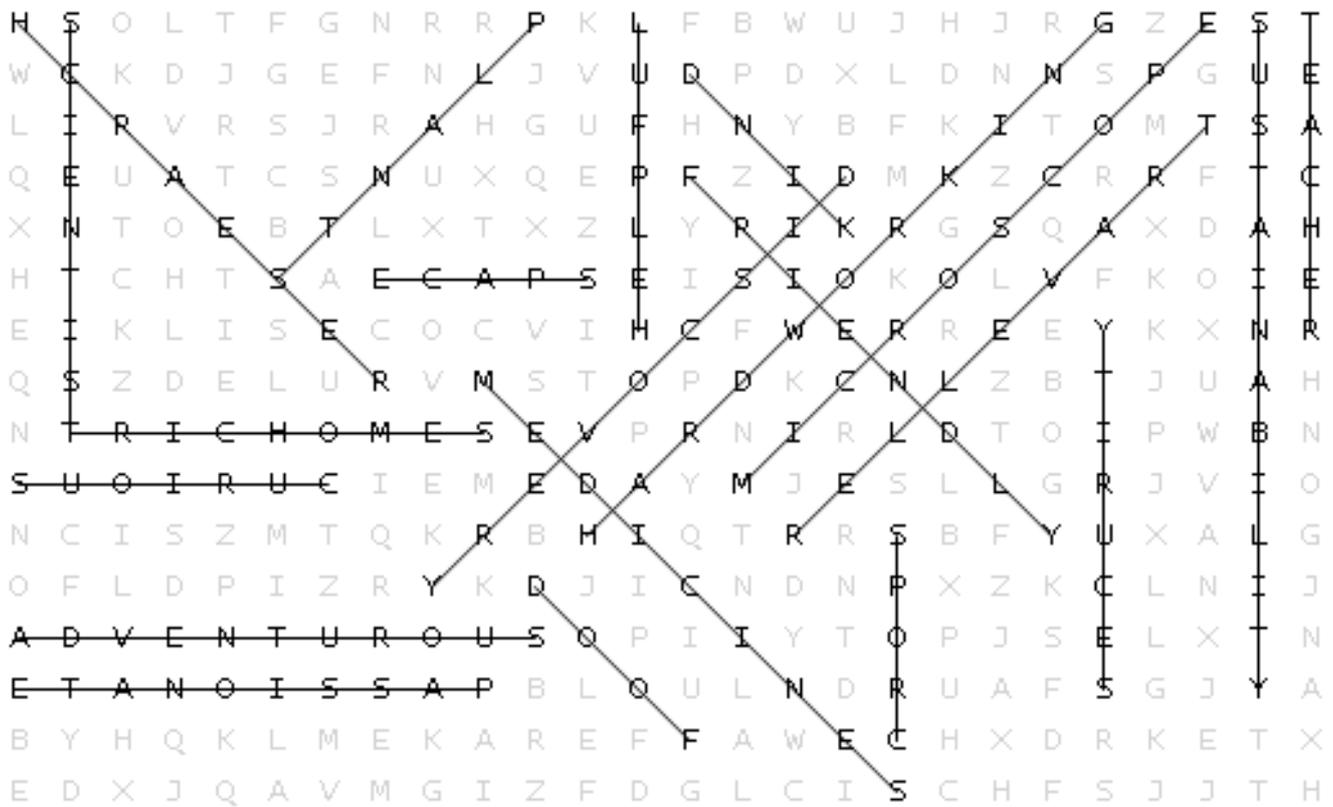
- 4.00am** It's a super early start for me today, but I don't mind. I'm hitting the road to visit some of the farmers I work with to collect samples to check how the latest crops are going.
- 6.00am** I arrive at the farm, but the farmer has already been up and working for hours! I'm just in time to hitch a ride on the tractor to gather some samples of the crops I've been doing some cutting-edge research into. The farmer and I have made some changes to how these crops are grown, and I'm hoping that the samples I collect today will show that the changes are working.
- 9.15am** I've got all my samples, and it looks like things are going well. I won't know for sure until I get back to my lab, so I hit the road again and head into my other workplace. During the drive, I listen to audio recordings of what other people are doing in this space to create more sustainable food solutions. I love hearing all the innovation and passion. It keeps me inspired and focused during these long hours on the road.
- Midday** I'm back, just in time to join the team for lunch. We meet in the cafeteria most days. Some bring their lunch, some buy it. Today I buy mine, I was up really early and didn't make anything before I left. The team and I chat about the samples I've collected, and what we hope they will tell us.
- 1.00pm** I'm in the lab with my soil and produce samples. These samples were collected from crops that I designed and have been conducting field experiments on. I'm hoping the samples will tell me a positive story. It won't be a quick story. It will take a few weeks to get the full story these samples have to tell.
- 2.30pm** While my samples undergo analysis, I dive into another part of my work. Understanding plant DNA. Better understanding about plant DNA will help me to find solutions to some of the biggest problems facing humankind at the moment - food security!
- 4.00pm** I pack up and say goodbye to the team. I had an early morning, and tomorrow I look forward to sleeping in.
- 5.00pm** I get home and can hear laughter and joy. My family is in the kitchen making dinner, it's one of my favourites. I join them and share some of my wins for the day. We always share our top three moments of the day, and one of our least favourite. My least favourite moment today was when I spilled my coffee before I even got in the car this morning. It went everywhere.
- 9.00pm** Time for bed. I hope to dream about something other than work! I love my job, but tonight I want to dream about flying.

Meet Thomas. He's an agronomist/molecular geneticist who is working out how we can grow plants in space. Fill in the bubbles with 5 STEM (Science, Technology, Engineering and Mathematics) skills he uses in his 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

Answers



Let's reflect

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

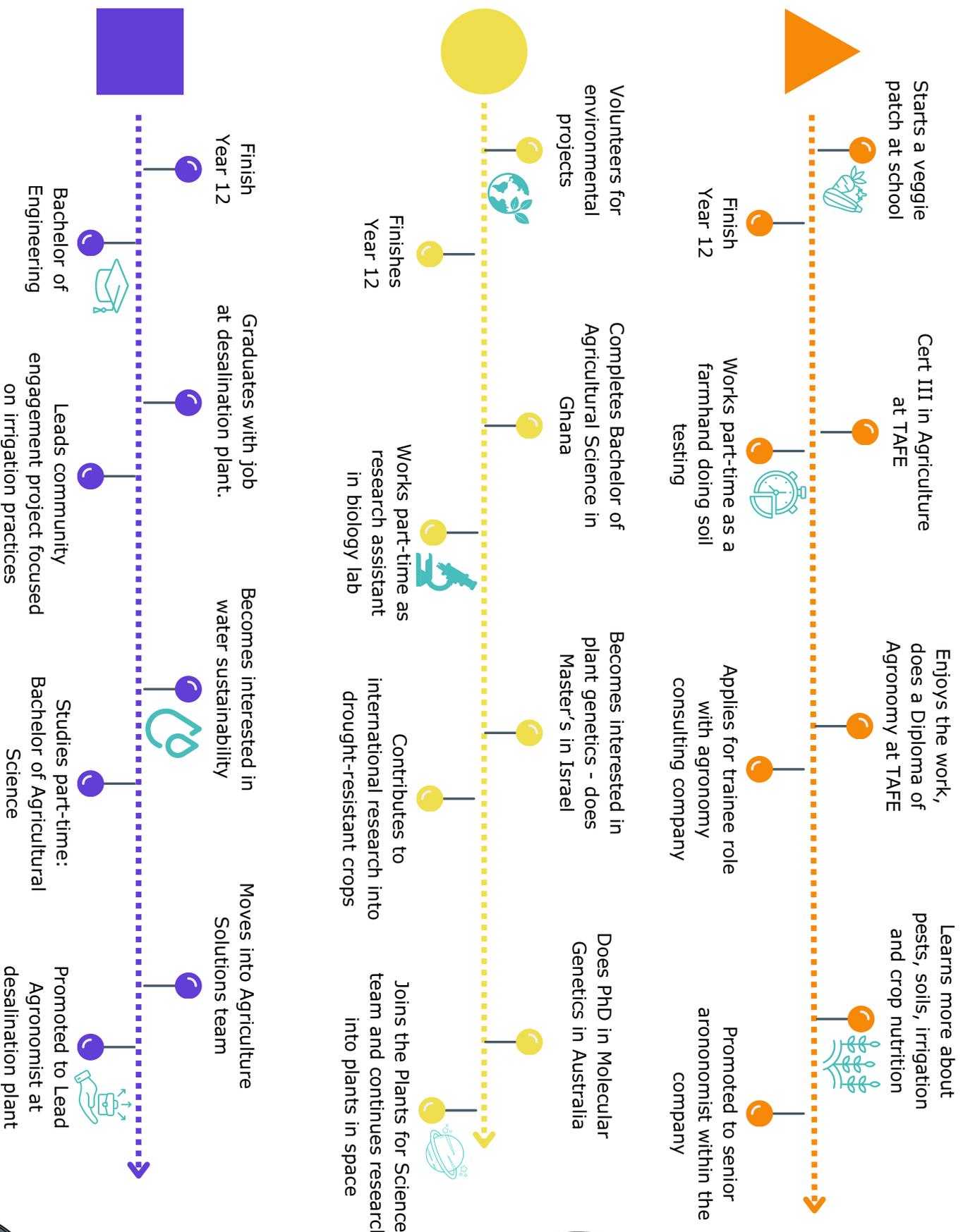
Which of these skills do you think you are best at, or would like to get better at?

1. _____

2. _____

3. _____

Can you think of anything else Thomas might need to do his job?



Agronomist/Molecular Geneticist career pathways

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

FUTUREyou

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, YourCareer.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.servicessaustralia.gov.au/education to see what's available.



- Certificate III in Agriculture: <https://training.gov.au/training/details/cpc32011>
- Diploma of Agronomy: <https://training.gov.au/training/details/AHC51920/qualdetails>



- Bachelor of Agricultural Science: <https://www.courseseeker.edu.au/courses>
- Master's of Molecular Genetics: <https://www.courseseeker.edu.au/courses>
- PhD in Plant Genetics: <https://www.courseseeker.edu.au/courses>



- Bachelor of Engineering: <https://www.courseseeker.edu.au/>
- Bachelor of Agricultural Science: <https://www.courseseeker.edu.au/courses>



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.

Agromonist/Molecular Geneticist career pathways

Find out more at <https://www.unsw.edu.au/future-you/resources/>

FUTUREyou