

# TEACHER GUIDE

## Career Q&A Videos: Vertical Farming

Vertical farming is a relatively new concept in agriculture where plants are cultivated in controlled environments. Trays of plants are often stacked to save space and take advantage of using vertical spaces opposed to growing horizontally. Plants are provided with a suitable growing medium, nutrients and specific wavelengths of light e.g red and blue spectrums. The enclosed environment exclude pests and diseases reducing requirements for pest control and presents opportunities for the recycling of inputs like water and growing medium. Vertical farms are typically developed in cities in warehouses, parking garages or purpose-built containers. This enables food production to be very close to the end consumer drastically shortening food miles and improving food security. The design and development of vertical farming systems, understanding the physiology of plants and supply chain logistics are just some areas where students can find new opportunities within vertical farms and find agricultural careers within the city.

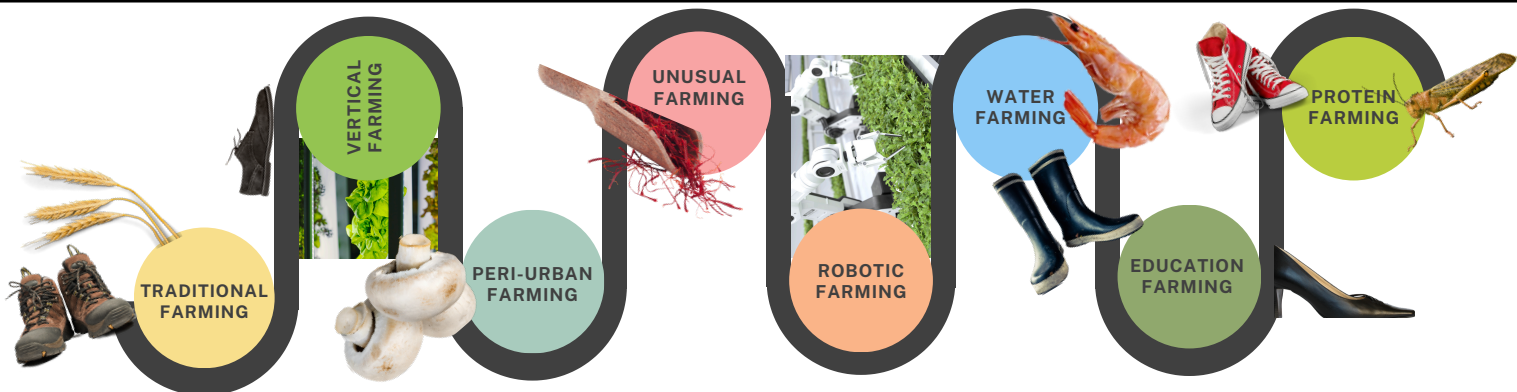
In this series of Career Q&A videos three candidates are interviewed about their experiences in vertical farming.

- John Leslie Executive Director Vertical Farm Systems (6.07 min)
- Tom Shaw Horticulture Operations Lead InvertiGro (9.07 min)
- Noah Verin Owner/Farmer Urban Green Sydney (8.26 min)

The videos can be watched individually or all three can be watched to discuss the differences between the candidates answers. The candidates are asked the following questions:

1. Where did you go to school and what was your favourite subject?
2. Describe what you do.
3. Describe a typical day.
4. Explain how what you do is adapted for Australian agriculture.
5. Explain how technology has changed the way you do things.
6. Identify something that surprised you about your career.
7. Describe the most useful skill you require for your role.
8. Identify some of the challenges facing young people starting in your role and explain how they can overcome them.
9. What shoes do you wear to work?
10. Where do you sit on the CSU Career Pathway Poster?

A set of worksheets relating to the videos accompanies this resource.



## NSW CURRICULUM

### Year 7-10 Agricultural Technologies - Stage 5

#### Objective

Knowledge and understanding of agriculture as a dynamic and interactive system that uses plants and animals to produce food, fibre and other derivatives

#### AG5-1

Explains why identified plant species and animal breeds have been used in agricultural enterprises and developed for the Australian environment and/or markets

#### AG5-2

Explains the interactions within and between agricultural enterprises and systems

#### AG5-3

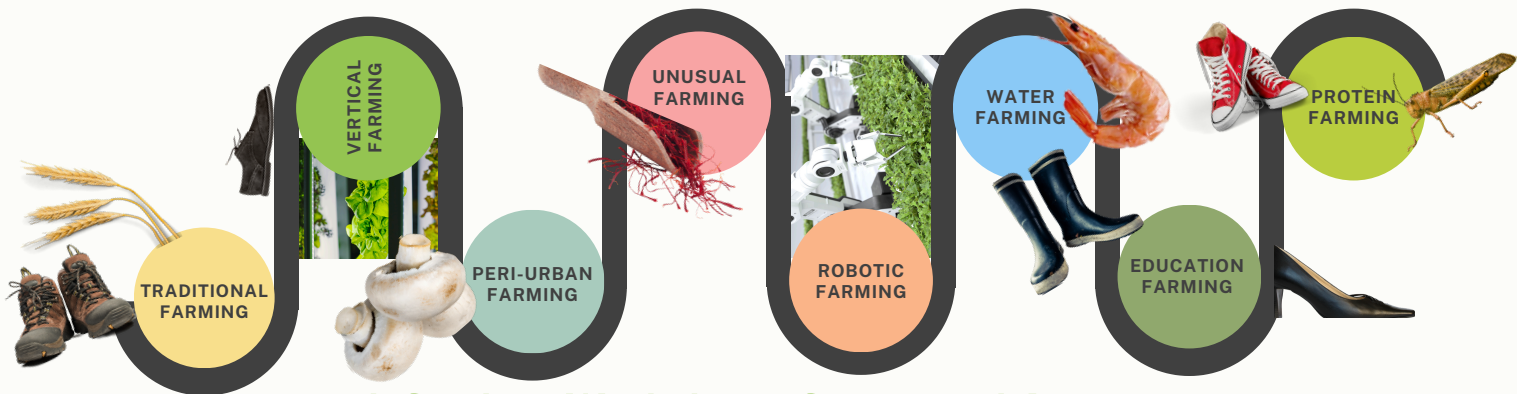
Explains the interactions within and between the agricultural sector and Australia's economy, culture and society

## AUSTRALIAN CURRICULUM

### YEAR 9/10 Design and Technology

**AC9TDE10K01** Analyse how people in design and technologies occupations consider ethical, security and sustainability factors to innovate and improve products, services and environments





## 1. Student Worksheet: Suggested Answers (may vary depending on videos and student's ideas)

1. In the video, a person working in agriculture discusses their career. Identify their job title and using the PIEFA Career Paths in Agriculture Poster, explain which category of agriculture they work in (make sure you justify your reasoning).

*Vertical Farming: City farming in warehouses in specially designed controlled environments. Farming upwards producing herbs, vegetables and fruit with minimum inputs and no soil. (In Noahs case they do use soil-can be a discussion point)*

2. Identify their (the person being interviewed) favourite subject at school. Is there a connection between their favourite subject and what they currently do? Justify your answer.

*John Leslie- Yes: Drafting and drawing relates to what he is doing now with designing systems.*

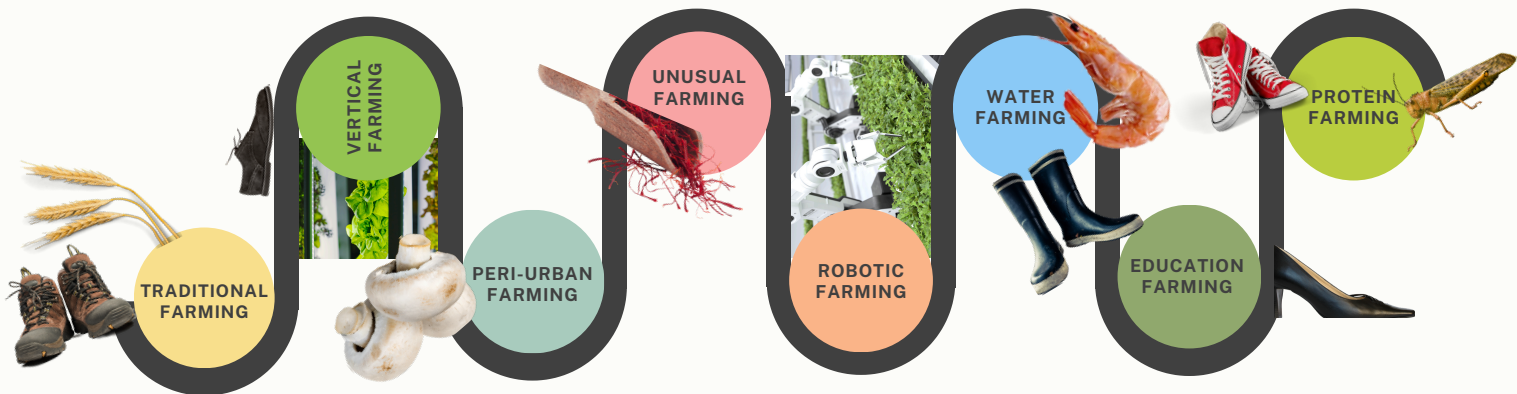
*Tom Shaw and Noah Verin- History No: their subjects do not relate- but goes to show even if you have broad interests can still work in agriculture*

3. Describe a problem technology addresses in the video and explain how technology helps to solve the issue(s).

*Problem: Designing components in two dimensions means there can be errors with the manufacture of components. 3D CAD ensures components are correctly manufactured and fit.*

*Problem: Energy efficiency of LED lights; newer versions of lights much more energy effecient.*

*Problem: Monitoring systems- Internet of Things: allows for the constant monitoring of systems which means the system can be adjusted without physically being at the Vertical Farm.*



4. Technology helps address the labour shortage in agriculture, so whilst it is replacing jobs it is also creating jobs. Do you agree or disagree with this statement? Justify your answer with examples and / or evidence.

*Yes, technology is creating jobs- In these videos new jobs are created like design engineers designing vertical farming systems or vertical farming creates new jobs like supplying microgreens within the industry.*

5. There are often challenges when starting a new role. Identify the challenges they (the person being interviewed) faced and the strategy they used to overcome the challenge.

*Challenges: Overcoming negative perception of agriculture-realising there are roles within cities and you do not have to work on a farm to work in agriculture.*

*Challenges: Training opportunities- just need to a positive attitude*

*Challenges: Don't expect a job- be creative and create your own*

6. Describe a situation where you are faced with a similar challenge. Explain what strategy you would use to overcome the challenge.

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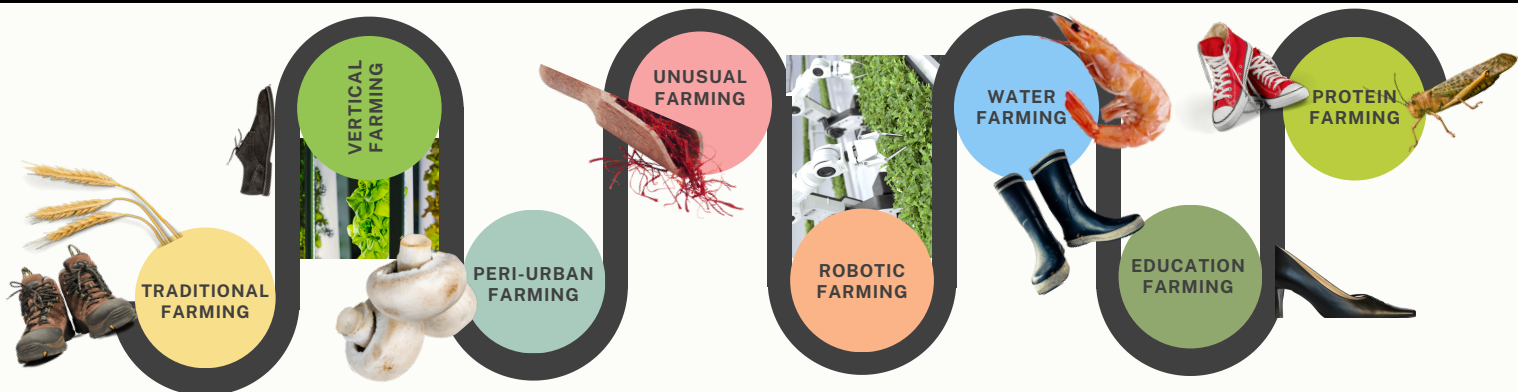


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7. In the video, the person being interviewed mentions the skills required for their role. List the skills and explain how these skills help them in their role. Provide reasons with your answer.

*Skills:*

*Communication*

*Patience and tolerance*

*Time management and multi tasking*

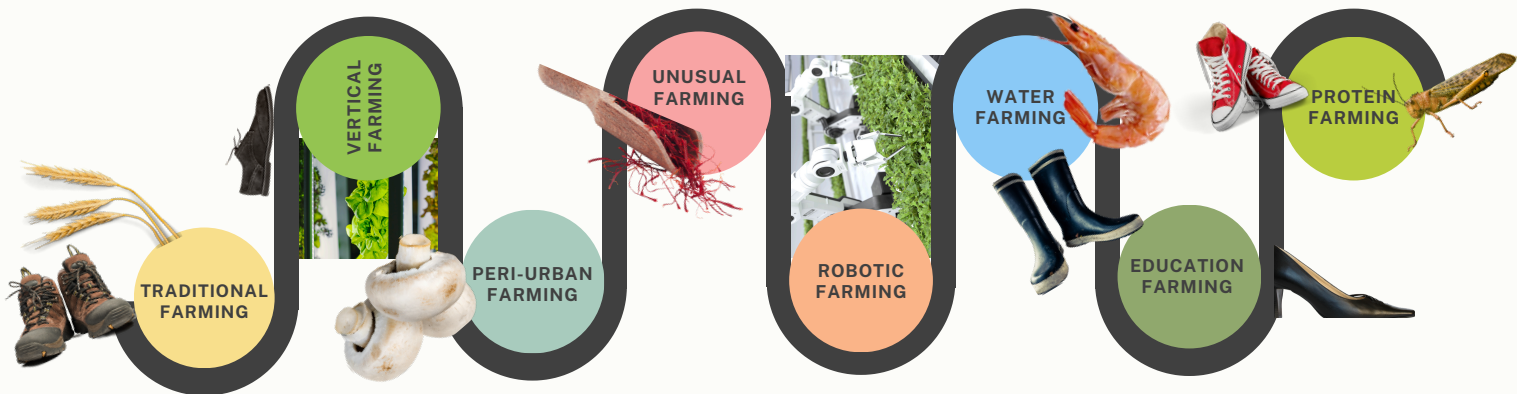
8. Research and describe how the agricultural product discussed in this video is adapted to, or suited for Australian environmental conditions.

- *Vertical farming shortens the long supply chains in Australia*
- *It allows production of food independent of fire and flood*
- *Does not require adaption because it is grown in a controlled environment*

9. Does this role promote sustainability in agriculture? Justify your answer.

*Yes, Vertical farming does promote sustainability:*

- *Reduction of plastic in packaging*
- *Reduction of water use*
- *Reusing growing mediums*
- *Reduced or no pesticide use*
- *Reduction in food miles*



## 2. Create a Job Description

A job description details the features of a role and is required when you want to advertise for a job position. Select a career from one of the videos you watched and create a job description for this career. Use the following template from the [Australian Government Fair Ombudson Website](#) to write your job description. You will need to research your career to help you answer the questions in the template. [Career Harvest](#) could be a useful starting point.

PRINTABLE TEMPLATE JOB DESCRIPTION (Refer to page 12 of worksheets for electronic version)

JOB TITLE: (Write the name of the job role) For example, Receptionist

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JOB TYPE: (Write the type of employment) For example, Full-time; Part-time; Casual

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LOCATION: (Physical address the employee will work at. If the job requires travel, list the primary location) For example, Smithton office

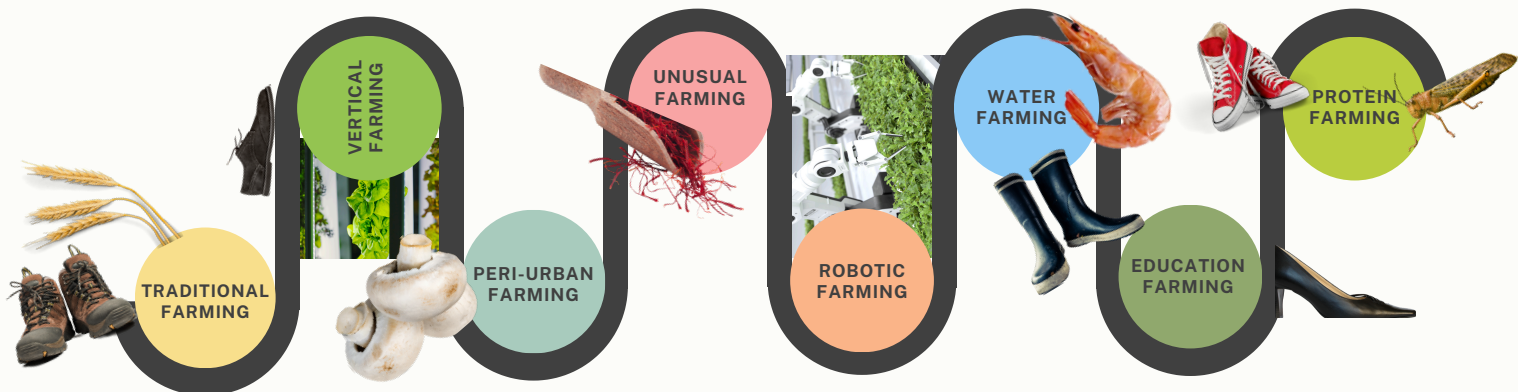
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SUPERVISOR/MANAGER: (Who the employee will report to?)  
For example, Office Manager; Shift Supervisor

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MAIN DUTIES/RESPONSIBILITIES: (What are the duties and responsibilities of the position?)  
For example,

- Coordinate and carry out all office administration, including reception, mail, couriers, greeting clients and filing
  - Maintain a clean and safe workspace, and abide by workplace health and safety policies
  - Other tasks as directed
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## 2. Create a Job Description

PRINTABLE TEMPLATE JOB DESCRIPTION  
 MAIN DUTIES/RESPONSIBILITIES continued

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### SKILLS & EXPERIENCE

Qualifications: (What qualifications, licenses or education level does the employee need?)

For example,

- Diploma or Certificate IV in Business Administration or relevant experience
- First aid certificate

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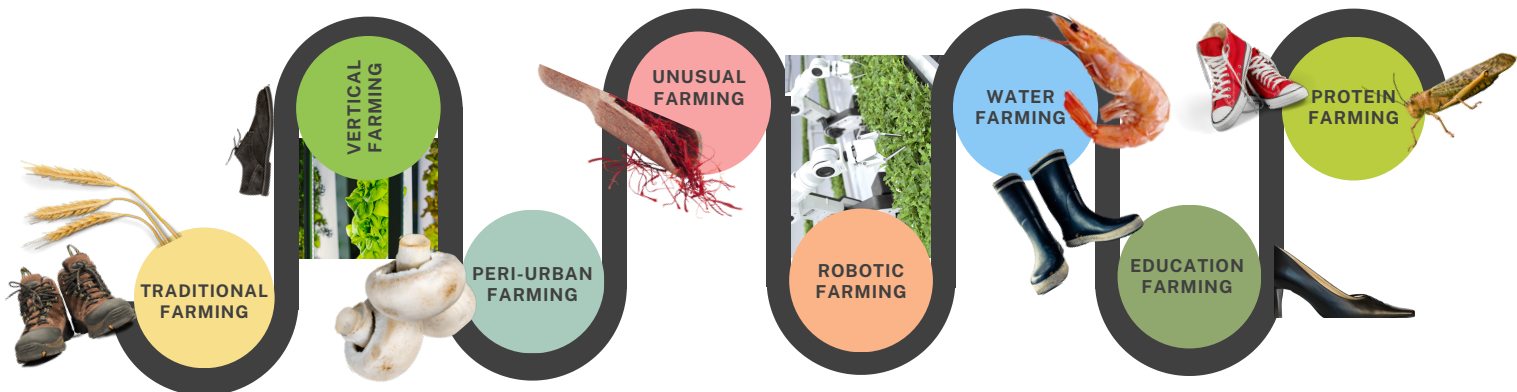
Experience: (What type and how much experience is needed?)

For example, 3 years experience in a similar role or industry

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## 2. Create a Job Description

### PRINTABLE TEMPLATE JOB DESCRIPTION

Skills: (What skills are needed for the job? Including any technical or interpersonal skills.)

For example,

- Intermediate to advanced Microsoft Office skills (Word, Excel, PowerPoint and Outlook)
- Excellent verbal and written communication
- Organised and able to meet deadlines

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PERFORMANCE GOALS: (What level of performance do you expect from the employee?)

For example,

- Complete administration tasks on time
- Ensure office is clean and presentable at all times
- Deal with clients, suppliers and other employees professionally at all times

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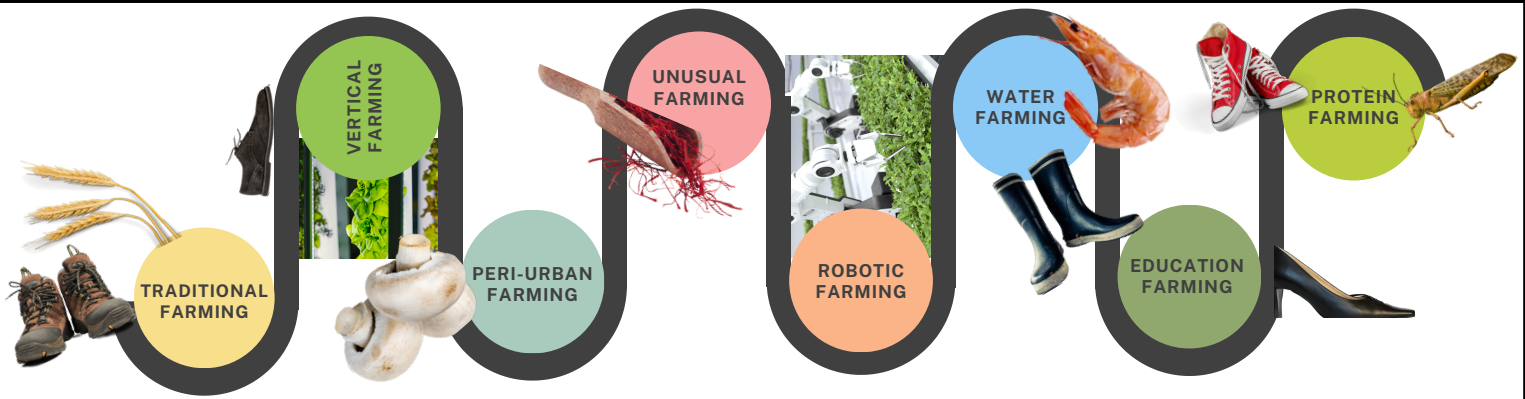


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### 3. Interview Question

Choose from one of the videos which role best matches your skills, experience and personality. Imagine you have been selected for an interview and explain to the interview panel why you would be a good candidate for this role.

1. Select your role:

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2. Explain what interests you about this role:

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3. Explain how your skills match this role:

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4. Describe how your work/ school experiences matches the role:

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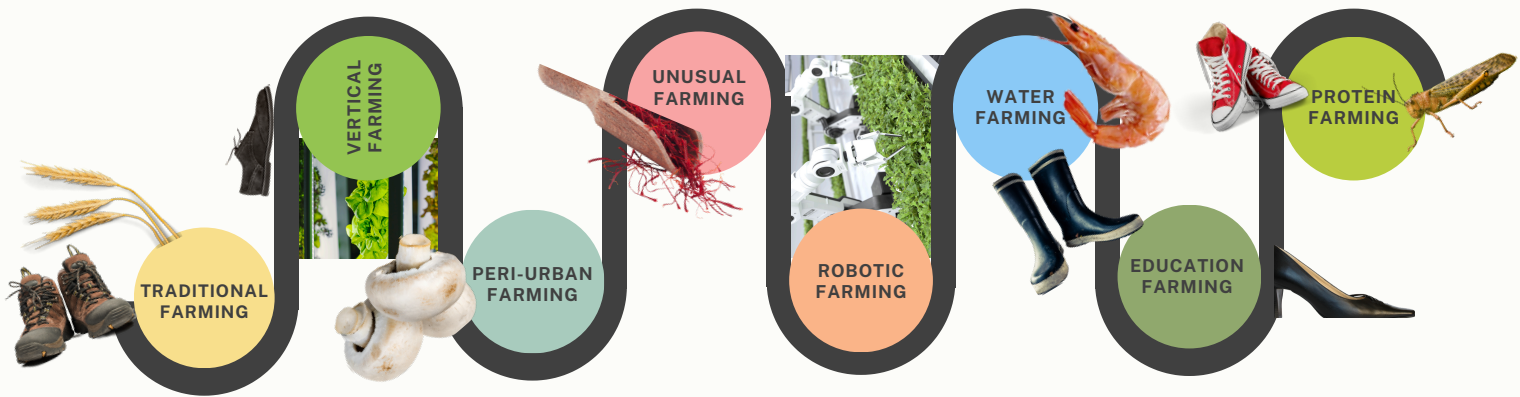
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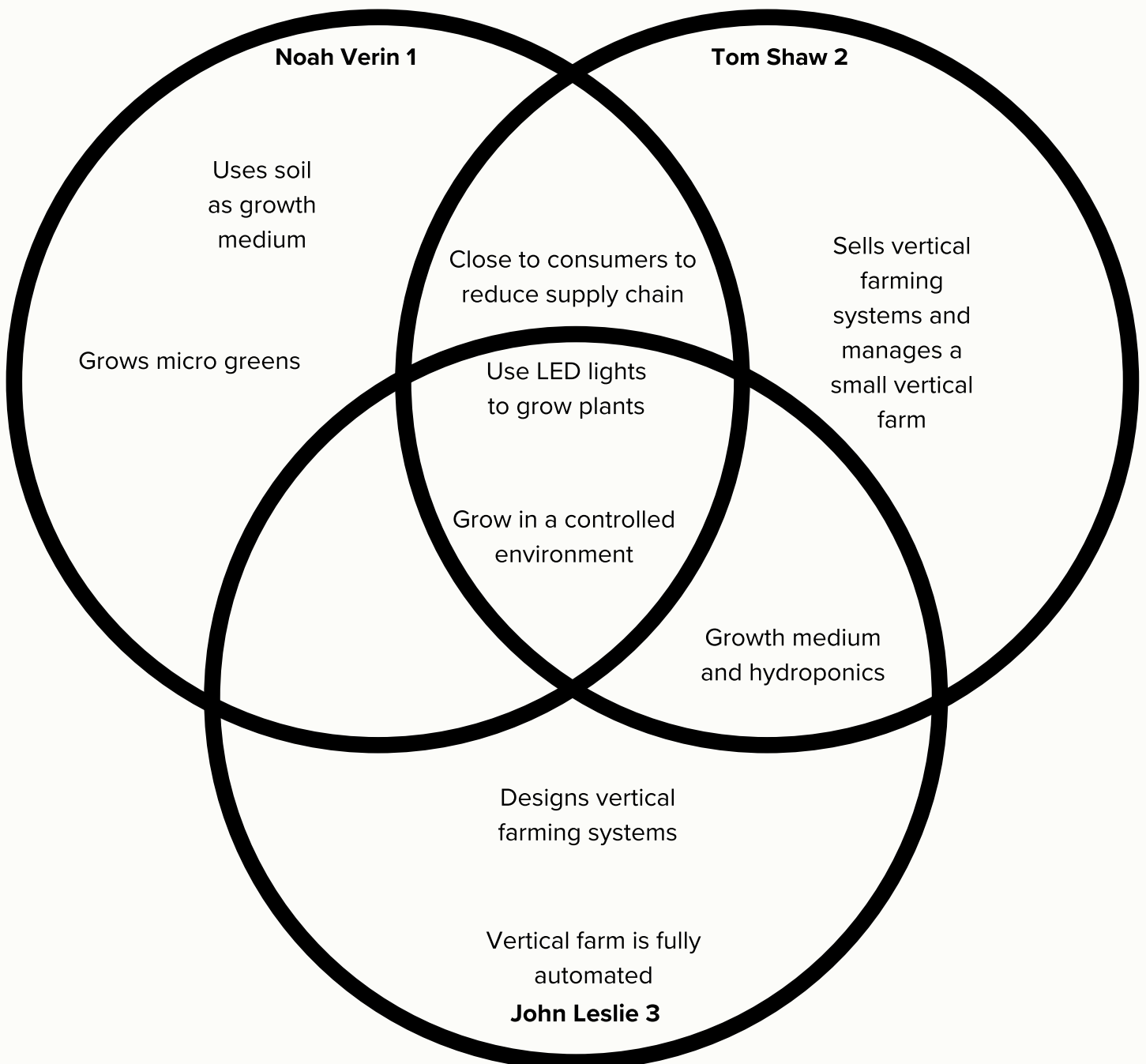


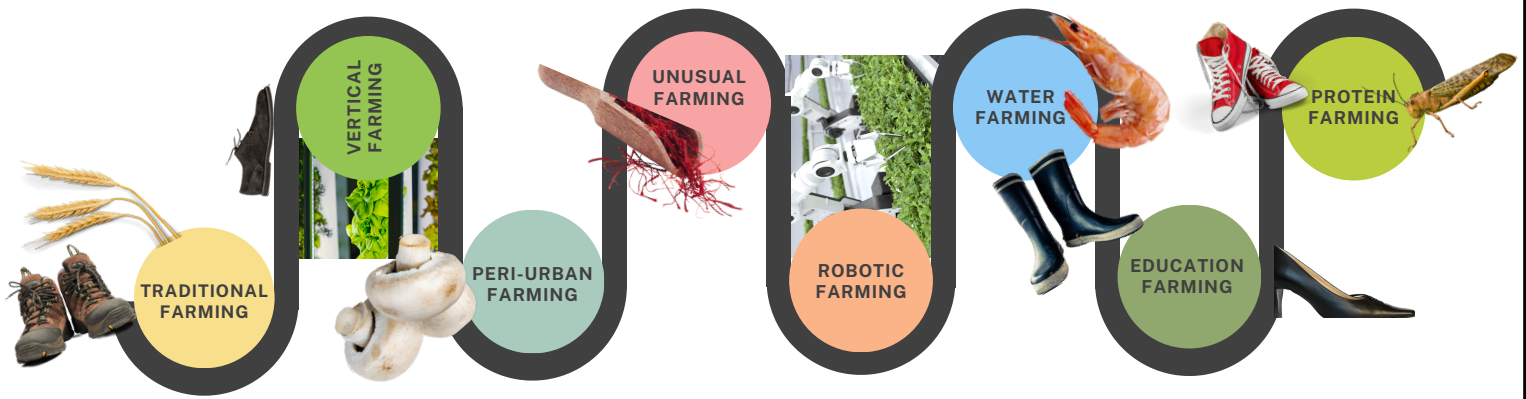
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## 4. Create a Venn Diagram

After watching all three videos create a Venn Diagram showing what the three careers have in common with each other and what is different between them. (e.g. what do they have in common with each other and what is different between them?)





Explain why there are commonalities and differences between each of the careers.

Your Answer:

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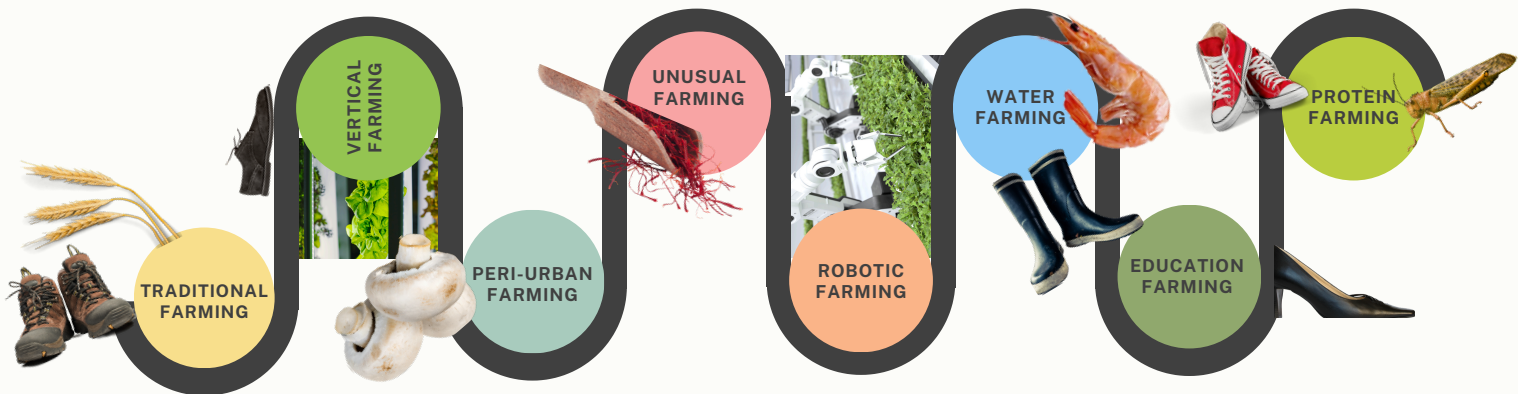
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### TEMPLATE JOB DESCRIPTION

#### IMPORTANT

This template has been colour-coded to assist you to complete it accurately. You will replace the blue < > writing with what applies to your situation.

Example information is shown in purple writing to assist you and should be deleted once you have finished the ad.

JOB TITLE: <Role name> For example, Receptionist; Sales Assistant

JOB TYPE: <Type of employment> For example, Full-time; Part-time; Casual

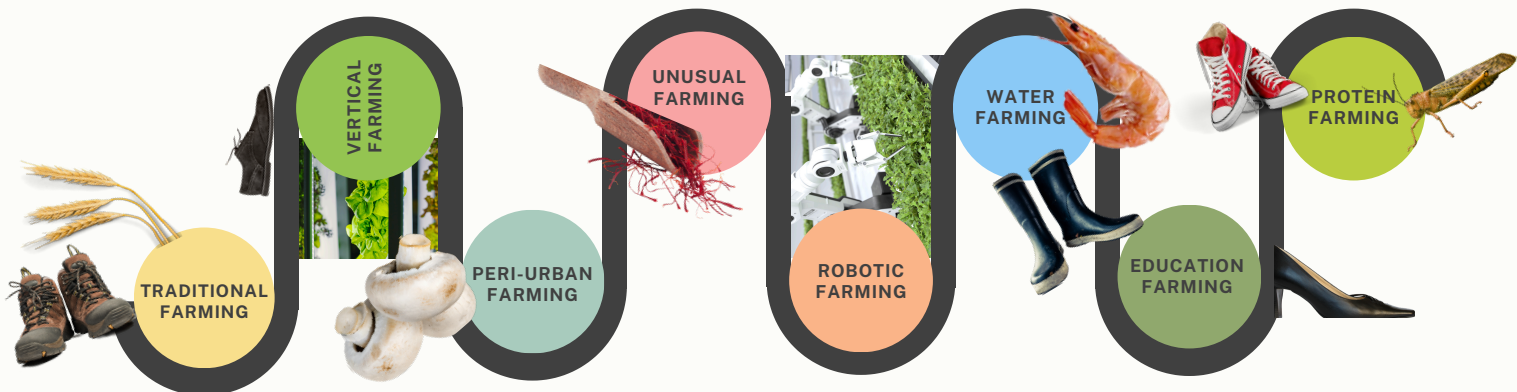
LOCATION: <Physical address the employee will work at. If the job requires travel, list the primary location> For example, Smithton office

SUPERVISOR/MANAGER: <Who the employee will report to> For example, Office Manager; Shift Supervisor

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- First aid certificate

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For example, 3 years experience in a similar role or industry

Skills: <What skills are needed for the job, including any technical or interpersonal skills?>

For example,

- Intermediate to advanced Microsoft Office skills (Word, Excel, PowerPoint and Outlook)
- Excellent verbal and written communication
- Organised and able to meet deadlines

PERFORMANCE GOALS: <What level of performance do you expect from the employee?>

For example,

- Complete administration tasks on time
- Ensure office is clean and presentable at all times
- Deal with clients, suppliers and other employees professionally at all times

## References

Career Harvest – Career Harvest is a one-stop shop for prospective students to discover rewarding careers. (n.d.). [www.careerharvest.com.au](http://www.careerharvest.com.au). <https://www.careerharvest.com.au/>

Charles Sturt University . (n.d.). Careers in Agriculture. Retrieved March 20, 2024, from [https://cdn.csu.edu.au/\\_\\_data/assets/pdf\\_file/0007/4261363/Agriculture-careers-diagram\\_A3\\_web.pdf](https://cdn.csu.edu.au/__data/assets/pdf_file/0007/4261363/Agriculture-careers-diagram_A3_web.pdf)

Welcome to the Fair Work Ombudsman website. (n.d.). Fair Work Ombudsman. <https://www.fairwork.gov.au/tools-and-resources/templates>