

PLANTS IN SPACE

The Botanic Gardens and State Herbarium x Slingsby Theatre Company



ABOUT

Imagine this: You are one of the last of the Earthkind, preparing to leave the planet and venture to a new home on the Moon. But, humans can not survive without plants which are vital for oxygen, medicine, materials, food and of course, wellbeing.

Your mission: Choose ONE plant to take with you and design a structure to help it flourish.

STEP 1: Structure Detective

The Botanic Gardens are home to plants from all over the world. Some of these plants need specific conditions to thrive, which is why we have buildings like the Amazon Waterlily Pavilion, the Bicentennial Conservatory, the Palm House and the Simpson Shade House.

Find and visit some of the plant houses located in Adelaide Botanic Garden (you can find them all on our garden map).

While you are visiting the structure, identify the following:

- What is the structure protecting the plants from?
- What does it provide the plants with?
- What conditions/environment do you think the plants inside require?
 - Desert
 - Temperate Rainforest
 - Tropical Rainforest
- What materials is the structure made of?
- How does it control
 - Light
 - Water
 - Airflow
 - Temperature
 - Pests



STEP 2: Choose your plant

Choose a plant you saw at the Botanic Garden, your favourite plant or from the list provided. You must choose a plant using two of these reasons:

- Food source
- Provides oxygen
- Medicinal/healing properties
- Building materials/textiles
- Fast growing
- Low water needs
- Emotional support/wellbeing
- Culturally significant
- Survives harsh conditions
- Great for pollinators

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STEP 3: Design thinking

Plan and design a structure for the Moon that keeps your chosen plant alive and flourishing! Remember, plants are not just decoration or nice to have, they are survival infrastructure. Consider the following in your design thinking:

The structure must:

- Protect from cold
- Protect from radiation
- Provide light
- Provide water
- Provide nutrients/soil support
- Manage airflow
- Humans to access for care/harvesting

What does your plant need:

- Sunlight
- Water
- Temperature
- Space for growth and roots
- Pollination requirements

Habitat Features:

- Is it underground or above ground?
- Does it use recycled water?
- Does it rotate to face the sun?
- Does it have artificial lighting?
- Does it have a sealed dome?
- Does it use misting?
- Does it need insulation layers?
- Does it include a hydroponics system?

STEP 4: Concept design

Sketch or create a concept for your structure

Include:

- Plant placement
- Light source
- Water System
- Temperature Control
- Protective shell
- Space for humans
- Air system

STEP 5: Name and pitch!

Name your structure and share with your peers/teacher on

1. What plant you chose
2. Why it is important to take to the Moon
3. How your design keeps it alive
4. The most interesting/innovative feature of your design

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PLANT SHORTLIST

Most of these plants can be found around Adelaide Botanic Garden. Choose from the list below or choose a different plant you would love to take with you to the Moon!

Food and survival

- Wheat – calorie-dense staple food, easy to store seeds
- Potato – high energy food, grows in compact spaces
- Tomato – food, fresh or canned, needs a lot of water
- Banana – food, fast growing, leaves used for cooking and weaving
- Beans/Legumes – protein source, improves soil nitrogen
- Pumpkin/Squash – long storage life, high yield
- Sweet Potato – edible leaves and tubers, hardy
- Beans/Peas – fast growing, easy to care for, beautiful flowers, high yield
- Lettuce/Leafy Greens – fast growing, good source of vitamins, fresh and green
- Strawberry – small space, high morale food, pollination challenge

Medicine and useful plants

- Aloe vera – burns/skin treatment, drought tolerant
- Lavender – calming scent, insect repellent, wellbeing
- Tea Tree (Melaleuca) – antiseptic oils, native, resilience
- Eucalyptus – medicinal uses, fast growth, strong scent, memories of home
- Ginger – food and medicine, can be dried and ground up,
- Turmeric – medicinal, long-term storage potential
- Calendula – burns/skin treatment, wellbeing, hardy, edible

Oxygen and materials

- Bamboo – super fast growth, building material
- Moss – moisture indicator, grows in sealed humid spaces
- Ferns – love humidity, good for closed terrarium habitats
- Mangrove – filters water, ecosystem plant, challenging
- Pine / Conifer – timber, slow growth but long-term value

Wellbeing and pollinator friendly

- Sunflower – edible seeds and good for morale, needs lots of light
- Everlasting Daisy – pollinator friendly, resilient, can be used for dried flowers
- Orchids – fragile but valuable, challenging choice
- Rosemary – food flavouring, medicinal, hardy, favourite of pollinators
- Mint – fast growing, useful, spreads easily, used for food

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Design below!

Name of Structure:

Plant Chosen:

Importance of Plant:

Design Features: