



Australian Government
**Department of Agriculture,
Fisheries and Forestry**

Biosecurity champions

Student activities – Year 2



① Activity 1: worksheet 1a – stimulus images At the airport



Images: © Department of Agriculture, Fisheries and Forestry

🕒 Activity 1: worksheet 1b – fact sheet

Pests, diseases and biosecurity

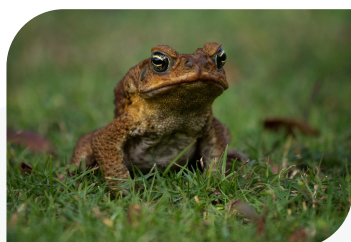
Did you know?

Australia's biosecurity officers use detector dogs trained to detect biosecurity risk items in luggage and mail.



What is a pest?

A pest is an unwanted living thing that can damage plants, animals or people and spread diseases. Cane toads, red imported fire ants and brown marmorated stink bugs are pests.



Cane toad



Red imported fire ant



Brown marmorated stink bug

Image: © Department of Agriculture, Fisheries and Forestry

What is a disease?

A disease causes a living thing to become unwell. Diseases are caused by bacteria, fungi or viruses, which we call pathogens.

Lumpy skin disease in cattle, *Xylella fastidiosa* (pronounced zy-LEL-lah fas-tid-ee-OH-sah) and citrus canker are diseases.



Citrus canker



Xylella fastidiosa infected leaves

Image: © John Hartman, University of Kentucky, bugwood.org

How can we protect Australia?

Australia does not have many of the world's most damaging plant and animal pests and diseases.

We are trying to keep out pests and diseases that could damage our environment, harm our native plants and animals and destroy the plants we use to produce food and fibre. Some pests and diseases can also affect humans and make them sick.

Australia's biosecurity system helps protect us from unwanted pests and diseases.

Biosecurity involves careful inspection of:

- luggage
- mail
- cargo
- imported goods

checking for any items such as seeds, plants, wood, meat, fruit and vegetables that might contain pests and diseases that Australia is trying to keep out.

Biosecurity detector dogs and technology such as X-ray machines are used to detect many items that may contain pests and diseases. Biosecurity officers can then inspect these items.



Images: © Department of Agriculture, Fisheries and Forestry

There are rules about what can be brought into Australia. You must declare (tell someone about) food, plant and animal products as you enter Australia from overseas and when sending mail parcels.

At airports and cruise terminals, special bins are provided to dispose of food and other biosecurity risk items.

There are penalties for those who do the wrong thing and don't follow the rules when travelling or ordering goods online.

The Australian Government works with other countries to manage pests and diseases before they arrive in Australia.



Who is in charge of biosecurity?

The Department of Agriculture, Fisheries and Forestry (DAFF) is the Australian Government department that manages biosecurity in Australia.

Many others, including Indigenous rangers, play a crucial role in protecting and taking care of Country. They help to take care of Country by managing feral animals, weeds, and fire and keeping a Top Watch! across northern Australia for pests and signs of diseases.

In fact, we all have a role to play in Australia's biosecurity, including you!



Images: © Department of Agriculture, Fisheries and Forestry

🕒 Activity 1: worksheet 1c – sentences

Pests, diseases and biosecurity

Read the sentences and fill in the blank spaces using the words below.

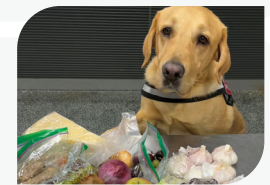
diseases **pests** **Indigenous** **dogs** **luggage**
penalty **Country** **biosecurity** **stink**



1. This pest is a brown marmorated _____ bug.
 It is a pest that Australia is trying to keep out.



2. Australia's _____ system helps
 protect us from unwanted pests and diseases.



3. Biosecurity involves careful inspection of
 _____, mail, cargo and imported goods.



4. Biosecurity officers check for seeds, plants, wood, meat, fruit
 and vegetables that might contain _____ and
 _____ that Australia is trying to keep out.



5. _____ rangers help to take care of
 _____. They help protect Australia from
 biosecurity threats.



6. If people do the wrong thing and don't follow Australia's
 biosecurity rules, they may have to pay a _____.



7. X-ray machines and detector _____ are used to detect items
 that may contain pests and diseases. Biosecurity officers can
 then inspect these items.



Images: © Department of Agriculture, Fisheries and Forestry

🕒 Activity 2: worksheet 2a

Measuring microbes



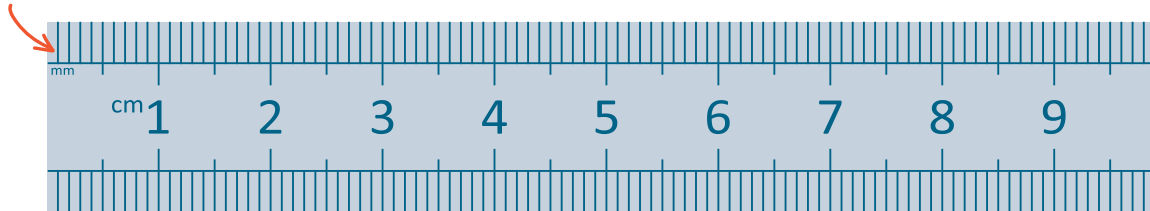
Millimetres

A millimetre (mm) is a very small unit of measurement. When you look at a ruler, the smallest marks between the bigger centimetre marks are millimetres. There are 10 millimetres in 1 centimetre, so they are really small!

A tiny ant might be a few millimetres long. Uncooked spaghetti is about 2 millimetres in width, while a grain of sand is usually about 1/2 a millimetre.

Can you think of any other objects that can be measured in millimetres?

1mm



Ant



Sand



Pasta

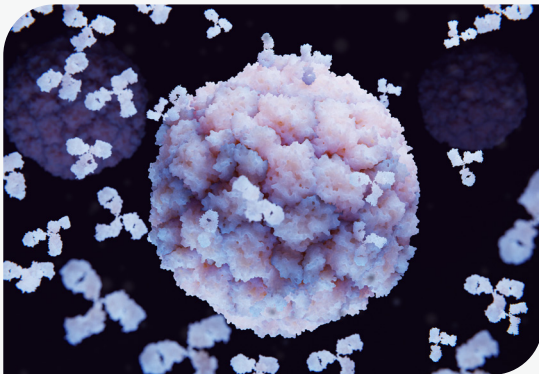
Millimetres and nanometres

Some things are even smaller than 1 millimetre, so small that you can't see them without using a special tool like a microscope. These things need even smaller measurements called **micrometres** or **nanometres**. Human hair is about 90 micrometres thick, which is a lot smaller than 1 millimetre!

Germs such as **viruses** and **bacteria** are so small that we measure them in **nanometres**. Scientists use these very small measurements and powerful microscopes to see and measure them.

The virus that causes the common cold, also known as **rhinovirus**, is one of the smallest viruses that can infect humans. It measures between 20 and 30 nanometres in diameter.

Around **33,333** rhinoviruses could fit in a 1 millimetre space on a ruler!



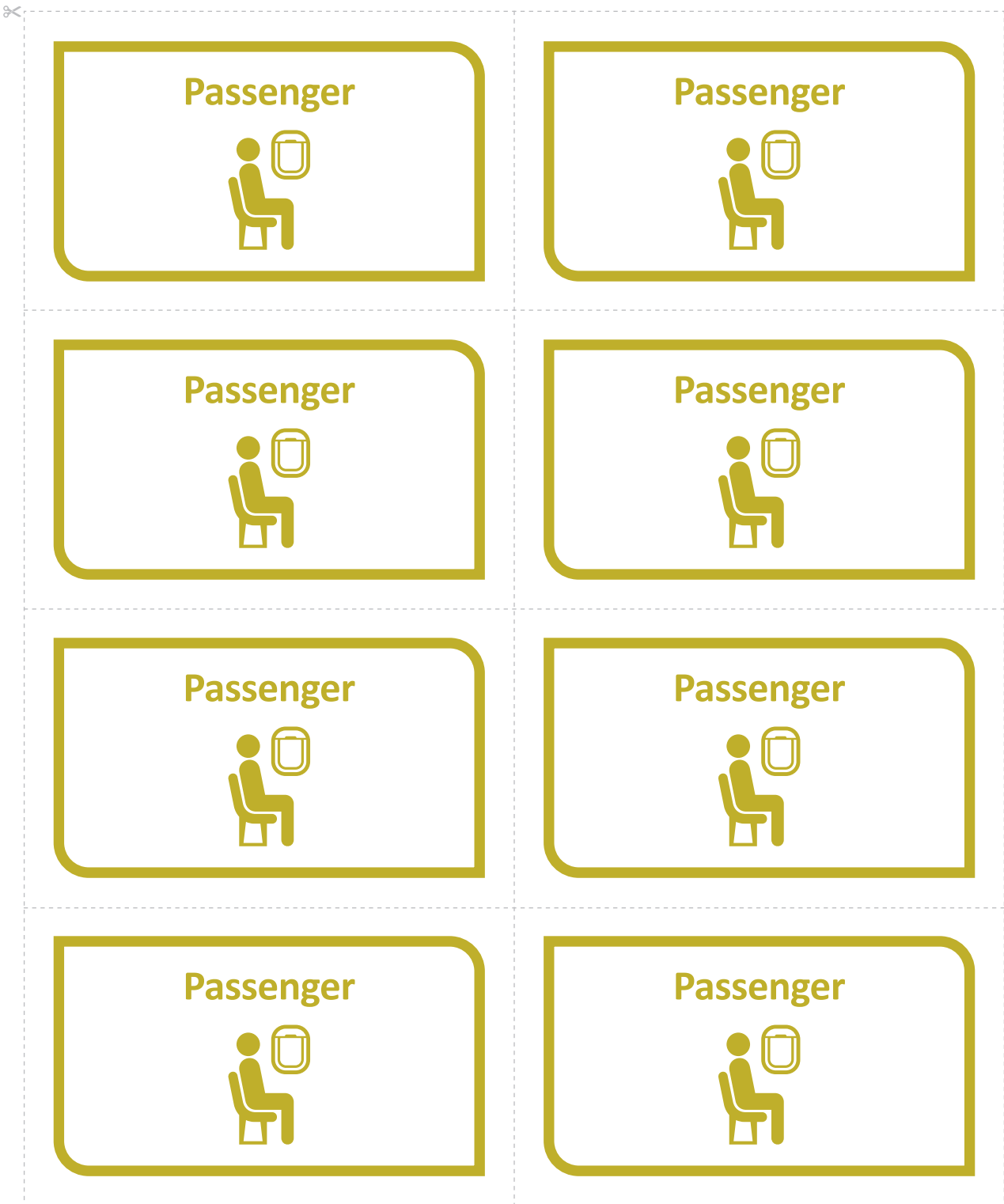
Activity 2: worksheet 2b

Character cards









Cut out and distribute a character card to each student.

<p>Athlete one</p> 	<p>Athlete</p> 
<p>Athlete</p> 	<p>Athlete</p> 
<p>Athlete</p> 	<p>Athlete</p> 
<p>Athlete</p> 	<p>Passenger</p> 

Cut out and distribute a character card to each student.



Cut out and distribute a character card to each student.

<p>Passenger</p> 	<p>Passenger</p> 
<p>Passenger</p> 	<p>Passenger</p> 
<p>Border Force officer</p> 	<p>Border Force officer</p> 
<p>Flight attendant</p> 	<p>Flight attendant</p> 







Activity 2: worksheet 2c

International illness

As you complete the role-play, answer the questions below.

a) Use tally marks to record each new person who is infected with the virus.

Character	Tally	Total
 Athlete		
 Passenger		
 Flight attendant		
 Border Force officer		

b) How long did it take for everyone to catch the virus?

c) Name the person who passed the virus to you.

d) Name the two people who you passed the virus to.

e) Tick the boxes to show some of the ways the spread of the virus could have been slowed down or stopped.

- | | | |
|--|---|--|
|  Wearing face masks on the plane <input type="checkbox"/> |  Using hand sanitiser after touching shared items <input type="checkbox"/> |  Not traveling when feeling unwell <input type="checkbox"/> |
|  Regularly washing hands with soap <input type="checkbox"/> |  Giving high fives to everyone on the plane <input type="checkbox"/> |  Check the temperature of passengers when boarding the plane <input type="checkbox"/> |

🕒 Activity 3: worksheet 3a

Biosecurity worldwide watch

Read the information about one of the pests and diseases Australia is watching out for with your group. Highlight the keywords to learn how this pest or disease could harm our farms and communities.



We are watching out for...

1 Foot-and-mouth disease

Foot-and-mouth disease is a virus that gives cattle, sheep, goats and pigs a fever and blisters in their mouth and on their feet.

Animals with foot-and-mouth disease cannot be sold or used to make food. If foot-and-mouth disease reached Australia, it would make our livestock sick and mean there would be less food for people to purchase.

Australia's closest neighbour where foot-and-mouth disease can be found is **Indonesia**. The capital of Indonesia is **Jakarta**.

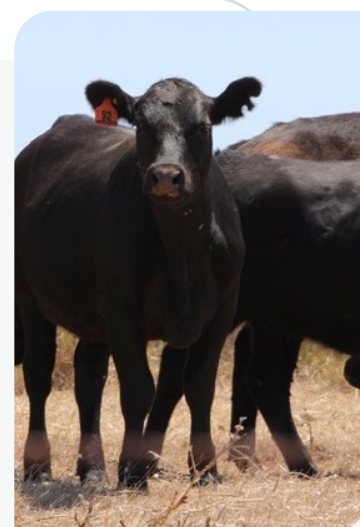
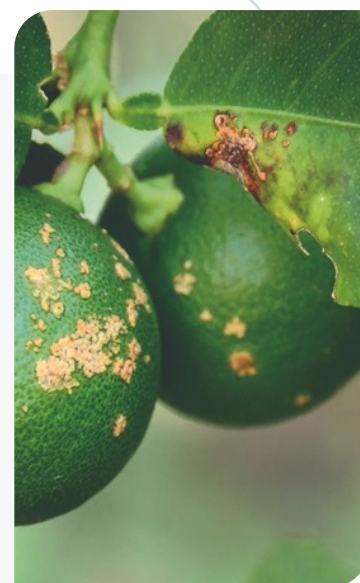


Image: © Carlo Allia

2 Citrus canker

Citrus canker is a disease caused by a bacteria that causes ugly brown and yellow lumpy spots, called cankers, on the leaves, fruits, and stems of citrus trees like oranges, lemons and limes. Apart from the warty lumps making citrus fruits look ugly, the cankers can get so bad that there are not enough green leaves left for the tree to grow properly, and the fruits drop off before they are ripe.

If it were to arrive and spread in Australia, canker would cause a lot of damage to citrus trees, and we could even run out of these healthy fruits. Citrus canker can be found in various countries around the world, including all the countries which are our next-door neighbours to the north like **Timor-Leste**. The capital of Timor-Leste is **Dili**.

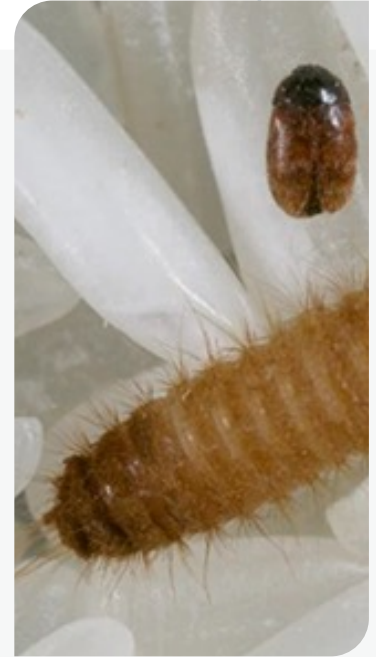


3 Khapra beetle

The Khapra (car-p-ra) beetle is a tiny insect that damages grains such as wheat and rice after they have been harvested and stored in warehouses. Grains are stored so farmers can sell them to different countries around the world, and they can be used to make foods such as bread and pasta all year round.

If the Khapra beetle came to Australia, it could damage lots of stored grains so farmers would make less money, and there would be less grain to make different foods.

It can be found in countries including **India**. The capital of India is **New Delhi**.



Keeping them out!

Borders

Biosecurity officers carefully check luggage and cargo at airports and seaports. They protect Australia from pests or diseases that could come into the country on plants, seeds, animals and food.

Quarantine

If something is risky, like plants or animals from other countries, they are placed in quarantine. This means they are kept separate to make sure they don't spread any pests or diseases in Australia.

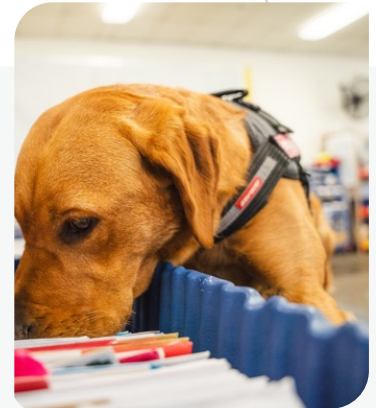


Image: © Department of Agriculture, Fisheries and Forestry

Activity 3: worksheet 3b

Biosecurity mapping challenge

Follow the instructions to map the distance from your location to New Delhi, India and Dili, Timor-Leste.

- 1** Scan the QR code or click on the link to access [Google Earth](#).


- 2** Type the city and the country into the search bar (for example, New Delhi, India).


- 3** Mark the location on the map with an 'X'.


- 4** Click on the ruler icon, then click on the red pin, assigning it to the location on the Google Earth map (to start the measuring tool).


- 5** Use the mouse or keypad to turn the Earth and locate the area where you live (for example, Brunswick, Victoria). You may need to use the '+' tool at the bottom right of the screen to zoom in and find your nearest town or suburb.


- 6** Click and pin this location with the mouse or keypad (a yellow line should have tracked the trip).


- 7** At the top right of the screen, the distance from the location to your local area will be calculated (select kilometres as the units).





- a) Use Google Earth to find the distance from where you live to each of the locations below.
- b) Record your answers in kilometres (km).
- c) Use a coloured pencil and a ruler to draw a path showing the distance to each location.

1 **New Delhi, India**

The distance from New Delhi to where I live is:

2 **Dili, Timor-Leste**

The distance from Dili to where I live is:





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Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.



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