



Mozzie Wise - Community Health



Read this information about Ross River virus.

Ross River virus is an 'arbovirus' (**arthropod-borne virus**) which is more prevalent from spring to early summer. One of the vectors of this virus in the south west of Western Australia is the mosquito, *Culex annulirostris*—a freshwater species. The virus begins in a host such as a kangaroo or wallaby. While the virus is inside the host, it multiplies to levels which increase the number of viruses in the host's blood so that when the mosquito draws blood from the host, it takes up the virus with the blood. The mosquito then carries the virus with it and transfers the virus to a new host in its saliva, which it uses to prevent blood clotting as it draws blood out of its prey.

Ross River virus symptoms include: rashes on the torso and limbs; joint pain (similar to arthritis); tiredness and weakness; joint swelling and stiffness; flu-like symptoms (with fever, chills and headache); muscle aches and pain; and swollen lymph glands. People can recover from the virus over a few weeks; however, some people take more than a year before they fully return to good health. The virus is diagnosed via a blood test and there is no specific treatment available.



Use a dictionary to record the definition of a 'virus'.



A virus carries out specialised functions to enable it to survive and reproduce. It must have a host to survive and it requires a vector to be transferred from one host to establish itself in a new host. If the virus is unable to reproduce in the new host, the host is known as a 'dead host' and the virus can not be transferred to a vector.



Draw a diagram to show the transmission of Ross River virus.



If many people in the community were to contract Ross River virus, what do you think that would mean for our economy?



Provide suggestions to keep the community safe from vector diseases such as Ross River virus.

- _____
- _____
- _____



Use the knowledge you have gained to develop a community education package about the risks involved with mosquito bites!

FUN FACTS

Ross River virus was first named in 1959.

It was first discovered in mosquitoes trapped near Ross River near Townsville.

This virus must be reported to the Department of Health.

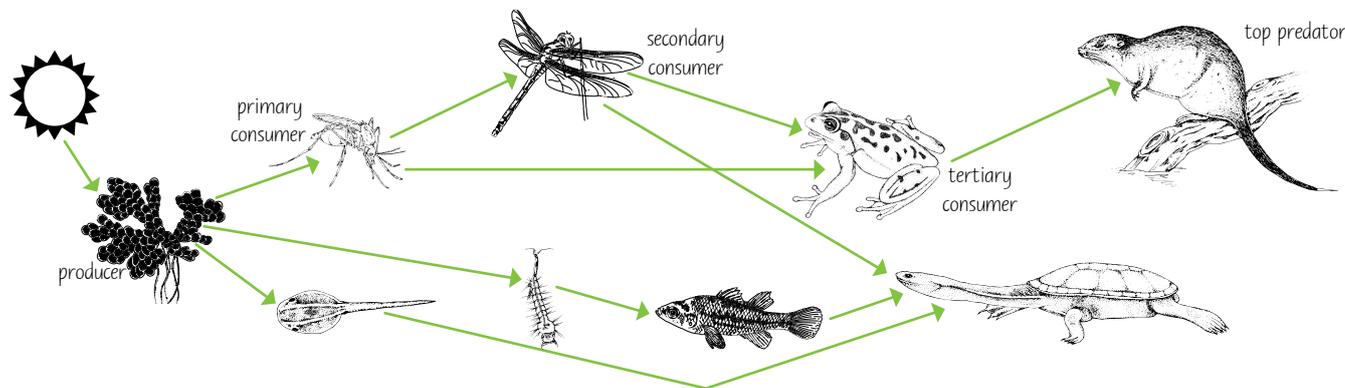
National Curriculum Links | Multi-cellular organisms contain systems of organs that carry out specialised functions that enable them to survive and reproduce (ACSSU150) Plan and use health practices, behaviours and resources to enhance the health, safety and wellbeing of their communities (ACPP5077)



Mozzie Wise - Interdependent Communities

 Read this paragraph.

All living things require energy to survive, whether it be from the sun, nutrients in the soil or water or nutrients from another living thing. The larger the living thing, the more energy it requires. Energy moves through an ecosystem from the very smallest nonliving particles such as phosphorus and nitrogen found in the soil to the very largest apex predator. The cycle is a continuous flow of energy that carries on even after death when remains of living things return to the soil to be taken up into the cycle once again by producers and detritivores. These cycles of energy can be depicted in a food web which shows the interdependence within a particular community.



The balance within any community is essential for the survival of each member. Too much or not enough of any particular component can upset the balance and affect the success of the community. For example, dragonflies are one of the main consumers of mosquitoes at every stage of their life cycle. Thus if dragonfly numbers are reduced, then the numbers of mosquitoes would increase. This would cause problems for people living close to this particular community.

 Mosquitoes are part of the interdependent community above. Many people consider mosquitoes to be a pest and don't understand their value. Using the information above and your own research, put forward an argument to convince a mosquito-hater that mosquitoes play an important role in the energy flow of our ecosystems.

RESEARCH NOTES

MY ARGUMENT

 Test your argument out on a 'mosquito-hating person'. Can you convince them that mosquitoes are important?



FUN FACTS

Dragonfly nymphs eat mosquito larva and pupa.

Only female mosquitoes take a blood meal to produce eggs.

Mosquitoes thrive in stagnant and polluted water.



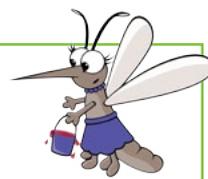
Mozzie Wise - Healthy decisions

 Read this paragraph.

Some species of mosquito are vectors of disease which can be transmitted to humans via mosquito bites. We know that mosquitoes are more active in the warmer months and at dawn and dusk. We also know that mosquitoes require water for the majority of their life cycle. We also know that female mosquitoes need to take a blood meal to receive the necessary proteins for egg development. With all of this knowledge, the Department of Health and Local Governments can make decisions about community health practices and inform the public about best practice. Various advertising campaigns, educational brochures and community signage at appropriate locations are used to express this public message.

 Use the Internet to locate some examples of community education about mosquitoes spreading disease. What are the major points of knowledge that you notice across the information? Record them here.

 Evaluate the messages you have observed and the knowledge you have gained to develop your own education campaign informing the public about the risks associated with mosquito bites. Show your draft ideas here.



 Explain how you will expose the masses to your campaign.

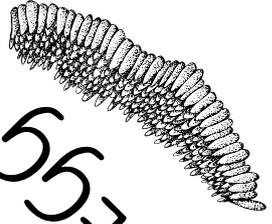
 Create your campaign and share it as extensively as you can.

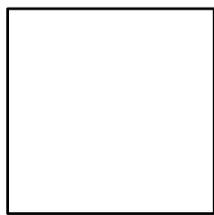
FUN FACTS	Mosquito-borne diseases were first noted when the trading of slaves began in the 15th Century.	Yellow and Dengue fevers were the first two diseases known to be spread by mosquitoes.	More than 600 000 people die from Malaria each year!
------------------	--	--	--

National Curriculum Links | Evaluate and apply health information from a range of sources to health decisions and situations (ACPPS095) Plan, implement and critique strategies to enhance the health, safety and wellbeing of their communities (ACPPS096)

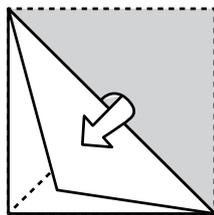


Mozzie Wise - Reducing the bite

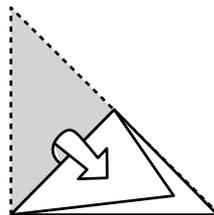
 <p>LARVA</p>	<p>4</p> <p>Check all fly screens are free from holes.</p>	<p>3</p> <p>Change outdoor lights from white to yellow.</p>	 <p>EGG</p>
<p>5</p> <p>Use fans outdoors to help keep mosquitoes away at BBQs.</p>	<p>6</p> <p>Try to avoid being outdoors during peak mosquito times (dusk and dawn).</p>	<p>8</p> <p>Wear light coloured clothing when outdoors during dusk and dawn.</p>	<p>2</p> <p>Remove all standing water from around your home.</p>
<p>9</p> <p>Apply a mosquito repellent to your skin.</p>	<p>7</p> <p>Wear long sleeves and long pants to cover as much skin as possible.</p>	<p>1</p> <p>ADULT</p> 	<p>5</p> <p>Use fans outdoors to help keep mosquitoes away at BBQs.</p>



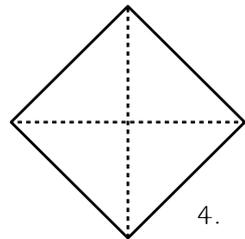
1.



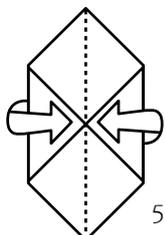
2.



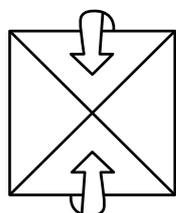
3.



4.



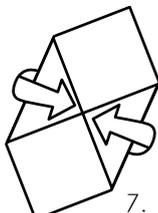
5.



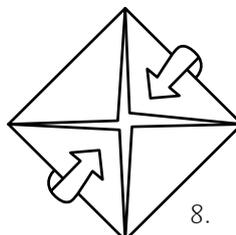
flip over



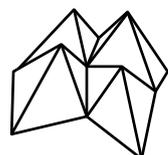
6.



7.



8.



9.



Mozzie Wise - The Great Mozzie Checkup



Look around your home and school.
Tick the box when you have completed the action.

Make sure puddles aren't being made from sprinklers or rain in your garden.	H	S
Get rid of all tins, jars, tyres and other items that may hold water.	H	S
Check your yard to see if there is any water laying around.	H	S
Keep native Western Pygmy Perch in ponds and plant local native plants to attract frogs and dragonflies—they eat mosquitoes!	H	S
Put sand in pot plant saucers to soak up water.	H	S
Get rid of plants which store water in the bottom of their leaves.	H	S
Keep grassy areas mowed short and get rid of weeds.	H	S
Make sure the wind can pass through areas.	H	S
Keep your swimming pool clean and healthy.	H	S
Make sure pool covers do not collect water.	H	S
Make sure drains are clear and clean.	H	S
Make sure leaves do not collect in gutters and downpipes.	H	S
Make sure drains are clean and clear of leaves and rubbish.	H	S
Fit fly screens on all windows and doors.	H	S
Make sure there are no holes in the fly screens on doors and windows.	H	S
Empty bird baths once a week.	H	S
Empty your pet's drinking water daily.	H	S
Turn over boats, canoes and dinghies; so they can't fill with water.	H	S
Make sure tyre swings have holes in the bottom to drain water.	H	S
Put away outside toys so they don't collect water.	H	S
Check that outside lights are yellow. Insects don't like yellow lights!	H	S



It is a good idea to complete this checklist regularly during the warmer months. Make a note on your calendar when you will go through the checklist again.



Mozzie Wise - Worksheet Answers

Year 7

Everyday (14A) negative (6D) impact (13A)
 natural (11A) nutrients (9D) phosphorus
 (7A) nitrogen (1D) waterways (4D) algae
 (12D) killing (3A) predators (8D) mosquito
 (5D) larvae (10D) pupae (2D) oxygen (15A)

Fertilisers

Grass clippings

Leaves (especially deciduous)

Soil

Dog faeces

Detergents

Leakages from septic tanks

Bread fed to water birds

Intensive agriculture

Industrial sources

Teacher check

acknowledge that prevention is the best approach by reducing breeding locations and avoiding mosquito bites. These messages also need to be clear in their education package.



**MOZZIE
Wise**

Year 8

virus: an ultramicroscopic (20 to 300 nanometre in diameter), metabolically inert, infectious agent that replicates only within the cells of living hosts, mainly bacteria, plants and animals

Teacher check diagram which should show a mosquito biting an animal and then a human

Increase in disease throughout a population will mean lost efficiency for any business, it could slow or interfere with production or meeting deadlines, which in turn could mean that products do not make it to market on time; resulting in lost sales and revenue for the business.

Teacher check; however, students should offer suggestions to prevent getting bitten by mosquitoes.

Year 9

Teacher check; however, students should be pointing out that mosquitoes provide a food source for other animals. It is only when the balance is out that mosquitoes generally become a problem to humans.

Year 10

Teacher check; however, students should



South East Regional Centre for Urban Landcare

1 Horley Road, Beckenham, WA, 6107

P | 9458 5664

W | www.sercul.org.au



61 Broun Avenue, Morley, WA, 6053

P | 9282 0622

W | www.bayswater.wa.gov.au