

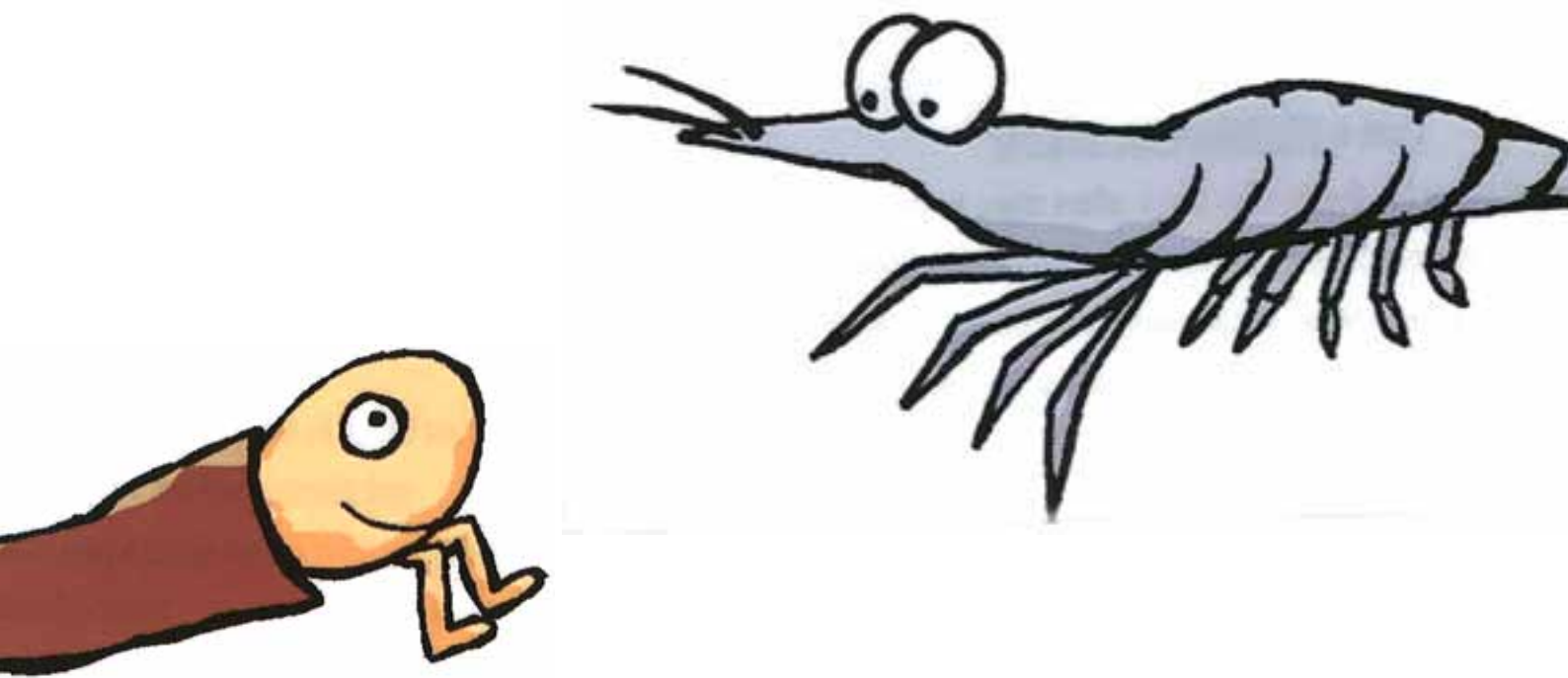


NRM Education

Supporting environmental sustainability in schools.

Critters Galore - Early Years Teacher Resource

Actively engage students in learning about aquatic macroinvertebrates.

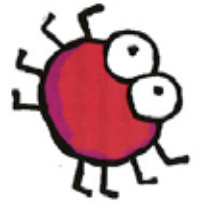




Critters Galore - Early Years

Introduction

Critters Galore actively engages students in learning about aquatic macroinvertebrates, their habits, features and reliance on healthy waterways. Water samples containing live specimens are brought into the classroom to familiarise students with macroinvertebrates they are likely to find and techniques for sorting and identifying them. This session closely relates to water quality monitoring by providing an introduction to one area of biological monitoring.



Aims

This session aims to develop:

- Understanding of healthy and unhealthy waterways and some factors which influence this.
- Understanding of what a macroinvertebrate is, where they live and what they feed on.
- Understanding of macroinvertebrates as indicators of water quality.
- Skills in identifying local macroinvertebrates.



Activity Classroom session 50 minutes

Students learn what macroinvertebrates are, where they live, why they're important to aquatic environments and what they indicate to us about water quality. Students are shown a poster, which features contrasting habitats, one healthy side and an unhealthy side. They are asked to describe the differences between the healthy and unhealthy habitats.



Pictures and information about common macroinvertebrates and their features are presented to the students. They read information about the sensitivity and tolerance of each macroinvertebrate to pollution. Students then consider habitat requirements and select appropriate places to stick macroinvertebrates onto the habitat poster.



Students are also given the opportunity to sort through a water sample containing live macroinvertebrate specimens likely to be found in their local river system. They can then observe the features and behaviours of each specimen and use a key to identify the macroinvertebrates they have found.





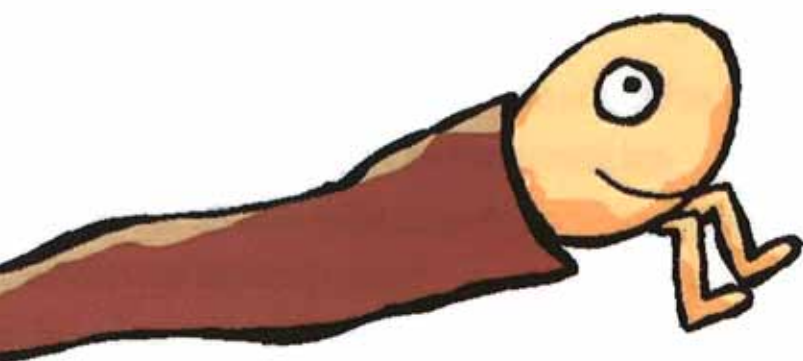
Links to the SACSA Framework

The Critters Galore session most closely aligns with the Learning Areas of Science and Society and Environment and primarily fosters the Essential Learnings of Interdependence and Thinking.

The Other Learning Opportunities listed also encourage links to additional Learning Areas and Essential Learnings as part of a holistic approach to learning about catchments and health of waterways. Students should also be encouraged to communicate their understanding through written pieces, artwork or other media.

| Learning Area | Strand | Key Idea |
|-------------------------|------------------------------|--|
| Science | Earth and Space | Children collect, organise and share information online and offline about the aspects of their personal world that enable them and their family to live. Id · T · C · KC1 · KC2 |
| Science | Life Systems | Children investigate the features and behaviours of plants and animals through direct and virtual experience. They explain, and share with others, their understandings of the connections between living things, and between themselves and natural environments. In · T · KC1 · KC2 |
| Society and Environment | Time, Continuity and Change | Children begin to develop skills in analysing and representing the concept of time – present, past and future. F · T · C · KC1 · KC2 |
| Society and Environment | Place, Space and Environment | Children develop an understanding of the concepts of sustainability, conservation and care of resources and places, and take action consistent with these. They assess the ways in which values affect behaviour. F · In · T · KC1 · KC6 |

South Australian Curriculum, Standards and Accountability Framework (SACSA) 2001, Adelaide: Department of Education, Training and Employment.





Key Competencies

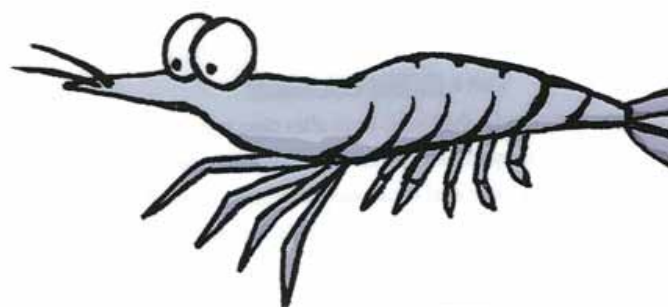
Participation in Critters Galore and the Other Learning Opportunities will encourage the learner to develop the following skills in relation to SACSA's Key Competencies:

- Sort macroinvertebrate species for identification purposes (KC1).
- Communicate ideas and information gathered through researching a macroinvertebrate species (KC2).
- Plan and organise a research project (KC3).

Other Learning Opportunities

These learning opportunities encourage the learner to actively use information and knowledge gained in Critters Galore to further their understanding of macroinvertebrates and catchment health.

- If you could be an aquatic macroinvertebrate, which would you most like to be and why?
- Study the features of your favourite macroinvertebrate and draw a picture of it. You could also construct your favourite macroinvertebrate out of clay, plasticine or other material.
- Create a macroinvertebrate environment in the classroom. Display drawings of macroinvertebrates or dress up and live the life of a macroinvertebrate for a day.
- Imagine you are a macroinvertebrate. Write a story about one day in your life. Describe the place where you live, your daily activities and the dangers you face.
- Select 5 macroinvertebrates of your choice and compare their features. How are they similar? What makes them different?
- Write and perform a macroinvertebrate role-play, exploring what happens to macroinvertebrates after certain events such as a flood or chemical spill.
- Construct a wonderword, crossword or jumbled words puzzle using words relating to aquatic macroinvertebrates. Give your puzzle to a classmate or another class to solve.
- Describe how learning about macroinvertebrates has changed your thinking about water pollution and water care. What can you do locally to protect macroinvertebrates?
- Draw a diagram to illustrate a macroinvertebrate's place in the food chain. Take Action!





- Make your own Artificial Substrate Sampler (see instructions in the Waterwatch Manual) and place it at your Waterwatch site. A substrate trap sits on the bottom of your waterway for around 6 weeks allowing macroinvertebrates to move in and make the substrate their home. Next time you are at your site, pull it out to collect a sample of macroinvertebrates to identify.
- Many people in the community don't realise there are lots of little critters in our waterways or what they can tell us about catchment health. Display pictures or posters of the macroinvertebrates you have studied to tell the community about your findings

Resources

These resources will help your investigations of macroinvertebrate features and behaviours and their significance as indicators of water quality.

Books

- Gooderham J & Tsyrlin E (2002) *The Waterbug Book: A Guide to the Freshwater Macroinvertebrates of Temperate Australia*, CSIRO Publishing.
Ph: 1800 645 051 Fax: (03) 9662 7555
- Winters B (1998). *Australian Guide to Pondlife*, Gould League of Victoria Inc.
Ph: (03) 9532 0909 Fax: (03) 9532 2860

Posters

- Aquatic Macroinvertebrate Identification Chart Contact your NRM Education Coordinator for a free copy.

CDs

- Hodson A (2002) *A Guide to Minibeasts of the Wetland*, Urrbrae Wetland.
Ph: 8272 6010

Macroinvertebrate illustrations thanks to AMLR NRM Education and students of Renmark Junior and Renmark North Primary Schools.



Contact Details:

Upper Murray

NRM Education Coordinator

Natural Resources Centre

2 Wade Street, Berri
SA 5343

Ph. 08 8580 1800

Mob. 0418 822 734

Fax. 08 8582 4488

Lower Murray

NRM Education Coordinator

Natural Resources Centre

110A Mannum Road, Murray Bridge
SA 5253

Ph. 08 8532 9100

Mob. 0409 693 057

Fax. 08 8531 1843