

# Teacher Notes

## Themes

- Lifecycles of insects
- Habitats of insects
- Climate change

## Key learning outcomes

- Be able to describe the lifecycle of the Christmas beetle
- Learn about the Christmas beetle's habitat
- Explain what climate change means, and how it is changing our environment
- Identify ways in which we can slow down climate change

## Key curriculum areas

- **Science:** Science Understanding (Biological sciences, Earth and space sciences); Science as a Human Endeavour; Science Inquiry Skills
- **English:** Language; Literacy
- **Cross-curriculum Priority:** Sustainability
- **The Arts:** Visual Arts

## Publication details

*Where Are All the Christmas Beetles?*

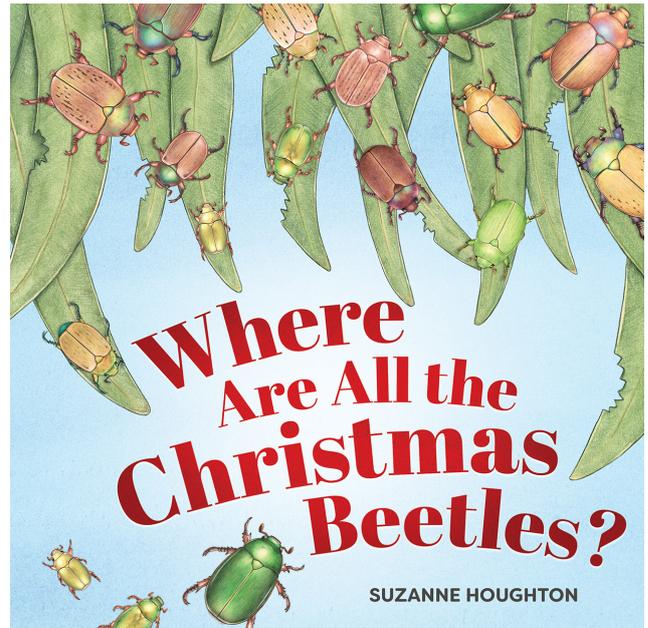
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# Where Are All the Christmas Beetles?

Suzanne Houghton

## About the book

Sparkling, brightly coloured Christmas beetles usually appear in the heat of December – a sign that the festive season has begun.

But recently they have been hard to find. We aren't seeing them in the eucalyptus trees, or dancing around lights at night. These shimmering, shiny beetles are disappearing from our summers. Where have they gone?

*Where Are All the Christmas Beetles?* takes us on a lyrical discovery of these fascinating creatures and explores the possible reasons for their decrease in numbers.

## Recommended for

Readers aged 5 to 9 (Years 1 to 4)



PUBLISHING

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## About the author/illustrator

Suzanne Houghton is an award-winning author and illustrator of several books, including *Wonderful Wasps* and *Life in a Hollow*. She loves nothing more than to splash colour on a page and bring joy to readers.

## Pre-reading questions or activities

### Christmas beetle habitat

As part of class work related to Christmas, talk about Christmas beetles. What do students know about them? Have they ever seen or heard them at their house? Why do they appear around Christmas time? Where do students think they are for the rest of the year?

### Climate change

Ask students what they know about climate change. Can they think of anything that has happened in Australia, or in other parts of the world, that can be attributed to climate change?

## Discussion questions

### Science

1. Look at pages 4–5 with students, and point out the different stages of the lifecycle that are depicted. Use the information about the lifecycle at the end of the book to supplement this discussion. What are they called at each stage of the lifecycle?
2. Are Christmas beetles found in the students' area? What features of the local area might attract them? (*For example, eucalyptus trees, bushland, pastures.*)
3. Discuss how climate change might be causing there to be fewer Christmas beetles. The book gives some clues about this; what are they?

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## English

1. What can students tell you about the way this story is written? Talk about rhyming words and how they are arranged.
2. Read the text aloud as a class and have students listen to the rhythm of the stanzas. Discuss the way the rhythm is consistent throughout. How does this relate to poems?

## Sustainability

1. The book suggests a way we might help to bring Christmas beetles back in greater numbers. (*See page 27; planting new trees to regenerate habitat and food source.*) How might this help increase their numbers? What other ways might help?

## The Arts

1. Look at the images of other beetles on page 8. How would students describe the style used for these beetles? (*They are realistic depictions of beetles.*) How does this style differ from the artistic style used in some other books the students know? Why would this realistic style be used in this book?

# Activities

## Science

### *Lifecycle of the Christmas beetle*

Create a presentation or poster featuring the lifecycle of the Christmas beetle. Each stage of the lifecycle should be drawn and labelled, with a brief explanation of that stage. Present your findings to the class as a group.

### *Identify a Christmas beetle*

(*This activity is limited to late November and December.*)

Download the Australian Museum's Xmas Beetles ID app: <https://australian.museum/visit/mobile-apps/>.

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In the evening, go hunting for Christmas beetles in your local area. Look around your garden, and around lights. If you find one, take a photo of it and browse the Xmas Beetles ID app to look for it. Write a report about your Christmas beetle, containing as many details as possible from the app, and include the photo you took.

If you have no luck finding your own Christmas beetle, choose one from the app on which to write a report.

## Quiz

Answer the questions in the quiz on page 6.

## Answers:

1. Early in the Australian summer (late November and December)
2. Underground, in the soil
3. Roots and rotting leaves
4. Green, gold, violet
5. In trees, on the ground near trees, flying around lights at night
6. Floods, bushfires, drought, loss of habitat
7. Birds, possums and some wasps, which eat Christmas beetles
8. Protect our natural woodlands, grasses and native trees; avoid using pesticides in our gardens; plant native ground cover

## English

### Rhyming words

Put students in groups and have them identify and list the words in the book that rhyme.

Then ask students to choose a pair of rhyming words and try to write their own rhyming story using that pair of rhyming words.

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## Sustainability

### *Research project*

As a small group, research an effect of climate change that is reducing the numbers of the Christmas beetle. Choose something from the book, or something else you are aware of, to research (for example floods, bushfires, drought, reduced habitat). Find out the following:

- How does climate change cause the thing you have chosen?
- How is it affecting the Christmas beetle?
- What or who else in the environment might this be affecting?
- What can we do as a society, and as governments, to help solve this problem?

Present your research project to the class. You might want to create a PowerPoint presentation to show the class, or create a poster and talk through each section of the poster.

## The Arts

### *Christmas beetle wrapping paper*

Design your own Christmas wrapping paper or Christmas cards (or simply an artwork, to encourage cultural diversity) featuring the Christmas beetle.

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## Quiz

Read the book *Where Are All the Christmas Beetles?* and then answer the questions below. (Answers are on page 4 of these notes.)

1. Around what time of year do we find Christmas beetles?

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2. Where do they live in the cooler months of the year?

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3. What food do they eat during those cooler months?

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4. What colours do these beetles reflect?

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5. Where can you usually find Christmas beetles when they emerge?

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6. What are some of the things that might be reducing the number of Christmas beetles we are seeing in our backyards?

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7. What other animals might need Christmas beetles to survive?

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8. What is something the book tells us we can do to help the Christmas beetle survive?

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# Teacher Notes

## Australian Curriculum Links (Version 8.4)

Year level	Learning area: Science	Other learning areas
Year 1	<p><b>Science Understanding: Biological sciences</b></p> <ul style="list-style-type: none"> <li>Living things live in different places where their needs are met (<a href="#">ACSSU211</a>)</li> </ul> <p><b>Science Inquiry Skills: Planning and conducting</b></p> <ul style="list-style-type: none"> <li>Participate in guided investigations to explore and answer questions (<a href="#">ACIS025</a>)</li> </ul> <p><b>Science Inquiry Skills: Communicating</b></p> <ul style="list-style-type: none"> <li>Represent and communicate observations and ideas in a variety of ways (<a href="#">ACIS029</a>)</li> </ul>	<p><b>English: Literacy</b></p> <ul style="list-style-type: none"> <li>Engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions (<a href="#">ACELY1656</a>)</li> <li>Create short imaginative and informative texts that show emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams (<a href="#">ACELY1661</a>)</li> <li>Write using unjoined lower case and upper case letters (<a href="#">ACELY1663</a>)</li> </ul> <p><b>Visual Arts</b></p> <ul style="list-style-type: none"> <li>Explore ideas, experiences, observations and imagination to create visual artworks and design, including considering ideas in artworks by Aboriginal and Torres Strait Islander artists (<a href="#">ACAVAM106</a>)</li> <li>Create and display artworks to communicate ideas to an audience (<a href="#">ACAVAM108</a>)</li> </ul>
Year 2	<p><b>Science Understanding: Biological sciences</b></p> <ul style="list-style-type: none"> <li>Living things grow, change and have offspring similar to themselves (<a href="#">ACSSU030</a>)</li> </ul> <p><b>Science Inquiry Skills: Planning and conducting</b></p> <ul style="list-style-type: none"> <li>Participate in guided investigations to explore and answer questions (<a href="#">ACIS038</a>)</li> </ul> <p><b>Science Inquiry Skills: Communicating</b></p> <ul style="list-style-type: none"> <li>Represent and communicate observations and ideas in a variety of ways (<a href="#">ACIS042</a>)</li> </ul>	<p><b>English: Literacy</b></p> <ul style="list-style-type: none"> <li>Rehearse and deliver short presentations on familiar and new topics (<a href="#">ACELY1667</a>)</li> <li>Write legibly and with growing fluency using unjoined upper case and lower case letters (<a href="#">ACELY1673</a>)</li> <li>Create short imaginative, informative and persuasive texts using growing knowledge of text structures and language features for familiar and some less familiar audiences, selecting print and multimodal elements appropriate to the audience and purpose (<a href="#">ACELY1671</a>)</li> </ul> <p><b>Visual Arts</b></p> <ul style="list-style-type: none"> <li>Explore ideas, experiences, observations and imagination to create visual artworks and design, including considering ideas in artworks by Aboriginal and Torres Strait Islander artists (<a href="#">ACAVAM106</a>)</li> <li>Create and display artworks to communicate ideas to an audience (<a href="#">ACAVAM108</a>)</li> </ul>
Year 3	<p><b>Science as a Human Endeavour: Use and influence of science</b></p> <ul style="list-style-type: none"> <li>Science knowledge helps people to understand the effect of their actions (<a href="#">ACSHE051</a>)</li> </ul> <p><b>Science Inquiry Skills: Communicating</b></p> <ul style="list-style-type: none"> <li>Represent and communicate observations, ideas and findings using formal and informal representations (<a href="#">ACIS060</a>)</li> </ul>	<p><b>English: Language</b></p> <ul style="list-style-type: none"> <li>Understand that successful cooperation with others depends on shared use of social conventions, including turn-taking patterns, and forms of address that vary according to the degree of formality in social situations (<a href="#">ACELA1476</a>)</li> </ul> <p><b>English: Literacy</b></p> <ul style="list-style-type: none"> <li>Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations (<a href="#">ACELY1676</a>)</li> <li>Plan and deliver short presentations, providing some key details in logical sequence (<a href="#">ACELY1677</a>)</li> <li>Plan, draft and publish imaginative, informative and persuasive texts demonstrating increasing control over text structures and language features and selecting print, and multimodal elements appropriate to the audience and purpose (<a href="#">ACELY1682</a>)</li> <li>Write using joined letters that are clearly formed and consistent in size (<a href="#">ACELY1684</a>)</li> </ul>

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Year level	Learning area: Science	Other learning areas
Year 4	<p><b>Science Understanding: Biological sciences</b></p> <ul style="list-style-type: none"> <li>Living things have life cycles (<a href="#">ACSSU072</a>)</li> </ul> <p><b>Science Understanding: Earth and space sciences</b></p> <ul style="list-style-type: none"> <li>Earth's surface changes over time as a result of natural processes and human activity (<a href="#">ACSSU075</a>)</li> </ul> <p><b>Science as a Human Endeavour: Use and influence of science</b></p> <ul style="list-style-type: none"> <li>Science knowledge helps people to understand the effect of their actions (<a href="#">ACSHE062</a>)</li> </ul> <p><b>Science Inquiry Skills: Communicating</b></p> <ul style="list-style-type: none"> <li>Represent and communicate observations, ideas and findings using formal and informal representations (<a href="#">AC SIS071</a>)</li> </ul>	<p><b>English: Language</b></p> <ul style="list-style-type: none"> <li>Incorporate new vocabulary from a range of sources into students' own texts including vocabulary encountered in research (<a href="#">ACELA1498</a>)</li> </ul> <p><b>English: Literacy</b></p> <ul style="list-style-type: none"> <li>Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular purposes and audiences (<a href="#">ACELY1689</a>)</li> <li>Plan, draft and publish imaginative, informative and persuasive texts containing key information and supporting details for a widening range of audiences, demonstrating increasing control over text structures and language features (<a href="#">ACELY1694</a>)</li> <li>Re-read and edit for meaning by adding, deleting or moving words or word groups to improve content and structure (<a href="#">ACELY1695</a>)</li> <li>Write using clearly-formed joined letters, and develop increased fluency and automaticity (<a href="#">ACELY1696</a>)</li> </ul>
All	<p><b>Cross-curriculum Priority: Sustainability Systems</b></p> <ul style="list-style-type: none"> <li>All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival. (OI.2)</li> <li>Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems. (OI.3)</li> </ul> <p><b>Futures</b></p> <ul style="list-style-type: none"> <li>The sustainability of ecological, social and economic systems is achieved through informed individual and community action that values local and global equity and fairness across generations into the future. (OI.6)</li> <li>Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments. (OI.7)</li> <li>Designing action for sustainability requires an evaluation of past practices, the assessment of scientific and technological developments, and balanced judgements based on projected future economic, social and environmental impacts. (OI.8)</li> <li>Sustainable futures result from actions designed to preserve and/or restore the quality and uniqueness of environments. (OI.9)</li> </ul>	

## Related books from CSIRO Publishing

- *Bee Detectives* (<https://www.publish.csiro.au/book/7962>)
- *Life in a Hollow* (<https://www.publish.csiro.au/book/8076>)
- *Phasmid: Saving the Lord Howe Island Stick Insect* (<https://www.publish.csiro.au/book/7226>)
- *The Butterfly and the Ants* (<https://www.publish.csiro.au/book/7965>)
- *Wonderful Wasps* (<https://www.publish.csiro.au/book/8057>)

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There is plenty of free content that can be used at school or home to support learning.

## Double Helix Extra

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## Other CSIRO resources

CSIRO has developed and delivered a broad range of high-quality STEM education programs and initiatives for nearly 40 years. Our programs aim to inspire the pursuit of further STEM education among students and the community, to equip the emerging workforce with tomorrow's skill sets, and to strengthen collaboration between industry and classrooms across Australia. For more information visit: <https://www.csiro.au/en/Education>



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