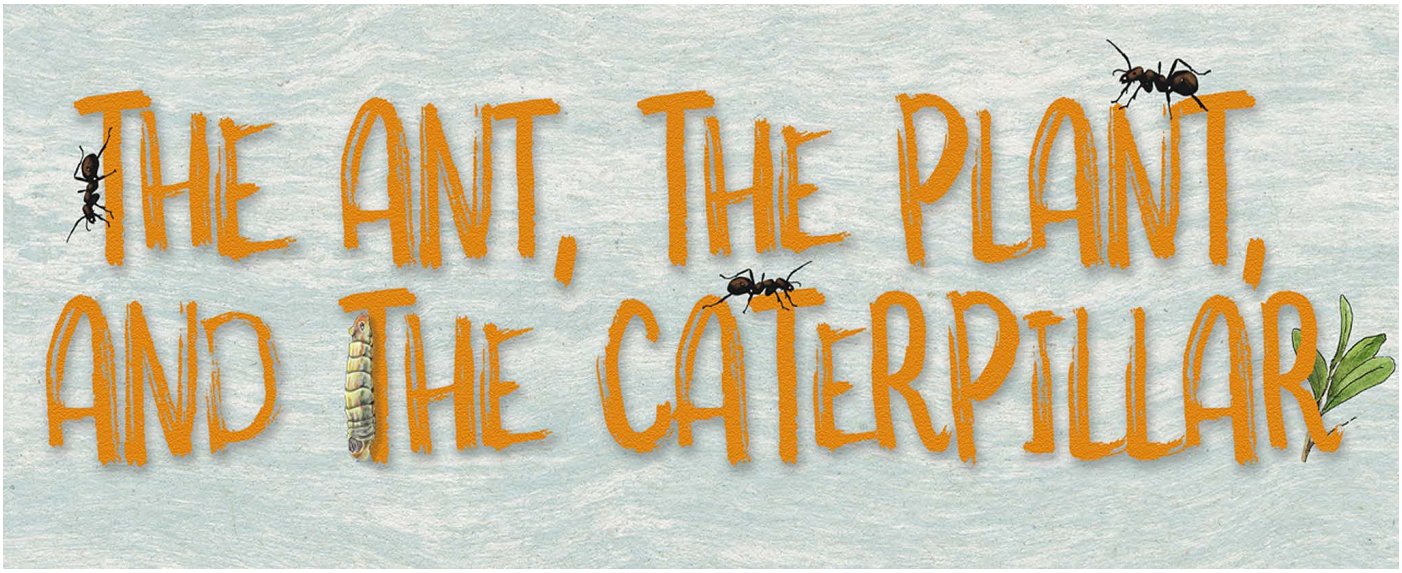
TEACHER NOTES



Written by

Karen Carter

THEMES

- Biodiversity
- Sustainability
- Conservation
- Biology (Symbiosis- Mutualism)
- Literacy, including hybrid texts ((narrative non-fiction), and comprehension questions.

SYNOPSIS

Book overview

While symbiotic relationships are somewhat common in nature, each relationship is unique and contributes to maintaining a biodiverse ecosystem.

The Ant, the Plant, and the Caterpillar picture book has been written and illustrated to inform children aged between 3-8 about the Eltham Copper Butterfly life cycle and its unique dependent relationship with the Notoncus Ant and the Sweet Bursaria plant.

There are few ongoing education programs for the Endangered Eltham Copper Butterfly (Endangered under the DSE Advisory List of Threatened Invertebrate Fauna in Victoria 2009) and its symbiotic relationship with a particular ant and plant species.
The book endeavours to bridge this environmental communication gap in a creative, light-hearted, friendly and engaging manner for preschool and primary school-aged children, their carers, parents and educators.

The book is written to evoke emotion while building new knowledge; it employs a contemporary botanical illustration style that represents the Australian bush, and is colourful and engaging while remaining true to scientific accuracy.

The symbiotic relationship between the ECB caterpillar, the Notoncus ant and the Sweet Bursaria plant (Bursaria spinosa) is portrayed through the lens of friendship between two main characters, Lucida, the caterpillar/butterfly and Nathan, the Notoncus Ant. It demonstrates the value of friendship, cooperation and how caring for one another reaps great rewards. At the same time, exhibiting how vital symbiosis is for this particular species' survival.
It reminds us that plants are the key to all wildlife (and humans') survival. Plants are often regarded as secondary citizens in conservation. In this story, the woodland habitat and the Sweet Bursaria plant are central to the survival of this butterfly and ant species.

It aims to inform, develop empathy towards plant and insect species while building connection and stewardship towards the natural environment. It will demonstrate how ecosystems work in nature and the importance of preserving biodiversity, aiming to create pro-environmental behaviour in children and the broader community.

AUTHOR

About the writer and Illustrator

Karen Carter is the writer and illustrator of the book. Karen was born in Perth, Western Australia, and resides in Melbourne, Victoria. She is the mother of two children. She is an academic, graphic designer and illustrator who began her career as a commercial artist in publishing. She has worked in advertising, design and communications, spending much of her career in the university sector as a lecturer in design, advertising and communications at James Cook University, Sunshine Coast University in Queensland and RMIT University in Melbourne, Victoria.

Karen has shifted her focus towards working more on ethical causes, drawing and writing about the natural world. Combining her creative and academic knowledge, Karen has contributed to educational and communication campaigns for social awareness, conservation, and sustainability. While her artistic skills are represented mainly in botanical illustration now. She has taught botanical illustration with the Botanical Arts Society of the Sunshine Coast and Brisbane Botanical Gardens in Queensland. A Master's degree in Internet/Media studies is currently undertaking a PhD in Environmental Communications.

Karen's love for nature and the compulsion to aid in building community awareness of environmental issues led to this recent publication, The Ant, the Plant and the Caterpillar, a picture book for children. The story was born out of a need to address an environmental communication gap whilst her daughter was at preschool. After exploring many communication avenues with the Banyule City Council to aid them in raising awareness of this endangered butterfly species, Karen determined that a picture book would be the most effective approach. She received an environmental grant in 2021-22 to produce the book for Banyule's Preschools and Primary schools.

Karen spends much of her time in the Eltham Copper Butterfly nature reserve close to her home, where she draws and photographs the indigenous plants, insects and wildlife that inhabit the reserve.

LEARNING OUTCOMES

Age Groups

RECOMMENDED FOR

The teaching notes have been written in alignment with the Australian Curriculum. However, the general questions and comprehension are suitable for ages 3-8.

3+ Early Years Learning Framework

FOCUS AREAS AND LEARNING OUTCOMES

- Outcome 1: Strong sense of identity; in relation to others with care, empathy and respect
- Outcome 2: Connection and contribution to their world
- Outcome 4: Confident and involved learning

5+ Foundation – 2

KEY FOCUS AREAS

- Literacy Stages: Foundation to Level 2
- Science Stages: Foundation to Level 2
- Curriculum priority – Biology & Sustainability

QUESTIONS & PLAY

3+ EYLF

3+ EYLF

Begin with the cover

- Can you point to the title? (Pointing to the title) What is the title of the book?
- What do you think this story will be about?
- What might happen in the story?
- What do we call the writing on the back of the book? (Blurb)
- What does the blurb tell us?

During the reading of the book:

- Have you heard of the Eltham Copper Butterfly before?
- What is happening in the pictures? What has happened so far?
- What might happen next?
- How might the story end? What sort of character is Nathan? Is he friendly/ mean/nice...?
- Is Nathan a special friend to Lucida? Why?
- Where do Nathan and Lucida live?

At the end of the book:

- Did you like this book? Why? (Encourage children to develop their opinion about the book by encouraging them to explain their reasons)
- What was your favourite part of the book? Why?
- What was the book's most interesting/happy/scary/ exciting part? Can you find it?
- What sort of character was Lucida?

What can we do to help the Eltham Copper Butterfly?

- How can we help the Butterflies' bush home survive? Discuss ideas.

Activities

Printable activity sheets can be found on the authors website; EYLF Activities link.

- Role play; either using costumes or printing out the characters (supplied activities sheets on the website) and sticking them on sticks to play outside in the garden. (Keeping in mind, many ant characters are needed to protect the caterpillar).
- Recall the lifecycle of the ECB; Cut out and decorate the room with the printable bunting supplied on the website.
- Memory Game: Cut out and play with the printable discs supplied on the website.

QUESTIONS

5+ FOUNDATION – 2

Begin with the cover

- Describe what can be seen on the front cover illustration.

- Look at the botanical illustrations on the orange end pages, discuss the scientific names, and explain why scientists classify species with Latin names.

- Read the blurb on the back cover. Discuss the dependent (Symbiotic) relationship between the ECB caterpillar, the Notoncus ants, and the Sweet Bursaria plant, and describe how relationships in nature may be mutually beneficial. (Give another symbiosis example, i.e the Egyptian Plover bird sits in the open mouth of a crocodile to clean the meat out of their teach to prevent infection whilst getting a feed from the crocodile teeth).

- Discuss what an endangered species. And how preserving species contributes to a healthy and diverse ecosystem, ultimately sustaining biodiversity.

After Reading the book

GENERAL QUESTIONS

(Extra questions can be found on the last page of the book).

- What insects feature in the book? What plant features in the book?
- What birds or animals are there in the book?
- Have you heard of the Eltham Copper Butterfly before?
- What things can you find in the book that are uniquely Australian?
- What is the scientific name of the Eltham Copper Butterfly?
- How big is the Eltham Copper Butterfly? (size in book)
- Do you have a favourite part of the story? Why?

COMPREHENSION

5+ Foundation - 2

Comprehension

- What is the title of the book
- Who is Lucida? Who is Nathan?
- Where do they live?
- What plant does the caterpillar and the butterfly need to survive?
- Where are the Eltham Copper Butterfly eggs laid?
- What other plants or trees are in their habitat?
- Who protects the caterpillar?
- Was the caterpillar in danger?
- Who are the predators of the caterpillar?
- What reward does the ant receive for protecting the caterpillar?
- When does the caterpillar pupate?
- What colours is the Elham Copper Butterfly?

Understanding

- Why does the caterpillar live underground with the ants?
- Why do the caterpillars only come out at night to feed on the Sweet Bursaria plant?
- Why is the ant so crucial to the caterpillar?
- What happens when the ant and the butterfly say goodbye?
- What is an indigenous plant?
- Why do the Eltham Copper Butterfly woodlands need to be protected?

Analysis

- Why is it so important that we take better care of nature and habitats like the home of the endangered Eltham Copper Butterfly?

Evaluating

- What could we do to help conserve the ECB habitat?
- What could we do to help conserve endangered species?

ACTIVITIES cont.

5+ Foundation - 2

Choose an activity appropriate for level.

LIFECYCLE PROJECT

Teachers print out 2 sets of printable Lifecycle bunting flags on the TEACHERS NOTES page on the author's website. Ask the children to cut them out and tape them on a string in order. Hang around the classroom.

Step 1

Learn more about the Eltham Copper Butterfly and the life cycle of this species. Ask the children to draw and label the life cycle to show how the caterpillar grows and transforms—remembering the ant's role in the butterfly's lifecycle.

Step 2

Find another butterfly species and compare the life cycle of the Eltham Copper Butterfly. Ask what is different and what is the same. Draw or write the similarities or differences.
(A printable template is available on authors website; Teachers Notes).

POSTER

Environmental Conservation Campaign

In groups of two, ask the children to think about creating an A3 poster for the community that could help conserve the habitat for an endangered species. It could be for the Eltham Copper Butterfly or any other endangered species. It could be to raise community awareness or to take action. Find other examples of conservation posters to show the class.

Step 1

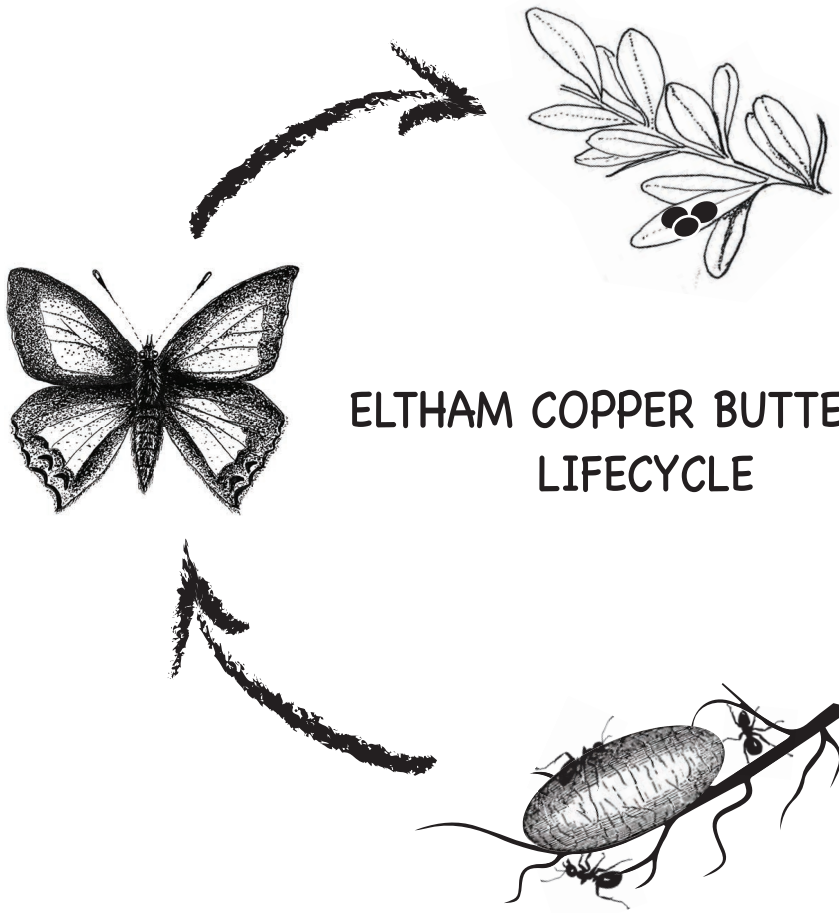
Ask the children what they could say to the community about the species.
Help the children develop words for a Headline; (Positive) SAVE, HELP, PROTECT, CONSERVE. (Negative; against the action; STOP, NO MORE, (i.e. STOP chopping down trees, taking away habitat etc).

Step 2

Ask the children to draw the species for the poster. Help the groups put their chosen words into a headline (making sure the words are very large in size).

THE ANT, THE PLANT, AND THE CATERPILLAR

LIFECYCLE COMPARISON



ELTHAM COPPER BUTTERFLY
LIFECYCLE

Find a Butterfly species: write and draw, compare lifecycles.

BUTTERFLY NAME:.....

.....

COMPARE BUTTERFLY SPECIES

 *Eltham Copper Butterfly*	*Other Butterfly Species* *Name: .....*

LIST DIFFERENCES & SIMILARITIES

ACTIVITIES cont.

5+ (older Kids)

SYMBIOSIS PROJECT *(Friendship comparison venn diagram)*

SYMBIOSIS IN NATURE means species that rely upon or are dependent on each for survival, cleaning and food. There are three types of symbiosis for survival: mutualism, commensalism, and parasitism.
The Eltham Copper Butterfly and the Notoncus Ants have a “Mutualistic” relationship. Both benefit from their association.
Human friendship is also a symbiotic relationship where two individuals come together and mutually benefit from the association and regard they have for one another.

Step 1

Ask the children to think of a friend who helped them when they were in need.
Question - How did you and your friend work together as Lucida and Nathan worked together? Make notes.

Step 2

Why is it important to have friends? How are your friendships similar or different to Lucida and Nathan’s? Compare and contrast the importance of friends for humans and for insects like the Eltham Copper butterfly and the Notoncus ant.

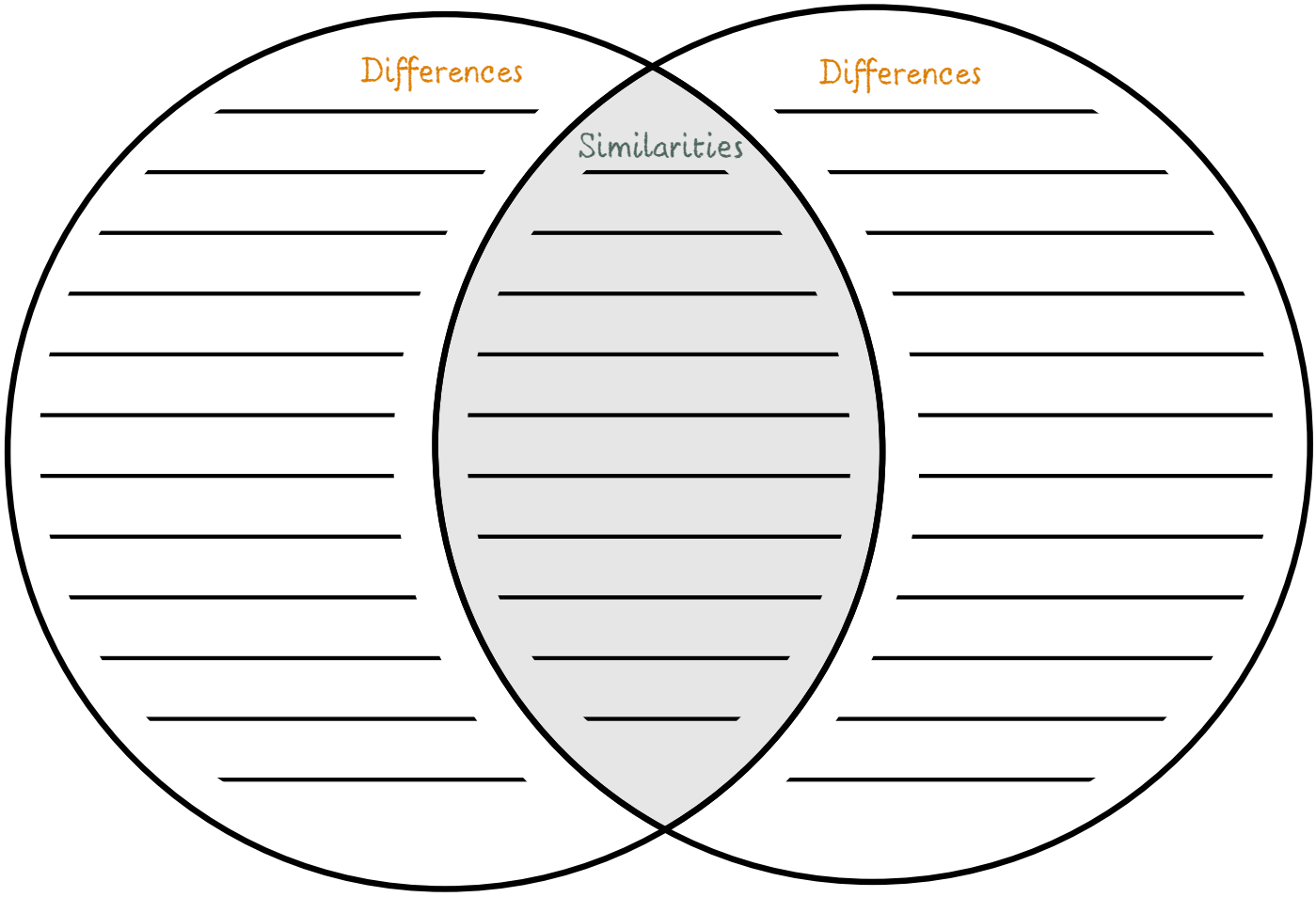
Ask the children to make a compare and contrast list. Pending the level, create a Venn diagram. *(A printable template is available on authors website; Teachers Notes).*

COMPARE FRIENDSHIPS

VENN DIAGRAM

LUCIDA & NATHAN's friendship

Your friendship



ACTIVITIES cont.

5+ (older Kids)

OTHER ACTIVITY QUESTIONS

THREATENED SPECIES

Wildlife can be labelled as Threatened; what does this mean? There are three 'threatened' categories: critically endangered, endangered, or vulnerable. What is the difference between these three classifications?

- Draw three Columns, and label each category: critically endangered, endangered, or vulnerable. Then find an animal, insect or fish for each category and write or draw the example.

RUBBISH POLLUTES

Rubbish, particularly plastics, heavily affects our environment and wildlife by polluting water, waterways, soils, etc.

- Can you find an example of wildlife or habitat that has been polluted by rubbish?
- What happened or could happen to the wildlife affected by rubbish?
- Can you think of ways to help?
- Make a list of ideas and share your ideas for saving wildlife from rubbish waste.