



EK BOOKS TEACHER NOTES & RESOURCES

Title: Grub

Author: Sandra Severgnini

Illustrator: Sandra Severgnini

Publisher: EK Books

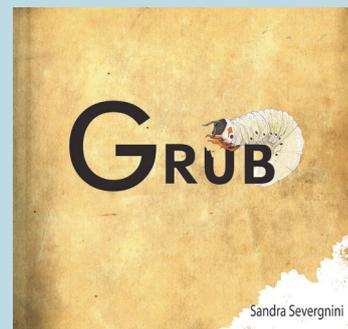
Price: ANZ \$24.99 | USA \$18.99 | CA \$24.99 | UK £10.99

ISBN: 9781922539267

Publication date: August 2022

Audience age: 5-8 years

Key Curriculum Areas: English, Science / STEAM, Health and Physical Education, Humanities and Social Sciences, Visual Arts



SYNOPSIS:

On the floor of the rainforest, far below the tree canopy, a small grub has a big question. Sensing that his body is about to change, he wonders what he will become, so he turns to his friends for answers. The ladybird, the cicada, the dragonfly and the monarch butterfly all describe what they looked like before they changed – and none looked like the grub. Eventually, the grub begins to change – and his transformation is spectacular!

With realistic illustrations, vivid detail and gentle humour, *Grub* brings the habitat and life cycle of the Hercules beetle, and other insects that undergo metamorphosis, to life. The final reveal is sure to send young readers on a journey of discovery to learn more about the amazing Hercules beetle – one of the world's largest – with its giant pincers.

THEMES:

Metamorphosis. Life Cycles. Environment. Natural World. Biodiversity. Self-awareness. Change

SELLING POINTS:

- Teaches children about the process of complete metamorphosis, with realistic illustrations showing the Hercules beetle at different stages of development alongside other insects that undergo metamorphosis.
- Takes young readers on a journey through the natural world of the rainforest with illustrations conveying the beauty of its biodiversity.
- Encourages children to observe the different ways bodies change and to identify with the big question, 'What will I become?'

AUTHOR/ILLUSTRATOR BACKGROUND:

Sandra Severgnini owned an art gallery and retail store before finally deciding it was well and truly time to nurture her lifetime passion and focus on children's picture books. Her fascination with the magical natural world around her inspires her words and brings sensitivity and humour to her illustrations. Sandra's other books include *Tree Beings* (also published by EK Books), *In the Shadow of an Elephant*, *Where's Lucky?*, and *The Christmas Garden*.



INTERVIEW:

AUTHOR

What is the inspiration for this story?

The amazing things going on around us in nature that we don't see.

What was the most rewarding part of this project?

Getting to know Grub.

What was the most challenging part of this project?

Waiting to hear if the publisher liked it.

ILLUSTRATOR

What media do you use to create your illustrations? Briefly describe your process.

Traditionally I used watercolour, but now I start with pencil illustrations and then scan them in and colour and shade in Photoshop. The magic with this is I can do lots of small illustrations and then bring them together like a jigsaw to make the bigger picture. It's also great for adjusting and fixing boo boos.

What was the most rewarding part of this project?

Bringing Grub and his friends to life

What was the most challenging part of this project?

Grub lives in a very small area and creating interest on every page was challenging.

TEACHER ACTIVITIES/NOTES:

N.B. These questions and activities can be adapted to suit the experience and ability of students.

DISCUSSION:

Before Reading

- Show students pictures of different insects in the larvae stage, and ask them to guess what kind of creature it will turn into. These can include butterflies, moths, beetles, ladybirds, cicadas, and other insects.
- Have students heard of the term 'metamorphosis'? What does it mean? How does it relate to the insects shown in the above pictures?
- What other creatures 'change' during their life cycle? Make a list.
- Look at the cover of 'Grub'. What is a grub, and what might it look like after it goes through metamorphosis? (Keep the answer a secret!)
- Do you think this story is real or imagined?

During Reading

- What do you see? Observe the different habitats, flora, and biodiversity.
- Have you seen a ladybird / butterfly / cicada / dragonfly / stick insect as a larva / pupa / nymph / early stages of metamorphosis? How is it different to an adult insect?
- Why do you think Grub is asking what he will change into?
- Why does Grub need to eat so much?
- What do you think Grub will be?

After Reading

- What did you like / dislike about this story? How did it make you feel? What was your reaction to the ending?
- What did you learn about Grub? Have you heard of or seen a Hercules Beetle before? What words can you use to describe Grub throughout his changing states? How do you think the Hercules Beetle got its name?
- What else does this story make you wonder about? What would you like to know? What did you learn about each of the different insects?
- Can you explain the life cycle of the Hercules Beetle, or any of the other insects?
- How long do you think Grub stayed in his protective shell (cocoon) until he re-emerged? How does the story tell us it was a long time? What was the protective shell made from?
- How is the story both factual and imaginary?
- Find and make a list of some of the unfamiliar terms in the book, such as 'canopy', 'nymph', 'larvae', and other related terms like 'metamorphosis', 'biodiversity', 'pupa', 'chrysalis', 'emerge', etc. Write definitions or create a wordsearch.
- What did you notice in the illustrations that helps you understand the kind of environment the insects live in? Why do you think the forest fruits and flowers are important to this story? What did you like the most about the illustrations? How has colour, line and texture been used to make the illustrations look realistic?
- How can you relate to this story? Think about how you will grow and change. What will you become?

ACTIVITIES:

ENGLISH

Vocabulary: Noun – Verb – Adjective Match

(ACELA1437) (ACELA1452) (ACELA1454) (ACELA1468)

- Locate in the book, and write the nouns (insect names) to the corresponding verbs (action words) and adjectives (describing words), like the examples below. See **BLM 1**.

Nouns – Verbs – Adjectives

Ladybird / larva – scurrying – long, black, spiny, red

Butterfly / caterpillar – fluttered – beautiful, striped

Cicada / nymph – sing – impressive

Dragonfly / larva – hovered – underwater

Stick insect / nymph – wavered – long

Hercules Beetle / grub – ate, grew, thought, changing – white, protective

Alternatively, write your own nouns, verbs and adjectives to describe each insect's actions and traits in the corresponding columns.

Vocabulary: Synonyms

(ACELA1432) (ACELA1464) (ACELA1435) (ACELA1437) (ACELA1451) (ACELA1452) (ACELA1454) (ACELA1468) (ACELA1470) (ACELT1584)

(ACELY1650) (ACELY1660) (ACELY1670) (ACELY1651) (ACELY1661) (ACELY1671)

- Using the terms found in the 'Noun – Verb – Adjective Match' task, students can write their own sentences using synonyms. For example, instead of "Ladybird clicked, 'Before I changed I had a long black spiny body with red markings.'", try "Ladybird clacked, 'Before I grew I had a long dark prickly body with red specks.'"
- Students can fold a piece of paper in half, then write the sentence at the top and draw the before and after insect on each side of the fold.

Vocabulary: Adjectives – Labelled Insect Diagrams

(ACELA1437) (ACELA1452) (ACELA1454) (ACELA1468) (ACELA1469) (ACELA1470) (ACELT1578) (ACELT1591) (ACELY1650) (ACELY1660)

(ACELY1670)

Science links - (ACSSU002) (ACSSU017) (ACSSU030) (ACSHE013) (ACSHE021) (ACSHE022) (ACSHE034) (ACSHE035) (ACSIS014) (ACSIS024) (ACSIS037) (ACSIS025) (ACSIS038) (ACSIS012) (ACSIS029) (ACSIS042)

- Write adjectives, or describing words, and other information that describes the features of the insects in the book. See **BLM 2** to list words about their appearance, behaviours, character traits, changes, etc.

Comprehension: Text-to-Self, Text-to-Text, Text-to-World

(ACELT1575) (ACELT1783) (ACELT1582) (ACELT1584) (ACELT1589) (ACELT1590) (ACELY1650) (ACELY1660) (ACELY1665) (ACELY1670)

- Ask students to think about the text and how this connects to what they know. Answer and write about the following questions...

Text-to-Self: What are some aspects in the story, Grub, that you can relate to in your own life? How are you changing as you grow older? Do you have questions about your own development? Have you seen insects at different stages of their life cycle / metamorphosis? Have you seen a scurrying ladybird, a hovering dragonfly or heard a singing cicada? Have you been to a forest and observed its biodiversity?

Text-to-Text: Compare aspects of the story to those in another similar text, such as a different story (fiction or non-fiction) about insects, or life cycles in nature, or about growth and changes.

Text-to-World: What can you do to care for nature and the environment? Why is this important? What can you find out about Hercules Beetles and other insects? What special roles do they play within their habitat? What might be the effects of deforestation on these creatures? How many insects begin as nymphs or larvae? How can this story help other children across the world?

Comprehension: Story Sequence / Retell

(ACELA1435) (ACELA1434) (ACELA1447) (ACELA1451) (ACELA1463) (ACELT1578) (ACELT1584) (ACELT1580) (ACELT1586) (ACELY1650) (ACELY1660) (ACELY1670) (ACELT1785)

- Match the insects (larva and adult), and order the sentences as they appeared in the book. See **BLM 3**.
 - Grub's friend ladybird was scurrying by.
 - A butterfly fluttered by.
 - Grub could hear the musical song of a cicada.
 - A dragonfly hovered above.
 - A stick insect wavered in the breeze.
 - Grub broke his way out of the shell... and he wasn't a grub anymore.
- Students can also make stick puppets using the insect pictures to retell the story in their own words.

Creative Writing: Innovation on Text

(ACELA1435) (ACELA1451) (ACELT1783) (ACELT1831) (ACELT1582) (ACELT1832) (ACELT1833)

- Ask students to brainstorm their thoughts on the concept of 'What will I become?'. They can make a list of possible outcomes for when they are adults. These could include career paths, interests, appearance, etc.
- Students write a sentence or paragraph beginning with '*I will become...*' Illustrate.

Narrative Writing

(ACELT1580) (ACELY1651) (ACELY1652) (ACELT1832) (ACELY1661) (ACELY1672) (ACELY1648) (ACELY1658) (ACELY1674)

- Students can write a narrative story from the perspective of a grub in a forest. It could be based on fact or completely imaginary. What does your world look like? Who or what will you meet? What kinds of emotional or physical challenges might you need to be overcome (eg. Wondering what you will become, unexpected changes, or environmental threats)? How will they be resolved? Begin your narrative with a sizzling start, such as dialogue, onomatopoeia, action or scene setting. Remember to use interesting action words and language! Decide if the story is written in first or third person. Set it out with a beginning, middle and end.

Information Report

(ACELA1430) (ACELA1786) (ACELA1447) (ACELA1450) (ACELA1453) (ACELA1463) (ACELY1648) (ACELY1651) (ACELY1658) (ACELY1660) (ACELY1661) (ACELY1668) (ACELY1671)

Science Links: (ACSSU002) (ACSSU017) (ACSSU030) (ACSIS233) (ACSIS027) (ACSIS040)

- Students can create a poster or digital presentation with the collation of facts about the Hercules Beetle, or another insect, including its life cycle showing metamorphosis. Be sure to include a title, interesting facts, diagrams or pictures, and captions for the information report. See **BLM 4**.



Did You Know? –

Hercules beetles are one of the largest species of beetles in the world. It is believed to be one of the strongest creatures on earth for its size, being able to carry 850 times its own body weight. They are normally found in the jungles of Central and South America. Some more facts and a printable sheet about the Hercules Beetle can be found here: www.learncreatelove.com/hercules-beetle-printable-craft

Thinking Tools / Graphic Organisers

(ACELA1429) (ACELT1575) (ACELT1783) (ACELT1583) (ACELT1589) (ACELY1650) (ACELY1660) (ACELY1670)

- **KWHL Chart:** Students can complete a KWHL chart or placemat graphic organiser about the book or a particular insect. The headings include K (I Know), W (What I Want to Know), H (How Will I Find Out), L (What I Have Learnt). See **BLM 4**.
- **Concept Web:** Use the concept web diagram to flesh out ideas on a chosen topic, such as 'Hercules Beetle'. The sub-headings could include, 'food', 'appearance', 'life cycle', 'habitat', 'facts', 'dangers', etc, with the descriptions providing further detail. See **BLM 5**.
- **Venn Diagram:** Complete a Venn Diagram to compare the similarities and differences between two different insects. Think about their appearances, characteristics, growth / changes, special features, etc. For a challenge, compare three different insects with a three-way Venn Diagram. See **BLM 6** and **BLM 7**.

MATHEMATICS

Timelines

Measurement: (ACMMG007) (ACMMG021) (ACMMG041) (ACMMG019)

- The insects in Grub change and grow over time. Students can complete a timeline of any of these, or their own life, to show the chronological stages / ages from birth to now, including descriptions of changes in appearance or milestones (eg. Crawling, first steps, etc). Include any pictures and diagrams for each year / stage.
- Extension: add measurements in millimetres or centimetres on the timeline to show the growth from birth to now / adult. This could be presented digitally or as a poster.

SCIENCE / STEAM

Hercules Beetle Life Cycle

(ACSSU002) (ACSSU017) (ACSSU211) (ACSSU030) (ACSHE013) (ACSHE021) (ACSHE022) (ACSHE035) (ACSIS014) (ACSIS037) (ACSIS011) (ACSIS024) (ACSIS039) (ACSIS233) (ACSIS027) (ACSIS041) (ACSIS012) (ACSIS029)

- (See 'Information Report' Task). Other tasks can include, depending on the level of students' knowledge:
 - Match the name of the stages to the pictures, and write information about each in the life cycle. See **BLM 8 and 9**.
 - Create a paper wheel with a split pin to demonstrate the changing stages of the beetle's life cycle.
 - Create a 3D life cycle model using paper, cardboard, craft foam, wire, cotton wool, and so on.
 - Find various species of insects in the yard or garden. Students write and draw what they notice.
 - Purchase caterpillars / grubs and watch them grow.

- Watch videos to learn about the Hercules Beetle. Some facts can be seen here:
[Watch a Hercules Beetle Metamorphose Before Your Eyes | Nat Geo Wild - YouTube](#)
[Facts about Hercules Beetle - YouTube](#)

Flying Hercules Beetles (or other flying insect) Experiment

(ACSSU003) (ACSSU018) (ACSSU031) (ACSHE013) (ACSHE021) (ACSHE034) (AC SIS014) (AC SIS011) (AC SIS233) (AC SIS012) (AC SIS024) (AC SIS025) (AC SIS039) (AC SIS027) (AC SIS041) (AC SIS029)

- Explore the chemical reaction of vinegar and baking soda with this fun 'grub to beetle' balloon experiment. You will need a balloon, permanent marker, vinegar, baking soda, empty clear bottle, spoon and tray. Draw a grub (or nymph or larva) on one side of the balloon, and the beetle (or adult insect) on the other. Pour some vinegar into the bottle, and some baking soda inside the balloon (a funnel may help). Attach the balloon to the bottle, and lift to show the grub side (say it's in its protective shell). Predict and observe what happens when the baking soda fills into the bottle. Will the beetle grow?
- Experiment with variations like adding in dish soap. Predict, observe and record the findings. Which balloon insect worked the best?

Science involved: The baking soda (base) and vinegar (acid) mixed together releases carbon dioxide (gas). There is a further reaction when the carbon dioxide mixes with the soap.

Rotting Fruit Experiment

(ACSSU003) (ACSSU211) (ACSSU018) (ACSSU030) (ACSHE013) (ACSHE021) (ACSHE022) (ACSHE034) (ACSHE035) (AC SIS014) (AC SIS024) (AC SIS011) (AC SIS025) (AC SIS038) (AC SIS233) (AC SIS027) (AC SIS040) (AC SIS012) (AC SIS213) (AC SIS042)

- Hercules Beetles feed on rotting fruits and decay found on the forest floor. Find out how fruit rots and how best to preserve it with this experiment. You will need one apple, 4 jars or containers, vinegar, salt water and lemon juice. Place a segment of the apple in each of the four containers, and cover with the same amount of each liquid, leaving one of them empty. Leave untouched in a cool place for a week and observe the changes. Record the changes each day. Which apple is the best preserved? Compare and discuss the results with others.

Science involved: Food rots because micro-organisms such as bacteria, yeasts and fungi break it down by feeding on it.

HUMANITIES AND SOCIAL SCIENCES

Deforestation of rainforests in Central and South America

(ACHASSI001) (ACHASSI018) (ACHASSI034) (ACHASSI002) (ACHASSI003) (ACHASSI019) (ACHASSI036) (ACHASSI007) (ACHASSI040) (ACHASSI008) (ACHASSI009) (ACHASSI041) (ACHASSI042) (ACHASSI010) (ACHASSI043) (ACHASSK014) (ACHASSK031)

- Discuss the term 'deforestation'. What does it mean, and how does this impact the wildlife within the area? Locate the areas where the Hercules Beetle lives on a map. Mark some of the geographical features of these regions (eg. forests, rivers, mountains, landmarks, etc). Find out how the Hercules Beetle is threatened because of deforestation. Pose questions about and brainstorm ideas for what can be done to preserve the biodiversity of these rainforest areas. Write these on leaf, fruit and flower shapes to make a rainforest class mural.

HEALTH AND PHYSICAL EDUCATION

Healthy Mind / Healthy Body Ideas:

(ACPPS003) (ACPPS004) (ACPPS005) (ACPPS006) (ACPPS017) (ACPPS018) (ACPPS020) (ACPPS021) (ACPMP008) (ACPMP012) (ACPMP025) (ACPMP028)

- Mindfulness and physical activity are ideal for mental and physical health, as well as building relationships with family and friends.
 - Read a book about insects
 - Find different kinds of insects in your own or local garden
 - Write down, draw or collect images of yourself changing over time
 - Plant a tree or flowers with your family
 - Go fruit picking
 - Make different recipes with your favourite fruits
 - Role play acting like different critters, changing from birth to adult – have a friend guess what you are!
 - Sing songs like cicada!
 - Build a protective shell (out of household materials) for yourself or a handmade insect
 - Interview an adult about changes in their lives
 - Keep a journal of your own changes or achievements.

VISUAL ARTS

Papier-Mache Protective Shell

(ACAVAM107) (ACAVAM108)

- Blow up a balloon, tie and cover with papier-mâché mixture (50/50 water and glue, newspaper or tissue paper strips). Add a second layer for strength. Students might like to paint their protective shells once dry. Pop the balloon and pull it out. Hang up them with string. *Optional: make a paper beetle to fit inside the shell.

Real Life Drawing / Painting

(ACAVAM106) (ACAVAM107) (ACAVAM108) (ACAVAR109)

- Choose a plant, tree fruit, single flower or a picture of an insect to study and draw. Look closely at its lines, shape, textures and colours. Use a fine pencil, charcoal or paint for your medium. How realistic does it look?

NAME _____

DATE _____

NOUNS	VERBS	ADJECTIVES

NAME _____

DATE _____



WRITE THE SENTENCES IN ORDER, AND DRAW A LINE TO MATCH THE LARVA TO THE ADULT.

NAME _____

DATE _____

<p>1. A butterfly fluttered by.</p>			
<p>2. Grub's friend ladybird was scurrying by.</p>			
<p>3. Grub could hear the musical song of a cicada.</p>			
<p>4. A dragonfly hovered above.</p>			
<p>5. Grub broke his way out of the shell... and he wasn't a grub anymore.</p>			
<p>6. A stick insect wavered in the breeze.</p>			

PLACEMAT CHART

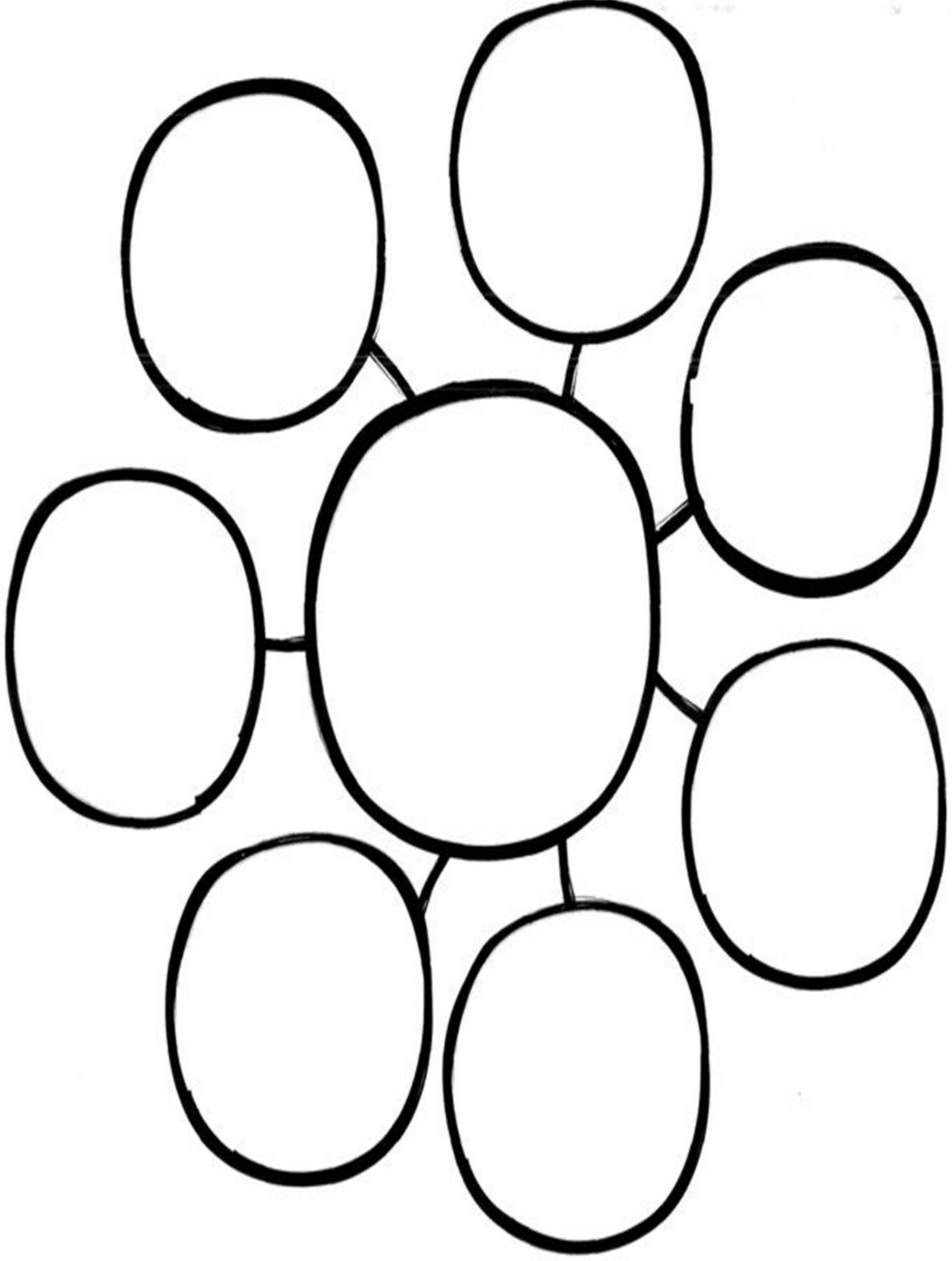
NAME _____

DATE _____

The form consists of a large outer rectangle with rounded corners. Inside this rectangle, there is a smaller, centrally placed rounded rectangle. This layout is intended for a placemat chart, where the central box is for a title or main topic, and the surrounding space is for related information or activities.

NAME _____

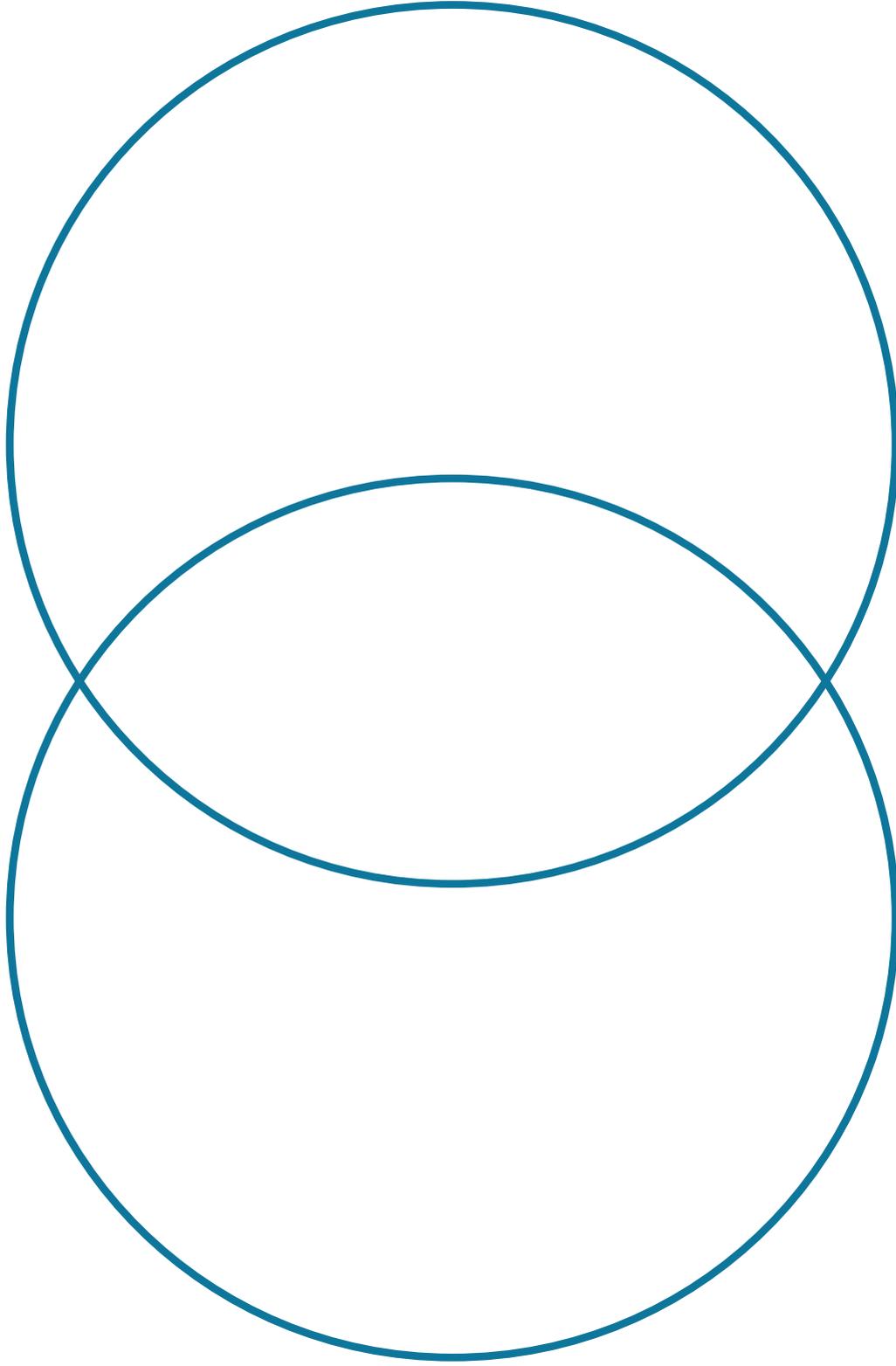
DATE _____



VENN DIAGRAM

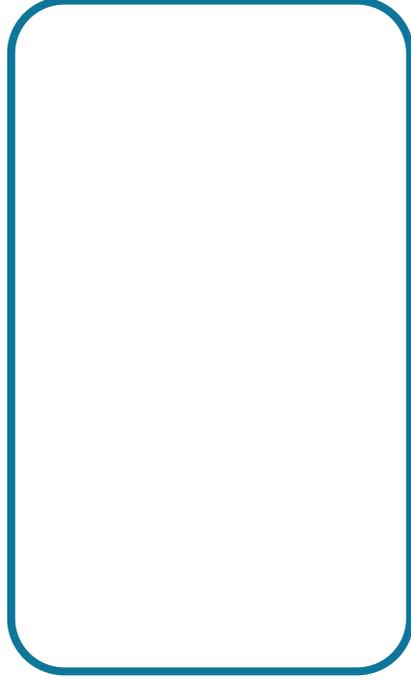
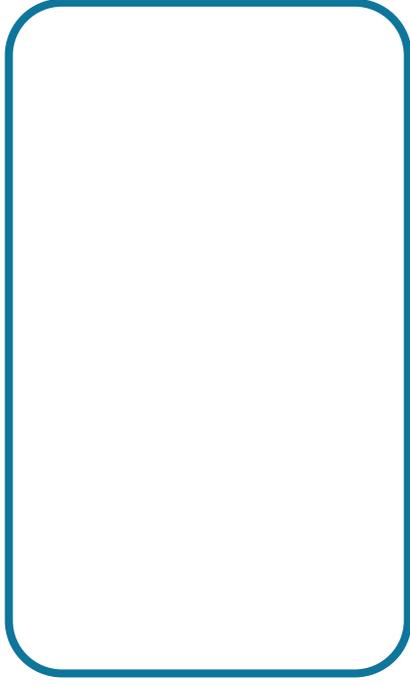
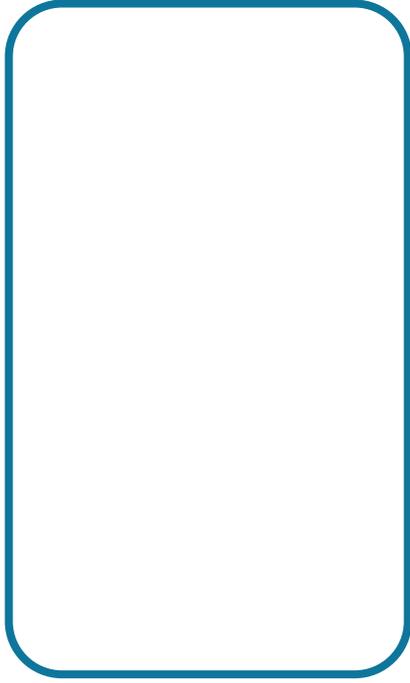
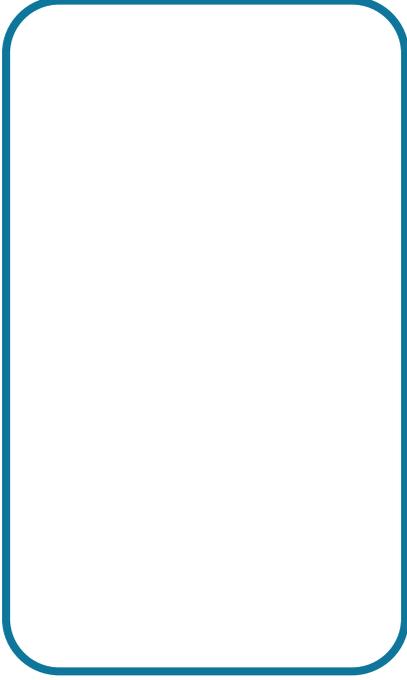
NAME _____

DATE _____



NAME _____

DATE _____



LIFE CYCLE: HERCULES BEETLE

MATCH THE LABEL TO THE PICTURE

DATE _____

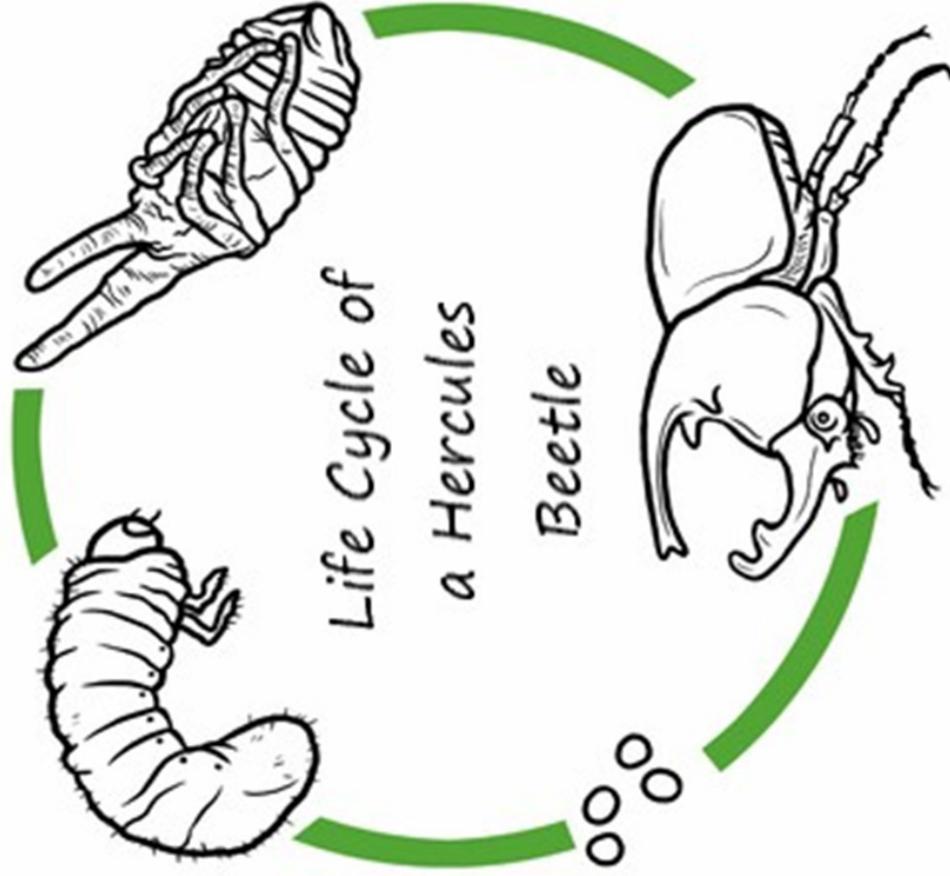
NAME _____

Eggs

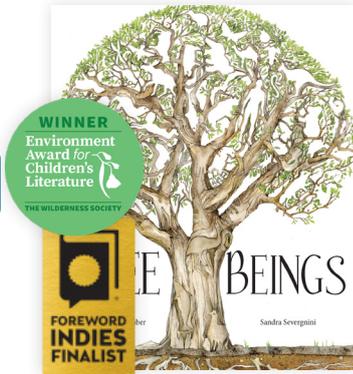
Larva

Pupa

Adult



RELATED TITLES ORDER FORM



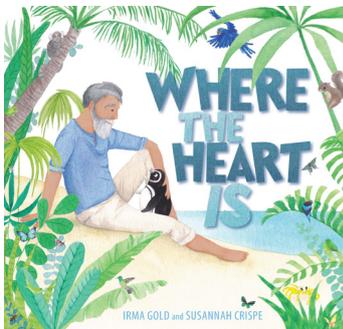
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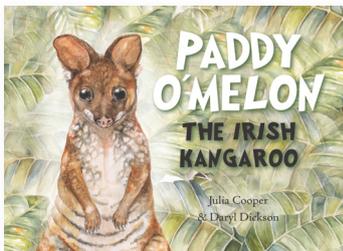
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