## Summary

This domain will introduce your students to the largest group of animals on the earth. Students will learn the characteristics of insects, as well as why other “creepy crawlies” such as spiders, worms, and centipedes are not insects. Students will also learn about the life cycles of insects, how insects can be categorized as solitary or social, and how insects are viewed as both helpful and harmful. For example, students will learn how insects are important to the process of pollination, in the production of honey, and in the creation of silk. Students will gather the information they learn in a journal and will have the opportunity to further research their questions and points of interest. After hearing a fictional narrative about Clara Caterpillar, students will write their own fictional narratives about an insect of their choice. This domain will lay the foundation for review and further study of the life cycles, habitats, and classifications of insects and other animals.

## The Big Ideas

Insects, like other animals, have specific identifying features. Some insects are considered either beneficial or detrimental from a human perspective.

## Core Content Objectives

Students will:

- Explain that insects are the largest group of animals on the earth
- Explain that there are many different types of insects
- Classify and identify particular insects as small, six-legged animals with three main body parts
- Identify and describe the three main body parts of insects: head, thorax, and abdomen
- Identify the placement and/or purpose of an insect’s particular body parts – specifically regarding grasshoppers (Lesson 3), dragonflies (Lesson 5), butterflies (Lesson 6), bees (Lesson 8), and ants (Lesson 9).
- Describe an insect’s external skeleton, or exoskeleton
- Describe some newborn insects as resembling the adults of their species
- Cite ways in which insects may be helpful and/or harmful
- Distinguish between social and solitary insects
- Explain why spiders are not insects
- Demonstrate familiarity with the poem “Hurt No Living Thing”
- Demonstrate familiarity with the poem “Caterpillars”
- Describe the molting process of insects
- Compare and contrast grasshoppers and crickets
- Describe the two types of metamorphosis: complete and incomplete
- Describe the characters, setting, and plot of a story
- Describe the roles of honeybee workers, drones, and queens
- Explain that all members of a social insect colony come from one queen
- Describe the social behavior of an ant colony
- Describe the roles of worker ants, males, and queens
What Students Have Already Learned In The Core Knowledge Language Arts Program That Will Be Reactivated In This Domain

Plants (Kindergarten)
- Describe how bees collect nectar and pollen
- Explain how bees make and use honey
- Describe the important role bees play in plant pollination

Animals and Habitats (Grade 1)
- Describe what a habitat is
- Explain why living things live in habitats to which they are particularly suited
- Classify animals on the basis of the types of food they eat (herbivore, carnivore, omnivore)

Fables and Stories (Grade 1)
- Explain in their own words the moral of a particular fable
- Identify character, plot, and setting as basic story elements

What Students Will Learn In Future Grades That Will Utilize The Background Knowledge From This Domain

<table>
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<tr>
<th>Grade 3:</th>
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<tr>
<td>Intro. to Classification of Animals</td>
<td>Cells: Structures &amp; Processes</td>
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<td>Ecology: the food chain</td>
<td>Life Cycles &amp; Reproduction</td>
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Language Arts Objectives

<table>
<thead>
<tr>
<th>Core Knowledge</th>
<th>CCSS ELA</th>
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<tr>
<td>Students will:</td>
<td>RL2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</td>
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<tr>
<td>Use agreed-upon rules for group discussions, i.e., look at and listen to the speaker, raise hand to speak, take turns, say “excuse me” or “please,” etc. (L.2.1)</td>
<td>RL2.2 Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.</td>
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<td>Ask questions to clarify directions, exercises, and/or classroom routines (L.2.2)</td>
<td>RL2.3 Describe how characters in a story respond to major events and challenges.</td>
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<td>Carry on and participate in a conversation over at least six turns, staying on topic, initiating comments or responding to a partner’s comments, with either an adult or another child of the same age (L.2.3)</td>
<td>RL2.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.</td>
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<td>Identify and express physical sensations, mental states, and emotions of self and others (L.2.4)</td>
<td>RL2.7 Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.</td>
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<tr>
<td>Follow multi-step, oral directions (L.2.5)</td>
<td>RL2.9 Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.</td>
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Insects

Listening and Learning Strand:
Grade 2 – Domain 6 of 12

- Provide simple explanations (L.2.7)
- Learn common sayings and phrases such as “Eaten out of house and home” (L.2.9)
- Prior to listening to a read-aloud, identify (orally or in writing) what they know and have learned that may be related to the specific story or topic to be read aloud (L.2.10)
- Listen to and understand a variety of texts, including fictional stories, fairy tales, fables, historical narratives, informational text, myths, and poems (L.2.11)
- Make predictions (orally or in writing) prior to and during a read-aloud, based on the title, pictures, and/or text heard thus far, and then compare the actual outcomes to predictions (L.2.12)
- Describe illustrations (orally or in writing) (L.2.13)
- Use pictures accompanying the read-aloud to check and support understanding of the read-aloud (L.2.14)
- Learn and use (orally or in writing) new words from read-alouds and discussions (L.2.15)
- Learn synonyms and antonyms (L.2.17)
- Answer questions (orally or in writing) requiring literal recall and understanding of the details and/or facts of a read-aloud, i.e., who, what, where, when, etc. (L.2.18)
- Answer questions (orally or in writing) that require making interpretations, judgments, or giving opinions about what is heard in a read-aloud, including answering “why” questions that require recognizing or inferring cause/effect relationships (L.2.22)
- Compare and contrast (orally or in writing) similarities and differences within a single read-aloud or between two or more read-alouds (L.2.23)
- Make personal connections (orally or in writing) to events or experiences in a read-aloud and/or make connections among several read-alouds (L.2.24)
- Draw pictures, dictate, or write simple sentences to represent details or information from a read-aloud (L.2.29)
- Distinguish fantasy from realistic text (L.2.30)
- Distinguish the following forms of literature: fiction, nonfiction, poetry, and plays (L.2.31)

RL2.10 By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

RI2.2 Identify the main topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.

RI2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.

RI2.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.

RI2.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.

RI2.7 Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.

RI2.8 Describe how reasons support specific points the author makes in a text.

RI2.9 Compare and contrast the most important points presented by two texts on the same topic.

RI2.10 By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

W2.1 Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.

W2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

W2.3 Write narratives in which they recount a well elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

W2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).

W2.8 Recall information from experiences or gather information from provided sources to answer a question.
### Insects

**Listening and Learning Strand: Grade 2 – Domain 6 of 12**

- Share writing with others (L.2.34)
- Create, tell, and/or draw and write an original story with characters, a beginning, middle, and an end (L.2.39)
- Generate questions and seek information from multiple sources to answer questions (L.2.40)
- Retell (orally or in writing) important facts and information from a read-aloud (L.2.41)

| SL2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. |
| a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion) |
| b. Build on others’ talk in conversations by linking their comments to the remarks of others. |
| c. Ask for clarification and further explanation as needed about the topics and texts under discussion. |

| SL2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. |

| SL2.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences. |

| SL2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. |

| SL2.6 Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 2 Language standards 1 and 3 on pages 26 and 27 for specific expectations.) |

| L2.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. |

| L2.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies. |

| L2.5 Demonstrate understanding of word relationships and nuances in word meanings. b. Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny). |

| L2.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy). |
### Day-by-Day Lessons

#### Read Aloud Lessons (one per day)

It is recommended that each lesson be composed of two distinct parts presented at different intervals during the day. In Grade 2, each entire lesson should take a total of sixty minutes. In each lesson, the read-aloud should be the focus of the entire lesson. Students should be introduced to, listen to, and then discuss the read-aloud during the first part of the lesson. During the second part of the lesson, students should extend their understanding of the read-aloud using the types of exercises and assessments recommended below. A teacher might choose to pause during the natural breaks in a domain, based on the students’ performance, to spend one to two days reviewing, reinforcing, or extending the material taught thus far as noted by the Pausing Points below.

(Minimum Number of Days: 10; Maximum Number of Days: 14)

#### Lesson 1

**About Insects**  
**Core Vocabulary**  
active  
nourishment  
*antennae*  
pests  
insects

#### Lesson 2

**Bugs are Insects**  
**Core Vocabulary**  
abdomen  
communities  
*external*  
pierce  
thorax

#### Lesson 3

**Are You a Grasshopper?**  
**Core Vocabulary**  
catapulted  
chirping  
*pod*  
struggle  
suction

#### Lesson 4

**Chirping Crickets**  
**Core Vocabulary**  
alert  
molting  
*piping*  
trilling  
vibrate

#### Lesson 5

**Are You a Dragonfly?**  
Read-Aloud: *Are You a Dragonfly?*, by Judy Allen and Tudor Humphries (Kingfisher, 2001) ISBN 0753458051  
**Core Vocabulary**  
crumpled  
darts  
dodging  
hovered  
pounce

#### Pausing Point 1

**Lesson 6**

**From Caterpillar to Butterfly**  
**Core Vocabulary**  
coiled  
chrysalis  
larva  
metamorphosis  
pupa

#### Lesson 7

**Clara Caterpillar**  
**Core Vocabulary**  
capable  
captivating  
clambered  
colossal  
succulent

#### Lesson 8

**The Honey Makers**  
**Core Vocabulary**  
beekkeepers  
cocoon  
colonies  
honeycomb  
pollination  
queen
### Core Knowledge

**Insects**

**Listening and Learning Strand:**

**Grade 2 – Domain 6 of 12**

**Day-by-Day Lesson Plans**

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#### Lesson 9

**Ant Cities**

Read-Aloud: *Ant Cities*, by Arthur Dorros

**Core Vocabulary**

- disturb
- grooming
- harvester
- hollowed-out
- husks

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#### Pausing Point 2

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#### Trade Books

**Insects**

These specific book titles are listed simply as examples of trade books that are presently in print. Other books and/or versions of stories may also be suitable.

Insects
Listening and Learning Strand:
Grade 2 – Domain 6 of 12
Day-by-Day Lesson Plans

33. On Beyond Bugs!, by Tish Rabe (Random House, 1999) ISBN 0679873037
34. Sarah’s Story, by Bill Harley (Tricycle Press, 1996) ISBN1582461783

Making Cross-Curricular Links
You may wish to reinforce applicable concepts from other subject areas as you cover the noted works:

Mathematics Grade 2
VI. Geometry
• Identify a line of symmetry (insects, like humans, exhibit bilateral symmetry which is often illustrated with the wings and other appendages of insects)

Music (not from the CK Sequence)
• “Flight of the Bumble Bee”, Nikolai Rimsky-Korsakov
• “The Ants Go Marching”, Robert Singleton

Language Arts Grade 2
V. Poetry
• “Bee! I’m expecting you!” (Dickinson)
• “Caterpillars” (Fisher)
• “Hurt No Living Thing” (Rossetti)

VII. Sayings and Phrases
• Eaten out of house and home

*Review of Aesop’s Fable The Grasshopper and the Ants (Kindergarten - Fiction) may also prove fruitful

Sample Extension Exercises and Assessments
Extension exercises should relate in a deep and meaningful way to the content and language arts objectives listed above. The suggestions listed below are meant to be fun yet purposeful exercises designed to further students’ acquisition of the domain objectives.

Insects Journal
Have students create an Insects Journal to record the information they will learn about insects throughout the unit. You may use the covers of the read-alouds to spur the students’ ideas. Students can draw pictures of the insects using those pictures from the readings of each lesson or from other trade books that they select. Tell students that they should also write down any questions they may have about each insect, and that they will have the opportunity later to read through several trade books about insects to look for answers to their questions. You may wish to extend this research beyond the classroom book tub to include online and other resources.

“Hurt No Living Thing” – Poetry Reading
Have students discuss why they think Ms. Rosetti wrote a poem about not hurting living things. Ask students to think about times when they have interacted with insects, including perhaps times when they may have hurt an insect, and why. Students may also think about times when they have helped an insect, and why. Remind students that just as we may be harmful and helpful to insects, they may also be harmful and helpful to us.
Jumping Grasshoppers!

Tell students that a grasshopper can jump twenty times the length of its body, which is about two and a half feet. Use a ruler or your hands to show students this distance. Remind them that this is because their bodies are catapulted by their long, strong legs. Tell students that they are going to measure how far they would be able to jump if they were grasshoppers. Using a measuring tape or ruler, have students work in pairs to measure their height, helping them as needed. Have students record their height in their journals. Then, with assistance, have students multiply this number times twenty, using a calculator if necessary. Have students record this number in their journals. If possible, take your students outside or to a large area and show them the distance they would be able to jump if they were grasshoppers.

Venn Diagram

Tell students that together you are going to compare and contrast the two types of insects they have just heard about: grasshoppers and crickets. Remind students that to compare means to tell how things are similar and to contrast is to tell how things are different.

Draw a Venn Diagram on chart paper, a chalkboard, or a whiteboard. Have students help you fill in the diagram, showing the characteristics of only the grasshopper, the characteristics of only the cricket, and the characteristics that both insects share. Differences should include that crickets have very long antennae, and grasshoppers have short antennae; crickets are omnivores, because they eat grasshoppers and other animals, whereas grasshoppers are herbivores, because they eat only plants. Similarities should include that they are both solitary insects; they both have a nymph phase; they both molt; they both eat plants; they may both be harmful by eating crops; they both use their legs to catapult themselves through the air; they both make chirping sounds; they both can use camouflage at times; etc.

Sequencing: The Life Cycle of a Dragonfly

Provide students with images cards of a dragonfly laying eggs, a dragonfly nymph, a dragonfly molting, and an adult dragonfly. Have students help you put the cards in order to show the life cycle of a dragonfly. As you discuss the process, review words and concepts such as nymph, molt, exoskeleton, chitin, solitary insect, etc. Explain that the life cycle will continue as the adult dragonfly lays its eggs, just as its mother did in the ‘first’ image.

“Caterpillars” – Poetry Reading

Read the poem “Caterpillars” to students. Ask students to listen for the process that is being described. You may wish to reread the poem and have students listen for the words that rhyme, writing them on a piece of chart paper, a chalkboard, or a whiteboard. Discuss what Ms. Fisher is saying about caterpillars. Ask students why it is important for caterpillars to eat and grow. Ask students what it is called when a caterpillar makes a complete change into a butterfly.

Write a Fictional Narrative: Plan

Tell students that they are going to write a fictional narrative, or story, from the perspective of an insect, similar to the story Clara Caterpillar (Lesson 7). Using their journals or selected trade books, have students review the insects they have learned about so far. Tell students that they are also going to learn about honeybees and ants, and that they may choose to write a story from the perspective of one of these insects, even though they are not in their journals yet. Tell students that they are also going to plan their narrative before they write.

Continued on next page.
After reviewing their journals, have students choose one type of insect and write it at the top of their paper. Then have them think of a name for their insect and write it in front of the type. Remind them that the author of *Clara Caterpillar* chose to use alliteration in her title, and tell them that they may choose to do the same. You may wish to give them examples, such as Andrew Ant, Darla Dragonfly, or Christina Cricket.

You may wish to ask the following content questions as review:

- Is your insect a solitary insect or a social insect?
- How is your insect helpful and/or harmful?
- Does your insect go through incomplete metamorphosis or complete metamorphosis?
- Is your insect a carnivore, herbivore, or omnivore?

You may wish to ask the following questions to help students organize their story:

- What is the setting of your story?
- Who are the characters?
- What is the plot? (What do you want to happen in the beginning, middle, and end?)

Have students brainstorm ideas for their insect stories and write words and phrases on their paper. Tell students that they may choose to repeat the beginning sounds of certain words throughout their stories, as the author of *Clara Caterpillar* did with the letter ‘c’ or /k/ sound. You may choose to model alliteration and brainstorming by choosing your own alliterated title and writing down your ideas on chart paper, chalkboard, or whiteboard. You may wish to have students work together in groups to allow them to give and receive feedback.

Tell students that they will continue their writing with the draft step in later lessons.

### Write a Fictional Narrative: Draft

Give each student their copy of the narrative plan and tell them that they are going to continue writing their fictional narrative, or story, about the insect they have chosen. Ask: Is the insect in your story a solitary insect or a social insect? How do you know?

Have students review their titles and brainstorming worksheet to see if there is anything they would like to change. You may wish to have students work together in groups to allow them to give and receive feedback.

Once they have decided on a title and basic story, have them write five sentences in five rectangle boxes. Write the introductory sentence for your paragraph in the first rectangle. Write the three supporting sentences in the second, third, and fourth rectangles. Write your concluding sentence in the fifth rectangle. Remind students that the first sentence, box 1, should be an introduction sentence. You may wish to read the first sentence of *Clara Caterpillar* to students as an example. Remind students that they last sentence, box 5, should be a conclusion sentence. You may wish to read the last sentence of *Clara Caterpillar* to students as an example. Also, remind students to use capital letters at the beginning of their sentences and the correct punctuation at the end.

Tell students that they will continue with this draft step and will also complete the edit step the next time you meet. The teacher will need to provide an Editing Checklist to students during the next activity.

### Write a Fictional Narrative: Edit

Give each student their copies of the five sentences written and tell them that they are going to continue working on their insect narratives. You may wish to have students work in groups to allow them to give and receive feedback.

After students have completed their stories, have them work in pairs or groups to edit their paragraphs using an Editing Checklist that you, the teacher, have prepared ahead of time. Remind students to check for capital letters at the beginning of their sentences and the correct punctuation at the end.

Have students share their narratives with the class as time allows. Have students listen carefully to see if the author chose to use alliteration, and if so, if they can hear the repeated letter sound in the story.
### Riddles for Core Content

Ask the students riddle such as the following to review core content:

- I am the process by which most newborn insects change into their adult forms. What am I called? (metamorphosis)
- We are two types of metamorphosis. What are we? (complete and incomplete metamorphosis)
- I am the name for the caterpillar stage in the process of complete metamorphosis. What am I? (larva)
- I am the name for the chrysalis or cocoon stage in the process of complete metamorphosis. What am I? (pupa)
- We are the four stages in the life cycle of an insect that undergoes complete metamorphosis. What are we? (egg, larva, pupa, adult)
- I am the female that produces all of the eggs for a social colony, allowing the colony to survive. What am I? (the queen)
- We are the male bees that mate with the queen. What are we? (the drones)

You may wish to have students create their own riddles about insects to pose to the class based on what they have learned.

### Insect Research

**Materials: Insects Journals, trade books, other resources as needed**

Have students check their Insects Journals to see if there are any questions they have about insects that have not been answered. Allow them to search through the trade books in the classroom book tub to look for answers. You may also wish to allow them to research using online and/or library resources. Have students write in their journals any information that either answers a question or that they find interesting. As time allows, have students share what they find with the class. You may wish to extend this exercise by having students write and share a brief report about a specific insect.

### Domain Assessment

As a summative assessment, have students write one to two complete sentences to answer each question or statement below.

*What are some ways that insects are helpful and/or harmful?*
*What is the difference between a solitary insect and a social insect?*
*Describe the molting process of insects.*
*How are complete metamorphosis and incomplete metamorphosis different?*
*What is your favorite thing that you learned about insects, and why?*

Note: You may need to have some students respond orally if they are not able to respond in writing and some students may require help reading the questions as well. You may also have students answer three questions in one sitting and two at another time.

This assessment could also be extended by 1) including more comprehension questions, 2) having students identify the body sections of an insect diagram or 3) by identifying a variety of statements about insects as ‘True’ or ‘False’.