**Expert Pack: Insects & Bugs**

Lexile Range: 640-820

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| **Topic/ Subject:** Insects/Science |
| **Text/ Resources**Books1. *Wonders of Nature* by Cheryl Ryan
2. *Extreme Insects* by Sylvia Ives Baxter
3. *Nature Stinks* by Kira Freed
4. *Everything Bugs: What Kids Really Want to Know About Bugs* by Cherie Winner

Other Media1. “Insects” (definition)
2. “National Geographic – Weird but True: Insects”
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| **Rationale and Suggested Sequence for Reading**This text set will begin, “National Geographic – Weird but True: Insects,” students will see a short set of weird and interesting facts about bugs. This will help to keep kids interested in this topic, but also thinking about all of the purposes for insects. In *Wonders of Nature*, students will learn more about some of the most unique bugs, and then in *Extreme Insects,* they will learn about the ways that insects protect themselves. Some of the perceptions people have about bugs, and the fear that they have might be valid! In *Nature Stinks*, kids will learn about another way that bugs protect themselves, and a way that they help plants. Finally, in *Everything Bugs: What Kids Really Want to Know About Bugs*, kids will think about what the world would be like if there were no insects. They will learn about the importance of these bugs, and realize that they are needed for the world that we live in. |
| **The Common Core Shifts for ELA/Literacy**1. Regular practice with complex text and its academic language
2. Reading, writing and speaking grounded in evidence from text, both literary and informational
3. Building knowledge through content-rich nonfiction
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| **College and Career Readiness Anchor Standards for Reading Literary and/or Informational Texts**1. *Read closely to determine what the text says explicitly and to make logical inferences from it*; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. *Determine central ideas or themes of a text* and analyze their development; summarize the key supporting details and ideas.
3. *Read and comprehend complex literary and informational texts independently and proficiently.*
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| **Annotated Bibliography****690L “National Geographic – Weird but True: Insects”**Author: National Geographic KidsGenre: Informational SlideshowLength: 11 slidesSynopsis: In this slideshow, kids will learn about weird and interesting facts about bugsCitation: National Geographic Kids. (n.d.). *National Geographic – Weird but Tue: Insects.* Retrieved on Jan 4, 2017 from <http://kids.nationalgeographic.com/explore/adventure_pass/weird-but-true/insects/#WBT1600x90011.png>. National Geographic Kids.Suggested Activities: A Picture of Knowledge**640L *Wonders of Nature*** Author: Cheryl Ryan Genre: Nonfiction Book Length: 16 Pages; use pages 4, 6, 10, 11, &12 for this text setSynopsis: The world is full of interesting animals. Some animals look strange or have special skills. Some animals are actually insects. Citation: Ryan, C. (n.d.). *Wonders of Nature.* Pages 4, 6, 10, 11, &12. Level J. <https://www.raz-plus.com/books/leveled-books/book/?id=739&lang=English>. Reading A-Z. Learning A-Z. Unites States.Suggested Activities: A Picture of Knowledge**790L *Extreme Insects***Author: Sylvia Ives BaxterGenre: Nonfiction Book Length: 16 pagesSynopsis: Insects are always in danger. They have many enemies. They are food for each other as well as other animals. Insects have many traits that help them stay alive. These traits include size, looks, and weaponsCitation: Baxter, S.I. (n.d). Extreme Insects. Level I. <https://www.raz-plus.com/books/leveled-books/book/?id=636&lang=English>. Reading A-Z. Learning A-Z. Unites States.Suggested Activities: Wonderings**730L *Nature Stinks!***Author: Kira FreedGenre: Nonfiction Book Length: 16 pages, use pages 4, 12, & 13 for this text setSynopsis: Both plants and animals can smell bad. Stinky plants smell bad to get helpful insects to come near. Stinky animals often smell bad to keep enemies away. Smelling bad helps both plants and animals stay alive.Citation: Freed, K. (n.d.). *Nature Stinks!.* Level K. Pages 4, 12 &13. <https://www.raz-plus.com/books/leveled-books/book/?id=2557&lang=English>. Reading A-Z. Learning A-Z.Suggested Activities: Quiz Maker**820L *Everything Bug: What Kids Really Want to Know About Bugs***Author: Cherie WinnerGenre: Nonfiction Book Length: use pages 7-9 for this text setSynopsis: Some people like bugs, and some don’t. Most people have mixed feeling about bugs, but bugs are actually really important. Many other plants and animals rely of bugs to survive.Citation: Winner, C. (April, 2004). *Everything Bug: What Kids Really Want to Know About Bugs.* Pages 7-9. “Introduction” and “Why wouldn’t we have chocolate if bugs disappeared?” Northwood Press. T & N Children’s Publishing. United States. Suggested Activities: A Picture of Knowledge |

### Supports for Struggling Students

By design, the **gradation of complexity** within each Expert Pack is a technique that provides struggling readers the opportunity to read more complex texts. Listed below are other measures of support that can be used when necessary.

* Provide a brief **student-friendly glossary** of some of the academic vocabulary (Tier 2) and domain vocabulary (Tier 3) essential to understanding the text
* Download the Wordsmyth widget to classroom computers/tablets for students to access student-friendly definitions for unknown words: <http://www.wordsmyth.net/?mode=widget>
* Provide brief **student-friendly explanations** of essential background knowledge not easily learned from the text
* Include **pictures or videos** related to the topic within and in addition to the set of resources in the pack
* Select a small number of texts to **read aloud** with some discussion about vocabulary work and background knowledge
* Provide **audio recordings** of the texts being read by a strong reader (teacher, parent, etc.)
* **Chunk the text** and provide brief questions for each chunk of text to be answered *before* students go on to the next chunk of text
* Pre-reading activities that focus on the **structure and graphic elements** of the text
* Provide **volunteer helpers** from the school community during independent reading time
* Use expert Packs as the **resources for Guided Reading** with a small group of students

Why Text Sets Support English Language Learners

Those acquiring English as a second language have to learn many words in English to catch up with their English-only peers. Vocabulary builds at a much quicker pace when reading a set of connected texts. Text sets are an adaptable resource perfect for building knowledge and vocabulary. Student use of text sets can vary in terms of independence or teacher supports based on the individual needs of the students in the room. Activities found within the text set resources reflect several best practices for English Language Learner instruction including:

* Providing brief, engaging texts that provide a high volume of reading on a topic.
* Providing web-based resources and/or videos that are tied to the content of the texts students are reading.
* Providing opportunities for students to learn new vocabulary through the use of student-friendly definitions in resource-specific glossaries.
* Allowing for options to reinforce newly learned vocabulary and/or content through graphic organizers.
* Providing opportunities for students to reinforce new vocabulary through multi-modal activities including written work, group discussion, viewing visual content, and reading texts that feature the vocabulary.

Teachers of ELLs may use the protocols on the following pages to provide additional support to students who are struggling to access the content within text sets because they are new to English.

ELL Text Set Protocol Grades 3-12

The goal of text sets is to help students build knowledge through a volume of independent reading, and it is important that educators provide scaffolds to allow English Language Learners to be successful in engaging meaningfully with the texts, even as students are still developing English language skills. The protocol below can be used for teaching with text set resources as a full class. Students can also be trained on the protocol so that they can utilize text sets in small groups or partnerships as a resource for independent or reciprocal reading and study.

Please note that this protocol includes options for teachers. Individual decisions should be made considering the needs of the students and the demands of the content, keeping in mind that the goal of each scaffold is to allow students to meaningfully access the text and move toward independent, knowledge-building reading.

**Step one: Build knowledge and vocabulary.**

Introduce students to the overall topic/content of the text set, including knowledge demands needed to engage in the content, and domain-specific vocabulary necessary for comprehension. This should be done prior to engaging with the texts themselves; time allotted to this activity should reflect student needs (anywhere from 5 minutes prior to reading, to a full day’s lesson is appropriate).

*Options for this step include:*

* Engage students in reading and discussing auxiliary texts (of lesser complexity) and resources (illustrations, photographs, video clips) on the topic of the text set.
* Pre-teach a few key content-specific terms prior to students engaging with a text set. (Ideas for text-focused vocabulary instruction can be found [here](https://achievethecore.org/content/upload/Selecting%20and%20Using%20Academic%20Vocabulary%20in%20Instruction.pdf).)
* Provide the student-friendly glossary included in the text set prior to reading each text.
* When possible, allow students to read texts in their home language about the topic under study.

**Step two: Read text orally.**

Focusing on one resource at a time, allow students to listen to a fluent read of the resource, while following along with their own copy of the text.

*Options for this step include:*

* Have a fluent reader model the first read of a text or resource.
* Have students engage in a buddy/partner read.
* Use recordings of the text to provide additional opportunities to hear expert reading.

**Step three: Engage in group discussion about the content.**

Allow students time in partnerships or small groups to discuss the content of the resource.

*Options for this step include:*

* + Allow for discussion/conversation (in the students’ home language if possible) with a small group of students reading the same text set prior to writing or provide heterogeneous language groupings to talk about content and discuss what students are learning.
	+ Have students refer to the student-friendly glossary included with each text set to identify meanings for new vocabulary necessary for comprehension.

**Step four: Write about what was read.**

*Options for this step include:*

* Use the “Rolling Knowledge Journal” and/or “Rolling Vocabulary Journal” as a shared writing routine/ graphic organizer to help to scaffold the writing process and capture student knowledge over time.
* Provide students with several supports to help students engage in writing/drawing about what they read:
	+ Use mentor texts about which students can pattern their writing.
	+ Allow them to write collaboratively.
	+ Show students visual resources as prompts, etc.
	+ Provide language supports such as strategically chosen sentence starters.

**Repeat steps one through four with each resource in the text set as appropriate.**

**Expert Pack: Insects & Bugs**

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| **Learning Worth Remembering****Cumulative Activities –** The following activities should be completed and updated after reading each resource in the set. The purpose of these activities is to capture knowledge building from one resource to the next, and to provide a holistic snapshot of central ideas of the content covered in the expert pack. *It is recommended that students are required to complete* ***one*** *of the Cumulative Activities (Rolling Knowledge Journal or Rolling Vocabulary) for this Expert Pack.* |

**1. Rolling Knowledge Journal**

* Read each selection in the set, one at a time.
* After you read each resource, stop and think what the big learning was. What did you learn that was new and important about the topic from this resource? Write, draw, or list what you learned from the text.
* Then write, draw, or list how this new resource added to what you learned from the last resource(s).

**Sample Response:**

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| **Title** | **Write, Draw, or List** |
| **New and important learning about the topic** | **How does this resource add to what I learned already?** |
| 1. “National Geographic – Weird but True: Insects” | Some insects have some interesting talents. Cockroaches can survive underwater for up to 15 minutes, moths can smell each other from miles away, and grasshoppers can leap great distances. A caterpillar has more muscles than a human. Crickets detect sound through their knees. Some ants make themselves explode when attacked. |  |
| 2. *Wonders of Nature* | The world is full of interestinganimals. Some animals look strange or have special skills. Animals can actually be insects too! | People don’t give insects enough credit for all that they do. They are important to different habitats. |
| 3. *Extreme Insects* | Insects are always in danger and have many enemies. They are food for each other as well as other animals. Insects have many traitsthat help them stay alive like size, looks, and weapons. | Insects can be dangerous and super tough. They protect themselves and can become violent. |
| 4. *Nature Stinks*  | Both plants and animals can smell bad. Stinky plants smell bad to get helpful insects to come near. Stinky animals often smell bad to keep enemies away. Smelling bad helps both plants and animals stay alive. | There are other ways for insects to protect themselves without getting violent. They can also use their smell to deter enemies. |
| 5. *Everything Bugs: What Kids Really Want to Know About Bugs* | Without insects and spiders, we’d have no bug bites or cobwebs, no malaria, and no crops to be ruined by locusts. But wait, spiders and insects do a lot of good things too. If they disappeared, many fish, frogs, and bird would starve. | Since an insect is an animal, it can smell bad. But some plants smell bad to attract animals. This is so that they can pollinate when they fly between the flowers of the plants. |

**2. Rolling Vocabulary: “Fabulous Five”**

* Read each resource then determine the (up to) 5 words from each text that most exemplify the central idea of the text.
* Next use your 5 words to write about the most important idea of the text. You should have as many sentences as you do words.
* Continue this activity with EACH selection in the Expert Pack.
* After reading all the selections in the Expert Pack, go back and review your words.
* Now select the “Fabulous Five” words from ALL the word lists.
* Use the “Fabulous Five” words to summarize the most important learning from this Expert Pack

**Sample Response**

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| --- | --- |
| **Title:** | **Five Vocabulary Words & Sentences** |
| “National Geographic – Weird but True: Insects” | Words: insects, muscles, detect, outweigh, explode1. Insects include ants, bees, butterflies and beetles.
2. A caterpillar has more muscles than a human.
3. Crickets detect and hear sound through their knees.
4. The world’s termites outweigh the world’s people.
5. Some ants make themselves explode when attacked.
 |
| *Wonders of Nature* | Words: animals, tunnel, silk, blend, protect1. The world is full of interesting animals.
2. The trap-door spider lives in a tunnel in the ground.
3. The spider’s home has a hidden door made of silk and dirt.
4. These animals blend in well with real leaves on trees so they’re hard to see.
5. The leaf hides and protects her eggs from danger.
 |
| *Extreme Insects* | Words: traits, extreme, poison, danger, weapons1. Insects have many traits that help them stay alive, like their size and color.
2. Some of the extreme traits insects have that help them include shooting out stuff to hurt their enemies.
3. It shoots out poison that turns their insides to goo.
4. Animals are in danger when they are being attacked.
5. Weapons that these animals use are poison and sharp claws.
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| *Nature Stinks*  | Words: odor, stinky, enemies, liquids, burn1. If you’ve ever smelled a skunk, you know it is not a nice odor.
2. Stinky plants smell bad to get helpful insects to come near.
3. Stinky animals often smell bad to keep enemies away.
4. Some beetles can spray a mix of liquids that shoot out with a pop.
5. A stinky bugs’ spray can kill their enemies and burn people.
 |
| *Everything Bugs: What Kids Really Want to Know About Bugs* | Words: marvel, devour, malaria, crops, pollinate1. Maybe you marvel at dragonflies, but get the scared if you see a spider in your bathtub.
2. When caterpillars devour and eat my tomato plants, I almost wish the bugs would all go away.
3. Malaria, given to humans from mosquitoes, can cause a fever.
4. Crops¸ a place where something like corn is grown, can be ruined by locusts.
5. Chocolate comes from the seeds of the cacao plant, and in order to make seeds, cacao flowers must be pollinated by insects.
 |
| **Fabulous Five** | Words: animals, insects, traits, enemies, pollinatedThe world is full of interesting **animals**. Some animals look strange or have special skills, and some animals are actually **insects**. Insects have many **traits** that help them stay alive. These traits include size, looks, and weapons, and even smell! Stinky insects (and other animals) often smell bad to keep **enemies** away. Some people don’t like insects, but they are actually very important. In order for plants to grow, their flowers must be **pollinated** by insects; without insects, the plants wouldn’t grow. |

**Student Copy**

**1. Rolling Knowledge Journal**

* Read each selection in the set, one at a time.
* After you read *each* resource, stop and think what the big learning was. What did you learn that was new *and important* about the topic from *this* resource? Write, draw, or list what you learned from the text.
* Then write, draw, or list how this new resource added to what you learned from the last resource(s).

**Sample Response**

|  |  |
| --- | --- |
| **Title** | **Write, Draw, or List** |
| **New and important learning about the topic** | **How does this resource add to what I learned already?** |
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**2. Rolling Vocabulary: “Fabulous Five”**

* Read each resource then determine the 5 words from each text that most exemplify the central idea of the text.
* Next use your 5 words to write about the most important idea of the text. You should have as many sentences as you do words.
* Continue this activity with EACH selection in the Expert Pack.
* After reading all the selections in the Expert Pack, go back and review your words.
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**Sample Response**

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| --- | --- |
| **Title:** | **Five Vocabulary Words & Sentences** |
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| **Fabulous Five** | Words:  |

**Learning Worth Remembering**

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| **Singular Activities** – the following activities can be assigned for each resource in the set. The purpose of these activities is to check for understanding, capture knowledge gained, and provide variety of ways for students to interact with each individual resource. Students may complete some or none of the suggested singular activities for each text. Singular activities should be assigned at the discretion of the teacher. |

**1. Quiz Maker –** (Recommended for *Nature Stinks*)

* Make a list of questions that would make sure that another student understood the information.
* Your classmates should be able to find the answer to the question from the resource.
* Include answers for each question.
* Include where you can find the answer in the resource.

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| --- | --- |
| **Question**  | **Answer** |
| 1. |  |
| 2.  |  |
| 3. |  |
| 4. |  |

**2. A Picture of Knowledge** – (Recommended for “National Geographic – Weird but True: Insects,” *Wonders of Nature,* and *Everything Bugs: What Kids Really Want to Know About Bugs*)

(see graphic below)

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**3. Wonderings –** (Recommended for *Extreme Insects*)

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| **I’m a little confused about:** | **This made me wonder:** |
| On the left, track things you don’t understand from the video and the article.  | On the right side, list some things you still wonder (or wonder now) about this topic. |

**Expert Pack: Insects & Bugs**

Expert Pack Glossary

**“National Geographic – Weird but True: Insects”**

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| --- | --- |
| *Word* | *Student-Friendly Definition* |
| detect  | To discover something |
| muscles | A bundle of tissue in an animal body that gives it the ability to move and helps maintain the parts of the body |
| length | The distance from one side to another |
| directions | The line along which something moves |
| attacked | To want to hurt someone or something; come towards them in an unfriendly way |
| explode | To burst |

***Wonders of Nature***

|  |  |
| --- | --- |
| *Word* | *Student-Friendly Definition* |
| animal | A living organism that has senses, traits, and can respond to other things |
| protect | To keep safe |
| silk | A strong, soft fiber made by silkworms, a caterpillar that is part of the insect family |
| cone | A shape that is round and wide at the top and pointy and narrow at the bottom |
| hunt | To go and chase, sometimes for food |
| praying position | Hands in front of you, pressing the inside of your hand to the other hand; arms make a triangle position |

***Extreme Insects***

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| *Word* | *Student-Friendly Definition* |
| extreme | Much more than usual |
| poison  | A substance that can kill animals or plants |
| protect  | To keep something from being hurt |
| traits | Qualities that make living things different from one another |
| danger | Not feeling safe |
| frightens | To make afraid |
| fake | Not real |
| weapon | Something used to hurt something else |

***Nature Stinks***

|  |  |
| --- | --- |
| *Word* | *Student-Friendly Definition* |
| enemies  | Living things that hate or hurt other living things |
| liquid  | Something that flows and changes shape while keeping its size |
| spray | To scatter many drops of liquid in a certain direction |
| stinky | Having a strong or bad smell |
| bother | To make upset or to worry |

***Everything Bugs: What Kids Really Want to Know About Bugs***

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| *Word* | *Student-Friendly Definition* |
| aphids | A small bug that eats sap from plants. They often help plant to pollinate  |
| conservation  | Saving a living thing to keep it from becoming extinct  |
| crops | Plants that were planted to be used as food |
| devour | To eat quickly and enthusiastically  |
| malaria | A sickness caused by parasites. Bugs, including mosquitos are known to spread this life-threatening illness |
| To marvel  | To be inspired by something |
| pollinate | To move pollen from one plant to another. Pollen is a microscopic yellow powdery substance that allows plants to become fertilized in order to make seeds for more plants |

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