

EAT BUGS PROJECT STARTUP


**CURRICULUM GUIDE, DISCUSSION QUESTIONS, ENRICHMENT
ACTIVITIES & AND LOTS OF BUGGY FUN!**

Vocabulary, Writing & Discussion Prompts, Social Studies & Science
Activities, Building a Business & Entrepreneurship, Math & Data
Measurement, Enrichment Activities & Fun, and Amazing Additional Resources



EAT BUGS: PROJECT STARTUP is inspired by the true story of two friends who landed a deal on *Shark Tank*. These sixth-grade students-turned-entrepreneurs are on a mission to build a buzz-worthy business and save the world one bug at a time!

BY HEATHER ALEXANDER, WITH LAURA D'ASARO AND ROSE WANG • ILLUSTRATED BY VANESSA FLORES

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heatheralexanderbooks.com

eatchirps.com/book

USING THE GUIDE

Information and activities are organized by subject with titles in bold. All teacher instructions are *italicized*. The corresponding chapters from *Eat Bugs: Project StartUp* are listed in **RED** next to the activities, and the Common Core State Standards for grades 3–5 are listed in **BLUE**. For more information on the Common Core, visit corestandards.org.

The discussion questions, prompts, and activities in this guide were created by Paige A. DeLozier. She was an elementary teacher for 6+ years in Metropolitan Nashville Public Schools before joining the team at TalkingPoints edTech non-profit organization. She holds her undergraduate degree in Interdisciplinary Studies with her K-6 ESOL endorsed teaching license.

*If you want to experiment with eating insects, please don't eat insects you catch in the wild.
You can purchase edible insects that are farmed and have gone through quality testing.
Also, if you are allergic to crustaceans or shellfish, you may be sensitive to insects.*



PROJECT STARTUP VOCABULARY

business	when someone makes, buys, and sells goods or services
edible	able to be eaten safely
entrepreneur	someone who starts and manages a business
environment	all the living and nonliving things, including air and water, within a given area
goods	items to be sold or purchased
insect	a small, air-breathing animal with six legs and a body segmented into three parts
protein	a substance within a food source made up of amino acids essential to the diet of all animals
services	work to be done and paid for by a customer
startup	a small, new business
sustainable	able to continue; able to be kept going for a considerable amount of time

WRITING & DISCUSSION PROMPTS

COMPREHENSION

1. What important information about Hallie and Jaye is revealed in Chapter 1 at the zoo? How are the girls alike? How are they different? How does Jaye view Hallie when she first meets her? How does her opinion change by the end of the book?

CHAPTER 1 CCSS.ELA-LITERACY.RL.3.3 CCSS.ELA-LITERACY.RL.4.3 CCSS.ELA-LITERACY.RL.5.3

2. The title of Chapter 2 is “Jaye.” Why is this the title of the chapter? How is this chapter different from Chapter 1? How do the chapter titles help you, as the reader, better understand the characters in the story?

CHAPTER 2 CCSS.ELA-LITERACY.RL.3.6 CCSS.ELA-LITERACY.RL.4.6
CCSS.ELA-LITERACY.RL.5.6

3. Look at the following chart of character traits. Check off the ones that describe Hallie. Check off the ones that describe Jaye. What about you? Explain your answers.

AFTER CHAPTERS 1 & 2 CCSS.ELA-LITERACY.RL.3.3 CCSS.ELA-LITERACY.RL.4.3 CCSS.ELA-LITERACY.RL.5.3

Character Trait	Hallie	Jaye	You
confident			
brave			
adventurous			
curious			
stubborn			
smart			
caring			

4. Jaye has been friends with Spencer since they were in kindergarten. Describe their friendship and how it has changed.

CHAPTER 6 CCSS.ELA-LITERACY.RL.3.1 CCSS.ELA-LITERACY.RL.4.1 CCSS.ELA-LITERACY.RL.5.1

5. Jaye goes to hang out with Erica, Spencer, and some other kids when she's supposed to be helping Hallie. Why does she keep spending time with these kids? How do you know?

CHAPTER 14 CCSS.ELA-LITERACY.RL.3.1 CCSS.ELA-LITERACY.RL.4.1 CCSS.ELA-LITERACY.RL.5.1

6. Rather than being disappointed or arguing over the results of the pitch competition, what did Hallie and Jaye do?

CHAPTER 19 CCSS.ELA-LITERACY.RL.3.1 CCSS.ELA-LITERACY.RL.4.1 CCSS.ELA-LITERACY.RL.5.1

7. Over the course of the novel, many characters experienced challenges and issues that altered the way they felt and behaved. Complete the chart below to show how these characters changed by describing how they acted at the beginning and at the end of the novel.

END OF NOVEL CCSS.ELA-LITERACY.RL.3.3 CCSS.ELA-LITERACY.RL.4.3 CCSS.ELA-LITERACY.RL.5.3

Character	Beginning of Novel	End of Novel
Hallie		
Jaye		
Spencer		
Jaye's Mom		

OPINION

CCSS.ELA-LITERACY.W.3.1 CCSS.ELA-LITERACY.W.4.1 CCSS.ELA-LITERACY.W.5.1

1. Jaye has found that doing origami “makes that fluttery feeling I sometimes get in my stomach not feel so bad.” Many people turn to hobbies or activities, such as coloring, doing puzzles, building Legos, or shooting basketballs, to help them feel calm. What activity do you find calming? What other activities do you think may have the same effect? Explain why they help.

CHAPTER 6

2. Hallie and Jaye's path to friendship is rocky. What are four qualities you think one should have to be a good friend? Do Hallie or Jaye display those qualities? Is one girl a better friend than the other? Explain your answer. What's one quality your close friend has that you admire? Why?

CHAPTER 10

3. Hallie feels betrayed seeing Jaye with Erica and Spencer in Chapter 14, and afterward she refuses to speak to Jaye. Jaye feels horrible that the other kids laughed at Hallie. Have you ever had to reach out to someone to say that you're sorry after a disagreement? How did you go about it?

CHAPTER 14

4. What does a good apology from a friend look like? Is it a phone call? A text? A face-to-face conversation? Do you have to accept apologies immediately, or is it okay to take some time when you've had your feelings hurt?

CHAPTERS 15 & 16

EXPLANATORY

CCSS.ELA-LITERACY.W.3.2 CCSS.ELA-LITERACY.W.4.2 CCSS.ELA-LITERACY.W.5.2

1. Spencer's group presented an idea they didn't come up with. This caused Hallie and Jaye to make quick changes to their project plans. Explain what happened when they suddenly had to switch ideas. What did Hallie do? What did Jaye do? How did it turn out?

CHAPTERS 8 & 9

2. Hallie and Jaye create a secret, Partner Power Pulse hand squeeze. Write about a secret call, signal, made-up word, or inside joke you have with friends or family. If you don't have one, make up a signal you could use with people close to you and describe it.

CHAPTER 17

3. Have you ever participated in a competition? Maybe it was a sporting event or a spelling bee. Explain how you would prepare for a competition that makes you nervous.

CHAPTER 18

SOCIAL STUDIES & SCIENCE ACTIVITIES

ENTOMOPHAGY (en-tuh-MAH-fuh-jee):
otherwise known as EATING BUGS

Read this paragraph to the students to introduce the term entomophagy and then chose to complete any of the discussion/writing prompts.

“Entomophagy is the practice of consuming insects. Over two billion people in 80 percent of the world eat insects as part of their daily diet, and many cultures have eaten bugs for over thousands of years. Western cultures have only recently become aware of the nutritional and environmental advantages of edible insects.”



“SHOULD WE EAT BUGS?”

<https://ed.ted.com/lessons/should-we-eat-bugs-emma-bryce>

What do you think? Should we eat bugs? Prepare your own short TED Talk on whether you agree or disagree with the views expressed in the video, making sure to back up your opinions with reasonable explanations. Take turns presenting your TED Talks to the class.

CHAPTER 3 CCSS.ELA-LITERACY.SL.3.1 CCSS.ELA-LITERACY.SL.4.1 CCSS.ELA-LITERACY.SL.5.1

THE HARDEST INSECT TO EAT IS . . . YOUR FIRST ONE!

Sometimes trying a new food is scary. For example, Americans thought sushi was “icky” until the California roll was introduced. Let’s see what kinds of foods we like and dislike!

CHAPTER 3 CCSS.ELA-LITERACY.SL.3.4 CCSS.ELA-LITERACY.SL.4.4 CCSS.ELA-LITERACY.SL.5.4

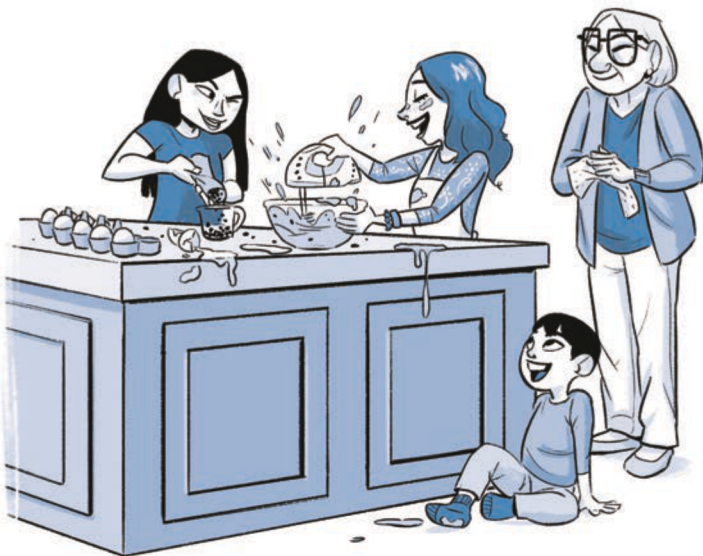
- Like or Dislike? Have students stand in the middle of the room and listen carefully for you to name different kinds of foods. When you say a food out loud, they are to run to one side of the room if they like it and the other if they don’t. (You’ll need to explain which side is which prior to the start of the activity.) Once there, give them a few seconds to turn and talk about why they like or dislike the food before you call out a new one.
- Think About It. Write or talk about a time you tried a new food. Discuss the different characteristics (appearance, smell, color—use all five of your senses) that first made you hesitant to try it. Did it taste the way you expected?

TOP FIVE LIST

Hallie loves to make lists. Create a “Top Five List” of the benefits of eating insects. To best do this, research the farming and eating of crickets. Try to answer the following questions:

CHAPTER 1 CCSS.ELA-LITERACY.RI.3.5 CCSS.ELA-LITERACY.RI.4.5 CCSS.ELA-LITERACY.RI.5.7

- What is the nutritional value of eating crickets (and other insects)?
- Why is cricket farming environmentally conscious?
- How does what we eat affect the health of the planet?
- What might some of the effects (for example, on the environment, or on society) be if our planet switched out our beef-heavy diet to an insect-heavy diet?



BE A BUG CHEF!

In *Project Startup*, Jaye and Hallie first bake edible bug cookies and then decide to cook cricket chips. If you were part of their team, what other edible bug food products would you suggest making? Grasshopper ice cream? Termite tacos? Here’s a word bank of edible insects. Choose one and create something original (and delicious!), and explain your choices.

CHAPTER 7 THROUGH END

ant
bee

centipede
cicada

cricket
dragonfly

grasshopper
mealworm

scorpion
tarantula

termite
wasp

Next, research an edible insect recipe from around the world and report on the following:

- The country it comes from: locate the country on a map
- The type of insect: list three facts about that insect
- How the insect is cooked or prepared

Now it's time to create your own edible bug recipe. Give it a catchy name. Be sure to list all the ingredients and give step-by-step instructions. (The recipes can be collected and combined into a classroom

cookbook. Or email them to info@eatchirps.com and they might be featured on the website.)



Recipe: _____



Ingredients:

Directions:

From the Kitchen of: _____

DETERMINATION NATION

Select a short supplemental book to read aloud that emphasizes the theme of perseverance. Use the book's thematic connections to Hallie's and Jaye's journey in *Project StartUp* to complete this activity.


CCSS.ELA-LITERACY.RL.3.2 CCSS.ELA-LITERACY.RL.4.9 CCSS.ELA-LITERACY.RL.5.2

Supplemental read-alouds:

- *Amazing Grace* by Mary Hoffman
- *She Persisted: 13 American Women Who Changed the World* by Chelsea Clinton
- *Ada's Violin: The Story of the Recycled Orchestra of Paraguay* by Susan Hood
- *Firebird* by Misty Copeland

Before reading, discuss the meaning of the words *determination* and *perseverance*. What did they mean for Hallie and Jaye? What have they meant for each of us in our lives? Prepare the reader to look for evidence of this in the new book.

Create this chart to refer to and fill out before, during, and after reading the new text.



Examples of Determination/Perseverance		
<i>Project StartUp</i>	[Title of New Book]	My Life

Stop periodically throughout the book to add new findings to the chart.

After completing both books and the chart, have students use chart as a guide for their written task.

WRITTEN TASK:

What is perseverance? Give examples of perseverance from *Project StartUp* and the second book that you read. Can you think of a time when you persevered? How did you feel?

BUILDING A BUSINESS & ENTREPRENEURSHIP

PAIN POINTS

A pain point is a problem a person is having that an entrepreneur finds innovative solutions for. Think about your average day in your classroom from the time you sit down to the time the bell rings. What problems arise that you and your classmates wish there was a solution to? You could be the person to fix it!

THE BIG IDEA

All businesses start with an idea. Some of the best ideas come from trying to solve a problem. Where did Hallie's inspiration for creating an edible bug business come from? Explain how or where you get your best ideas.

CHAPTER 11

START A BUSINESS!

Make a business plan for your very own startup.

My Name: _____

My Business Will Be: _____

It will be a **GOOD** or a **SERVICE** (circle one)

The Problem It Solves Is: _____

My Target Audience (People Who Will Want It) Is: _____

Name Ideas: _____

**Drawing of My Product
(or the Packaging):**

My Partners and/or the People On My Business Team Will Be:

A List of Materials or Ingredients Needed and the Price:

Material/Ingredient

Price

<hr/>	<hr/>
<hr/>	<hr/>
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Ways to Make, Raise, or Save Money to Pay for the Business:

I Hope My Business Will Become:



A GREAT SALESPERSON

Congratulations! You have just been hired to be the director of sales for Chirps Chips. Your first job is to persuade your town's grocery store to carry cricket chips and place them at the front of the store. Write the store a persuasive letter (or a pitch). Include facts and convince them that people are going to buy your chips!

CHAPTER 4 CCSS.ELA-LITERACY.W.3.1, CCSS.ELA-LITERACY.W.4.1, CCSS.ELA-LITERACY.W.5.1



LOGO-LAND

A strong, easy-to-recognize logo is important to the success of a business. Describe what makes a good logo. Think about the color, shape, simplicity, beauty, and reflection of the product.

CHAPTER 14

MATH & DATA MEASUREMENT

GATHERING INTEL

Working alone or in a group, conduct an opinion poll. Ask the following questions:

Would you eat insects? What kind of edible bug would you try first? You can create your own additional questions.

CHAPTER 12 CCSS.MATH.CONTENT.3.MD.B.3

Before conducting the poll, decide the following:

- Who will you poll?
- How many people will you poll?
- How will you poll them? (in person, written, online)

Compile and tally the opinion poll results. Discuss your findings. You may also want to graph your result or create a chart.

CRUNCHING NUMBERS

It takes 2,000 gallons of water to make 1 pound of beef. It takes 1 gallon of water to make 1 pound of crickets. How much water would it take to make 50 pounds of crickets? 100 pounds? How much water would it take to make 50 pounds of beef? 100 pounds? Show your math.

CHAPTER 5 CCSS.MATH.CONTENT.3.NBT.A.3 CCSS.MATH.CONTENT.4.NBT.B.5 CCSS.MATH.CONTENT.5.NBT.B.5

PENNIES FOR A PLAYGROUND

At the end of the novel, there is an interview with the real cofounders of Chirps chips. Laura explains that when she was a kid, she had a lemonade and cookie stand that raised \$14,000 to replace the playground equipment in a local park.

TRUE STORY CCSS.MATH.CONTENT.4.NBT.B.6 CCSS.MATH.CONTENT.5.NBT.B.6

- If each cup of lemonade cost 50 cents, how many cups did she sell?

ENRICHMENT ACTIVITIES & FUN

QUIZ: WHAT BUGS YOU?

This is a fun quiz to gauge students' comfortability with and knowledge of edible insects. You can give it prior to reading the novel and then again afterward, and compare the results.

1. How do you feel about eating bugs?
 - a. Yum! Totally into it!
 - b. I have an open mind.
 - c. Um . . . not so sure.
 - d. No way!
2. Would you eat a bug if it looked like a bug?
 - a. Of course!
 - b. Sure, but it needs to be a small bug.
 - c. If it's drenched in chocolate.
 - d. Nope.
3. Would you eat a bug if you knew it was in your food but you couldn't see it?
 - a. Of course!
 - b. Sure, but it needs to be a small bug.
 - c. If it's drenched in chocolate.
 - d. Nope.
4. You go to a friend's house for dinner, and you don't recognize the food they pile onto your plate. You:
 - a. Dig in! You're eager to see what the mystery meal tastes like.
 - b. Sniff the food. Poke it with your fork. Then take a bite.
 - c. Politely ask what's being served and the ingredients. Then take a teeny-tiny taste.
 - d. Pretend you aren't hungry. (You'll eat your own food later, thank you very much.)

Name: _____

WHAT KIND OF BUG AM I?

USE THE CLUES TO FIND EACH INSECT.

I live in a hive with a queen.
I carry pollen from flower to flower.
I am yellow and black.
I am a(n) _____.

I scare away predators with my red and black colors.
I like to eat aphids and plants.
I live on every continent except Antarctica.
I am a(n) _____.



I can be red or black.
I can carry a heavy load.
I am sometimes a soldier in a colony.
I am a(n) _____.



I have ears on my belly.
I can hop eighty times my length.
I make music with my legs and wings.
I am a(n) _____.

I am a super-fast runner.
I have been on Earth longer than any other insect.
I breathe through holes all over my body.
I am a(n) _____.



Answers: bee, ladybug, ant, grasshopper, cockroach

ACROSTIC POEMS

Acrostic poems are simple poems in which the first letter of each line forms a word or phrase. An acrostic poem can describe the subject or even tell a brief story about it. Write an acrostic poem that describes each word provided.

C _____

R _____

I _____

C _____

K _____

E _____

T _____

ACROSTIC POEM

E

A

T



B

U

G

S



ACROSTIC POEM

B

U

S

I

N

E

S

S

Name: _____

EAT BUGS! EDIBLE INSECTS SEARCH

Find the following words in the puzzle.
Words are hidden horizontally, vertically, and diagonally.

C	H	G	T	S	Q	E	T	L	T	I	F	U	H	D	A	G	Y
E	L	R	W	O	Z	M	L	A	C	N	W	J	L	M	W	N	S
N	L	A	C	C	Q	E	D	S	R	K	T	I	D	R	N	Q	T
T	V	S	R	X	V	A	R	X	C	A	B	K	H	P	J	P	V
I	N	S	I	Q	C	L	A	T	L	O	N	E	C	S	F	Y	E
P	W	H	C	Y	I	W	G	E	X	K	R	T	E	X	D	Y	L
E	J	O	K	S	C	O	O	R	X	D	D	P	U	C	M	D	F
D	S	P	E	M	A	R	N	M	R	C	D	T	I	L	E	Y	B
E	V	P	T	Q	D	M	F	I	Z	M	H	J	Y	O	A	K	A
K	V	E	G	J	A	Y	L	T	Z	Q	V	N	F	G	N	S	O
Z	N	R	M	G	I	G	Y	E	S	W	A	S	P	V	Q	T	C
I	X	P	G	T	O	E	N	T	O	M	O	P	H	A	G	Y	Y

ANT
BEE
CENTIPEDE
CICADA
CRICKET

DRAGONFLY
ENTOMOPHAGY
GRASSHOPPER
MEALWORM
SCORPION

TARANTULA
TERMITE
WASP



Name: _____

EAT BUGS! BUSINESS WORD SEARCH

Find the following words in the puzzle.
Words are hidden horizontally, vertically, and diagonally.

B	R	A	N	D	R	E	S	E	A	R	C	H	S	R	V	A	F
Y	S	A	B	U	D	G	E	T	D	K	C	P	T	E	F	G	I
B	M	K	G	Y	D	L	E	L	V	F	U	R	A	I	L	Q	G
Y	M	F	J	R	B	I	M	H	E	D	S	O	R	C	D	L	B
H	O	V	P	F	U	I	T	G	R	A	T	F	T	P	Q	D	C
O	Y	G	R	E	S	D	U	T	T	C	O	I	U	T	Q	P	O
F	X	T	I	S	I	E	C	M	I	A	M	T	P	P	J	I	S
F	L	S	C	D	N	A	E	H	S	K	E	P	A	F	N	T	T
R	O	V	E	Q	E	D	I	I	I	U	R	L	D	I	W	C	S
G	G	C	C	V	S	Y	R	F	N	D	O	A	G	Y	X	H	S
N	O	K	C	H	S	Q	T	S	G	K	N	N	D	V	C	M	B
E	N	T	R	E	P	R	E	N	E	U	R	S	H	I	P	P	Z

ADVERTISING
BRAND
BUDGET
BUSINESS
COSTS
CUSTOMER

ENTREPRENEURSHIP
IDEA
LOGO
PITCH
PLAN
PRICE

PROFIT
RESEARCH
SELL
STARTUP



ADDITIONAL RESOURCES

- [Bug Me While I'm Eating Lesson](#) – Education World
- [Can Eating Insects Save the World?](#) – BBC
- [Chirping Crickets Science Project](#) – Education.com
- [Chirps Chips](#) – The real deal
- [Climate Kids](#) – NASA
- [Cricket Experiment Ideas](#) – Beachwood Schools
- [Insect Research Articles](#) – National Geographic Kids
- [Teacher/Parent Resources](#) – University of Kentucky Department of Entomology
- [Your Questions About Food and Climate Change, Answered](#) – New York Times



5 FUN FACTS ABOUT EATING INSECTS

- 1** More people eat insects than speak English. In fact, over 2 billion people eat insects regularly.
- 2** It takes over 2,000 gallons of water to make 1 pound of beef, but only 1 gallon of water to make a pound of crickets.
- 3** There are thousands of different kinds of insects eaten all over the world. Some are sour and some even taste like bacon!
- 4** Kids in parts of Cambodia collect crickets each night, bring them in to school, and the school cafeteria will cook them up for lunch everyday.
- 5** Insects are a delicacy in many parts of the world. Fried wasps mixed with boiled rice, sugar, and soy sauce, was a favorite dish of Emperor Hirohito of Japan.