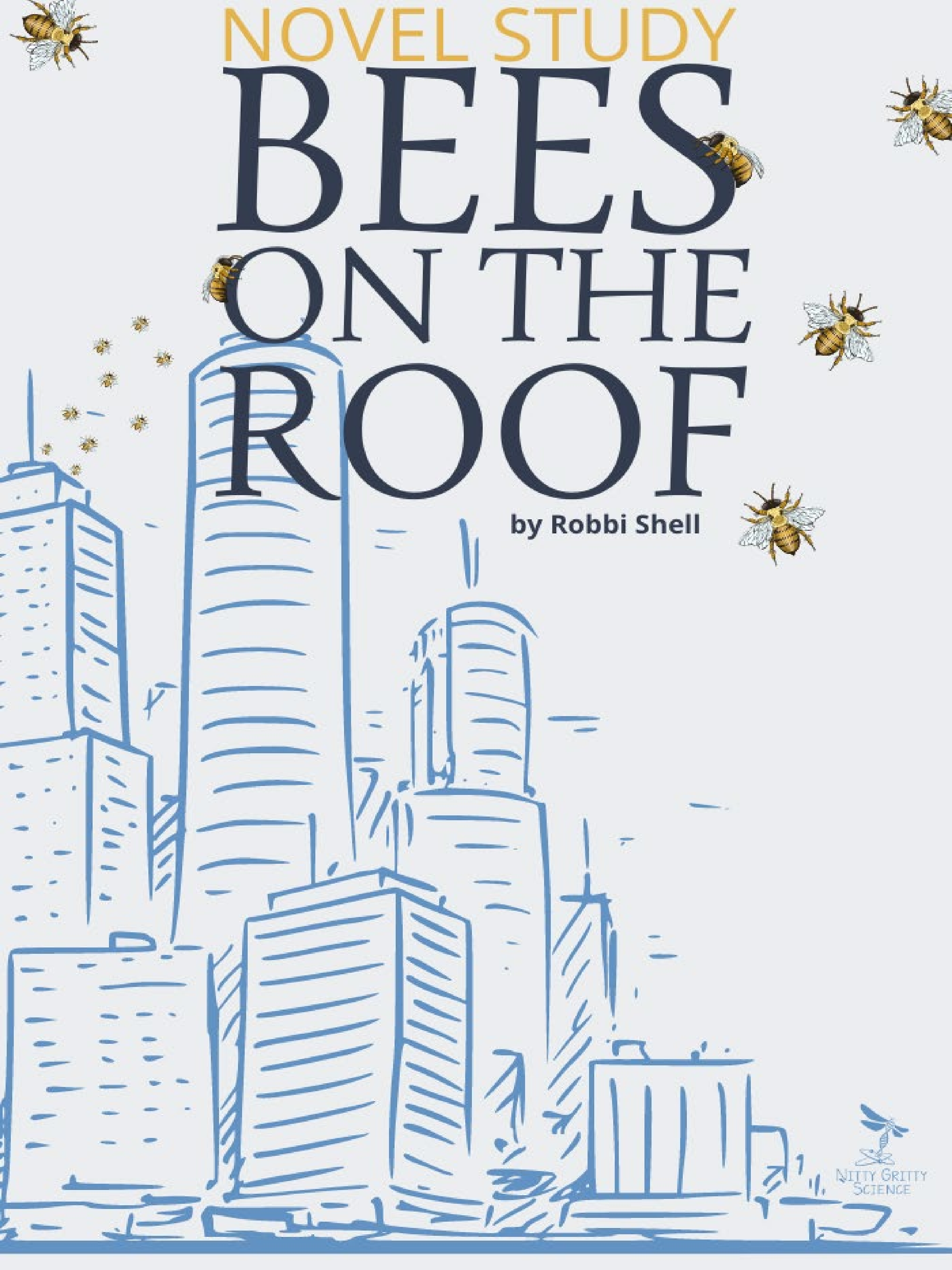


NOVEL STUDY

BEEES ON THE ROOF

by Robbi Shell



Why Novel Studies in the Science Classroom?

Here at Nitty Gritty Science we want to foster the love of reading and improve science literacy. We believe that using novel studies in the science classroom will not only give students exposure to different perspectives but will also help them develop an understanding of how science vocabulary applies to so many events in their lives.

Research also shares benefits of using novel studies in the science classroom such as:

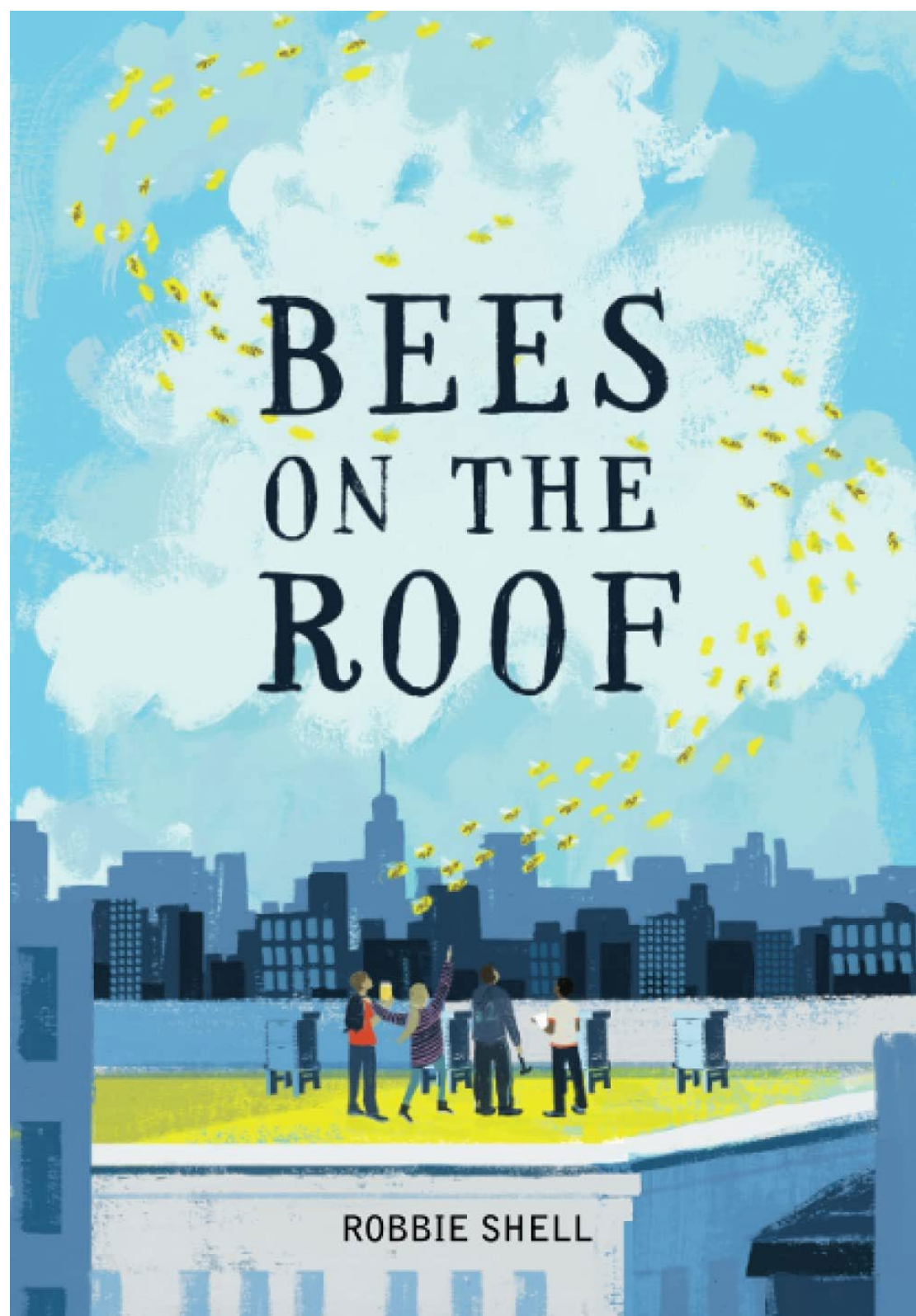
The literacy from reading can easily come from non-fiction and fiction novels that surround a science-related topic and are far more of a high-interest read for the majority of students than reading a textbook (Anderson & Hite, 2010; Batchelor, 2017; Coiro, 2012; Freudenrich, 2000).

Science fiction novels are an excellent way to engage students in science ideas while also helping students improve their literacy skills. (Creech and Hale, 2006)

Teachers can add in other readings from the internet and news articles which brings the reading level down to a more manageable level, however students are more willing to learn and spend the time to learn new vocabulary when highly engaged in what they are reading (Weinbugh et al., 2014).

There is very little research out there about the usefulness of using novels in classrooms other than ELA. Others have used novels and other types of formats to get students excited about science and science concepts (Batchelor, 2017; Coiro, 2012; Freudenrich, 2000; Ivey & Fisher, 2005; Jarman & McClune, 2001), but very few have used novels to teach science concepts and also try to increase literacy skills among students in the secondary classroom, so Nitty Gritty Science is here to help with that!

Happy reading,
Erica



The *Bees On The Roof* novel study follows the story of Sam, who needs to find a seventh-grade science fair project and a way to save the restaurant where his father works. When he enrolls three friends in an effort to raise bees on a hotel roof in New York City, the complications multiply. Bee sting allergies, a great bee die-off, a rival team's cheating, a mysteriously reclusive science teacher, and Sam's romantic feelings for a classmate make the bee project anything but simple. This story includes lots of facts about bees and Colony Collapse Disorder.

"Honey bees are endlessly fascinating creatures, with complex social organization, symbolic dance language, and altruistic behavior. Recent declines in honey bee populations worldwide have also raised our awareness of how important they are for pollinating our agricultural crops and maintaining a healthy and balanced environment. Bees on the Roof is a wonderful introduction into the world of bees, and the beekeepers who care for them. As anyone who has kept bees knows, caring for these complex creatures is both extremely challenging and rewarding. Indeed, what starts as a 'simple' science project for Sam and his friends turns into a life-changing journey, and their experiences with their colonies of honey bees help them learn about themselves, each other, their families, their community, and their world." —Christina Grozinger, Distinguished Professor, Entomology; Director, Center for Pollinator Research, Pennsylvania State University

Hyperlinked Table of Contents

Table of Contents: <u>Bees on the Roof</u> Novel Study	
Description	Page #
Before You Read	3
Word Study: Chapters 1-5	4-7
Types of Bees	8
Parts of Bees	9
Word Study: Chapters 6-12	10-11
Pollination	12
Comprehension Questions: Chapters 13-19	13
Word Study: Chapters 13-19	14-15
Comprehension Questions: 20-24	16
Word Study: Chapters 20-24	17-19
Comprehension Questions: Chapters 25-32	20
Word Study: Chapters 25-32	21-22
Comprehension Questions: Chapters 33-42	23
Word Study: Chapters 33-42	24-25

Check out the following sample pages focusing on science vocabulary, reading comprehension, and literacy-based projects!

BEFORE YOU READ

Directions: Research bees and write them

BEES ON THE ROOF

Initials: _____

WORD STUDY Chapters 1-5

1. Feign

2. Claustrophobic

Identify a synonym for feign.

3. Colony Collapse Disorder

Explain Colony Collapse

BEES ON THE ROOF

Initials: _____

Comprehension Questions: 13-19

1. Describe the different components of the beehive the kids will need to purchase for their project.

BEES ON THE ROOF

Initials: _____

WORD STUDY Chapters 1-5

9. Bacteria

Strep throat pneumonia are of bacterial

TRUE

11. Viruses

A virus is treated with antibiotics

TRUE

13. Cells

What are the parts of a cell?

- 1.
2.
3.

BEES ON THE ROOF

Initials: _____

WORD STUDY

14. Ecosystem

Definition:

16. Cancer

Cancer is uncontrolled cell growth.

18. Amputation

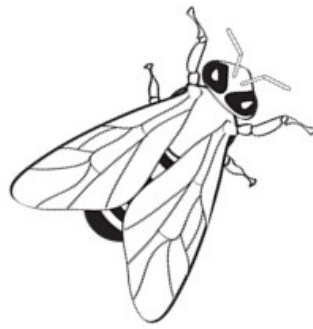
If someone has cancer, they may have to have a part of their body removed.

BEES ON THE ROOF

Initials: _____

Types of Bees

Directions: List three characteristics for each type of bee.



Drone:

- 1.
2.
3.



Queen:

- 1.
2.
3.



Worker:

- 1.
2.
3.

Vocabulary

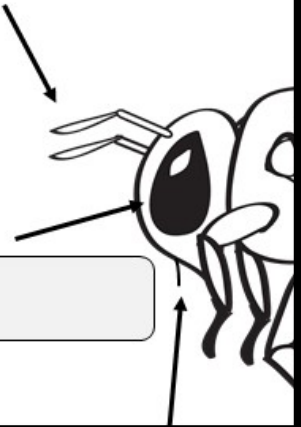
BEES ON THE ROOF

Initials: _____

Parts of a Bee

Directions: Correctly use the word bank below.

Antennae
Eyes
Wing
Proboscis



BEES ON THE ROOF

Initials: _____

WORD STUDY: Chapter 33-42

65. Microbiology

Microbiology is the study of _____ of _____.

Give three examples of _____.

1. _____
2. _____
3. _____

67. Pollutants

Identify one common pollutant and its health hazard.

69. Entomology

An entomologist is a scientist who studies insects.

- a. is an expert on insects
- b. studies plants
- c. is an expert on math
- d. uses math to study insects

BEES ON THE ROOF

Initials: _____

WORD STUDY Chapters 6-12

19. Varroa mites

The varroa mite is a parasite because it gets its nourishment from honeybees and lives off of honeybees.

21. Endangered

Compare endangered species to an extinct species.

20. Nectar

BEES ON THE ROOF

Initials: _____

WORD STUDY Chapters 6-12

24. Apiarists

An apiarist _____.

- a. keeps and takes care of reptiles
- b. is a beekeeper
- c. spends a lot of time with apes and gorillas

25. Ambitious

List three characteristics of someone who is ambitious.

1. _____
2. _____
3. _____

Waggle Dance

The waggle dance is a way that bees communicate.

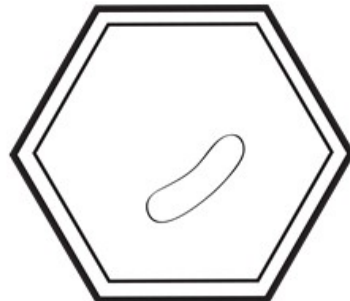


BEES ON THE ROOF

Initials: _____

Honeybee Life Cycle Project

Directions: After researching the honeybee life cycle, you will create a diorama that shows and explains the stages of the life cycle. Use the spaces below to begin creating your diorama.

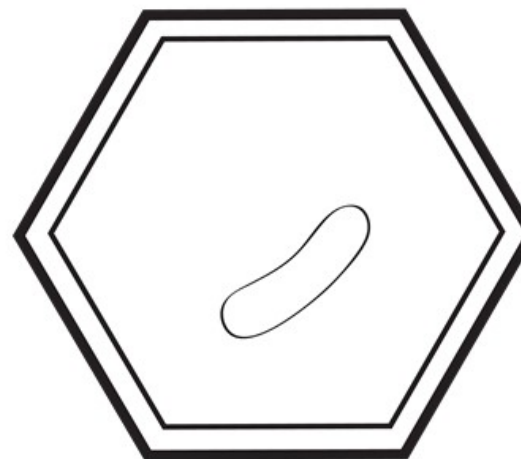




BEES ON THE ROOF

Initials: _____

Honeybee Life Cycle Project



Novel Project Options



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