

A Common Core State Standards and Next Generation  
Science Aligned Classroom Activities and Project Ideas for

# 100 BUGS!

## A Counting Book


FARRAR STRAUS GIROUX  
New York

Written by Kate Narita

Illustrated by Suzanne Kaufman

ISBN: 978-0374306311 ♦ Grades K-5



“Packed with great extension possibilities, visually engaging illustrations, and quick rhymes, this read-aloud would be a great addition to any STEM shelf.” —Kirkus Review 

# Meet the Team

**Kate Palaces Narita** is the author of *100 Bugs! A Counting Book*. When she's not out and about driving, teaching fourth grade or cheering on her two teenage sons, Kate lives, writes, and hikes on a small mountain in central Massachusetts. There's a magical part of Mt. Wachusett in every one of her stories. Be it small wonders like darting dragonflies and gorgeous garden phlox, or large wonders like munching moose and beautiful balsam firs, she celebrates nature's bounty each and every day. Visit her at [www.katenarita.com](http://www.katenarita.com).



**Suzanne Kaufman** is an author, illustrator, animator and lover of school potlucks. She is the author-illustrator of *Confiscated* and *I Love Monkey*. Her previously illustrated work includes books: *All Are Welcome*, *100 Bugs*, *Naughty Claudine Christmas*, and *Samanthasaurus Rex*. Over the years, she's done everything from animating special effects for Universal Television and Discovery Channel, to animating award-winning video games for children. When not tramping through the wilds of the Pacific Northwest, you will find her teaching animation or working in her studio. She lives in Seattle with her husband and two creative daughters of her own. Visit her at [www.suzannekaufman.com](http://www.suzannekaufman.com).



**Lisandra Flynn** is an editor turned elementary school teacher who works with Kate. She has a flair for design and enjoys creating learning resources for her students and fellow teachers. When she's not teaching or tediously reorganizing her classroom, Lisandra enjoys hiking, crafting, and decorating her home in central Massachusetts, which she shares with her husband, baby boy, and two feisty cats.





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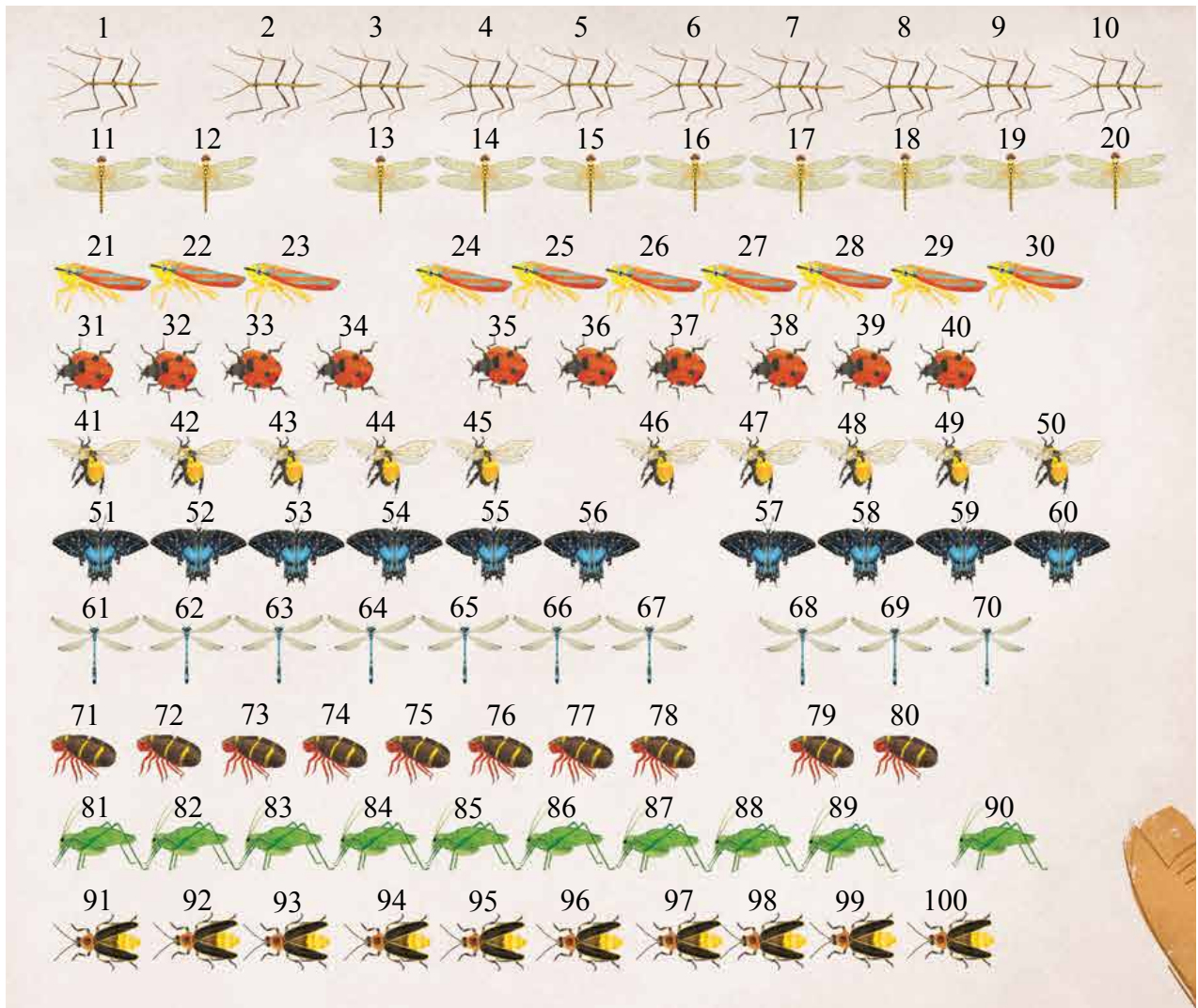
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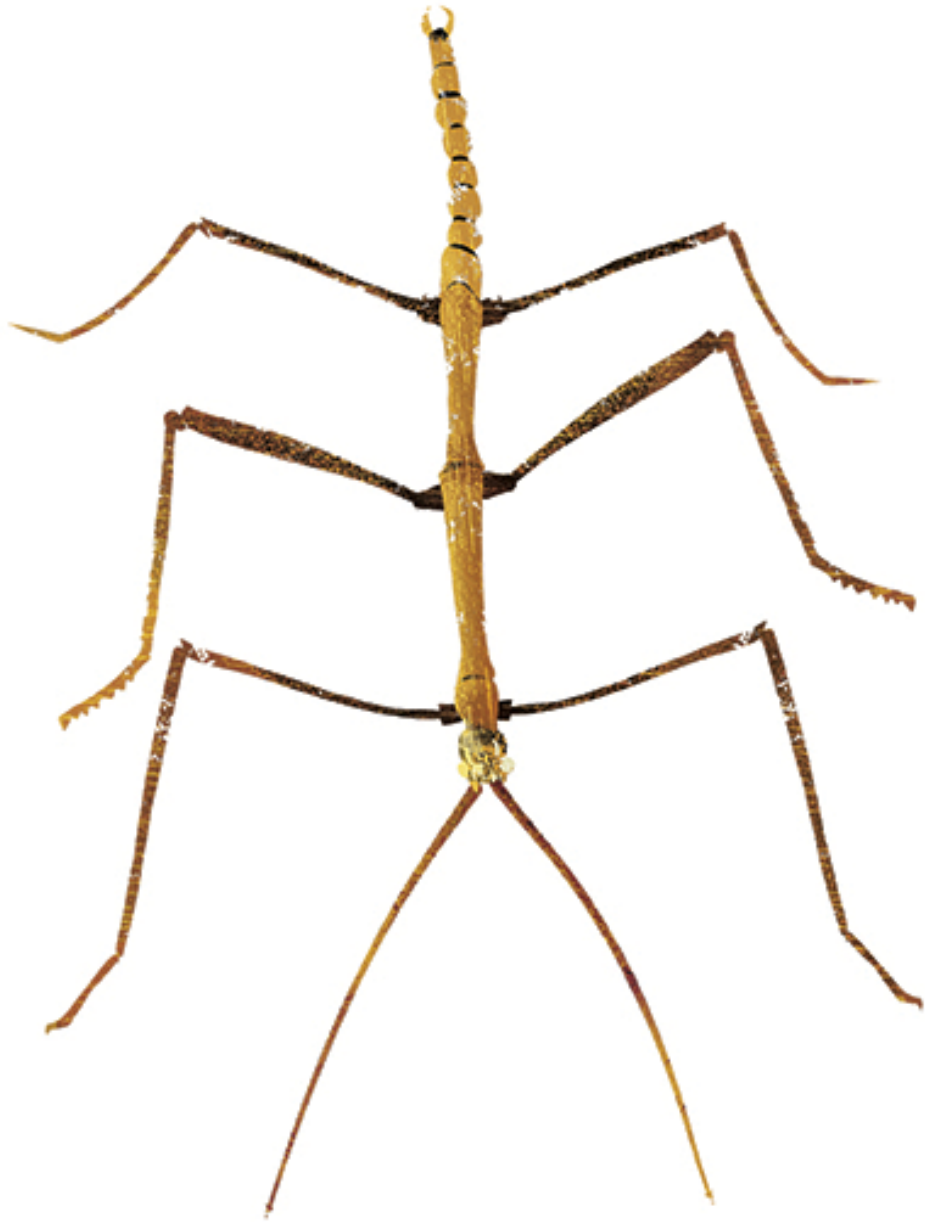


# Look-and-Find Bug Hunt

Suzanne Kaufman's delightful look-and-find illustrations are tons of fun. Create your own look-and-find learning experience in your school. Print out 100 copies of Ms. Kaufman's whimsical insects (attached) or team up with an older class in your school. Ask the older students to draw the 100 bugs featured in the book and hide them in the hallways around the school. Then, give your students a copy of the array below from the book. Each time students find one of the bugs, have them cross off the bug on their array.

Name: \_\_\_\_\_

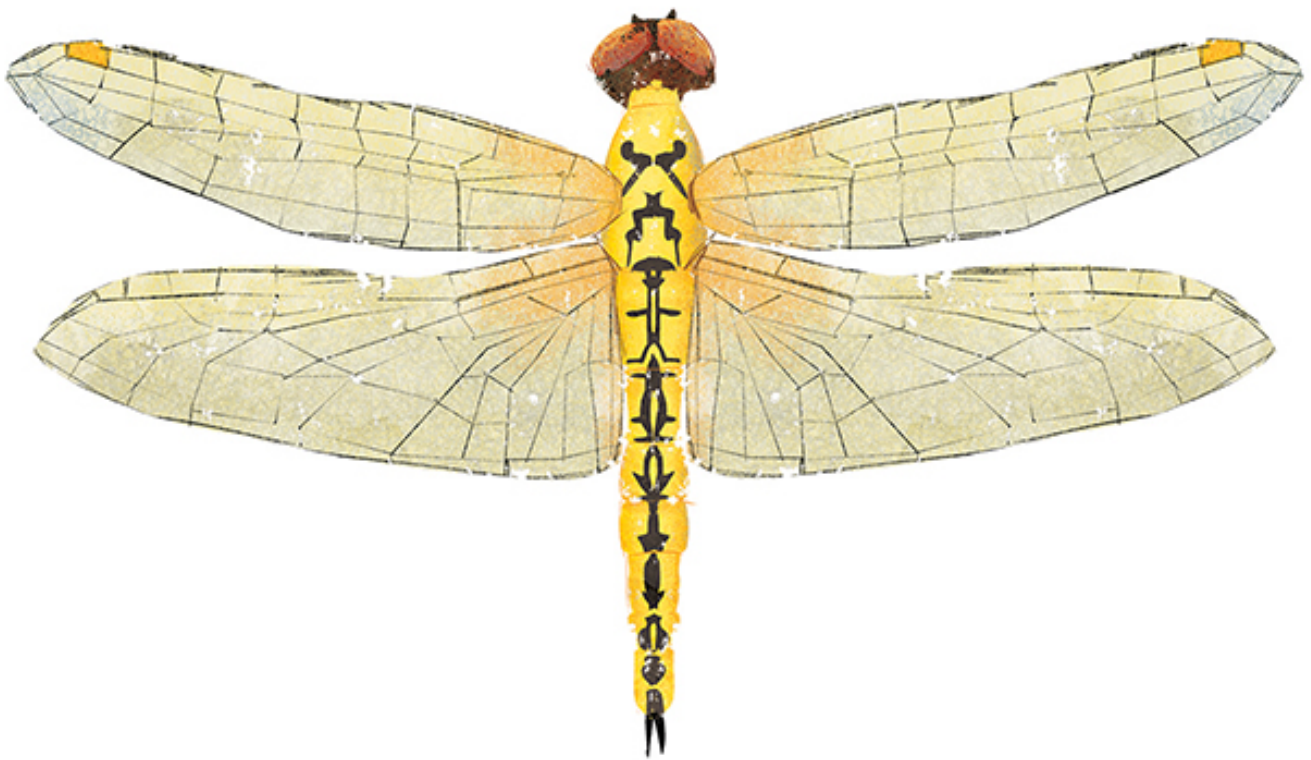




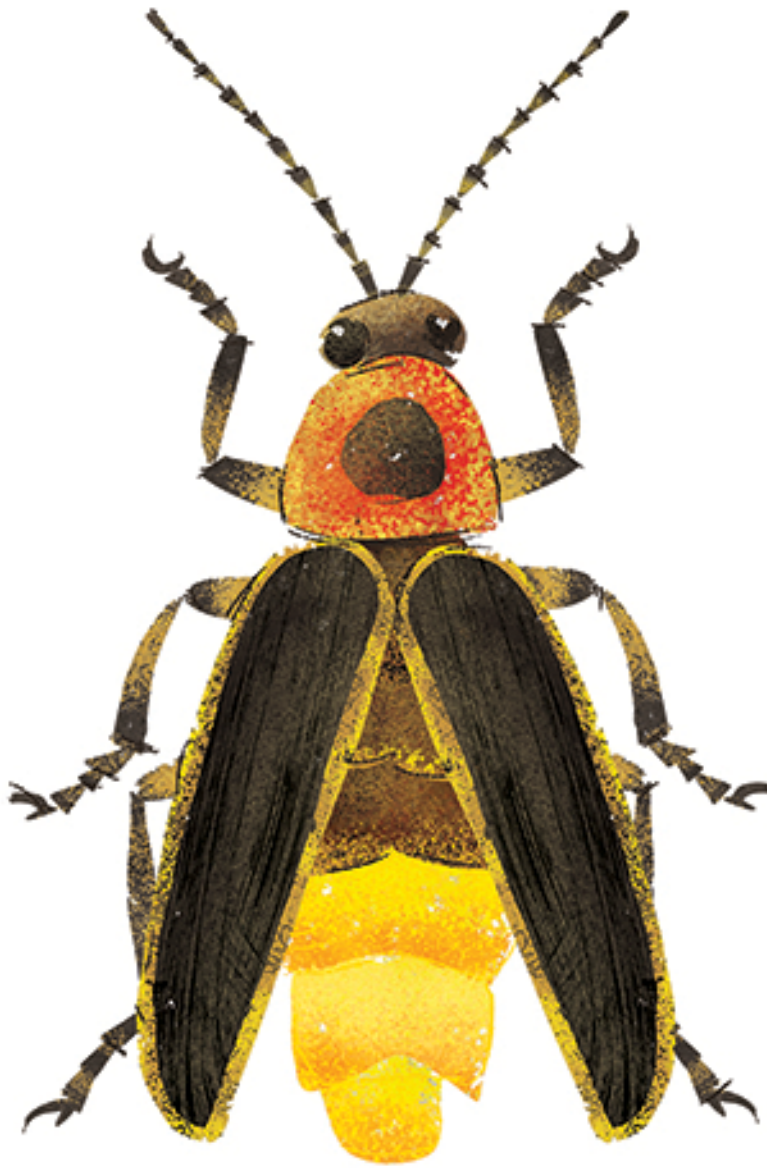


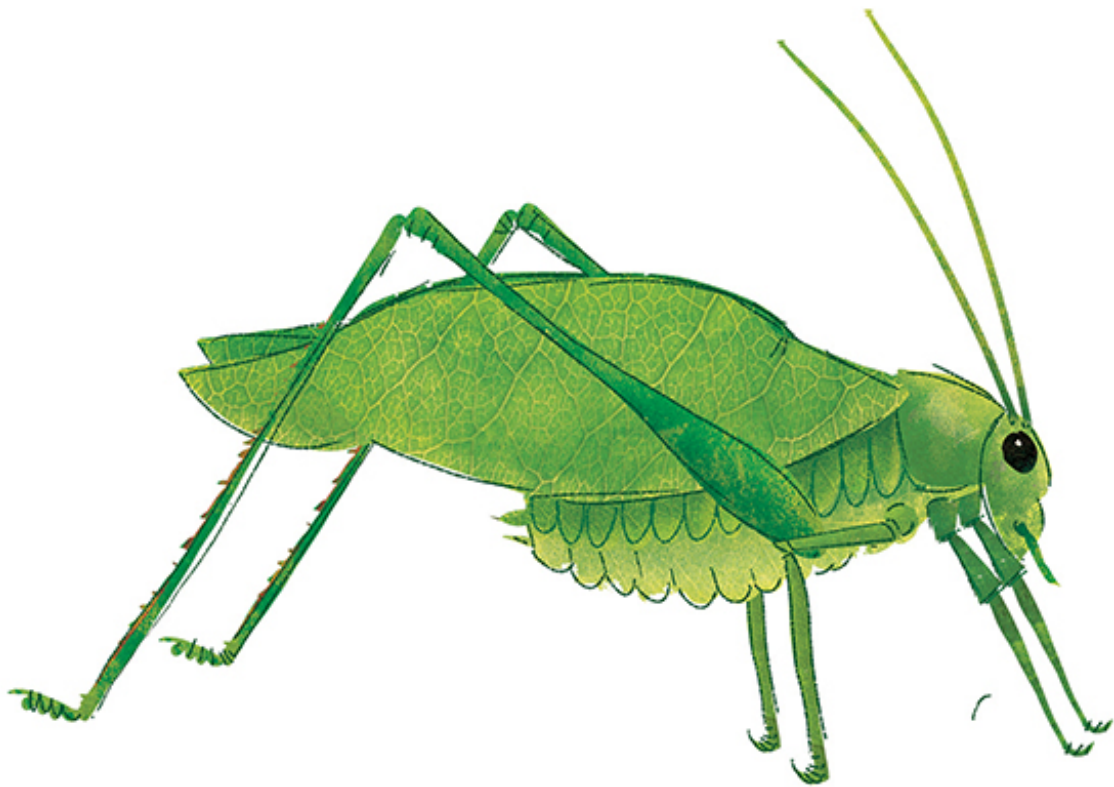
























# Look-and-Find Common Core Alignment

Know number names and the count sequence.

CCSS.MATH.CONTENT.K.CC.A.1: Count to 100 by ones and by tens.

# Make Your Own 100 Bugs! Book Trailer

Make your own *100 Bugs!* Book Trailer and move up the SAMR ladder. Watch the original trailer featuring Kate Narita and Charlie Mainini's students ([www.katenarita.com/books.html](http://www.katenarita.com/books.html)). Then, make your own using the script that follows. Mrs. Narita's students used Suzanne Kaufman's stunning color illustrations as a model for their own art. You can go that route or print out the illustrations attached for quick and easy signs to accompany the addition equations. Then, send Kate Narita the link to your trailer and she'll feature it on her blog. Fill out the contact form at [www.katenarita.com/contact](http://www.katenarita.com/contact).

**Narrator 1:** Can you count to ten?

**Narrator 2:** Sure: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

**Narrator 1:** That's right. But did you know there are ten ways to count to ten?

**Narrator 2:** What are you talking about?

**Narrator 1:** Let's go to Mrs. Narita's room to find out.

(For the part below, you need one student for each addend, as well as one student for each operation and equal sign.)

$$1 + 9 = 10$$

$$6 + 4 = 10$$

$$2 + 8 = 10$$

$$7 + 3 = 10$$

$$3 + 7 = 10$$

$$8 + 2 = 10$$

$$4 + 6 = 10$$

$$9 + 1 = 10$$

$$5 + 5 = 10$$

$$10 + 0 = 10$$

**Narrator 2:** Okay, okay, I get it. There are ten ways to count to ten. But what's up with all those bugs?

**Narrator 1:** I don't know. Let's ask \_\_\_\_\_ class.

Teacher's Name

**Narrator 2:** What was up with the bugs?

**Narrator 1:** Yeah. And where did they go?

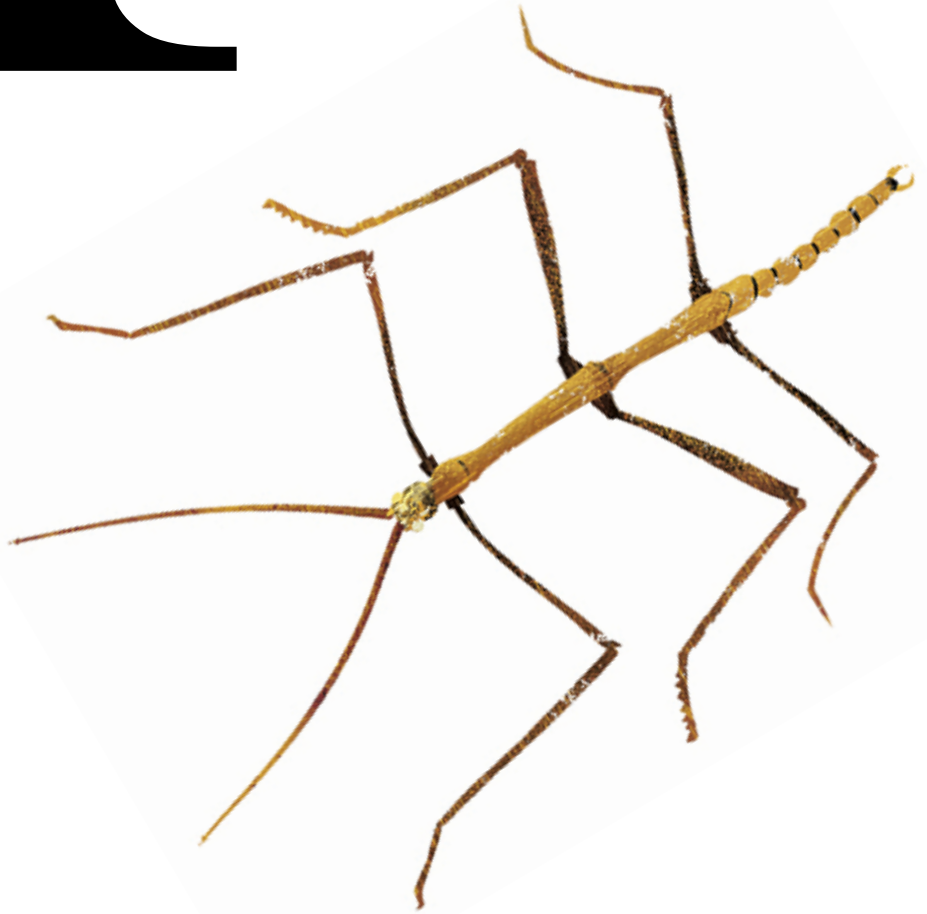
**Boys:** Don't ask us.

**Girls:** Check it out for yourselves.

**Class:** Read *100 Bugs! A Counting Book!*

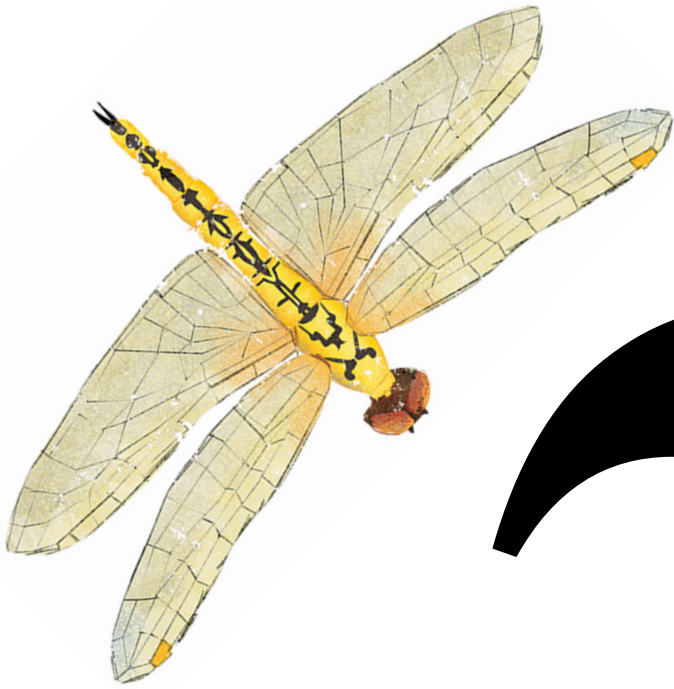


# I



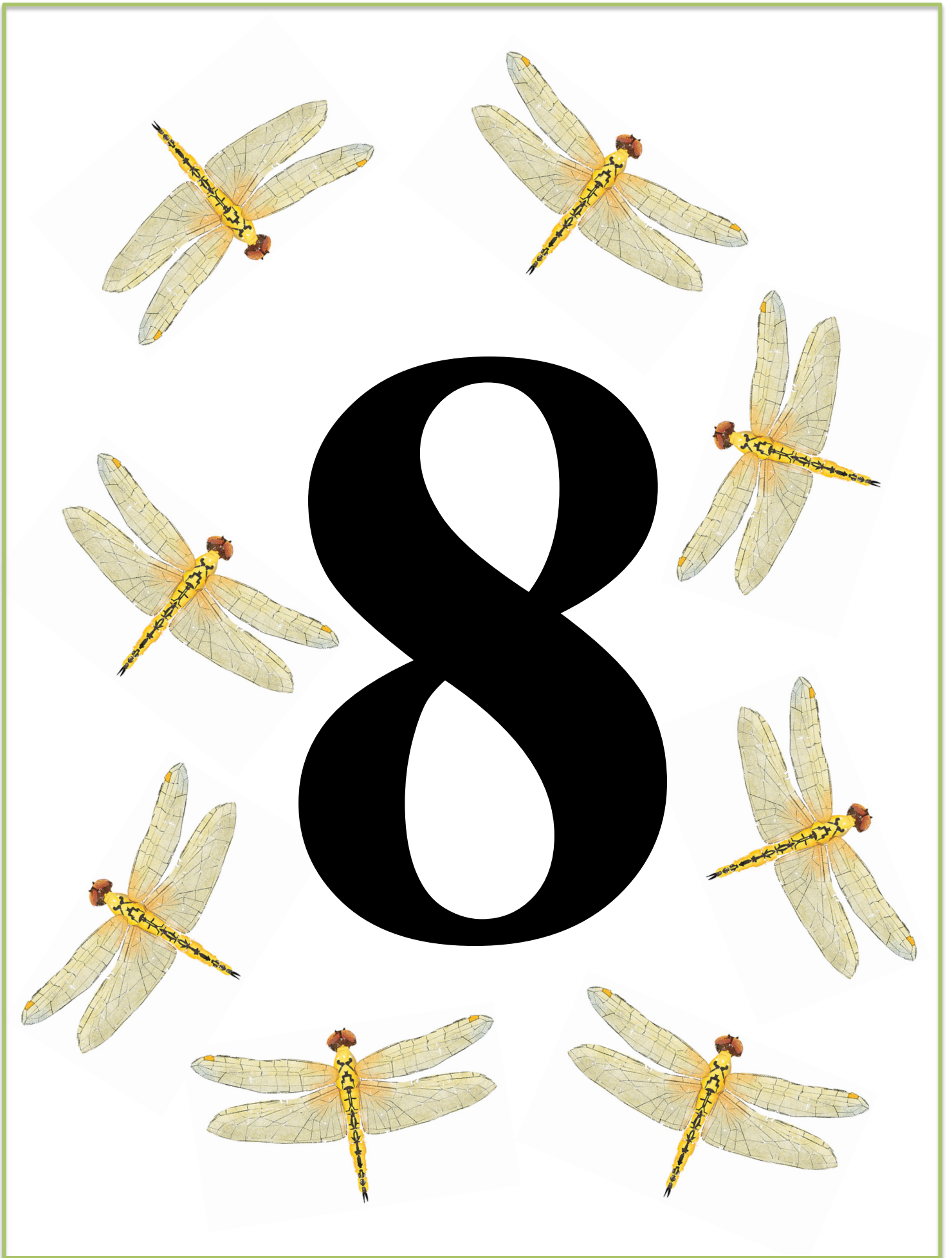






2





3





7







4







6





5

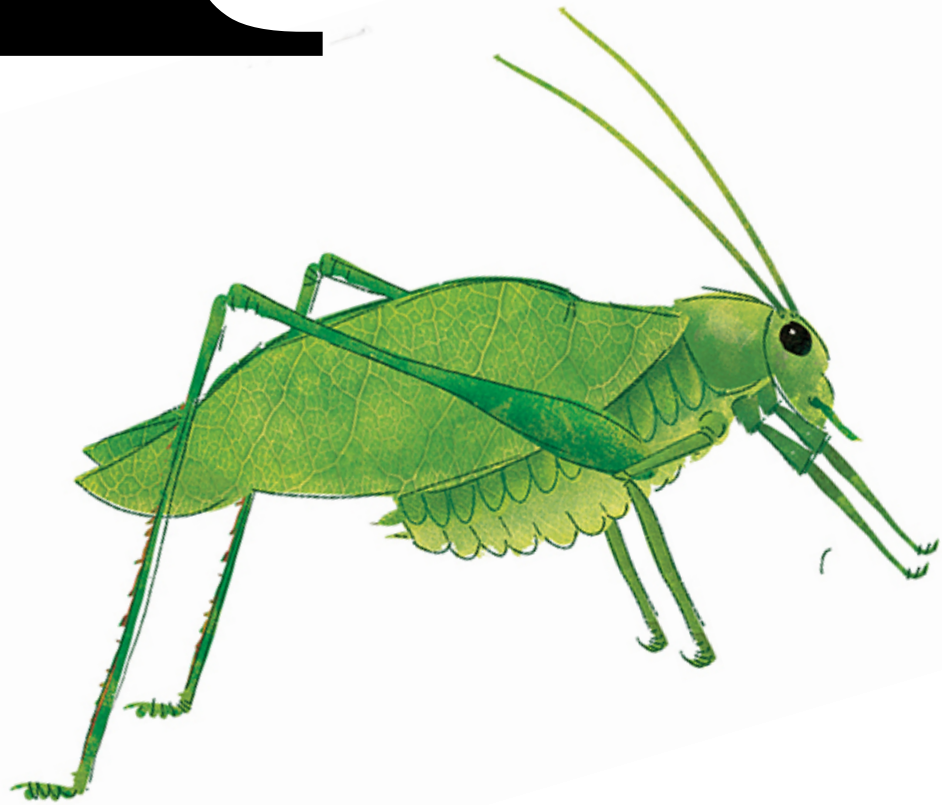




5



# I









2



8

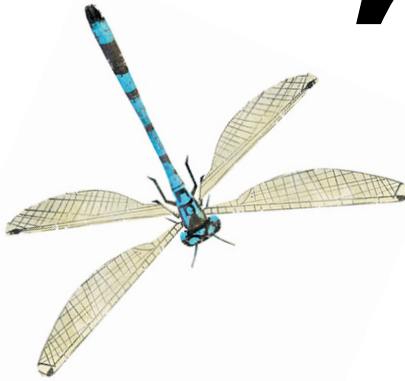


3





7





4



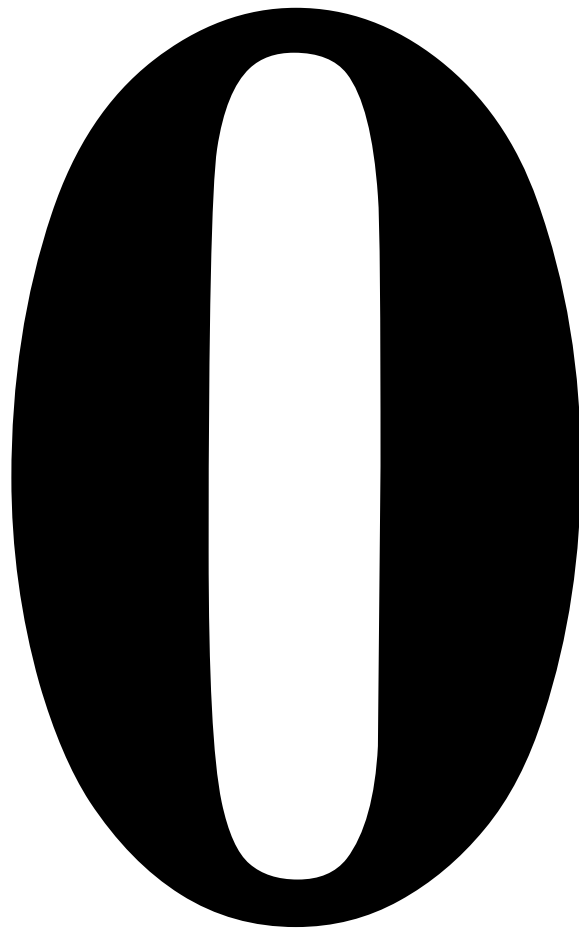


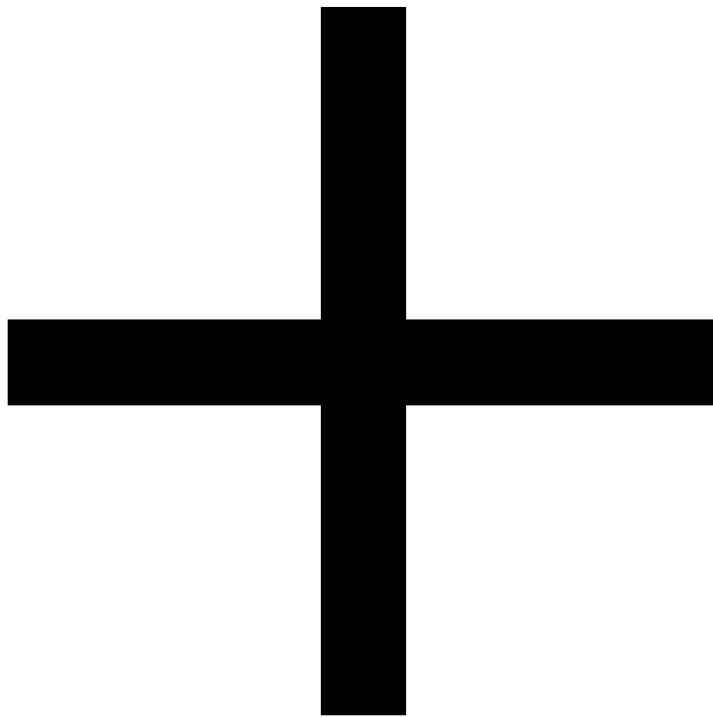


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# Book Trailer Common Core Alignment

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

CCSS.MATH.CONTENT.K.OA.A.2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

CCSS.MATH.CONTENT.K.OA.A.3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ).

CCSS.MATH.CONTENT.K.OA.A.4: For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.



# Adding with Tens

Name: \_\_\_\_\_

Directions: Complete each addition problem. Then count by tens to 100!

---

1.  $0 + 10 =$  \_\_\_\_\_

2.  $10 + 10 =$  \_\_\_\_\_

3.  $20 + 10 =$  \_\_\_\_\_

4.  $30 + 10 =$  \_\_\_\_\_

5.  $40 + 10 =$  \_\_\_\_\_

6.  $50 + 10 =$  \_\_\_\_\_

7.  $60 + 10 =$  \_\_\_\_\_

8.  $70 + 10 =$  \_\_\_\_\_

9.  $80 + 10 =$  \_\_\_\_\_

10.  $90 + 10 =$  \_\_\_\_\_



# Adding with Tens Answer Keys

Name: \_\_\_\_\_

Directions: Complete each addition problem. Then count by tens to 100!

---

1.  $0 + 10 = \underline{10}$

2.  $10 + 10 = \underline{20}$

3.  $20 + 10 = \underline{30}$

4.  $30 + 10 = \underline{40}$

5.  $40 + 10 = \underline{50}$

6.  $50 + 10 = \underline{60}$

7.  $60 + 10 = \underline{70}$

8.  $70 + 10 = \underline{80}$

9.  $80 + 10 = \underline{90}$

10.  $90 + 10 = \underline{100}$



# Adding with Tens Common Core Alignment

**Know number names and the count sequence.**

CCSS.MATH.CONTENT.K.CC.A.1: Count to 100 by ones and by tens.

**Understand place value.**

CCSS.MATH.CONTENT.1.NBT.B.2: Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

CCSS.MATH.CONTENT.1.NBT.B.2.A: 10 can be thought of as a bundle of ten ones — called a “ten.”

CCSS.MATH.CONTENT.1.NBT.B.2.C: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

**Use place value understanding and properties of operations to add and subtract.**











CCSS.MATH.CONTENT.1.NBT.C.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

CCSS.MATH.CONTENT.1.NBT.C.5: Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

# Bug Ten Frames

Create ten frames with your class. Ask students to draw the insects from the book or print out the attached copies of illustrator Suzanne Kaufman's bugs. Then, have ten students come to the front of the classroom. Arrange the students in two rows of five. For the walkingstick page, one student should stand holding the walkingstick picture while nine sit holding their walkingstick pictures. Repeat for the other combinations of ten within the book. Send Kate Narita a picture of your ten frames

([www.katenarita.com/contact](http://www.katenarita.com/contact)) and she'll feature your class photo on her blog. Then, put the ten frame worksheets in your math center for a fun follow up activity. See an example of a completed worksheet below.

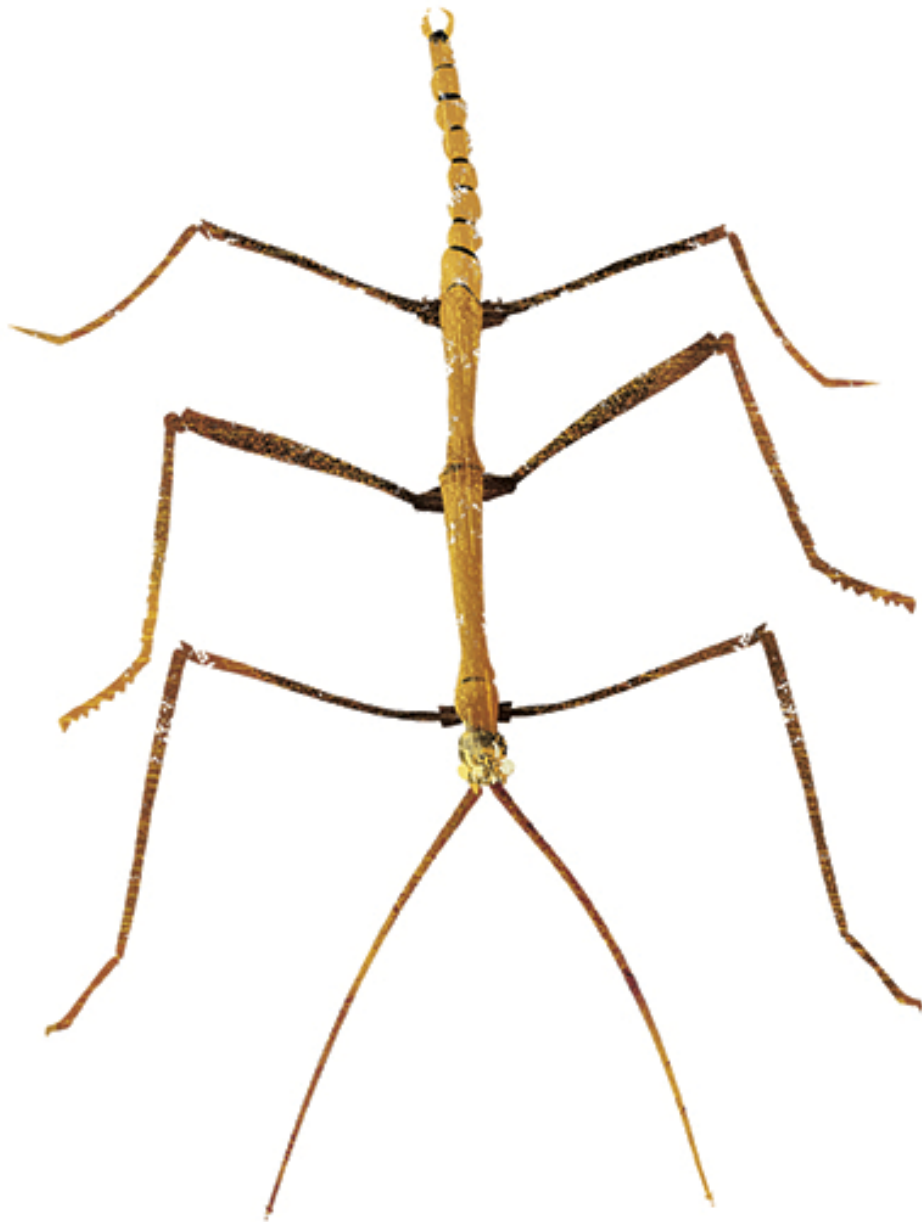
$$\underline{6} + \underline{4} = \underline{10}$$

$$\underline{10} - \underline{6} = \underline{4}$$

$$\underline{4} + \underline{6} = \underline{10}$$

$$\underline{10} - \underline{4} = \underline{6}$$

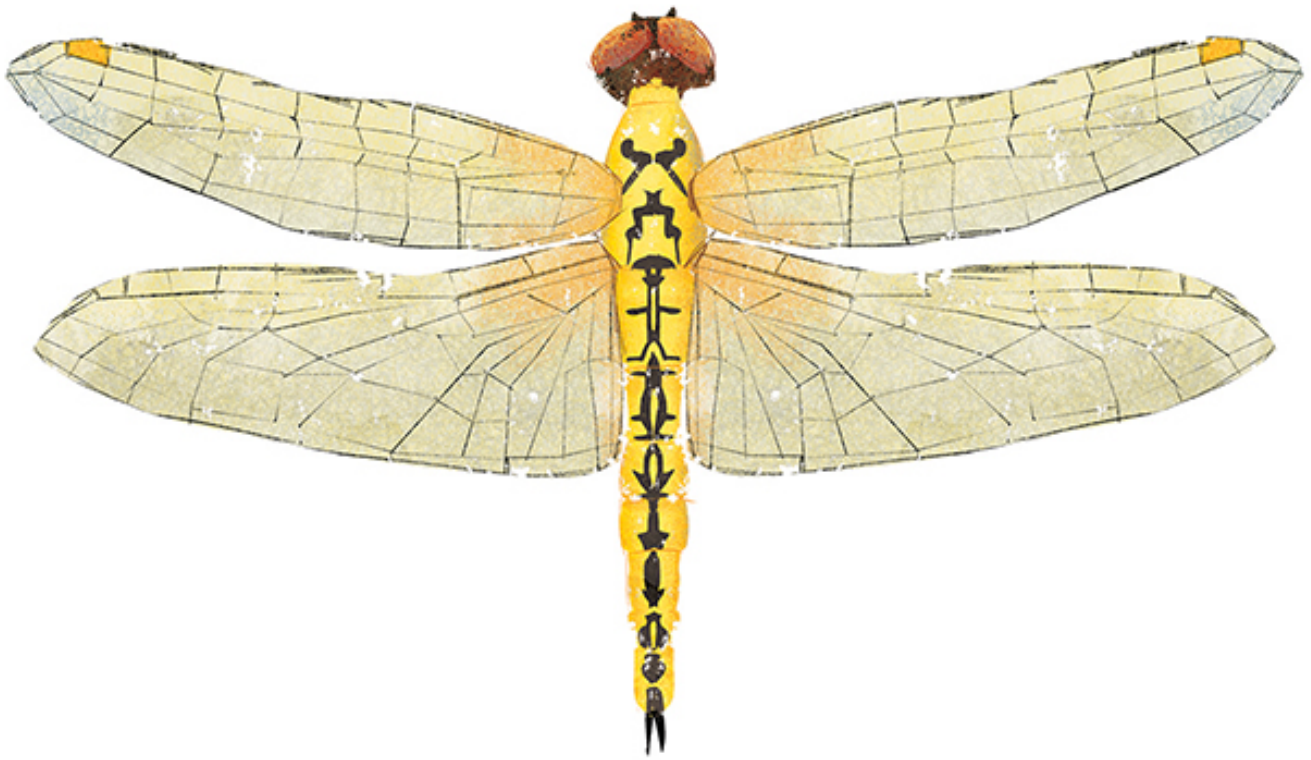


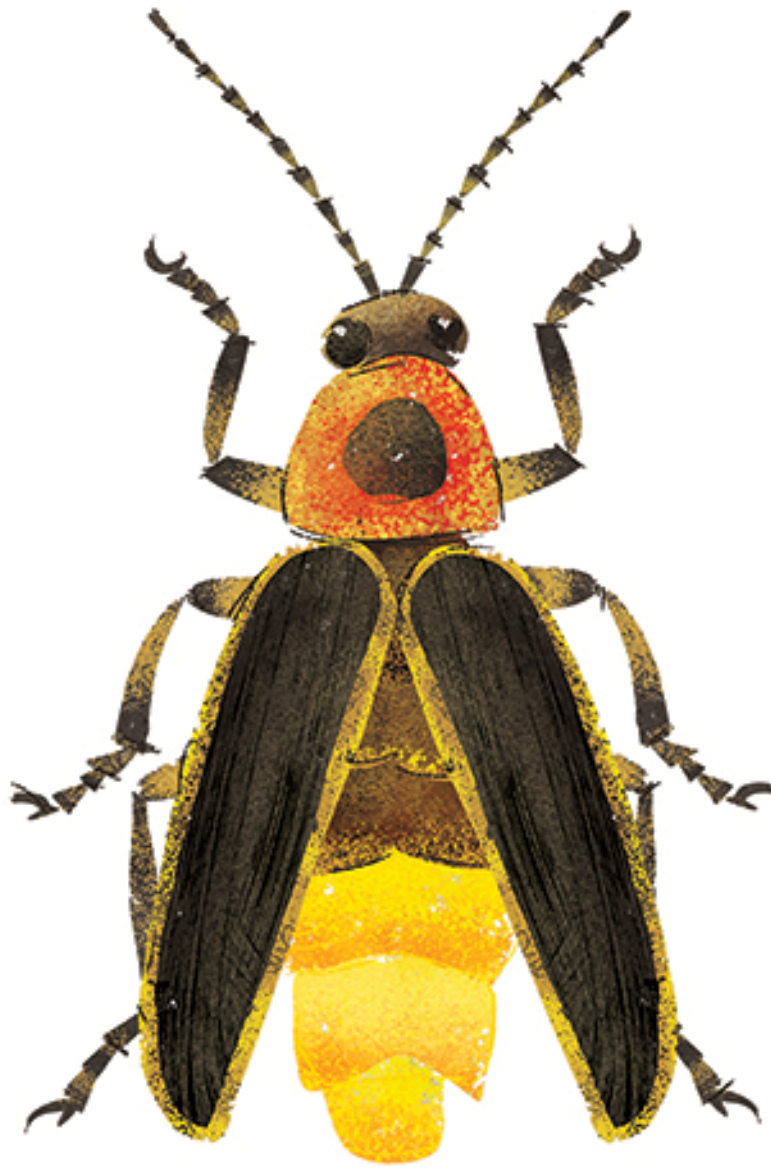


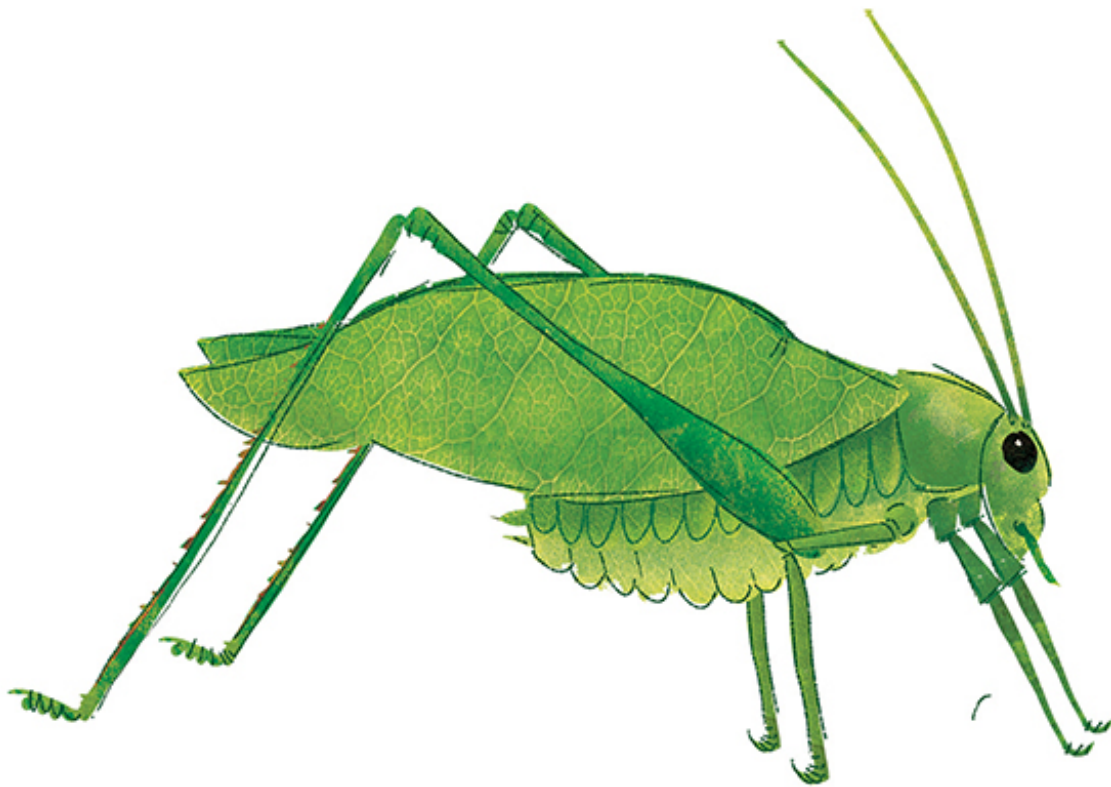






















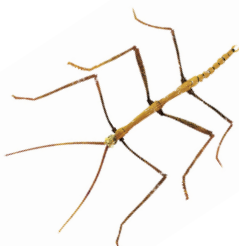


Name: \_\_\_\_\_

Directions: Draw one green walkingstick in the upper left-hand corner of your ten frame. Draw nine brown walkingsticks in the remaining spaces. (Males are more brownish, females are more greenish). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



## ANSWER KEY

Directions: Draw one green walkingstick in the upper left-hand corner of your ten frame. Draw nine brown walkingsticks in the remaining spaces. (Males are more brownish, females are more greenish). Then, write the two addition facts that go with the ten frame.


$$\begin{array}{r} 1 \\ \hline \end{array} + \begin{array}{r} 9 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \hline \end{array} + \begin{array}{r} 1 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw two orange dragonflies in the upper left-hand corner of your ten frame. Draw eight yellow dragonflies in the remaining spaces. (Males are golden orange and females are a duller yellow). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$





## ANSWER KEY

Directions: Draw two orange dragonflies in the upper left-hand corner of your ten frame. Draw eight yellow dragonflies in the remaining spaces. (Males are golden orange and females are a duller yellow). Then, write the two addition facts that go with the ten frame.


$$\underline{2} + \underline{8} = \underline{10}$$

$$\underline{8} + \underline{2} = \underline{10}$$



Name: \_\_\_\_\_

Directions: Draw three green leafhoppers with red stripes in the upper left-hand corner of the ten frame. Draw seven blue leafhoppers with red stripes in the remaining spaces. (The color difference is attributed to subspecies). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



## ANSWER KEY

Directions: Draw three green leafhoppers with red stripes in the upper left-hand corner of the ten frame. Draw seven blue leafhoppers with red stripes in the remaining spaces. (The color difference is attributed to subspecies). Then, write the two addition facts that go with the ten frame.


$$\underline{3} + \underline{7} = \underline{10}$$

$$\underline{7} + \underline{3} = \underline{10}$$



Name: \_\_\_\_\_

Directions: Draw four orange ladybugs in the upper left-hand corner of your ten frame. Draw six red ladybugs in the remaining spaces. (This species usually has six spots on each half or twelve total). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



## ANSWER KEY

Directions: Draw four orange ladybugs in the upper left-hand corner of your ten frame. Draw six red ladybugs in the remaining spaces. (This species usually has six spots on each half or twelve total). Then, write the two addition facts that go with the ten frame.


$$\begin{array}{r} 4 \\ \hline \end{array} + \begin{array}{r} 6 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \hline \end{array} + \begin{array}{r} 4 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw five bumblebees with black heads in the first row of your ten frame. Draw five bumblebees with yellow heads in the second row. (Females have black heads and males have yellow heads).

Remember that this bumblebee has a black stripe above its wings and an orange stripe across its middle. Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$





## ANSWER KEY

Directions: Draw five bumblebees with black heads in the first row of your ten frame. Draw five bumblebees with yellow heads in the second row. (Females have black heads and males have yellow heads).

Remember that this bumblebee has a black stripe above its wings and an orange stripe across its middle. Then, write the two addition facts that go with the ten frame.


$$\begin{array}{r} 5 \\ \hline \end{array} + \begin{array}{r} 5 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \hline \end{array} + \begin{array}{r} 5 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw six yellow butterflies with black stripes in the first row of the ten frame and the lower left-hand corner. Draw four black butterflies with light blue hindwings in the remaining spaces. (Females may be yellow or black, males are always yellow). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



## ANSWER KEY

Directions: Draw six yellow butterflies with black stripes in the first row of the ten frame and the lower left-hand corner. Draw four black butterflies with light blue hindwings in the remaining spaces. (Females may be yellow or black, males are always yellow). Then, write the two addition facts that go with the ten frame.


$$\begin{array}{r} 6 \\ \hline \end{array} + \begin{array}{r} 4 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \hline \end{array} + \begin{array}{r} 6 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw seven damselflies with green heads, black bodies and blue-tipped tails in the first row and the lower left-hand corner of the ten frame. Draw three powder blue/gray damselflies in the remaining spaces. (Males have green heads and females are grayish-blue). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



## ANSWER KEY

Directions: Draw seven damselflies with green heads, black bodies and blue-tipped tails in the first row and the lower left-hand corner of the ten frame. Draw three powder blue/gray damselflies in the remaining spaces. (Males have green heads and females are grayish-blue). Then, write the two addition facts that go with the ten frame.


$$\underline{7} + \underline{3} = \underline{10}$$

$$\underline{3} + \underline{7} = \underline{10}$$



Name: \_\_\_\_\_

Directions: Draw eight spittlebugs with two yellow stripes in the first row and the lower left-hand corner of the ten frame. Draw two spittlebugs with two red stripes in the remaining spaces. (These are two different variations of two-lined spittlebugs). Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$





## ANSWER KEY

Directions: Draw eight spittlebugs with two yellow stripes in the first row and the lower left-hand corner of the ten frame. Draw two spittlebugs with two red stripes in the remaining spaces. (These are two different variations of two-lined spittlebugs). Then, write the two addition facts that go with the ten frame.


$$\begin{array}{r} 8 \\ \hline \end{array} + \begin{array}{r} 2 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \hline \end{array} + \begin{array}{r} 8 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

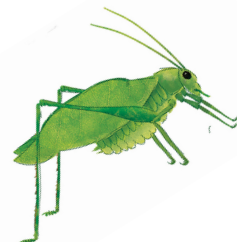
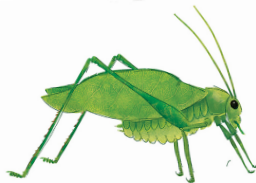
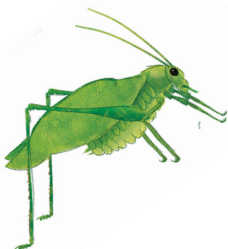


Name: \_\_\_\_\_

Directions: Draw nine green katydids in the first row and first four spaces of the bottom row of the ten frame. Draw one pink katydid in the lower right-hand corner. (Believe it or not, the females are sometimes pink instead of green)! Then, write the two addition facts that go with the ten frame.


$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

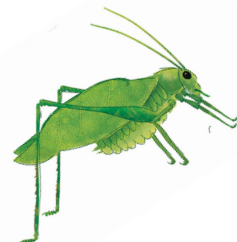
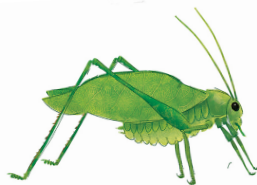
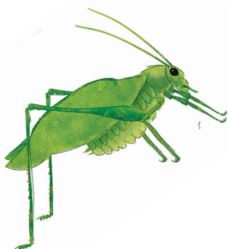


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$$\begin{array}{r} 9 \\ \hline \end{array} + \begin{array}{r} 1 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \hline \end{array} + \begin{array}{r} 9 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw ten lightning bugs in the spaces of the ten frame.  
Have fun! Then, write the two addition facts that go with the ten frame.


$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad} = \underline{\quad\quad\quad}$$



## ANSWER KEY

Directions: Draw ten lightning bugs in the spaces of the ten frame.  
Have fun! Then, write the two addition facts that go with the ten frame.  
frame.


$$\begin{array}{r} 10 \\ \hline \end{array} + \begin{array}{r} 0 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$

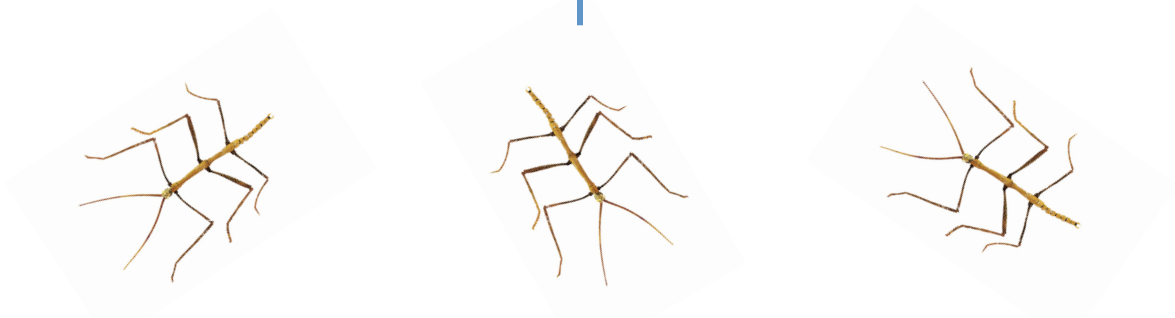
$$\begin{array}{r} 0 \\ \hline \end{array} + \begin{array}{r} 10 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw one green walkingstick in the upper left-hand corner of your ten frame. Draw nine brown walkingsticks in the remaining spaces. (Males are more brownish, females are more greenish). Then, write the fact family to go with the ten frame.


$$\begin{array}{ccc} \underline{\quad} + \underline{\quad} = \underline{\quad} & | & \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} & & \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$



## ANSWER KEY

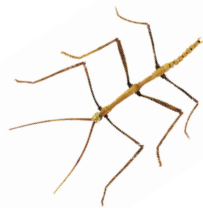
Directions: Draw one green walkingstick in the upper left-hand corner of your ten frame. Draw nine brown walkingsticks in the remaining spaces. (Males are more brownish, females are more greenish). Then, write the fact family to go with the ten frame.


$$\underline{1} + \underline{9} = \underline{10}$$

$$\underline{10} - \underline{1} = \underline{9}$$

$$\underline{9} + \underline{1} = \underline{10}$$

$$\underline{10} - \underline{9} = \underline{1}$$





Name: \_\_\_\_\_

Directions: Draw two orange dragonflies in the upper left-hand corner of your ten frame. Draw eight yellow dragonflies in the remaining spaces. (Males are golden orange and females are a duller yellow). Then, write the fact family to go with the ten frame.


$$\begin{array}{ccc} \underline{\quad} & + & \underline{\quad} = \underline{\quad} \\ \underline{\quad} & + & \underline{\quad} = \underline{\quad} \end{array} \quad \begin{array}{ccc} \underline{\quad} & - & \underline{\quad} = \underline{\quad} \\ \underline{\quad} & - & \underline{\quad} = \underline{\quad} \end{array}$$



## ANSWER KEY

Directions: Draw two orange dragonflies in the upper left-hand corner of your ten frame. Draw eight yellow dragonflies in the remaining spaces. (Males are golden orange and females are a duller yellow). Then, write the fact family to go with the ten frame.


$$\underline{2} + \underline{8} = \underline{10}$$

$$\underline{10} - \underline{2} = \underline{8}$$

$$\underline{8} + \underline{2} = \underline{10}$$

$$\underline{10} - \underline{8} = \underline{2}$$



Name: \_\_\_\_\_

Directions: Draw three green leafhoppers with red stripes in the upper left-hand corner of the ten frame. Draw seven blue leafhoppers with red stripes in the remaining spaces. (The color difference is attributed to subspecies). Then, write the fact family to go with the ten frame.


$$\begin{array}{ccccc} \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} \\ \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} \end{array} \quad \begin{array}{ccccc} \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \\ \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \end{array}$$



## ANSWER KEY

Directions: Draw three green leafhoppers with red stripes in the upper left-hand corner of the ten frame. Draw seven blue leafhoppers with red stripes in the remaining spaces. (The color difference is attributed to subspecies). Then, write the fact family to go with the ten frame.


$$\underline{3} + \underline{7} = \underline{10}$$

$$\underline{10} - \underline{3} = \underline{7}$$

$$\underline{7} + \underline{3} = \underline{10}$$

$$\underline{10} - \underline{7} = \underline{3}$$



Name: \_\_\_\_\_

Directions: Draw four orange ladybugs in the upper left-hand corner of your ten frame. Draw six red ladybugs in the remaining spaces.

(This species usually has six spots on each half or twelve total). Then, write the fact family to go with the ten frame.


$$\begin{array}{ccccccc} \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} & & \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \\ \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} & & \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \end{array}$$



## ANSWER KEY

Directions: Draw four orange ladybugs in the upper left-hand corner of your ten frame. Draw six red ladybugs in the remaining spaces. (This species usually has six spots on each half or twelve total). Then, write the fact family to go with the ten frame.


$$\underline{4} + \underline{6} = \underline{10}$$

$$\underline{10} - \underline{4} = \underline{6}$$

$$\underline{6} + \underline{4} = \underline{10}$$

$$\underline{10} - \underline{6} = \underline{4}$$



Name: \_\_\_\_\_

Directions: Draw five bumblebees with black heads in the first row of your ten frame. Draw five bumblebees with yellow heads in the second row. Remember that this bumblebee has a black stripe above its wings and an orange stripe across its middle. (Females have black heads and males have yellow heads). Then, write the fact family to go with the ten frame.


$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$





## ANSWER KEY

Directions: Draw five bumblebees with black heads in the first row of your ten frame. Draw five bumblebees with yellow heads in the second row. Remember that this bumblebee has a black stripe above its wings and an orange stripe across its middle. (Females have black heads and males have yellow heads). Then, write the fact family to go with the ten frame.


$$\underline{5} + \underline{5} = \underline{10}$$

$$\underline{10} - \underline{5} = \underline{5}$$

$$\underline{5} + \underline{5} = \underline{10}$$

$$\underline{10} - \underline{5} = \underline{5}$$



Name: \_\_\_\_\_

Directions: Draw six yellow butterflies with black stripes in the first row of the ten frame and the lower left-hand corner. Draw four black butterflies with light blue hindwings in the remaining spaces. (Females may be yellow or black, males are always yellow). Then, write the fact family to go with the ten frame.


$$\begin{array}{r} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \end{array} \quad \begin{array}{r} \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$



## ANSWER KEY

Directions: Draw six yellow butterflies with black stripes in the first row of the ten frame and the lower left-hand corner. Draw four black butterflies with light blue hindwings in the remaining spaces. (Females may be yellow or black, males are always yellow). Then, write the fact family to go with the ten frame.


$$\begin{array}{r} 6 \\ \hline \end{array} + \begin{array}{r} 4 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \hline \end{array} - \begin{array}{r} 6 \\ \hline \end{array} = \begin{array}{r} 4 \\ \hline \end{array}$$
$$\begin{array}{r} 4 \\ \hline \end{array} + \begin{array}{r} 6 \\ \hline \end{array} = \begin{array}{r} 10 \\ \hline \end{array} \quad \begin{array}{r} 10 \\ \hline \end{array} - \begin{array}{r} 4 \\ \hline \end{array} = \begin{array}{r} 6 \\ \hline \end{array}$$



Name: \_\_\_\_\_

Directions: Draw seven damselflies with green heads, black bodies and blue-tipped tails in the first row and the lower left-hand corner of the ten frame. Draw three powder blue/gray damselflies in the remaining spaces. (Males have green heads and females are grayish-blue). Then, write the fact family to go with the ten frame.


$$\begin{array}{r} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \end{array} \quad \begin{array}{r} \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$



## ANSWER KEY

Directions: Draw seven damselflies with green heads, black bodies and blue-tipped tails in the first row and the lower left-hand corner of the ten frame. Draw three powder blue/gray damselflies in the remaining spaces. (Males have green heads and females are grayish-blue). Then, write the fact family to go with the ten frame.


$$\underline{7} + \underline{3} = \underline{10}$$

$$\underline{10} - \underline{7} = \underline{3}$$

$$\underline{3} + \underline{7} = \underline{10}$$

$$\underline{10} - \underline{3} = \underline{7}$$



Name: \_\_\_\_\_

Directions: Draw eight spittlebugs with two yellow stripes in the first row and the lower left-hand corner of the ten frame. Draw two spittlebugs with two red stripes in the remaining spaces. (These are two different variations of two-lined spittlebugs). Then, write the fact family to go with the ten frame.


$$\begin{array}{ccccccc} \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} & & \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \\ \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} & & \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \end{array}$$



## ANSWER KEY

Directions: Draw eight spittlebugs with two yellow stripes in the first row and the lower left-hand corner of the ten frame. Draw two spittlebugs with two red stripes in the remaining spaces. (These are two different variations of two-lined spittlebugs). Then, write the fact family to go with the ten frame.


$$\begin{array}{r} \underline{8} + \underline{2} = \underline{10} \\ \underline{2} + \underline{8} = \underline{10} \end{array} \quad \begin{array}{r} \underline{10} - \underline{8} = \underline{2} \\ \underline{10} - \underline{2} = \underline{8} \end{array}$$

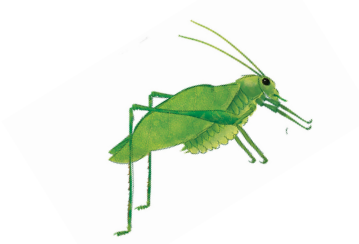
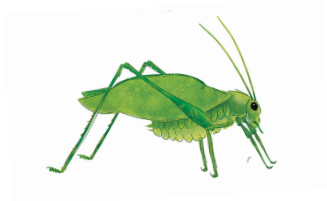
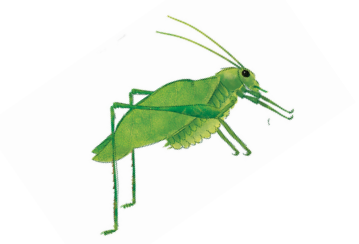




Name: \_\_\_\_\_

Directions: Draw nine green katydids in the first row and first four spaces of the bottom row of the ten frame. Draw one pink katydid in the lower right-hand corner. (Believe it or not, the females are sometimes pink instead of green)! Then, write the two addition facts that go with the ten frame.


$$\begin{array}{cccc} \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} \\ \underline{\quad} & + & \underline{\quad} & = & \underline{\quad} \end{array}$$
$$\begin{array}{cccc} \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \\ \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \end{array}$$



## ANSWER KEY

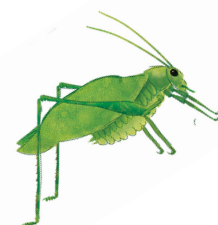
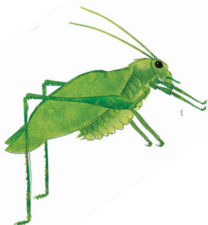
Directions: Draw nine green katydids in the first row and first four spaces of the bottom row of the ten frame. Draw one pink katydid in the lower right-hand corner. (Believe it or not, the females are sometimes pink instead of green)! Then, write the two addition facts that go with the ten frame.


$$\underline{9} + \underline{1} = \underline{10}$$

$$\underline{10} - \underline{9} = \underline{1}$$

$$\underline{1} + \underline{9} = \underline{10}$$

$$\underline{10} - \underline{1} = \underline{9}$$



Name: \_\_\_\_\_

Directions: Draw ten lightning bugs in the spaces of the ten frame.  
Have fun! Then, write the two addition facts that go with the ten frame.


$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



## ANSWER KEY

Directions: Draw ten lightning bugs in the spaces of the ten frame.  
Have fun! Then, write the two addition facts that go with the ten frame.  
frame.


$$\underline{10} + \underline{0} = \underline{10}$$

$$\underline{10} - \underline{0} = \underline{10}$$

$$\underline{0} + \underline{10} = \underline{10}$$



# Bug Ten Frames Common Core Alignment

## Know number names and the count sequence.

CCSS.MATH.CONTENT.K.CC.A.1: Count to 100 by ones and by tens.

CCSS.MATH.CONTENT.K.CC.A.3: Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

## Count to tell the number of objects.

CCSS.MATH.CONTENT.K.CC.B.4: Understand the relationship between numbers and quantities; connect counting to cardinality.

CCSS.MATH.CONTENT.K.CC.B.4.A: When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

CCSS.MATH.CONTENT.K.CC.B.4.B: Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

CCSS.MATH.CONTENT.K.CC.B.4.C: Understand that each successive number name refers to a quantity that is one larger.

CCSS.MATH.CONTENT.K.CC.B.5: Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

## Compare numbers.

CCSS.MATH.CONTENT.K.CC.C.7: Compare two numbers between 1 and 10 presented as written numerals.

# Bug Ten Frames Common Core Alignment

**Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.**

CCSS.MATH.CONTENT.K.OA.A.1: Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

CCSS.MATH.CONTENT.K.OA.A.2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

CCSS.MATH.CONTENT.K.OA.A.3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ).

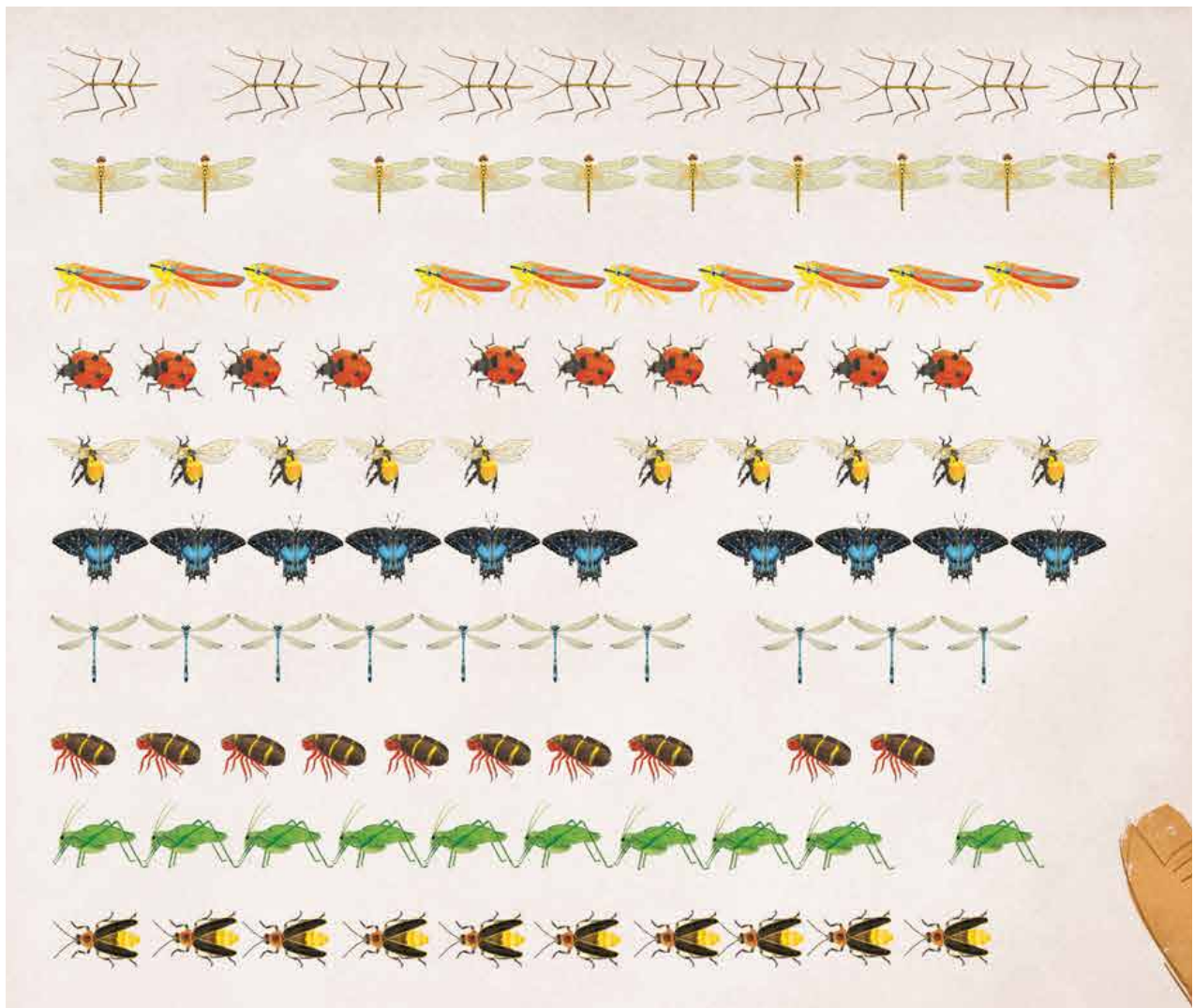
CCSS.MATH.CONTENT.K.OA.A.4: For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

**Understand and apply properties of operations and the relationship between addition and subtraction.**

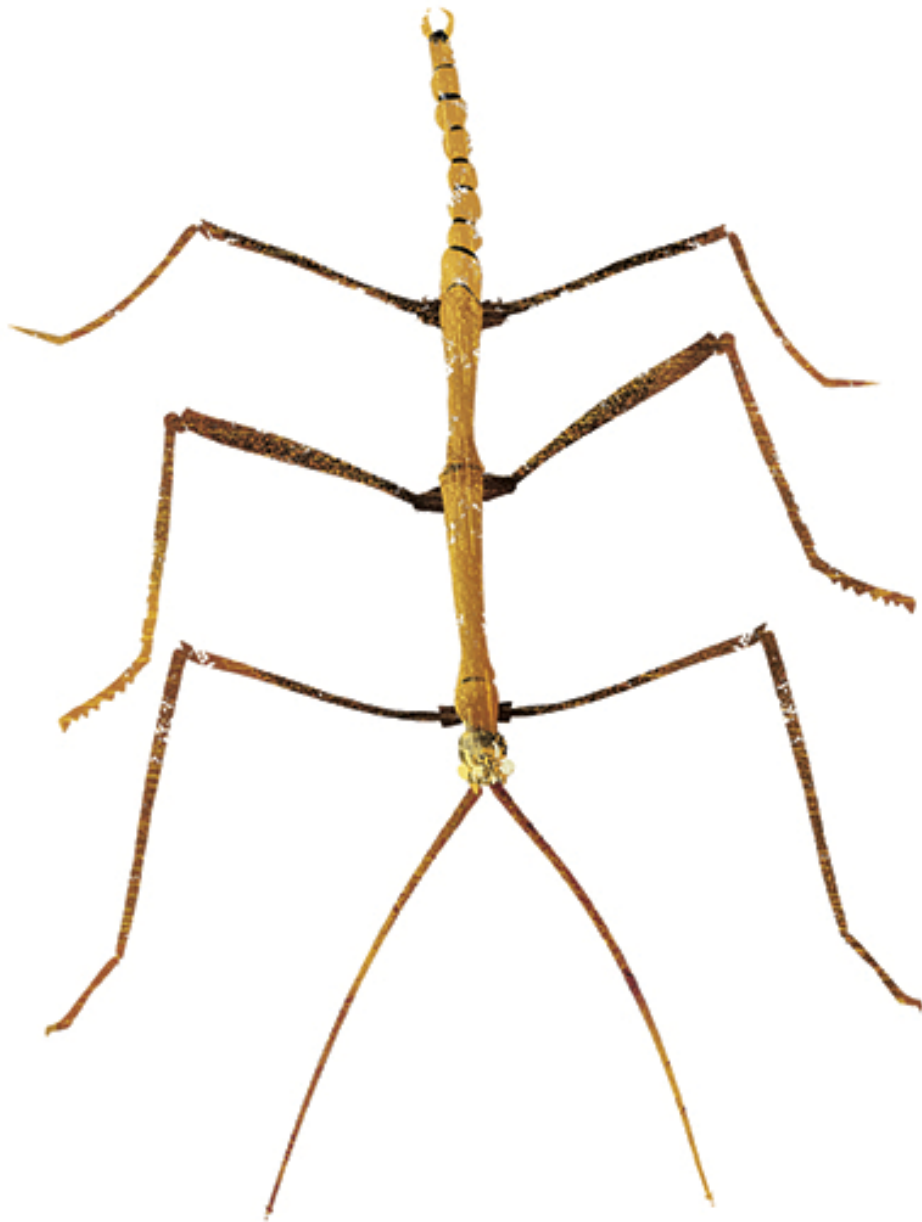
CCSS.MATH.CONTENT.I.OA.B.4: Understand subtraction as an unknown-addend problem. For example, subtract  $10 - 8$  by finding the number that makes 10 when added to 8.

# A 100 Bug Array

Recreate the array of 100 bugs featured inside the book. Students can draw their own bugs or you can print out multiple copies of illustrator Suzanne Kaufman's stunning bugs (attached). This can be done on bulletin board paper or you can team up with other classes and 100 students can hold the bugs. Whatever route you choose, be sure to send Kate Narita a photo of the array ([www.katenarita.com/contact](http://www.katenarita.com/contact)) and she'll be sure to put it on her blog.

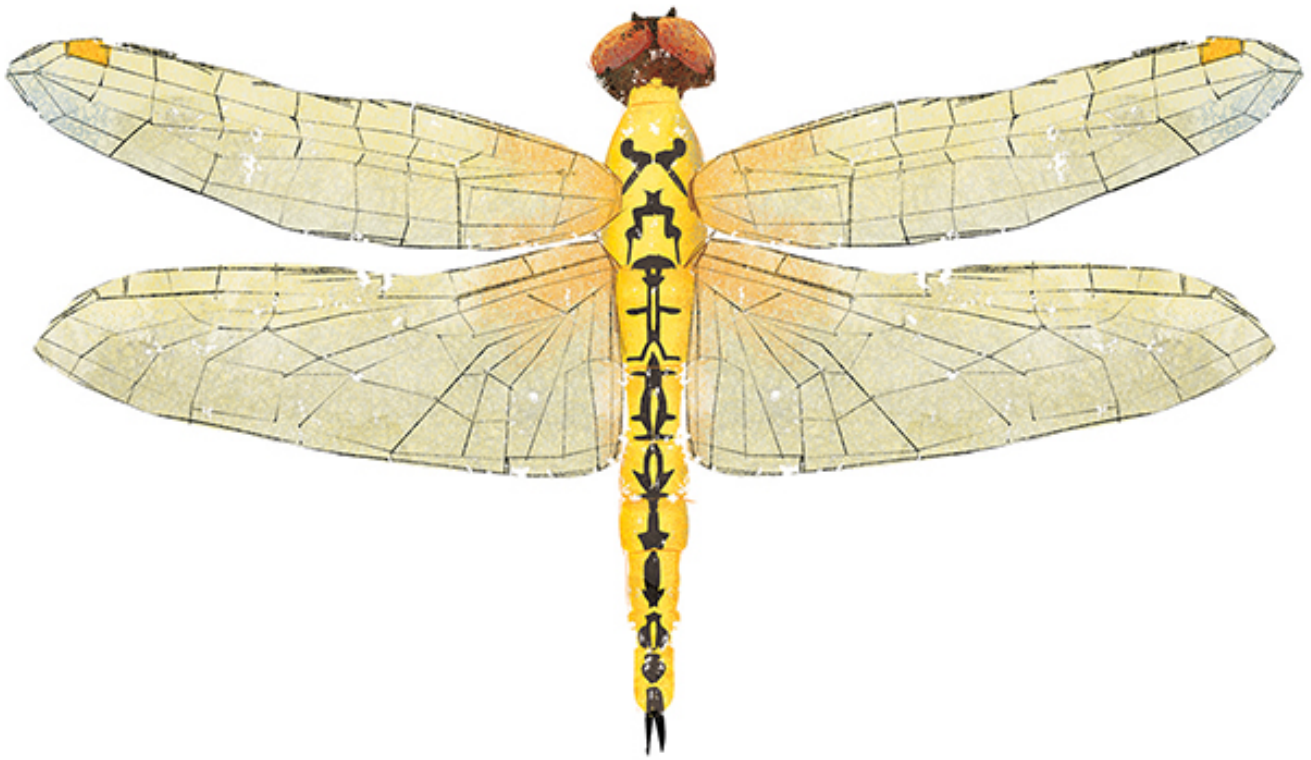


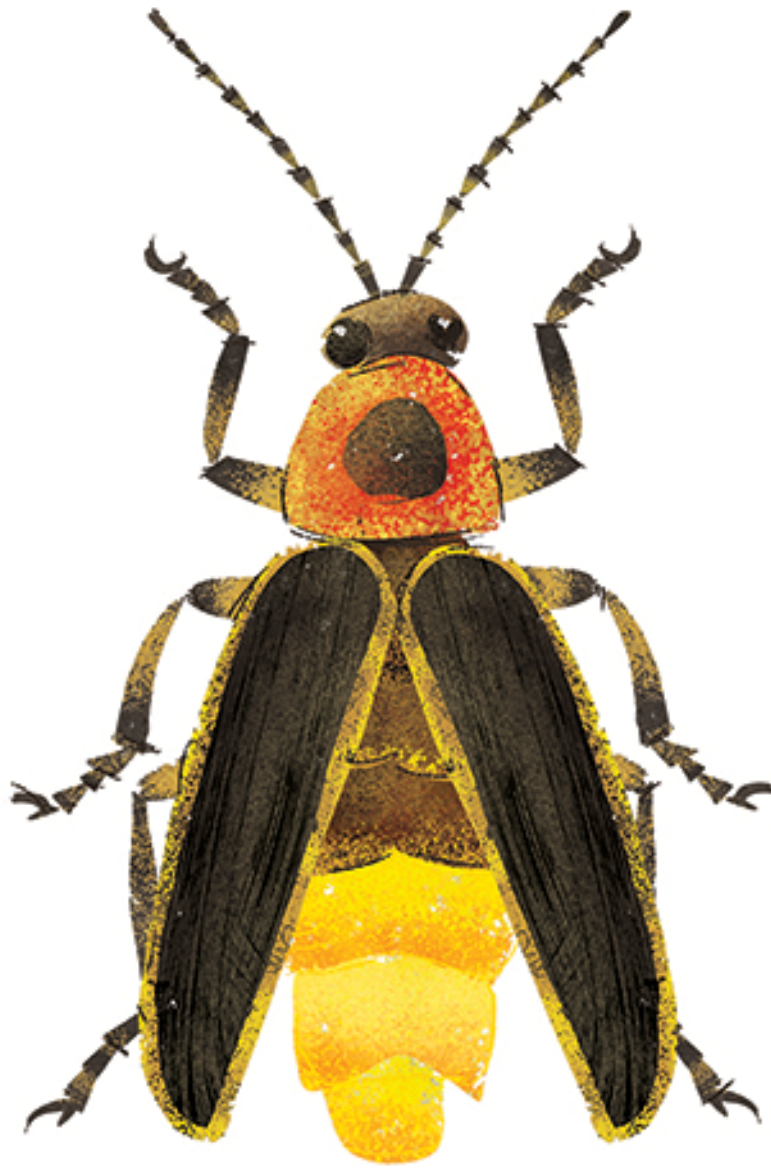


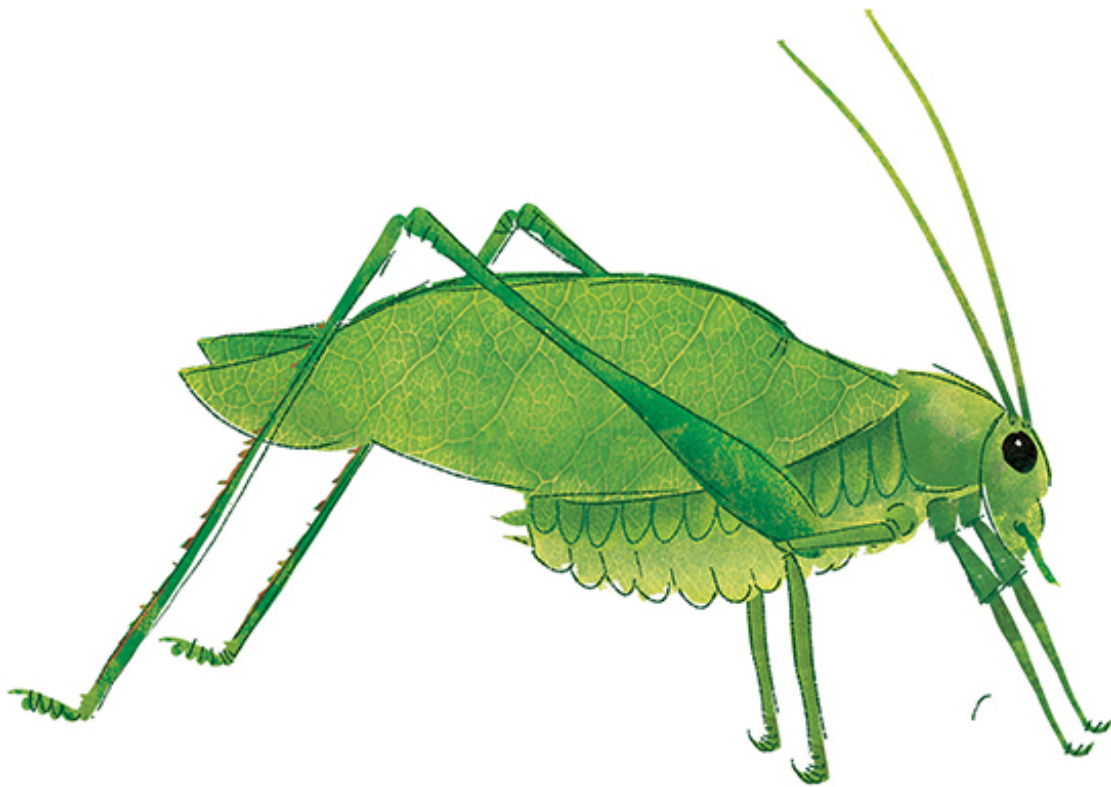
























# A 100 Bug Array Common Core Alignment

**Know number names and the count sequence.**

CCSS.MATH.CONTENT.K.CC.A.1: Count to 100 by ones and by tens.

**Understand place value.**

CCSS.MATH.CONTENT.1.NBT.B.2: Understand that the two digits of a two-digit number represent amounts of tens and ones.

CCSS.MATH.CONTENT.1.NBT.B.2.C: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

CCSS.MATH.CONTENT.2.NBT.A.1.A: 100 can be thought of as a bundle of ten tens — called a "hundred."

**Use place value and properties of operations to add and subtract.**

CCSS.MATH.CONTENT.1.NBT.C.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

CCSS.MATH.CONTENT.1.NBT.C.5: Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

CCSS.MATH.CONTENT.1.NBT.C.6: Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

# A 100 Bug Array Common Core Alignment

Work with equal groups of objects to gain foundations for multiplication.

CCSS.MATH.CONTENT.2.OA.C.4: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## damselfly (short a and long a)

- am** Put the "a" and the "m" together. What word did we spell?
- yam** Put a "y" in front of "am." What vegetable did we spell?
- mad** Take away the "y" and add an "m." What emotion did we spell?
- fad** Take away the "m" and add an "f." We spelled "fad" which is a trend.
- fade** If we add an "e" to the end of "fad," the "a" changes from a short "a" to a long "a." We spelled "fade" which means to get dimmer and disappear.
- made** Remove the "f" and replace it with "m." What word did we spell?
- dame** Switch the "d" and the "m," you spelled "dame" which means lady.
- dam** Remove the "e" and you have a short "a" sound. You spelled "dam."
- damsel** Add "s," "e" and "l" to the end of "dam" to create "damsel" which means young lady.
- damselfly** Add "fly" to the end of "damsel." Which bug did we create?



**I**

**f**

**e**

**d**

**a**

**y**

**s**

**m**

**l**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## leafhopper (ea combinations)

- are** Use three letters to spell the word "are."
- ear** Rearrange the same three letters to spell the word "ear."
- hear** Put an "h" in front of the word "ear." Notice this word "hear" has the word "ear," in it because we hear with our ears. The word "here," as in, "Come over here," doesn't have the word "ear" in it.
- heal** Remove the "r" and replace it with an "l." Your cut will heal.
- real** Remove the "h" and replace it with an "r." Is that a real diamond?
- flea** Remove the "r." Move the "l" in front of the "ea." Put the "f" in front of the "l" to spell "flea." There aren't any fleas in *100 Bugs! A Counting Book*.
- leaf** Take the "f" and move it to the end of the word. Did you see a leaf in *100 Bugs! A Counting Book*?
- hop** Put the word "leaf" aside. Use three letters to spell "hop."
- hopper** Add "per" to the end of "hop" to make "hopper."
- leafhopper** Put "leaf" and "hopper" together. Which bug did we create?



**l**

**r**

**f**

**p**

**e**

**p**

**e**

**o**

**a**

**h**



# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

## walkingstick (ing, ick and st blends)

- sing** Use four letters to spell the word "sing."
- sting** Put a letter between the "s" and "i" to make "sting." This bug doesn't sting.
- king** Remove the "st" and place a "k" in front of the "ing" to make "king."
- wing** Remove the "k" and place a "w" in front of the "ing" to make "wing." This bug doesn't have wings.
- wick** Remove the "ng" at the end of "wing." Put two letters after "wi" to create the word "wick."
- sick** Remove the "w" from "wick" and put an "s" at the beginning of the word to spell "sick."
- stick** Put a letter between the "s" and "i" to make "stick." This bug looks like a "stick."
- walk** Move "stick" to the side. Take four letters to create the word "walk."
- walking** Add "ing" to the end of "walk" to make "walking."
- walkingstick** Put "walking" and "stick" together. Which bug did we create?



**k**

**w**

**i**

**t**

**i**

**s**

**g**

**n**

**c**

**l**

**a**

**k**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## spittlebug (short e, i and u sounds)

- pit** Use three letters to create the word "pit."
- put** Remove the "i" and put a vowel in the middle to make "put."
- pet** Remove the "u" and put a vowel in the middle to make "pet."
- bet** Remove the "p" and use a consonant at the beginning to make the word "bet."
- beg** Remove the "t" and use a consonant at the end to make the word "beg."
- big** Remove the "e" and replace it with another vowel to make the word "big."
- bug** Remove the "i" and replace it with another vowel to make the word "bug." I wonder which bug we're spelling.
- spit** Spell "pit" again like we did in the beginning. Add an "s" in front of "pit." What word did we create? "Spit."
- spittle** Add "tle" to the end of "spit" to create "spittle," which means saliva.
- spittlebug** Add "bug" to the end of "spittle." Which bug did we create?



**I**

**U**

**i**

**S**

**g**

**t**

**e**

**t**

**b**

**P**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## katydid (long a, short a and short i sounds)

- at** Take two letters and create the word "at."
- it** Remove the first letter (vowel or "a") and replace it with the other vowel to make "it."
- kit** Place a letter in front of "it" to create "kit."
- kid** Remove the last letter ("t") and replace it with "d" to create "kid."
- day** Remove the first two letters ("k" and "i"). Move "d" to the front of the word. Place "a" after the "d." Put a "y" at the end. What word did we spell?
- dad** Take away the "y" and put the other "d" at the end. What word did we spell?
- did** Take away the vowel (middle letter or "a") and replace it with an "i" to make "did."
- Kay** Place "did" off to the side. How did we spell "day" earlier? (Someone will spell day. If no one does, you can point the word out on the board or the chart.) We're going to use the "a" and "y" at the end and place a "k" at the beginning to spell the name Kay.
- Katy** Place a "t" between the "a" and "y" to spell the name "Katy."
- katydid** Now put "Katy" and "did" together. Which bug did we create?



**k**

**i**

**d**

**d**

**a**

**K**

**y**

**t**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

## bumblebee (long e, short u, ble blend)

- me** Use two letters to spell the word "me."
- be** Remove the "m" and replace with a "b." It is a pleasure to "be" your teacher.
- bee** Place another "e" at the end of the word to create the "bee" that stings.
- blue** Remove the last "e." Put two letters in between the "b" and the "e" to make the color "blue."
- mule** Take away the "b." Put the "u" before the "l." Now you should have "ule" in front of you. Add an "m" in front of "ule." The bees in the book are by a horse, not a mule.
- bum** Remove the "le." Put the "u" in front of the "m." Put one letter in front of the "um" to make "bum."
- bub** Remove the "m" and replace it with a "b" to make another word for "boy."
- bubble** Add "ble" to the end of "bub" to create "bubble."
- bumble** Remove the second "b." Replace it with an "m" to spell bumble.
- bumblebee** Add "bee" to the end of "bumble." Which bug did we create?



e

e

b

b

b

u

m

l

e



# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## butterfly (short and long u, short e, fl and fr blends)

- tub** Use three letters to spell the word "tub."
- rub** Remove the "t" and put a different letter in front to create the word "rub."
- bet** Remove the "r" and the "u." "B" is the first letter in this word. Place two letters after it to make the word "bet."
- fret** Remove the "b." Replace with two letters in the beginning to create the word "fret." Don't fret if you need help spelling the word. No worries.
- fry** Remove the "et" and replace with "y" to create "fry."
- fly** Remove the "r." Put a letter in between "f" and "y" to create "fly."
- flute** Remove the "y" put three letters at the end to create "flute."
- flutter** To change from a long "u" sound to a short "u" sound, double the "t" and put an "r" at the end. Which word did you create?
- butter** Remove the "fl." Put one letter in front to make "butter."
- butterfly** Add the remaining three letters at the end to create "butterfly."



**r**

**l**

**f**

**e**

**b**

**y**

**u**

**t**

**t**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## lightning bug (short u, short i, and ight)

- hug** Use three letters to spell "hug."
- tug** Remove the "h" and replace it with "t" to spell "tug."
- bug** Remove the "t" and replace it with "b" to spell "bug." I wonder which bug we are spelling. Place "bug" off to the side.
- it** Use two letters to spell the word "it."
- lit** Place an "l" in front of "it" to spell lit. These bugs lit up the night in *Bugs! A Counting Book*.
- nit** Remove the "l" and replace it with an "n." The "nit" is not a bug that is featured in *100 Bugs! A Counting Book*.
- night** Put two letters between the "i" and "t" to spell "night." *100 Bugs! A Counting Book* begins in the morning and ends at night.
- light** Remove the "n" and replace it with a letter to make the word "light."
- lightning** Add "ning" to the end of "light." We see this during thunderstorms.
- lightning bug** Move "bug" to the end of "lightning," but leave a space because this bug's name is two words, not one. Which bug did we create?



**i**

**u**

**h**

**t**

**s**

**n**

**s**

**n**

**s**

**l**

**b**

**i**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

dragonfly (short a, short o, y as a vowel, fl blend and dr blend)

- fog** Use three letters to spell the word "fog."
- dog** Remove the "f" and put a different letter in front to make "dog."
- dry** Remove the "og" and put two letters after "d" to make "dry." Hint: sometimes "y" is used as a vowel.
- lag** Remove the word "dry." Use three different letters to spell the word "lag."
- flag** Put an "f" in the beginning of the word to create "flag."
- fly** Remove the "ag." Add one letter at the the end of the word to create "fly." Hint: remember the vowel we used in "dry?"
- rag** Place "fly" off to the side. Use three different letters to spell the word "rag."
- drag** Add a letter to the front of "rag" to create "drag."
- dragon** Add two letters to the end of "drag," to make "dragon."
- dragonfly** Put "dragon" and "fly" together. What bug did we create?



**l**

**g**

**f**

**d**

**a**

**y**

**r**

**o**

**n**

# It's a Bug's Word Out There!

Copy a set of letters for each student. Ask students to cut out the boxes so that they can manipulate the letters. Tell the students, "These letters can be used to spell one of the insects from the book. But first, we're going to use the letters to spell some smaller words. As we spell the words, if you think you've figured out the mystery bug, give me a thumbs up. But don't say it aloud. It's a secret." Then, ask students to spell each word in the list in order using the cues given below. Have fun!

---

## ladybug (short a and u sounds; distinguish between b and d)

- bud** Use three letters to create the word "bud."
- bad** Take out the vowel (middle letter or "u") and replace it with "a" to create "bad."
- bag** Remove the last letter and replace it with "g" to create "bag."
- lag** Remove the first letter and replace it with "l" to create "lag."
- lug** Take out the vowel (middle letter or "a") and replace it with "u" to create "lug."
- dug** Remove the first letter and replace it with "d" to create "dug."
- bug** Remove the "d" and replace it with a "b" to make "bug." Place the word "bug" to the side. You will use it in a few minutes.
- lad** Use three letters to create the word "lad."
- lady** What word do we create when we add a "y" at the end? "Lady."
- ladybug** Which bug do we create when we put "lady" and "bug" together? "Ladybug."



**l**

**g**

**d**

**b**

**a**

**y**

**u**



# It's a Bug's Word Common Core Alignment

## Reading Foundational Skills: Print Concepts

CCSS.ELA-LITERACY.RF.K.1.B: Recognize that spoken words are represented in written language by specific sequences of letters.

CCSS.ELA-LITERACY.RF.K.1.D: Recognize and name all upper- and lowercase letters of the alphabet.

## Reading Foundational Skills: Phonological Awareness

CCSS.ELA-LITERACY.RF.K.2.A: Recognize and produce rhyming words.

CCSS.ELA-LITERACY.RF.K.2.D: Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. (This does not include CVCs ending with /l/, /r/, or /x/.)

CCSS.ELA-LITERACY.RF.K.2.E: Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.

CCSS.ELA-LITERACY.RF.1.2: Demonstrate understanding of spoken words, syllables, and sounds (phonemes).

CCSS.ELA-LITERACY.RF.1.2.A: Distinguish long from short vowel sounds in spoken single-syllable words.

CCSS.ELA-LITERACY.RF.1.2.B: Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.

CCSS.ELA-LITERACY.RF.1.2.C: Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.

CCSS.ELA-LITERACY.RF.1.2.D: Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).

# It's a Bug's Word Common Core Alignment

## Reading Foundational Skills: Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.K.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.K.3.A: Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary sound or many of the most frequent sounds for each consonant.

CCSS.ELA-LITERACY.RF.K.3.B: Associate the long and short sounds with the common spellings (graphemes) for the five major vowels.

CCSS.ELA-LITERACY.RF.K.3.C: Read common high-frequency words by sight (e.g., *the, of, to, you, she, my, is, are, do, does*).

CCSS.ELA-LITERACY.RF.K.3.D: Distinguish between similarly spelled words by identifying the sounds of the letters that differ.

CCSS.ELA-LITERACY.RF.1.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.1.3.A: Know the spelling-sound correspondences for common consonant digraphs.

CCSS.ELA-LITERACY.RF.1.3.B: Decode regularly spelled one-syllable words.

CCSS.ELA-LITERACY.RF.1.3.C: Know final *-e* and common vowel team conventions for representing long vowel sounds.

CCSS.ELA-LITERACY.RF.1.3.D: Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.

# It's a Bug's Word Common Core Alignment

## Reading Foundational Skills: Phonics and Word Recognition (continued)

CCSS.ELA-LITERACY.RF.1.3.E: Decode two-syllable words following basic patterns by breaking the words into syllables.

CCSS.ELA-LITERACY.RF.2.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.2.3.A: Distinguish long and short vowels when reading regularly spelled one-syllable words.

CCSS.ELA-LITERACY.RF.2.3.B: Know spelling-sound correspondences for additional common vowel teams.

# Make-A-Match

Name: \_\_\_\_\_

Directions: Draw a line from the flower name on the left to the object it rhymes with on the right. Have fun!



asters

chicken cage



autumn joy

farrow



coralbells

happy boy



bugbane

horse feed



rose

hose



snakeroot

rafters



sneezeweed

rain boot



white phlox

weather vane



woodland sage

wishing well



yarrow

wood box



# Make-A-Match Answer Key

Name: \_\_\_\_\_

Directions: Draw a line from the flower name on the left to the object it rhymes with on the right. Have fun!



asters (rafters)



autumn joy (happy boy)



coralbell (wishing well)



bugbane (weather vane)



rose (hose)



snakeroot (rain boot)



sneezweed (horse feed)



white phlox (wood box)



woodland sage (chicken cage)



yarrow (farrow)



# Make-a-Match Common Core Alignment

## Reading Foundational Skills: Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.1.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.1.3.A: Know the spelling-sound correspondences for common consonant digraphs.

CCSS.ELA-LITERACY.RF.1.3.B: Decode regularly spelled one-syllable words.

CCSS.ELA-LITERACY.RF.1.3.C: Know final -e and common vowel team conventions for representing long vowel sounds.

CCSS.ELA-LITERACY.RF.1.3.D: Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.

CCSS.ELA-LITERACY.RF.1.3.E: Decode two-syllable words following basic patterns by breaking the words into syllables.

CCSS.ELA-LITERACY.RF.2.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.2.3.A: Distinguish long and short vowels when reading regularly spelled one-syllable words.

CCSS.ELA-LITERACY.RF.2.3.B: Know spelling-sound correspondences for additional common vowel teams.

CCSS.ELA-LITERACY.RF.2.3.C: Decode regularly spelled two-syllable words with long vowels.

CCSS.ELA-LITERACY.RF.2.3.D: Decode words with common prefixes and suffixes.

# Make-a-Match Common Core Alignment

## Reading Foundational Skills: Phonics and Word Recognition (Continued)

CCSS.ELA-LITERACY.RF.2.3.E: Identify words with inconsistent but common spelling-sound correspondences.

CCSS.ELA-LITERACY.RF.2.3.F: Recognize and read grade-appropriate irregularly spelled words.

# Ladder Stories

Kate Narita and Suzanne Kaufman use a ladder or mirror structure in their book. That means that the second half of the story repeats what happens in the first half of the story. So *100 Bugs!* starts off with sun rising, the kids getting out of bed and then they find these combinations of bugs: 1 and 9, 2 and 8, 3 and 7, 4 and 6. At noon, they find the five and five combination. Then, what happens? The text climbs back down the ladder. The kids find these combinations of bugs: 6 and 4, 7 and 3, 8 and 2, 9 and 1. Next, there's the final combination of 10 and 1, followed by the kids in bed, and the moon rising. Other examples of picture books with a ladder or mirror structure are: *Madame Martine* by Sarah Brannen, *The Rain Came Down* by David Shannon, *Boy + Bot* by Ame Dyckman, *A Sick Day for Amos McGee* by Philip Stead and *Old Bear and His Cub* by Olivier Dunrea. Have students write their own stories using a ladder or mirror structure.





# Ladder Story Planner

Name: \_\_\_\_\_

## Climb Up the Ladder

First Event: \_\_\_\_\_

\_\_\_\_\_

Second Event: \_\_\_\_\_

\_\_\_\_\_

Third Event: \_\_\_\_\_

\_\_\_\_\_

Fourth Event: \_\_\_\_\_

\_\_\_\_\_

## Climb Down the Ladder

Fourth Event: \_\_\_\_\_

\_\_\_\_\_

Third Event: \_\_\_\_\_

\_\_\_\_\_

Second Event: \_\_\_\_\_

\_\_\_\_\_

First Event: \_\_\_\_\_

\_\_\_\_\_

# Ladder Stories Common Core Alignment

## Writing: Text Types and Purposes

CCSS.ELA-LITERACY.W.K.3: Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

CCSS.ELA-LITERACY.W.1.3: Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

CCSS.ELA-LITERACY.W.2.3: 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.

CCSS.ELA-LITERACY.W.3.3: Write narratives to develop real or imagined experiences or events using effects technique, descriptive details, and clear event sequences.

CCSS.ELA-LITERACY.W.3.3.A: Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.

CCSS.ELA-LITERACY.W.3.3.C: Use temporal words and phrases to signal event order.

CCSS.ELA-LITERACY.W.3.3.D: Provide a sense of closure.

CCSS.ELA-LITERACY.W.4.3: Write narratives to develop real or imagined experiences or events using effective techniques, descriptive details, and clear event sequences.

CCSS.ELA-LITERACY.W.4.3.A: Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.

# Ladder Stories Common Core Alignment

## Writing: Text Types and Purposes (continued)

CCSS.ELA-LITERACY.W.4.3.C: Use a variety of transitional words and phrases to manage the sequence of events.

CCSS.ELA-LITERACY.W.4.3.D: Use concrete words and phrases and sensory details to convey experiences and events precisely.

CCSS.ELA-LITERACY.W.4.3.E: Provide a conclusion that follows from the narrated experiences or events.

# More About the Bugs Fact Hunt

Name: \_\_\_\_\_

Directions: Write the name of the correct insect below each corresponding fact. All the answers can be found in the back matter. Enjoy!

Candy-Striped Leafhopper

Eastern Forktail

Giant Walkingstick

Convergent Lady Beetle

Pennsylvania Firefly

Tricolored Bumblebee

Eastern Tiger Swallowtail

Wandering Glider

Two-Lined Spittlebug

Rattler Round-Winged Katydid

1. This insect has been spotted hundreds of miles out to sea and twenty-thousand feet above sea level in the mountains of the Himalayas.

---

2. This female beetle uses her light to attract mates and to lure in males from other species to gobble them up.

---

3. This insect's ears are on its knees. But just like our ears, they capture sound, amplify it, and transfer the information to the brain.

---

4. This true bug shoots its waste far away to keep predators off their trails.

---

5. This insect hides out from hungry birds and the hot sun in its own bubble of milky-white goo.

---



# More About the Bugs Fact Hunt

Name: \_\_\_\_\_

Directions: Write the name of the correct insect below each corresponding fact. All the answers can be found in the back matter. Enjoy!

---

Candy-Striped Leafhopper	Eastern Forktail	Giant Walkingstick
Convergent Lady Beetle	Pennsylvania Firefly	Tricolored Bumblebee
Eastern Tiger Swallowtail	Wandering Glider	
Two-Lined Spittlebug	Rattler Round-Winged Katydid	

6. This beetle took a trip to space in 1999 and was scheduled to return in 2015, but the rocket blew up.

\_\_\_\_\_

7. This insect fools its predators. Sometimes it's mistaken for bird poop, other times for a snake and during the adult stage, a female's coloring mimics a poisonous insect.

\_\_\_\_\_

8. If this insect is young or a nymph, it can regrow a missing leg, but adults can't.

\_\_\_\_\_

9. This insect savors meals. It doesn't eat on the wing, it dines while perched on plants.

\_\_\_\_\_

10. To you buzzing may be annoying or alarming. But to this insect it means there's a flower feast nearby.

\_\_\_\_\_



# More About the Bugs Fact Hunt Answer Key

Name: \_\_\_\_\_

Directions: Write the name of the correct insect below each corresponding fact. All the answers can be found in the back matter. Enjoy!

Candy-Striped Leafhopper      Eastern Forktail      Giant Walkingstick  
Convergent Lady Beetle      Pennsylvania Firefly      Tricolored Bumblebee  
Eastern Tiger Swallowtail      Wandering Glider  
Two-Lined Spittlebug      Rattler Round-Winged Katydid

1. This insect has been spotted hundreds of miles out to sea and twenty-thousand feet above sea level in the mountains of the Himalayas.

Wandering Glider

2. This female beetle uses her light to attract mates and to lure in males from other species to gobble them up.

Pennsylvania Firefly

3. This insect's ears are on its knees. But just like our ears, they capture sound, amplify it, and transfer the information to the brain.

Rattler Round-Winged Katydid

4. This true bug shoots its waste far away to keep predators off their trails.

Candy-Striped Leafhopper

5. This insect hides out from hungry birds and the hot sun in its own bubble of milky-white goo.

Two-Lined Spittlebug



# More About the Bugs Fact Hunt Answer Key

Name: \_\_\_\_\_

Directions: Write the name of the correct insect below each corresponding fact. All the answers can be found in the back matter. Enjoy!



Candy-Striped Leafhopper	Eastern Forktail	Giant Walkingstick
Convergent Lady Beetle	Pennsylvania Firefly	Tricolored Bumblebee
Eastern Tiger Swallowtail	Wandering Glider	
Two-Lined Spittlebug	Rattler Round-Winged Katydid	

6. This beetle took a trip to space in 1999 and was scheduled to return in 2015, but the rocket blew up.

Convergent Lady Beetle

---

7. This insect fools its predators. Sometimes it's mistaken for bird poop, other times for a snake and during the adult stage, a female's coloring mimics a poisonous insect.

Eastern Tiger Swallowtail

---

8. If this insect is young or a nymph, it can regrow a missing leg, but adults can't.

Giant Walkingsticks

---

9. This insect savors meals. It doesn't eat on the wing, it dines while perched on plants.

Eastern Forktail

---

10. To you buzzing may be annoying or alarming. But to this insect it means there's a flower feast nearby.

Tricolored Bumblebee

---



# More About the Plants Fact Hunt

Name: \_\_\_\_\_

Directions: Write the name of the correct plant below each corresponding fact. All the answers can be found in the back matter. Enjoy!

Autumn Joy

Common Yarrow

Bugbane

Julia Child Rose

Common Sneezeweed

White Snakeroot

Coralbells

New England Aster

Garden Phlox

Woodland Sage

1. This European plant grows in every state including Hawaii and Alaska.

\_\_\_\_\_

2. Birds feast on the dried seeds of this plant all winter long.

\_\_\_\_\_

3. White-tailed deer and eastern cottontail rabbits love to feast on this plant.

\_\_\_\_\_

4. In order for this plant to produce seeds, it needs another one like it nearby.

\_\_\_\_\_

5. This plant is named after a famous chef. She picked it out because she liked its buttery color and its licorice scent.

\_\_\_\_\_





# More About the Plants Fact Hunt

Name: \_\_\_\_\_

Directions: Write the name of the correct plant below each corresponding fact. All the answers can be found in the back matter. Enjoy!

Autumn Joy

Common Yarrow

Bugbane

Julia Child Rose

Common Sneezeweed

White Snakeroot

Coralbells

New England Aster

Garden Phlox

Woodland Sage

6. Butterflies flock to these blooms that look like tall, white candles.

\_\_\_\_\_

7. Scientists have found 60,000-year-old fossilized pollen of this plant in caves.

\_\_\_\_\_

8. If cows continually eat this plant, their milk becomes poisonous. Abraham Lincoln's mother, Nancy Lincoln, died from drinking milk poisoned by this plant.

\_\_\_\_\_

9. Deer avoid this plant because its leaves are bitter and toxic.

\_\_\_\_\_

10. This plant is a rest stop for insects. The petals provide landing spots and its yellow center is like a food court for bees, beetles and butterflies.

\_\_\_\_\_



# More About the Plants Fact Hunt Answer Key

Name: \_\_\_\_\_

Directions: Write the name of the correct plant below each corresponding fact. All the answers can be found in the back matter. Enjoy!

Autumn Joy

Common Yarrow

Bugbane

Julia Child Rose

Common Sneezeweed

White Snakeroot

Coralbells

New England Aster

Garden Phlox

Woodland Sage

1. This European plant grows in every state including Hawaii and Alaska.

Woodland Sage

2. Birds feast on the dried seeds of this plant all winter long.

Autumn Joy

3. White-tailed deer and eastern cottontail rabbits love to feast on this plant.

Garden Phlox

4. In order for this plant to produce seeds, it needs another one like it nearby.

Coral Bell

5. This plant is named after a famous chef. She picked it out because she liked its buttery color and its licorice scent.

Julia Child Rose



# More About the Plants Fact Hunt Answer Key

Name: \_\_\_\_\_

Directions: Write the name of the correct plant below each corresponding fact. All the answers can be found in the back matter. Enjoy!

Autumn Joy	Common Yarrow	Bugbane
Julia Child Rose	Common Sneezeweed	White Snakeroot
Coralbells	New England Aster	
Garden Phlox	Woodland Sage	

6. Butterflies flock to these blooms that look like tall, white candles.

Bugbane

---

7. Scientists have found 60,000-year-old fossilized pollen of this plant in caves.

Common Yarrow

---

8. If cows continually eat this plant, their milk becomes poisonous. Abraham Lincoln's mother, Nancy Lincoln, died from drinking milk poisoned by this plant.

White Snakeroot

---

9. Deer avoid this plant because its leaves are bitter and toxic.

Common Sneezeweed

---

10. This plant is a rest stop for insects. The petals provide landing spots and its yellow center is like a food court for bees, beetles and butterflies.

New England Aster

---



# Fact Hunt Next Generation Science Standard Alignment

## From Molecules to Organisms: Structures and Processes

1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. (Grades K-2)

1-LS1-2: Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. (Grades K-2)

4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (Grades 3-5)

## Heredity: Inheritance and Variation of Traits

1-LS3-1: Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

# Build-A-Bug

Name: \_\_\_\_\_

Look at the egg cartons, pipe cleaners, googly eyes, construction paper, toothpicks, and other goodies your teacher has gathered for you. Draw a picture of your new insect below. Remember that all insects have a head, an abdomen and a thorax as well as six legs. Then, fill out the information about your insect. After that, it will be time to build your bug!



Insect name: \_\_\_\_\_

Does your insect pollinate flowers? \_\_\_\_\_

Does it fly during the night or day? \_\_\_\_\_

What's your insect's super power? Does it leap forty times its body length like a leafhopper, carry 10-50 times their body weight like an ant, or create food like a honeybee? Insect super power: \_\_\_\_\_



# Build-a-Bug Next Generation Science Standard Alignment

## From Molecules to Organisms: Structures and Processes

1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. (Grades K-2)

1-LS1-2: Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. (Grades K-2)

4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (Grades 3-5)




4-LS1-2: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (Grades 3-5)



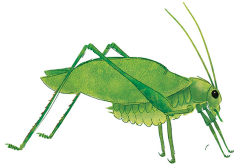
## Heredity: Inheritance and Variation of Traits

1-LS3-1: Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. (Grades K-2)

# Insect Trading Cards

**Directions:** Using the *100 Bugs!* back matter and the internet ([www.bugguide.net](http://www.bugguide.net) or [www.biokids.umich.edu](http://www.biokids.umich.edu)), complete the insect trading cards. Then, make two of your own cards. Trade them. Sort them. Have fun!




		
<b>Tricolored Bumblebee</b>	<b>Eastern Tiger Swallowtail</b>	<b>Eastern Forktail</b>
Latin Name:	Latin Name:	Latin Name:
Insect Order:	Insect Order:	Insect Order:
Size:	Size:	Size:
Habitat:	Habitat:	Habitat:
Super Power:	Super Power:	Super Power:


		
<b>Wandering Glider</b>	<b>Pennsylvania Firefly</b>	<b>Rattler Round-Winged Katydid</b>
Latin Name:	Latin Name:	Latin Name:
Insect Order:	Insect Order:	Insect Order:
Size:	Size:	Size:
Habitat:	Habitat:	Habitat:
Super Power:	Super Power:	Super Power:



# Insect Trading Cards

**Directions:** Using the *100 Bugs!* back matter and the internet ([www.bugguide.net](http://www.bugguide.net) or [www.biokids.umich.edu](http://www.biokids.umich.edu)), complete the insect trading cards. Then, make two of your own cards. Trade them. Sort them. Have fun!

		
<b>Convergent Lady Beetle</b>	<b>Candy-striped Leafhopper</b>	<b>Two-lined Spittlebug</b>
Latin Name:	Latin Name:	Latin Name:
Insect Order:	Insect Order:	Insect Order:
Size:	Size:	Size:
Habitat:	Habitat:	Habitat:
Super Power:	Super Power:	Super Power:

		
<b>Giant Walkingstick</b>		
Latin Name:	Latin Name:	Latin Name:
Insect Order:	Insect Order:	Insect Order:
Size:	Size:	Size:
Habitat:	Habitat:	Habitat:
Super Power:	Super Power:	Super Power:

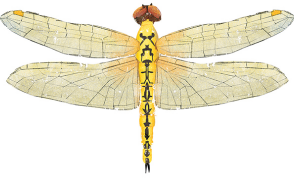

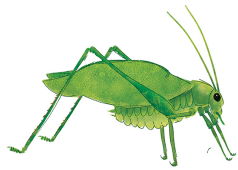




# Insect Trading Cards Answer Key

Directions: Using the *100 Bugs!* back matter and the internet, complete the insect trading cards. Then, make two of your own cards. Trade them. Sort them. Have fun!




		
<p><b>Tricolored Bumblebee</b></p> <p>Latin Name: <i>Bombus ternarius</i></p> <p>Insect Order: <i>Hymenoptera</i></p> <p>Size: Queens are <math>\frac{3}{4}</math> in./17-19 mm., male and worker bees are <math>\frac{1}{2}</math> in./13 mm.</p> <p>Habitat: Woodlands, meadows</p> <p>Super Power: <i>Varies</i></p>	<p><b>Eastern Tiger Swallowtail</b></p> <p>Latin Name: <i>Papilio glaucus</i></p> <p>Insect Order: <i>Lepidoptera</i></p> <p>Size: 4.5 in./120 mm.</p> <p>Habitat: Woodland edges, swamps</p> <p>Super Power: <i>Varies</i></p>	<p><b>Eastern Forktail</b></p> <p>Latin Name: <i>Ischnura verticalis</i></p> <p>Insect Order: <i>Odonata</i></p> <p>Size: 1 in./30 mm.</p> <p>Habitat: Wetlands, well-vegetated ponds</p> <p>Super Power: <i>Varies</i></p>


		
<p><b>Wandering Glider</b></p> <p>Latin Name: <i>Pantala flavescens</i></p> <p>Insect Order: <i>Odonata</i></p> <p>Size: 2 in./48 mm.</p> <p>Habitat: Ponds, pools, brackish water</p> <p>Super Power: <i>Varies</i></p>	<p><b>Pennsylvania Firefly</b></p> <p>Latin Name: <i>Photuris pennsylvanica</i></p> <p>Insect Order: <i>Coleoptera</i></p> <p>Size: <math>\frac{1}{2}</math> in./9mm.</p> <p>Habitat: Meadows, open forests</p> <p>Super Power: <i>Varies</i></p>	<p><b>Rattler Round-Winged Katydid</b></p> <p>Latin Name: <i>Amblycorypha rotundifolia</i></p> <p>Insect Order: <i>Orthoptera</i></p> <p>Size: 1.5 in./37 mm.</p> <p>Habitat: Woodland edges</p> <p>Super Power: <i>Varies</i></p>



# Insect Trading Cards Answer Key

**Directions:** Using the *100 Bugs!* back matter and the internet, complete the insect trading cards. Then, make two of your own cards. Trade them. Sort them. Have fun!

		
<p style="text-align: center;"><b>Convergent Lady Beetle</b></p> <p>Latin Name: <i>Hippodamia convergens</i></p> <p>Insect Order: <i>Coleoptera</i></p> <p>Size: 1/4 in./5.5 mm.</p> <p>Habitat: Grasslands, forests, farms, gardens, parks</p> <p>Super Power: <i>Varies</i></p>	<p style="text-align: center;"><b>Candy-striped Leafhopper</b></p> <p>Latin Name: <i>Graphocephala coccinea</i></p> <p>Insect Order: <i>Hemiptera</i></p> <p>Size: 1/4 in./8 mm.</p> <p>Habitat: <i>Anywhere with vegetation</i></p> <p>Super Power: <i>Varies</i></p>	<p style="text-align: center;"><b>Two-lined Spittlebug</b></p> <p>Latin Name: <i>Prosapia bicinta</i></p> <p>Insect Order: <i>Hemiptera</i></p> <p>Size: 1/4 in./8 mm.</p> <p>Habitat: <i>Anywhere with vegetation</i></p> <p>Super Power: <i>Varies</i></p>

		
<p style="text-align: center;"><b>Giant Walkingstick</b></p> <p>Latin Name: <i>Megaphasma denticus</i></p> <p>Insect Order: <i>Phasmida</i></p> <p>Size: 7 in./177 mm.</p> <p>Habitat: <i>Grapevines, oaks, grasses</i></p> <p>Super Power: <i>Varies</i></p>	<p>Latin Name:</p> <p>Insect Order:</p> <p>Size:</p> <p>Habitat:</p> <p>Super Power:</p>	<p>Latin Name:</p> <p>Insect Order:</p> <p>Size:</p> <p>Habitat:</p> <p>Super Power:</p>



# Insect Trading Cards Next Generation

## Science Standard Alignment

### From Molecules to Organisms: Structures and Processes

1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. (Grades K-2)

1-LS1-2: Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. (Grades K-2)

4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (Grades 3-5)

4-LS1-2: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (Grades 3-5)

### Heredity: Inheritance and Variation of Traits

1-LS3-1: Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

# Ten Vivid Verbs

Name: \_\_\_\_\_

**Directions:** Authors use vivid verbs to help readers paint a picture in their mind of what's happening in the story. Kate Narita could have used the verb "flying" ten times which would have made for a very boring book. Instead, she used flying one time and a variety of other vivid verbs to keep readers engaged. Look through *100 Bugs! A Counting Book* and write down the verb associated with each insect.

Insect

Verb

Walkingsticks

\_\_\_\_\_

Dragonflies

\_\_\_\_\_

Leafhoppers

\_\_\_\_\_

Ladybugs

\_\_\_\_\_

Bumblebees

\_\_\_\_\_

Butterflies

\_\_\_\_\_

Damselflies

\_\_\_\_\_

Spittlebugs

\_\_\_\_\_

Katydid

\_\_\_\_\_

Lightning bugs

\_\_\_\_\_



# Ten Vivid Verbs Common Core Alignment

## Reading Literature: Craft and Structure

CCSS.ELA-LITERACY.RL.1.4: Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.

## Writing: Text Types and Purposes

CCSS.ELA-LITERACY.W.4.2.D: Use precise language and domain-specific vocabulary to inform about or explain the topic.

CCSS.ELA-LITERACY.W.4.3.D: Use concrete words and phrases and sensory details to convey experiences and events precisely.

CCSS.ELA-LITERACY.W.5.2.D: Use precise language and domain-specific vocabulary to inform about or explain the topic.

CCSS.ELA-LITERACY.W.5.3.D: Use concrete words and phrases and sensory details to convey experiences and events precisely.

# It's Rhyme Time

Name: \_\_\_\_\_

Kate Narita found one object or animal to rhyme with the ten different flowers in *100 Bugs!* Here are the ten rhyming pairs: hose/rose, weathervane/bugbane, farrow/yarrow, rafters/asters, horse feed/sneezeweed, rain boot/snakeroot, wishing well/coralbells, chicken cage/woodland sage, wood box/white phlox and happy boy/autumn joy. Below is a short list of other flowers. Find objects or animals that rhyme with ten of the plants.

Bonus if the ten objects/animals can be found in one setting!

daffodil	buttercup	pansy	marigold	goldenrod
tulip	snowdrop	lily	cosmos	dandelion
daisy	snapdragon	milkweed	violet	poppy
clover	columbine	cyclamen	iris	heather
foxglove	heliotrope	hollyhock	jasmine	lilac

Flower

Object

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# It's Rhyme Time Common Core Alignment

## Reading Foundational Skills: Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.2.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.2.3.A: Distinguish long and short vowels when reading regularly spelled one-syllable words.

CCSS.ELA-LITERACY.RF.2.3.B: Know spelling-sound correspondences for additional common vowel teams.

CCSS.ELA-LITERACY.RF.2.3.C: Decode regularly spelled two-syllable words with long vowels.

CCSS.ELA-LITERACY.RF.2.3.D: Decode words with common prefixes and suffixes.

CCSS.ELA-LITERACY.RF.2.3.E: Identify words with inconsistent but common spelling-sound correspondences.

CCSS.ELA-LITERACY.RF.3.3.C: Decode multisyllable words.

CCSS.ELA-LITERACY.RF.3.3.D: Read grade-appropriate irregularly spelled words.

CCSS.ELA-LITERACY.RF.4.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.4.3.A: Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

# How Do the Bugs Measure Up?

Name: \_\_\_\_\_

Directions: Place your ruler along the line to measure each of the attached insects to the nearest quarter inch. Record your measurements in the data table below.

---

INSECT	MEASUREMENT
Walkingstick	
Dragonfly	
Leafhopper	
Ladybug	
Queen Bee	
Male and Worker Bumblebee	
Butterfly	
Damselfly	
Spittlebug	
Katydid	
Lightening Bug	





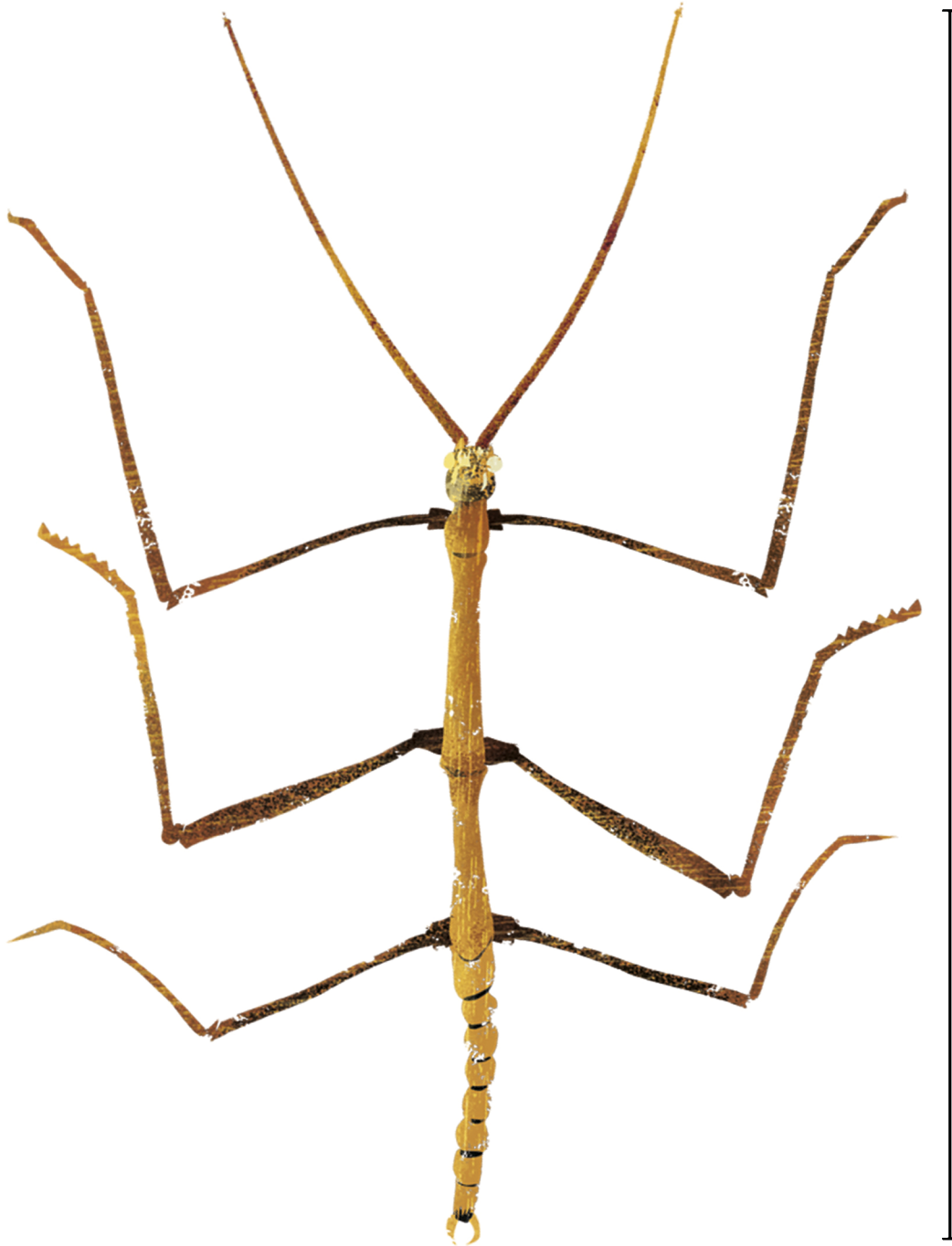
# How Do the Bugs Measure Up? Answer Key

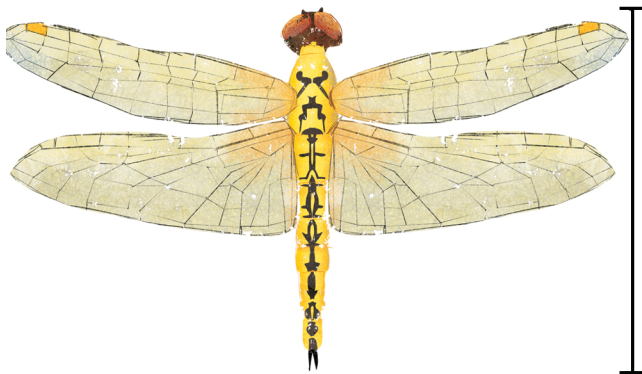
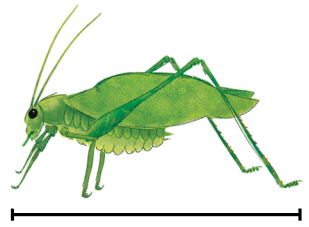
Name: \_\_\_\_\_

Directions: Place your ruler along the line to measure each of the attached insects to the nearest quarter inch. Record your measurements in the data table below.

INSECT	MEASUREMENT
Walkingstick	7 inches (7 in./177 mm.)
Dragonfly	2 inches (1.9 in./48 mm.)
Leafhopper	$\frac{1}{4}$ inch (.3 in./8 mm.)
Ladybug	$\frac{1}{4}$ inch (.25 in./5.5 mm.)
Queen Bee	$\frac{3}{4}$ inch (.7 in./18 mm.)
Male and Worker Bumblebee	$\frac{1}{2}$ inch (.5 in./11 mm.)
Butterfly	$4\frac{1}{2}$ inches (4.5 in./112.5 mm.)
Damselfly	1 inch (1.1 in./27.5 mm.)
Spittlebug	$\frac{1}{2}$ inch (.4 in./9 mm.)
Katydid	$1\frac{1}{2}$ inches (1.5 in./37 mm.)
Lightening Bug	$\frac{1}{2}$ inch (.4 in./9 mm.)







# How Do the Bugs Stack Up?

Name: \_\_\_\_\_

Directions: Use the data from the How Do the Bugs Measure Up? worksheet to create a line plot of the insects' measurements below. Remember to title your line plot. Then, use the line plot to answer the questions that follow.



1. One of the insects is an outlier. It's data point is so different from the rest it doesn't even fit on the graph. Which insect is an outlier?

2. Which measurement occurs most often?

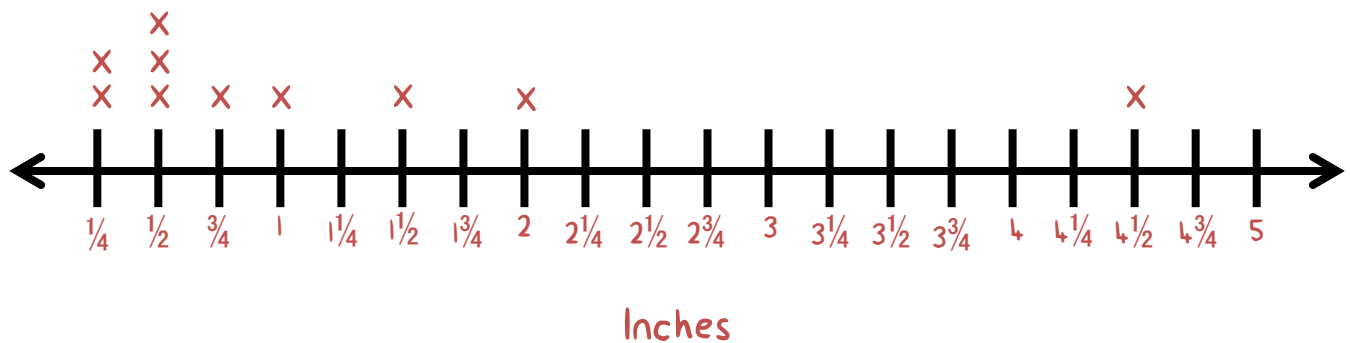


# How Do the Bugs Stack Up? Answer Key

Name: \_\_\_\_\_

Directions: Use the data from the How Do the Bugs Measure Up? worksheet to create a line plot of the insects' measurements below. Remember to title your line plot. Then, use the line plot to answer the questions that follow.

## Length of Bugs from *100 Bugs! A Counting Book*



1. One of the insects is an outlier. It's data point is so different from the rest it doesn't even fit on the graph. Which insect is an outlier?

The walkingstick measures 7 inches and is an outlier.

2. Which measurement occurs most often?

The measurement  $\frac{1}{2}$  inch occurs the most often.



# Bug Measurement Common Core Alignment

## Measure and estimate lengths in standard units.

CCSS.MATH.CONTENT.2.MD.A.1: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

CCSS.MATH.CONTENT.2.MD.A.2: Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

CCSS.MATH.CONTENT.2.MD.A.3: Estimate lengths using units of inches, feet, centimeters, and meters.

CCSS.MATH.CONTENT.2.MD.A.4: Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

CCSS.MATH.CONTENT.3.MD.B.4: Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

## Represent and interpret data.

CCSS.MATH.CONTENT.4.MD.B.4: Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

# It's Time for a Bug Debate

Pesticides harm insects. The following information is directly quoted from The Environmental Protection Agency's 2017 report which focuses on pesticide usage throughout the world from 2008-2012.

“U.S. pesticide usage totalled over 1.1 billion pounds annually in both 2011 and 2012, with herbicides accounting for nearly 50% of total U.S. pesticide usage in 2011 and nearly 60% of usage in 2012 (see Table 3.1). On average across all reported years (2008-2012), U.S. pesticide use accounted for approximately 23% of total pounds of pesticides applied, 25% of total pounds of herbicides applied, 43% of total pounds of fumigants applied, 12% of fungicides applied, and 6% of insecticides applied worldwide.”

Ask your students whether or not they think the farm featured in *100 Bugs!* uses pesticides, why or why not. Should farmers use pesticides, why or why not? Randomly divide up the class into two sides and have one side argue for the use of pesticides and the other side argue against the use of pesticides. Then, have them switch sides. After the debate, students can write a persuasive essay about why or why not farmers should use pesticides. I've included the persuasive essay planners I use in my classroom below. If you're looking to further explore the pesticide issue with your students, Melissa Stewart's *A Place for Butterflies* ([www.melissastewart.com](http://www.melissastewart.com)) and the other *A Place for* companion books are excellent resources. I use them each year in my classroom to teach cause and effect as well as problem and solution nonfiction text structures.



Name: \_\_\_\_\_

## Persuasive Outline

Thesis:

\_\_\_\_\_

(your specific topic)

(your point of view)

because

\_\_\_\_\_

(first topic sentence)

\_\_\_\_\_

(second topic sentence)

\_\_\_\_\_

(third topic sentence)

## Body Paragraph Topic Sentences

First Paragraph Topic Sentence:

\_\_\_\_\_  
\_\_\_\_\_

Second Paragraph Topic Sentence:

\_\_\_\_\_  
\_\_\_\_\_

Third Paragraph Topic Sentence:

\_\_\_\_\_  
\_\_\_\_\_









Name: \_\_\_\_\_

## Persuasive Essay Conclusion Paragraph

In conclusion, \_\_\_\_\_  
(copy thesis statement from introductory paragraph)

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Opinion sentence:

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# Bug Debate Common Core Alignment

## Biological Evolution: Unity and Diversity (Next Generation Science Standard)

3-LS4-4: Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

(Grades 3-5)

## Speaking and Listening: Comprehension and Collaboration

CCSS.ELA-LITERACY.SL.2.1: Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-LITERACY.SL.2.1.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).

CCSS.ELA-LITERACY.SL.2.1.B: Build on others' talk in conversations by linking their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.2.1.C: Ask for clarification and further explanation as needed about the topics and texts under discussion.

CCSS.ELA-LITERACY.SL.2.2: Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.2.3: Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

CCSS.ELA-LITERACY.SL.3.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

# Bug Debate Common Core Alignment

## Speaking and Listening: Comprehension and Collaboration (continued)

CCSS.ELA-LITERACY.SL.3.1.A: Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.3.1.B: 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).

CCSS.ELA-LITERACY.SL.3.1.C: Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

CCSS.ELA-LITERACY.SL.3.1.D: Explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.3.2: Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.3.3: Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

CCSS.ELA-LITERACY.SL.4.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.4.1.A: Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

# Bug Debate Common Core Alignment

## Speaking and Listening: Comprehension and Collaboration (continued)

CCSS.ELA-LITERACY.SL.4.1.B: Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.4.1.C: Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

CCSS.ELA-LITERACY.SL.4.1.D: Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

CCSS.ELA-LITERACY.SL.4.3: Identify the reasons and evidence a speaker provides to support particular points.

CCSS.ELA-LITERACY.SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.5.1.A: Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.5.1.B: Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.5.1.C: Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.

CCSS.ELA-LITERACY.SL.5.1.D: Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

# Bug Debate Common Core Alignment

## Speaking and Listening: Comprehension and Collaboration (continued)

CCSS.ELA-LITERACY.SL.5.2: Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-LITERACY.SL.5.3: Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

## Speaking and Listening: Presentation of Knowledge and Ideas

CCSS.ELA-LITERACY.SL.2.4: Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

CCSS.ELA-LITERACY.SL.2.6: Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

CCSS.ELA-LITERACY.SL.3.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.3.6: Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

CCSS.ELA-LITERACY.SL.4.4: Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.5.4: Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.5.6: Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.



# Bug Debate Common Core Alignment

## Writing: Text Types and Purposes

CCSS.ELA-LITERACY.W.3.1: Write opinion pieces on topics or texts, supporting a point of view with reasons.

CCSS.ELA-LITERACY.W.3.1.A: Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.

CCSS.ELA-LITERACY.W.3.1.B: Provide reasons that support the opinion.

CCSS.ELA-LITERACY.W.3.1.C: Use linking words and phrases (e.g., *because, therefore, since, for example*) to connect opinion and reasons.

CCSS.ELA-LITERACY.W.3.1.D: Provide a concluding statement or section.

CCSS.ELA-LITERACY.W.4.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

CCSS.ELA-LITERACY.W.4.1.A: Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.

CCSS.ELA-LITERACY.W.4.1.B: Provide reasons that are supported by facts and details.

CCSS.ELA-LITERACY.W.4.1.C: Link opinion and reasons using words and phrases (e.g., *for instance, in order to, in addition*).

CCSS.ELA-LITERACY.W.4.1.D: Provide a concluding statement or section related to the opinion presented.

CCSS.ELA-LITERACY.W.5.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

# Bug Debate Common Core Alignment

## Writing: Text Types and Purposes (continued)

CCSS.ELA-LITERACY.W.5.1.A: Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose.

CCSS.ELA-LITERACY.W.5.1.B: Provide logically ordered reasons that are supported by facts and details.

CCSS.ELA-LITERACY.W.5.1.C: Link opinion and reasons using words, phrases, and clauses (e.g., *consequently*, *specifically*).

CCSS.ELA-LITERACY.W.5.1.D: Provide a concluding statement or section related to the opinion presented.

# Ten Steps to Revision

**Directions:** Author Kate Narita shares the ten revision steps she took in *100 Bugs! A Counting Book*. From Manuscript to Book at <http://www.katenarita.com/100-bugs.html>. Now it's your turn. Look at your writing, make ten changes and record them below. Don't know what to do? Here are some ideas:

1. Add an alliterative phrase: "beautiful bees buzzed around the beehive."
2. Add a simile: "as slow as a slug."
3. Add a metaphor: "Life is a fruit salad."
4. Add vivid verbs: instead of fly use flutter or flit, instead of run use sprint or race.
5. Add a sensory detail: "the chewy, gooey mozzarella cheese slid down my throat."
6. Add a magic rule of three: "I tossed my guide book, my binoculars and my lucky keychain into my backpack."
7. Add dialogue. "Stop that dog!" the man screamed. "I can't catch her," I yelled.
8. Cut out filler words: very, just, like.
9. Start in the middle of the action, not when the character gets up in the morning.
10. Use the weather to show your character's emotions: If she's sad, the sky should be gray and gloomy, not bright blue and sunny.



Name: \_\_\_\_\_

Before

After

1.

\_\_\_\_\_

\_\_\_\_\_

2.

\_\_\_\_\_

\_\_\_\_\_

3.

\_\_\_\_\_

\_\_\_\_\_

4.

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# Steps to Revision Common Core Alignment

## Writing: Text Types and Purposes

CCSS.ELA-LITERACY.W.3.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

CCSS.ELA-LITERACY.W.3.3.B: Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.

CCSS.ELA-LITERACY.W.4.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

CCSS.ELA-LITERACY.W.4.3.B: Use dialogue and description to develop experiences and events or show the responses of characters to situations.

CCSS.ELA-LITERACY.W.4.3.D: Use concrete words and phrases and sensory details to convey experiences and events precisely.

CCSS.ELA-LITERACY.W.5.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

CCSS.ELA-LITERACY.W.5.3.B: Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations.

CCSS.ELA-LITERACY.W.5.3.D: Use concrete words and phrases and sensory details to convey experiences and events precisely.

# Steps to Revision Common Core Alignment

## Writing: Production and Distribution of Writing

CCSS.ELA-LITERACY.W.3.5: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.

CCSS.ELA-LITERACY.W.4.5: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.

CCSS.ELA-LITERACY.W.5.5: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.