

## Standards Addressed:

### Math

#### *Word Problems*

3.R.A.D

4.R.A.A

5.R.A.C

#### *Represent and Analyze Data*

3-5.DS.A

#### *Create Bar Graphs*

3.DS.A.a

### Science

#### *Sort and Classify Natural Patterns*

3.LS3.A.1

#### *Adaptations*

3.LS3.C.1

4.LS1.4.A.1

### ELA

#### *Make Connections; Text to Text*

3-5.R.1.C.a

#### *Read, Infer, and Draw Conclusions from Nonfiction*

3-5.R.3.A

#### *Academic Vocabulary*

3.R.1.B.i

4.R.1.B.f

5.R.1.B.g

## Social Studies(optional)

#### *Timelines*

3-5.TS.7.B



# The Tiger



Q: What's a tiger's favorite color?

A: Roar-range.

With their unmistakable stripes and intimidating size, learning about tigers will keep your students' attention. Students will especially enjoy finding out what type of fingerprint pattern they have and comparing with their classmates.

## The Book

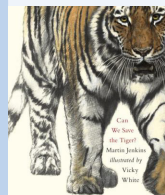


### *Tigers*

by Timothy Levi Biel, Zoobooks

Flesch-Kincaid grade level 5.52

This magazine is of large enough size to share pictures with the students. There is substantial information to expand upon the larger print messages and you will want to choose some of those details as well. To do this, you should pay attention to the information in the student guide, as some will be covered there. Its conservation message at the end of the book varies slightly from the other – you might want to read both together and see what conclusions students will reach.



### *Can We Save the Tiger?*

by Martin Jenkins

Flesch-Kincaid grade level 5.28

This beautiful book covers much more than tigers and its conservation message is far reaching. The information on pages 6 to page 14 focuses mostly on tigers, while the rest of the book covers other endangered species. If you conclude by reading pages 50 and 51, you should be able to initiate a good conversation about conservation — which is a key mission of the Kansas City Zoo.

## In this unit, students will:

- use math operations to solve one- and two-step word problems.
- compare fingerprints.
- creatively transform fingerprints into art.
- create a graph using collected data.
- identify main idea and details in a nonfiction passage.
- compare two nonfiction texts.
- create an infographic.

## Additional Tiger Information



- There is one species of tiger, *Panthera Tigris*, that is further split into nine subspecies. Of the nine original subspecies, six are still living. They are: Malayan, Sumatran, South China, Indochinese, Bengal, and Amur(Siberian).
- Tigers are generally independent by two years of age and attain sexual maturity at 3 – 4 years for females and at 4 – 5 years for males. Tigers have been known to reach the age of 26 years, but the average life span is much less. Tigers in human care have a longer average lifespan.
- Among fellow big cats, only the jaguar is similarly fond of water. Tigers may also cross rivers up to four miles wide and, if they need to, can swim a distance of 18 miles in a day. During the extreme heat of the day, they often cool off in pools. They are able to capture prey in the water.
- Tigers are ambush predators that hunt primarily at night. They use sight and sound to identify prey.
- Males of the largest subspecies, the Amur (Siberian) tiger, may weigh up to 660 pounds. For males of the smallest subspecies, our Sumatran tiger, upper range is around 400 pounds.

### What challenges does this animal face in the wild?

Tigers have lost 93% of their historic range. Their habitat has been destroyed and fragmented by humans, including forest clearing for agriculture, timber trade, and development activities such as building roads. Vast areas of pristine rainforest are slashed and burned each year in order to make way for palm oil plantations. Almost all palm oil is produced in Indonesia and Malaysia. In the past, this was not done using sustainable measures. Currently, both countries are working to make palm oil production a fully sustainable operation in the coming years. There is even an app (PalmOil Scan) developed to check sustainability in everyday products we use that contain palm oil!

### Be a Planet Protector!

Be a Planet Protector by checking your common food and household items for responsible sources. Share what you have learned about Certified Sustainable Palm Oil with your household and teach them how to look for certified products. By choosing items with Certified Sustainable Palm Oil you can help prevent habitat destruction and protect forest habitats worldwide.

## Meet Charles and Libby



Charles is named after Charles Schwartz (1914-1991). Charles Schwartz was a Missouri conservationist famous for his wildlife artwork. With his wife, Elizabeth (Libby), he produced 24 nature films and several wildlife books. He even designed wildlife stamps to spread his conservation message.



Libby is named after Elizabeth (Libby) Schwartz (1912-2013). Libby was one of the most influential Missouri conservationists of the twentieth century. Libby received her doctorate in zoology from the University of Missouri. During a time when there were not many female conservationists, Libby was a pioneer in her field and became one of the most respected field researchers. With her husband, Charles Schwartz, she worked tirelessly to create art, books, photography, and films that taught the importance of wildlife and the natural environment. She helped shape the modern conservation movement in Missouri and the United States.

## Vocabulary



### ELA- Academic Vocabulary: 3.R.1.B.i, 4.R.1.B.f, 5.R.1.B.g

Be sure to point out the new words to students as you read the texts. Ask them to use the words in a different way if they can. Point out how flexible words can be – and how the more descriptive words like *massive*, *stalk*, *majestic* or *desperate* can convey stronger meaning. They may want to use some of these words in their writing.

**ecosystem**- a system, or a group of interconnected elements, formed by the interaction of a community of organisms with their environment

**endangered** – at risk of dying out

**extinct** – a group of organisms no longer living

**massive** – huge, big and solid, very large

**poacher** – one who illegally hunts on another's property to make money

**solitary**-living alone; avoiding the society of others

**subspecies**- a subdivision of a species, especially a geographical or ecological subdivision.

**stalk** – to follow in a way like hunting

**territory** – an area that an animal protects from other animals

## Adaptation Exploration



### Science- Adaptations: 3.LS3.C.1, 4.LS1.A.1

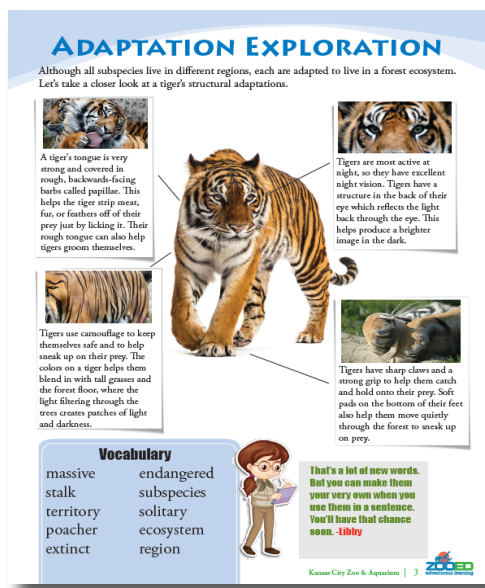
Tigers are fascinating animals with some amazing adaptations. On page 3 of the student guide, students can read about tiger stripes, feet, eyes and tongues. As you read the books that accompany this unit, are there additional adaptations that are not in this list?

**Stripes:** Tigers use camouflage to keep themselves safe and to help sneak up on their prey. The combination of lighter orange and darker black on a tiger helps them blend in with the tall grasses and forest floor, where the light filtering through the trees creates patches of light and darkness.

**Feet:** Tigers have sharp claws and a strong grip to help them catch and hold on to their prey. Soft pads on the bottom of their feet also help them to move quietly through the forest when trying to sneak up on their prey.

**Eyes:** Tigers are most active at night, so they have excellent night vision. Tigers have a structure in the back of their eye which reflects the light through the eye a second time. This helps produce a brighter image in the dark.

**Tongue:** A tiger's tongue is very strong and covered in sharp, backwards-facing barbs called papillae. This helps the tiger strip meat, fur, or feathers off of their prey just by licking it. Their rough tongue can also help them groom themselves.



## Read the Tiger Books to Your Students



ELA- Read, infer, and draw conclusions from nonfiction: 3-5.R.3.A

ELA- Text to text connections: 3-5.R.1.C.a

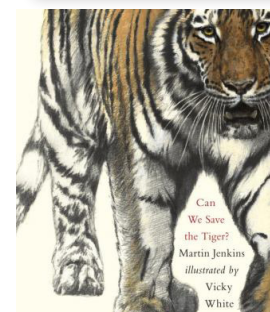
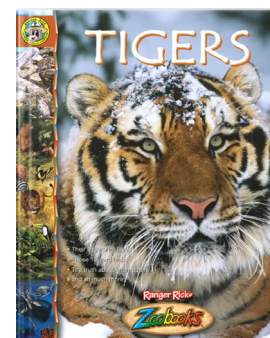
After reading the books, here are some questions you can ask students to check for understanding:

### Tigers Zoobook

1. This book is nonfiction. How do you know? What text features do you see?
2. On page 11, how does the infographic of the tiger tails explain how a tiger feels better than the text?

### Can We Save the Tiger?

1. How is this book's main idea different than *Tigers*?
2. As a class, can we find facts in this book that support the main idea?



## Let's Learn More



### ELA- Read, infer, and draw conclusions from nonfiction: 3-5.R.3.A

1. Students will begin by determining the facts from a short narrative created from *Tigers* by Laura Marsh, a National Geographic Kids book(not provided). They have several requirements to fulfill: underline the main idea (this has the understood subject, tigers), label the examples or details 1-7, and circle the conclusion. Remind them that the conclusion repeats, in different words, the main idea.

Tigers are fierce hunters. Their bodies are built for catching prey. A tiger's stripes camouflage it in tall grass and dry leaves. Its prey may not see the tiger until it's too late. Four large front top and bottom teeth and strong jaws help tigers kill prey quickly. A tiger's terrific eyesight helps it hunt at night. Big paws with soft pads help a tiger walk quietly so it can sneak up to its prey. Sharp claws hook into prey and don't let go. A long tail helps a tiger keep its balance when moving quickly. Big muscles in its back legs help a tiger dash or leap at its prey. Every part of a tiger helps it hunt.

### ELA- Read, infer, and draw conclusions from nonfiction: 3-5.R.3.A

2. After identifying the main idea and details, have students use the space provided on page 4 of the student guide to create an infographic of the information they just read.
3. Have students create an infographic of a tiger fact of their choosing. This can be another fact they learned from the readings or it can be an opportunity to research online or in the library. Once they have finished have them pair up with a classmate. They should look at each other's graphic, and identify the fact and main idea that their classmate was illustrating.

Once the class has had time to discuss and record their answers in the student guide, you can have a whole class discussion about how people can present the same information in different ways. See if any of the students thought of the same fact!

## LET'S LEARN MORE

**Charles says,** "You already know some facts about tigers.  
What else can we learn?"

1. Read the following paragraph about tigers:

Tigers are fierce hunters. Their bodies are built for catching prey. A tiger's stripes camouflage it in tall grass and dry leaves. Its prey may not see the tiger until it's too late. Four large teeth and strong jaws help tigers kill prey quickly. A tiger's terrific eyesight helps it hunt at night. Big paws with soft pads help a tiger walk quietly so it can sneak up to its prey. Sharp claws hook into prey and don't let go. A long tail helps a tiger keep its balance when moving quickly. Big muscles in its back legs help a tiger dash or leap at its prey. Every part of a tiger helps it hunt.

2. Now that you've read the paragraph, follow these directions:

Underline the main idea.

There are seven details or facts that help explain the main idea. Label each fact ① through ⑦.

Circle the concluding sentence which gives the main idea again.

3. Using the information in the above paragraph, create an infographic in the space below to illustrate the information.



4 | Kansas City Zoo & Aquarium



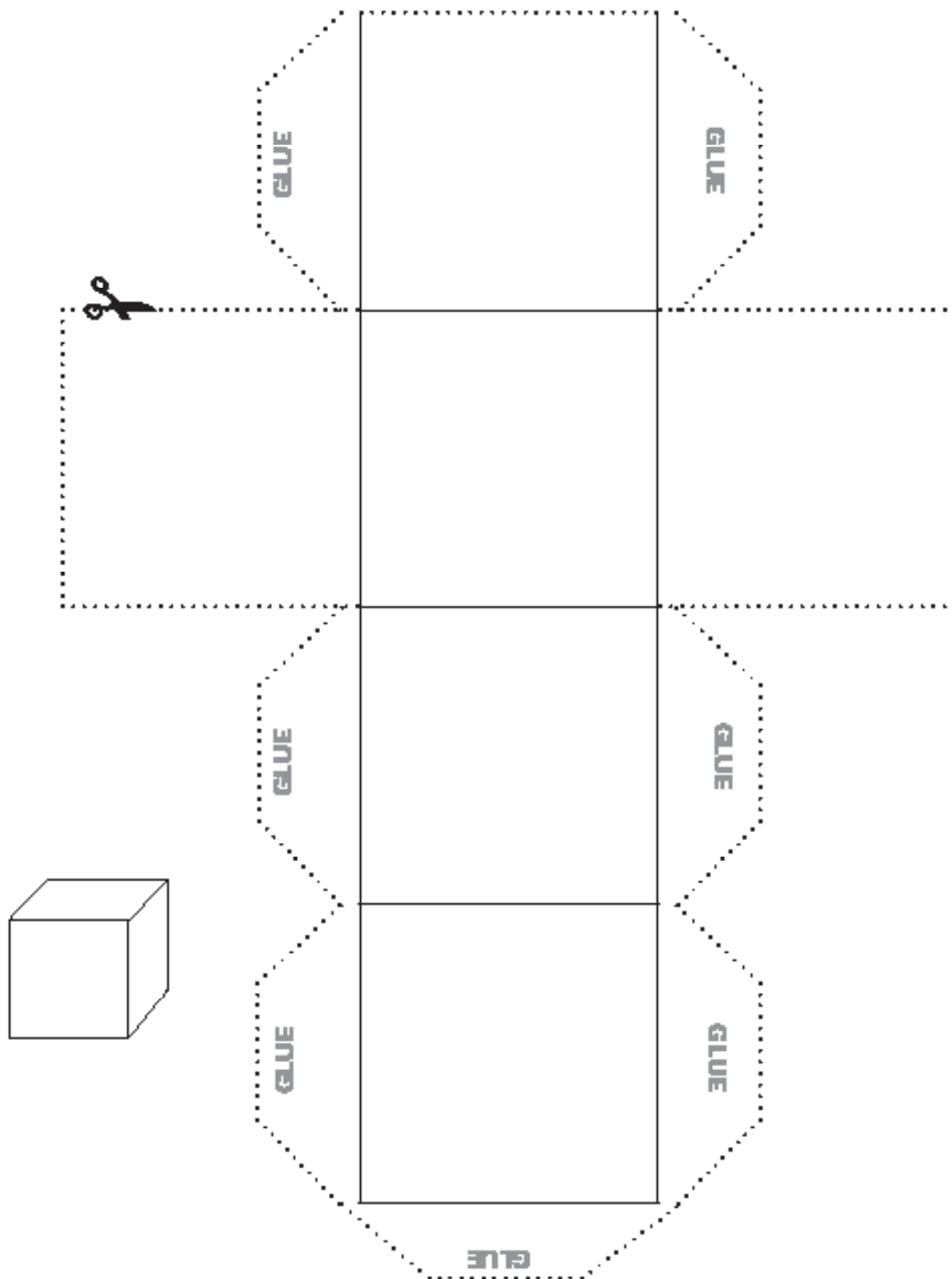
## Optional: Make a Tiger Cube



### ELA- Read, infer, and draw conclusions from nonfiction: 3-5.R.3.A

Students already have collected some facts. Have them make a box using the template below. We suggest you copy onto the heaviest paper that will go through your copier. Before cutting, folding, and gluing the cube, have students write important facts, draw pictures, or say what they can do to help save the tiger, etc., on the squares. Once they've created their cube, ask them to roll it and explain the side that comes up. You may want to enlarge the cube.

Instructions: Cut along the dotted lines and fold along the solid lines.



## Tiger Science



**Math- Represent and analyze data: 3-5.DS.A**

**Math- Create bar graphs: 3.DS.A.a**

**Science- Sort and classify natural patterns: 3-4.LS.3**

**Science- Variation of traits: 3.LS3.B**

### AT A GLANCE

**Duration:** 30 (60 minutes if completing optional activity)

**Setting:** Classroom; desks or tables

**Materials (bold are provided):**

**Washable ink pad**

Wet wipes/paper towel or access to bathroom to wipe off ink when complete

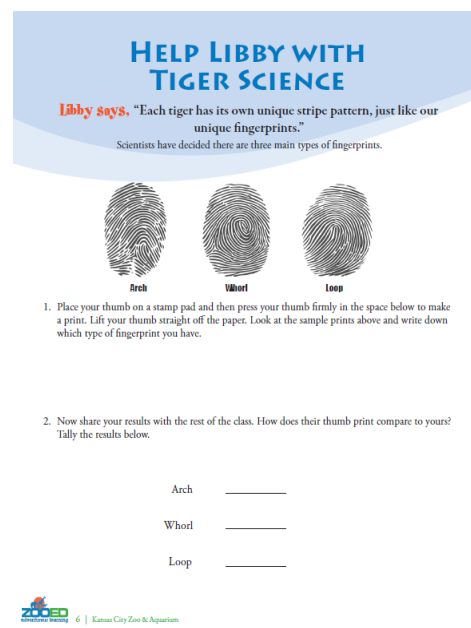
### Optional Activity Materials

Scissors

White Paper

Orange and Black Markers or Crayons

Glue



The Zoobook *Tigers* asks the question, “How is a tiger’s face like your thumb?” The answer is a tiger has stripes with a pattern, unique to that tiger. In the same way, each person on the planet has unique fingerprints. All finger print patterns are one of three designs: the arch, loop or whorl.

1. The students are provided instructions to make a thumb print and identify its type. They may need to make several to get a clean print.
2. The students will share their results with the rest of the class, and place a tally mark under the appropriate type of fingerprint. Then, on page 7 of the student guide, the students will use the data they collected and present it as a bar graph.

## Optional: Make Tiger Art



Students can turn their finger prints into art by adding tiger features. Students will select one or more pictures of the three types of finger prints to, with some imagination, incorporate them into part of a tiger’s face or body. The student will realize that there are probably as many different pictures of the tiger as there are students in the class. Being unique, whether it is in their thumb print or art work, is cool!

# Tiger Math



## ELA- Word Problems: 3.R.A.D, 4.R.A.A, 5.R.A.C

Often when students read informational text like the book *Tigers*, authors tend to provide a lot of numbers to explain important details. Students will write mathematical representations for each word problem. Then solve. The first one is provided. Please make sure the students label the numbers and pay attention to words that help identify the correct operation to use, like “more” or “less”

1. *An average tiger lives 20 years. The record for the longest living wild Sumatran tiger is 26 years. How much longer than average did that tiger live? (Subtraction)*

26 oldest tiger  
-20 normal age  
6 years difference

2. *A female tiger weighs about 320 pounds. Males weigh about 100 pounds more. What does a male tiger usually weigh? (Addition)*

320 pound male  
+100 pound more for a male  
420 pounds is the weight of a male

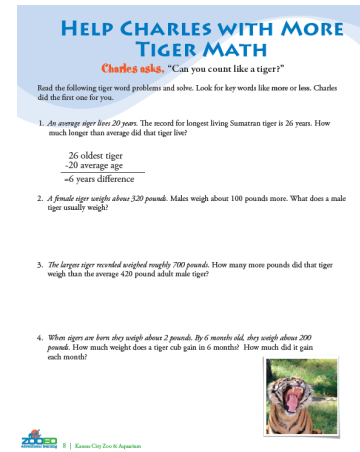
3. *The largest tiger recorded weighed roughly 700 pounds. How many more pounds did that tiger weigh than the average 420 pound adult male tiger? (Subtraction)*

700 Siberian male  
-420 average male  
280 pound difference between an average tiger & the biggest

4. *When tigers are born they weigh about 2 pounds. By 6 months old, they weigh about 200 pounds. How much weight does a tiger cub gain in 6 months? How much did it gain each month? (Subtraction/Division)*

200 pounds - 2 pounds = 198 pounds gained

198 pounds ÷ 6 months = 33 pounds per month



## Optional: Tiger Timeline



### Social Studies- Timelines: 3-5.TS.7.B

A timeline will help the students quickly view, in this case, the first two years of the life of a tiger. Students should know that two years = 24 months.

- The cubs first come out of their cave at 3 months.
- The cubs know how to hunt on their own at 18 months.
- At 6 months a tiger will weigh 200 pounds and have four big canine teeth.
- At birth, a tiger weighs less than 2 pounds.
- The tiger leaves his or her mother at two years.

**Optional:** Research other animal milestones and add them to the timeline. How do they compare?

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
At birth, weight is 2 pounds.			Out of their cave.			Weights 200 pounds.												Hunts on their own.						Leaves his or her mother.