The Alligator

Standards Addressed:

<u>Math</u> Measure lengths 1-2.GM.B Work with time 1.GM.C 2.GM.D Represent and Interpret Data 1-2.DS.A

> <u>Science</u> Adaptations 1.LS1.A

<u>ELA</u> Academic Vocabulary K.R.1.B 1.R.1.B.e 2.R.1.B.h

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Read, Infer, Analyze and Draw conclusions in fiction K-2.R.2.A

Read, Infer, Analyze and Draw conclusions in nonfiction K-2.R.3.A

Produce different types of sentences 2.L.1.A.h

Make connections between fiction and nonfiction texts 1-2.R.1.C.a

Social Studies(optional)

Name and locate regions of the world 2.EG.5.B.a





Q: Which side of the alligator is the greenest? A: The outside

Ooooooh alligators! Few other animals create such a visceral reaction. They look prehistoric, their eyes seem to glow, and their sharp teeth intimidate! Your students will enjoy learning more about these fascinating creatures while growing their own alligators like in the story.

The Books

National Geographic KIDS: Alligators and Crocodiles by Laura Marsh Lexile 570L

This book covers the highlights of alligators and crocodiles with several good pictures. Reading both books will introduce students to the difference between fiction and nonfiction.

Zack's Alligator

by Shirley Mozelle Flesch-Kincaid grade level 1.86 Lexile 500L This book is a complete story with a plot and two main characters, Zack and his keychain alligator named Bridget. Bridget grows into a full-sized alligator, that he feeds and cares for. On a walk they have several strange encounters, and then she shrinks back into a keychain again.





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In this unit, students will:

- write using different types of sentences: complete, compound, interrogative and exclamatory.
- describe the overall structure of a story acknowledge differences in the points of view of characters.
- compare fiction to nonfiction texts by looking at facts versus ideas.
- draw a bar graph (with single-unit scale) to represent a data set.
 - generate measurement data by measuring lengths using rulers.



Additional Alligator Information

- Scientists classify alligators, crocodiles, and gharials under the order *Crocodilia*, also called crocodilians. From there, they're broken into three scientific families: the *Alligatoridae* family includes the two species of alligators and six of caimans. The *Crocodylidae* family includes 14 species of crocodiles. The *Gavialidae* family includes the gharial and the false gharial. The three families have much in common, demonstrated in the optional lesson, which focuses on alligators and crocodiles.
- For about 230 million years, crocodilians have survived nearly every earthly scenario. They have outlived dinosaurs, ice ages, and more, yet they have changed very little over time. The only reptiles older than crocodilians are turtles, tortoises, and tuatara. Crocodilians are more closely related to birds and dinosaurs than most living reptiles.
- All crocodile species have an average lifespan of at least 30–40 years, and in the case of larger species, an average of 60–70 years. The largest species of crocodile appear to be the longest living, with some reaching over 100 years old.

What challenges does this animal face in the wild?

As human populations continue to expand and the need for natural resources grows, more and more wild spaces are being reallocated for human use, leaving less room for the wild animal populations. Increases in human population also cause an increase in trash, which can negatively impact alligator food sources in local wetlands.

Be a Planet Protector!

Be a Planet Protector by refusing single use plastic items. By choosing reusable items like water bottles and straws, you can help keep our oceans and waterways healthy. Your choices matter for a happy, healthy planet so choose the reusable option!

Meet Sylvia and Charles The And The Mark of The The The



Sylvia is named after Sylvia Earle. Sylvia Earle (b. 1935) is a marine biologist who researched marine ecosystems and developed new ways to research the deep sea. Leading several hundred underwater explorations and spending over 7,000 hours underwater, Sylvia Earle was a pioneer in understanding underwater ecosystems.



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.

Vocabulary

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ELA- Academic Vocabulary: K.R.1.B, 1.R.1.B.e, 2.R.1.B.h

bask- to lie in the warmth of the sun. Used to by reptiles to regulate body temperature

hiss- to make a sound as if holding an "s" for a long time; the sound itself

prey- an animal being hunted, caught, and eaten by another

reptile- any cold-blooded vertebrate of the class *Reptilia*, including turtles, snakes, lizards and crocodilians

shrink- to become smaller; a psychiatrist (slang);something that makes things smaller or tightly heldwetland- land that has a wet and spongy soil, such as a marsh, swamp, or bog



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Adaptation Exploration

Science-Adaptations: 1.LS1.A

On Page 3 of the student guide, students are introduced to alligators adaptations.

An adaptation is something that helps an animal to survive.

Teeth: Alligators have about 80 teeth at a time, but their teeth frequently fall out when they are hunting. Luckily, they can regrow teeth when they are lost. Alligators can grow as many as 3,000 teeth in their lifetime!

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- Tails: Alligator tails are long, flat and very muscular. They move their tails side to side to propel them through the water when swimming and to defend themselves, if necessary, with a strong thwack from their tail.
- Head: An alligator's nostrils are on the top of their head, allowing them to keep the rest of their body hidden underwater while just poking the tip of their nose above the water to breathe. But they don't even need to do that very often because they can hold their breathe for almost an hour!
- Feet: Webbed feet help the alligator steer while swimming. Long claws help them climb out of the water, and can also be used for digging when it is time to build a nest.

Read the Two Alligator Books to your Students

ELA- Draw conclusions from nonfiction: K-2.R.3.A

ELA- Draw conclusions from fiction: K-2.R.2.A

After you read Zack's Alligator:

Make a list of the characters (from page 5 of the student guide) in Zack's Alligator.

- Discuss the idea of point of view with your students. How a character thinks, acts, and what they believe helps the story feel more real.
- How do you identify a character's point of view? Look at their actions throughout the story and determine why do they make those choices?
- Can giving voices to the characters help the story feel more real? What voices would you give to the characters in Zack's Alligator?

Next, discuss with your students how characters create the plot. If you read Zack's Alligator more than once, be sure to talk about the order of the events happening in the story. Explain that this is called the plot, which creates the structure of the story. As events unfold in a story, characters may act or react to them. Once you choose the event, ask the students to list the characters who reacted to it.

ELA- Connections between Fiction and nonfiction text: 1-2.R.1.C.a

Ask students what some facts are they would like to know about Alligators and Crocodiles.

- Identify differences in fiction v. nonfiction, using Zack's Alligator and National Geographic: Alligators and Crocodiles as examples.
- Discuss differences between fiction/nonfiction material
 - •Visual clues: Show the students the cover of each book and ask them which belongs to the fiction book. What about the cover made them choose that? The picture? The colors used?
 - •Writing style: Do fiction and nonfiction authors write the same way? What are some things they do differently? What is the reason this book was written (author's purpose)? This could lead to a discussion about themes or main ideas in stories.
 - Purpose: Zack's Alligator is written to entertain, where National Geographic: Alligators and Crocodiles is informational. Can you have facts in a fictional story?

Extend the Plot The ANA CON ICA SANDST

Choose several events that occur in the book to help illustrate how character actions and reactions to events can help build the plot. What did they do? To illustrate these points, choose several sentences from Zack's Alligator, write them on the board, then have the students put the sentences in order of occurrence. How did they know the correct order? You can also choose to give students a part of the story to illustrate and then have the class put their illustrations in order around the classroom.





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Navigating Fictional Stories

ELA- Produce different kinds of sentences: 2.L.1.A.h

Student Guide Page 4: The first exercise helps students practice writing different types of sentences. Examples are provided but students may come up with their own.

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1. Complete Sentence: a sentence that has a subject, verb and object.

Alligators bask. *Alligators bask in the sun to stay warm*.

Alligators grow. Alligators can grow up to a foot a year.

2. Compound sentence: a sentence that has two separate ideas connected with a conjunction.

Alligators bask. Alligators bask in the sun to warm up but cool down in the water or shade.

Alligators grow. Alligators can grow up to a foot a year but stop when they are full grown at about 14 feet.

3. Interrogative Sentence: sentence that asks a question and ends with a question mark.

Alligators have a lot of teeth. *Did you know alligators can have 3,000 teeth over their life span?* Alligators and crocodiles are reptiles. *How are alligators and crocodiles similar?*

4. **Exclamatory sentence**: makes a statement that conveys strong emotion or excitement.

Alligators have strong jaws. An alligator's jaw is so strong that once closed it can be hard to force open! Alligators lay eggs. Alligators can lay up to 60 eggs in a nest!

5. Compound declarative sentence: joins two related declarative phrases.

Alligators hunt at night. Alligators eat meat. *Alligators like to eat meat and mostly hunt at night*. Alligators are reptiles. Crocodiles are also reptiles. *Alligators and crocodiles are both reptiles*.

ELA- Draw conclusions from fiction: K-2.R.2.A

Student Guide Page 5: Students will demonstrate their understanding of characters and plot in this exercise.

Terla 7 als hast friend	٨	1.	Circle the two main characters.
Turk, Zack's best friend	A	2.	Draw a box around the character who starts all the action.
Uncle Jack	A	3.	Put a squiggly line through the character who is never seen. (Hint:
Zack	Α		the same character could have more than two roles to play.)
Zack's mother		4.	Put an "A" for action after the characters that who move the story
<u>The mailman</u>	Α		along
Bridget	Α	5.	Draw line under the character who has the smallest role or part
a lady with a dog	Α		to play.
a policeman	Α	6.	Now, write a sentence about the actions or thoughts of one of
<u>Zack's father</u>			these characters.

ELA- Connections between Fiction and nonfiction text: 1-2.R.1.C.a

In the next question, students are asked to think about facts about alligators found in both books. Asking who, what, when, where, why and how will help them analyze the books for facts. The possible "facts" they could get from *Zack's Alligator* would be inferences: alligators like/need water; alligators prefer to eat fish; alligators will attack almost anything; alligators come from the Everglades. The other book is all facts of course. Students are asked to write a sentence that shows an example of a fact from the nonfiction text that supports an inference from *Zack's Alligator*.



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Alligator Math

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Math- Measurement: 1-2.GM.B

Zack's Alligator follows the story of an alligator keychain that grows until she is quite large. In this exercise, students collect data on their own sponge alligators. They will measure the length in centimeters (cm). Their little sponges will only grow to about 24-28 centimeters (from about 14cm to start) but this activity will provide them an experience in collecting data over time and then representing the data in a bar graph.

At a Glance:

Duration:

Growing: 4 consecutive days (don't start on Friday) Shrinking: 10-14 days

Sponge Alligators (reusable - please keep for future use)

Setting: Classroom

Materials (bold provided);



Wax String (*reusable - please keep for future use*) A ruler marked in centimeters Large watertight container, dishpan size Water Permanent Marker Number of groups: 6

About your alligators: *Please dry out and keep your alligators for use in future years. The manufacturer recommends keeping the alligators out of direct sunlight as it will cause the polymer to degrade.* Do not pack them away before they are completely dry. (If over time they wear out or break, you may request a new set when you order the Alligator unit.) The alligator may not shrink completely back to their original size but may grow larger with each subsequent use. The alligators will reach their maximum size in 4-5 days, but will grow enough over the first 24 hours to complete this activity. Their color also changes to a lighter color.

Before you pass out your alligators: Mark each alligator with a number, letter, or other way to distinguish them from each other. We found that marking the underside works better than on their back but feel free to do either or both. You will need to add more water to the soaking container as the alligators absorb water and grow.

Several students will share the same alligator. You may choose to have students measure together or have each student take turns and make their own measurements. Explain to the students that they are measuring along the curve of the alligator and to use their string (starting at the knot)to measure from the tip of the nose, along the back of their alligator to the end of the tail. Students can then transfer that measurement to a ruler to determine the length of the alligator.



Alligator Math continued

Math- Work with Time: 1.GM.C, 2.GM.D

We recommend measuring on the hour as this will be easier for students to calculate how long their alligator has been in the water and with their graphing. A clock has been provided for your students in their guide to help them keep track of their first and final times and alligator lengths. Additional clocks are available as an optional page in the teacher guide if you choose to extend this activity. You may copy and print these for your students as an additional handout.

To record their data along the way, discuss with your students the different ways information can be collected and select which chart or table would work best. A blank page (page 7 of the student guide) is available for data collection. It takes about two hours to have a measurable difference in size. Once their data is collected, they will graph their information (page 8 of the student guide). The graph's axis have been left blank for students to fill out. A larger graph, which will allow alligators to be tracked for three days, is available at the end of the teacher guide. Once their graph is complete, students will write a statement about their investigation and what they learned.

Let's Reflect

Math- Represent and Interpret Data: 1-2.DS.A

As students record data throughout their experiment, they may begin to make observations about how their alligators grew. They may say things like:

- 1. My alligator grew faster when there was more water.
- 2. The alligator grew fast in the beginning, but slowed down after a few days.
- 3. My alligator's head grew faster than the rest of its body.
- 4. The alligator got wider as it grew.
- 5. My alligator's tail curled up as it grew bigger.

Optional: Shrinking Alligators

In addition to growing, the alligators will shrink much like Zack's alligator, Bridget, did in the book. It takes longer for the alligator to shrink than to grow so measuring once daily should be enough. It may take 10-14 days for the alligators to shrink down to their final size. The alligators may not shrink back to their original size, but make sure to dry your alligators out completely before storing for use the next year.

The rate of shrinking can be recorded on the supplemental graph found in the teacher guide. Have your students create another bar graph showing how their alligators shrunk and compare the two graphs. If you were to connect the bar graphs with lines, what does that tell your students about how fast their alligators grew or how slow they shrunk? Measuring the amount of water needed to grow can also be used as an extension activity.

While the alligator is shrinking, your students' alligators can go on adventures with your students. They can go to specials or visit different parts of the school. Students can write and illustrate a story about their alligator's adventures around school. This can be done independently or as a group project. How adventuresome you and your students wish to make this is up to you! Remind the students about the discussion they had while reading *Zack's Alligator*. How do the characters in their story move along the plot? What are the sequence of events of their story?



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Optional: Comparing Alligators & Crocodiles

Science-Adaptations: 1.LS1.A

On Page 7 of the student guide, Sylvia says that crocodiles are reptiles, just like alligators. Use the chart below to explore the differences between alligators and crocodiles with your students. You could have students finish this sentence: *You know it's a crocodile if*... translating the text into their own language.

Alligators	Crocodiles		
Snout, head is rounder and shorter, more U shaped	Snout, head is more V shaped		
Only upper teeth show when mouth is closed. It has between 74–80 sharp teeth.	More teeth stick out when its mouth is closed because the upper jaw is bigger than the lower. They also have bigger nostrils.		
Lives near fresh or brackish water	Can live more easily in/near sea water		
Less aggressive than crocodiles	More aggressive than alligators		
Live only in the U.S. and China	Live all over the world		
Tend to be darker with blacker colors	Tend to have a lighter color, grayish-green		
Largest one ever found was 19 feet but most are usually no larger than 14 feet	Can grow to be larger and heavier – average size is around 17 feet but this varies by species.		
Young are dark with yellow stripes	Young are light with dark stripes		

What is the Same and What is Different between Alligators and Crocodiles

Optional: Geography Track And Track

Social Studies- Name and locate regions of the world: 2.EG.5.B.a

Print off a blank map of the Earth. Have students label the continents, oceans and hemispheres. Then color code where alligators and crocodiles live.



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Alligator Growth

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Measure your alligator making sure you have the correct one. Sylvia thinks your alligator changed a lot overnight. Is she correct? Write what time it is and draw the hands on the clock. Then, calculate how much time your alligator has been in the water.

Alligator's length	Elapsed Time	Alligator's length	Elapsed Time
11 12 10 9 8	2	10 9	12 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2
What time is it?:	AM or PM	What time is it?:	AM or PM
Alligator's length	Elapsed Time	Alligator's length	Elapsed Time
9 9 18	1 2 3 4	· 10 9	

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Time in/out of Water (hours)

Length in Centimeters (cm)

Growing/Shrinking Alligators

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