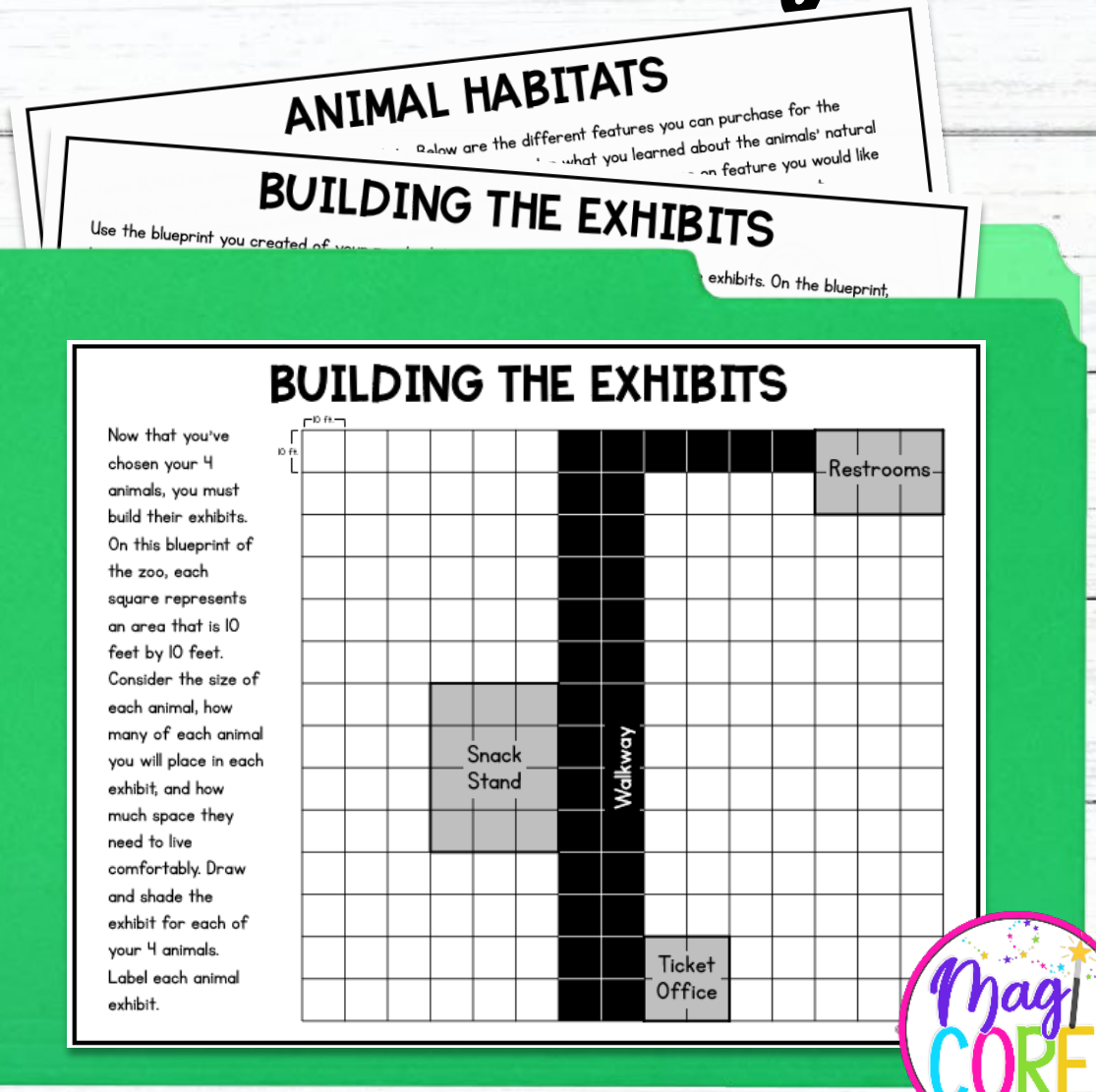
BUILD A ZOO

Project Based Learning

5th Grade
Print & Digital



ANIMAL HABITATS

Below are the different features you can purchase for the

what you learned about the animals' natural

on feature you would like

BUILDING THE EXHIBITS

Use the blueprint you created of your

exhibits. On the blueprint,

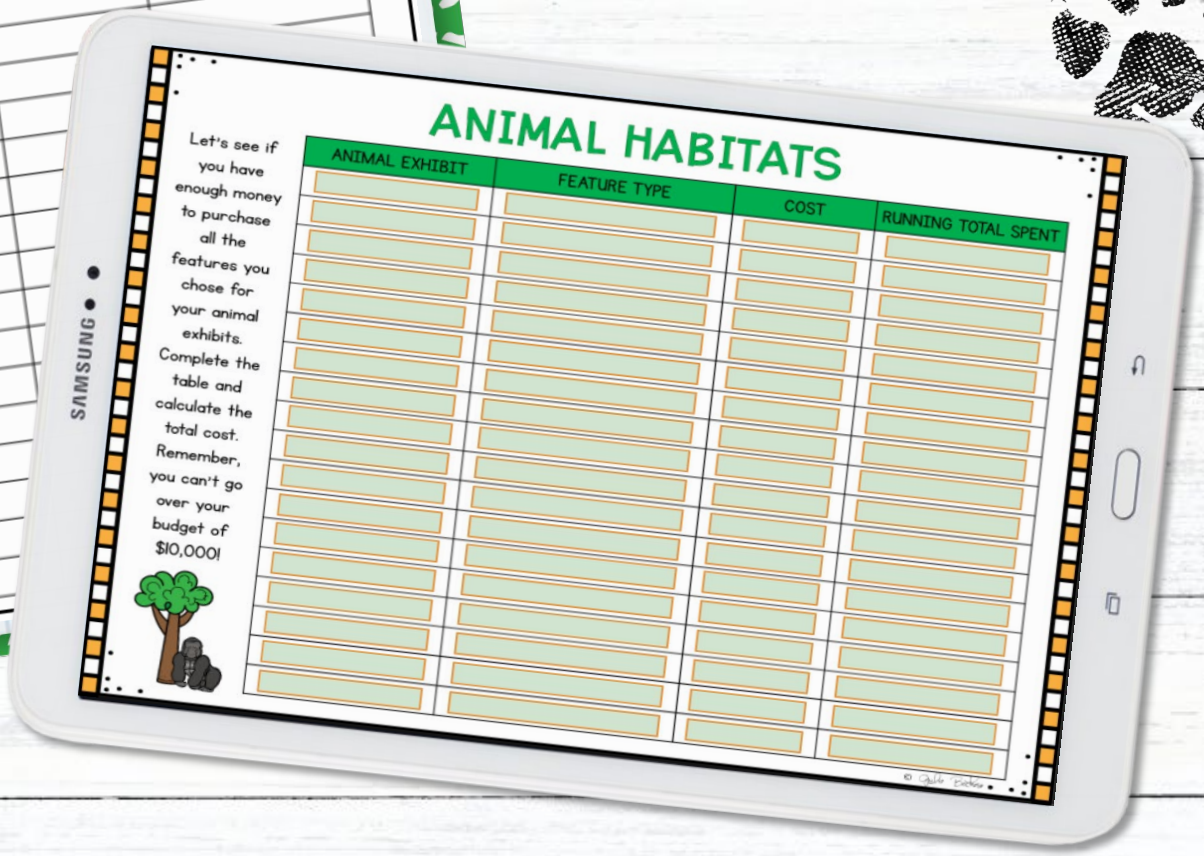
BUILDING THE EXHIBITS

Now that you've chosen your 4 animals, you must build their exhibits. On this blueprint of the zoo, each square represents an area that is 10 feet by 10 feet. Consider the size of each animal, how many of each animal you will place in each exhibit, and how much space they need to live comfortably. Draw and shade the exhibit for each of your 4 animals. Label each animal exhibit.

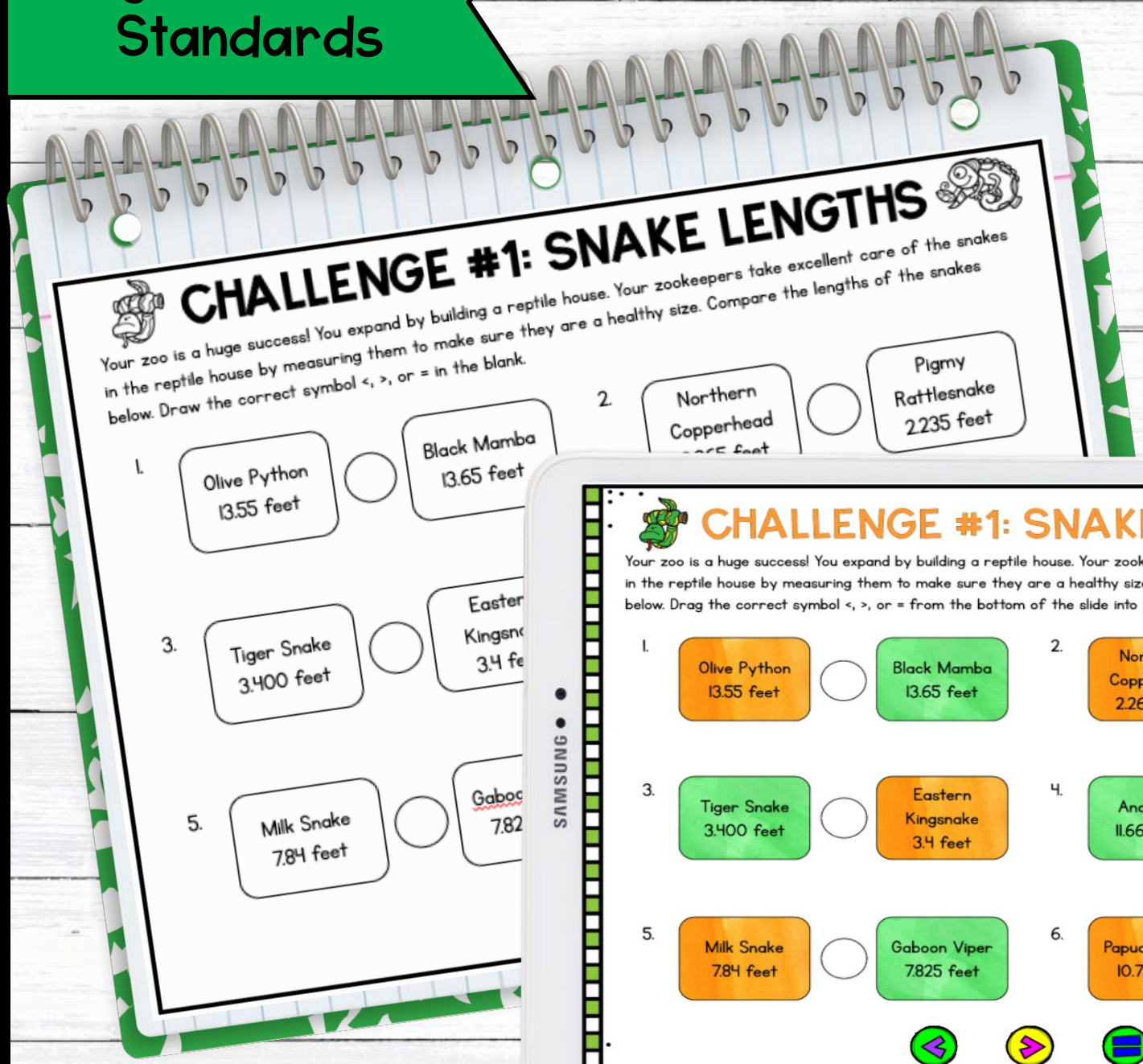
10 ft.
10 ft.
Restrooms
Snack Stand
Walkway
Ticket Office

Mag CORE

Print & Digital Versions



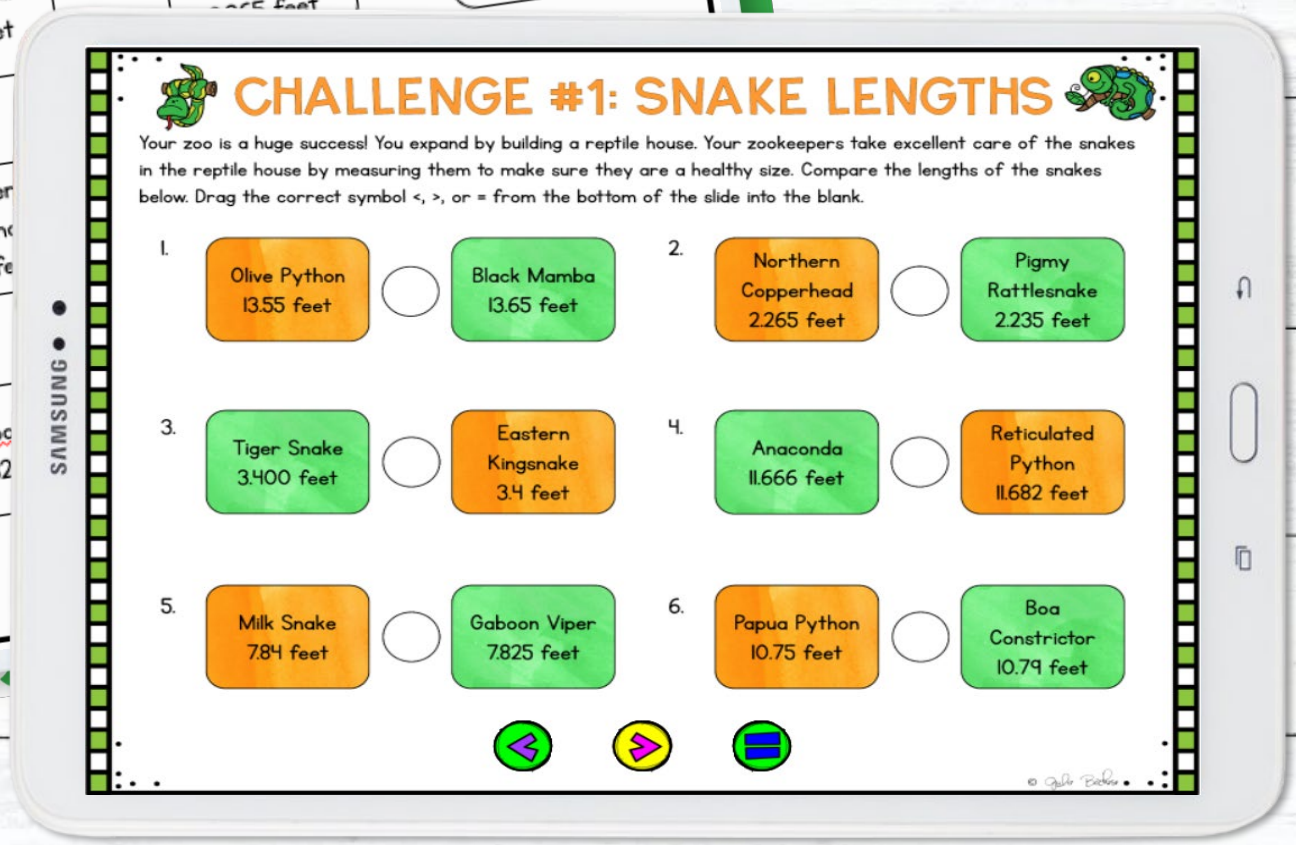
Aligned to Math Standards



CHALLENGE #1: SNAKE LENGTHS

Your zoo is a huge success! You expand by building a reptile house. Your zookeepers take excellent care of the snakes in the reptile house by measuring them to make sure they are a healthy size. Compare the lengths of the snakes below. Draw the correct symbol <, >, or = in the blank.

1. Olive Python 13.55 feet ◯ Black Mamba 13.65 feet
2. Northern Copperhead 2.265 feet ◯ Pigmy Rattlesnake 2.235 feet
3. Tiger Snake 3.400 feet ◯ Easter Kingsn 3.4 fe
5. Milk Snake 7.84 feet ◯ Gabo 7.82



CHALLENGE #1: SNAKE LENGTHS

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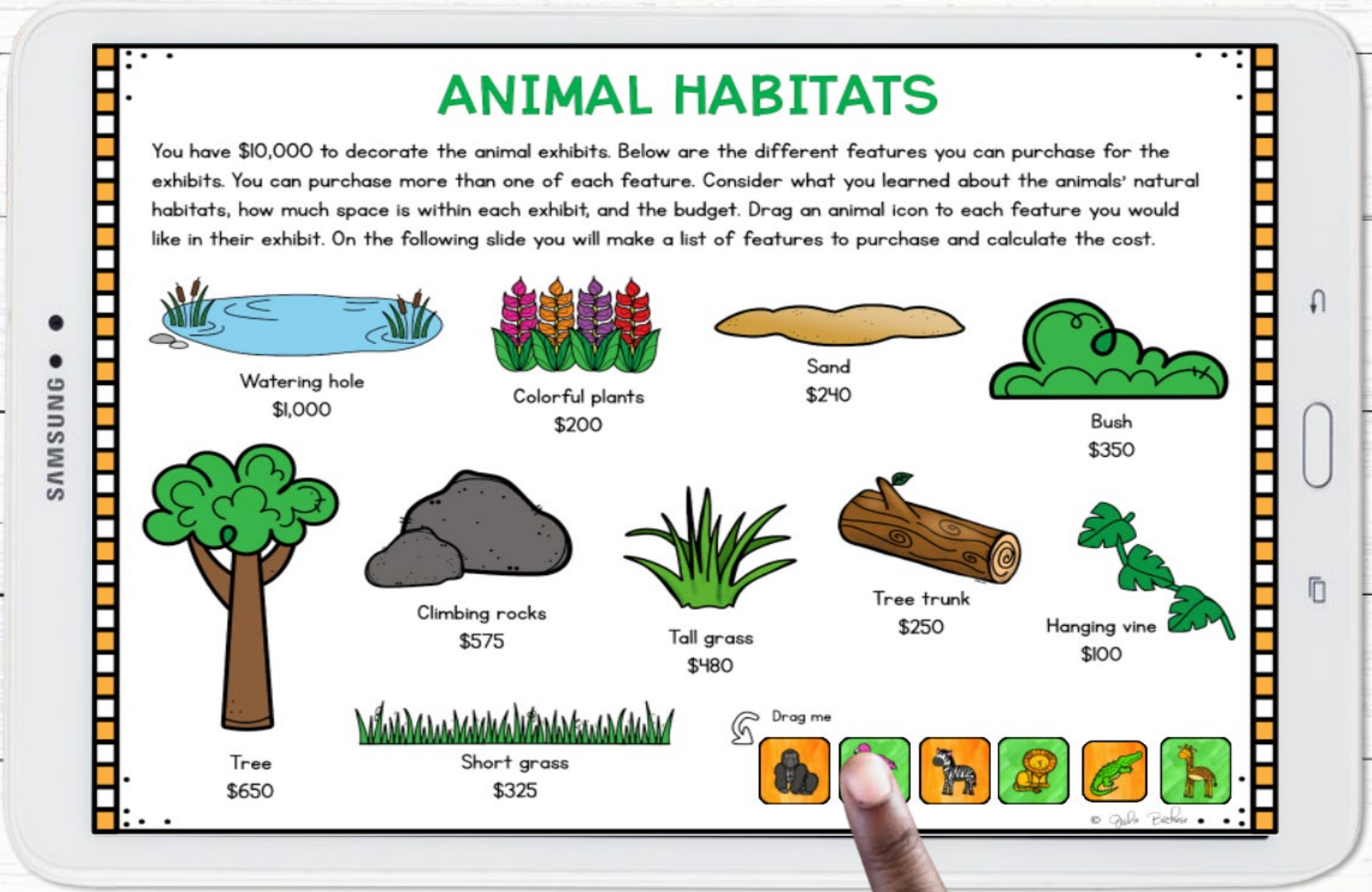
1. Olive Python 13.55 feet ◯ Black Mamba 13.65 feet
2. Northern Copperhead 2.265 feet ◯ Pigmy Rattlesnake 2.235 feet
3. Tiger Snake 3.400 feet ◯ Eastern Kingsnake 3.4 feet
4. Anaconda 11.666 feet ◯ Reticulated Python 11.682 feet
5. Milk Snake 7.84 feet ◯ Gaboon Viper 7.825 feet
6. Papua Python 10.75 feet ◯ Boa Constrictor 10.79 feet

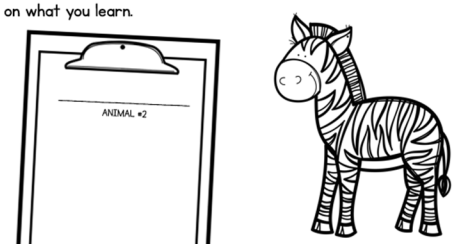
Interactive Elements

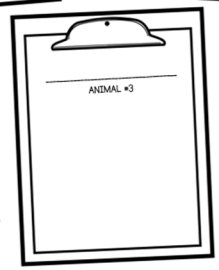


Realistic Scenarios

FEEDING TIME

With the animals settled in their new exhibits, it is mealtime at the zoo! You want to ensure that each animal's diet is the same as what they might eat in the wild. Research what each type of animal typically eats so that you know what type of food to buy. Take notes on what you learn.





FEEDING TIME

The table below shows how much food one of each type of animal is fed per day. Use the data from the table to answer the questions.

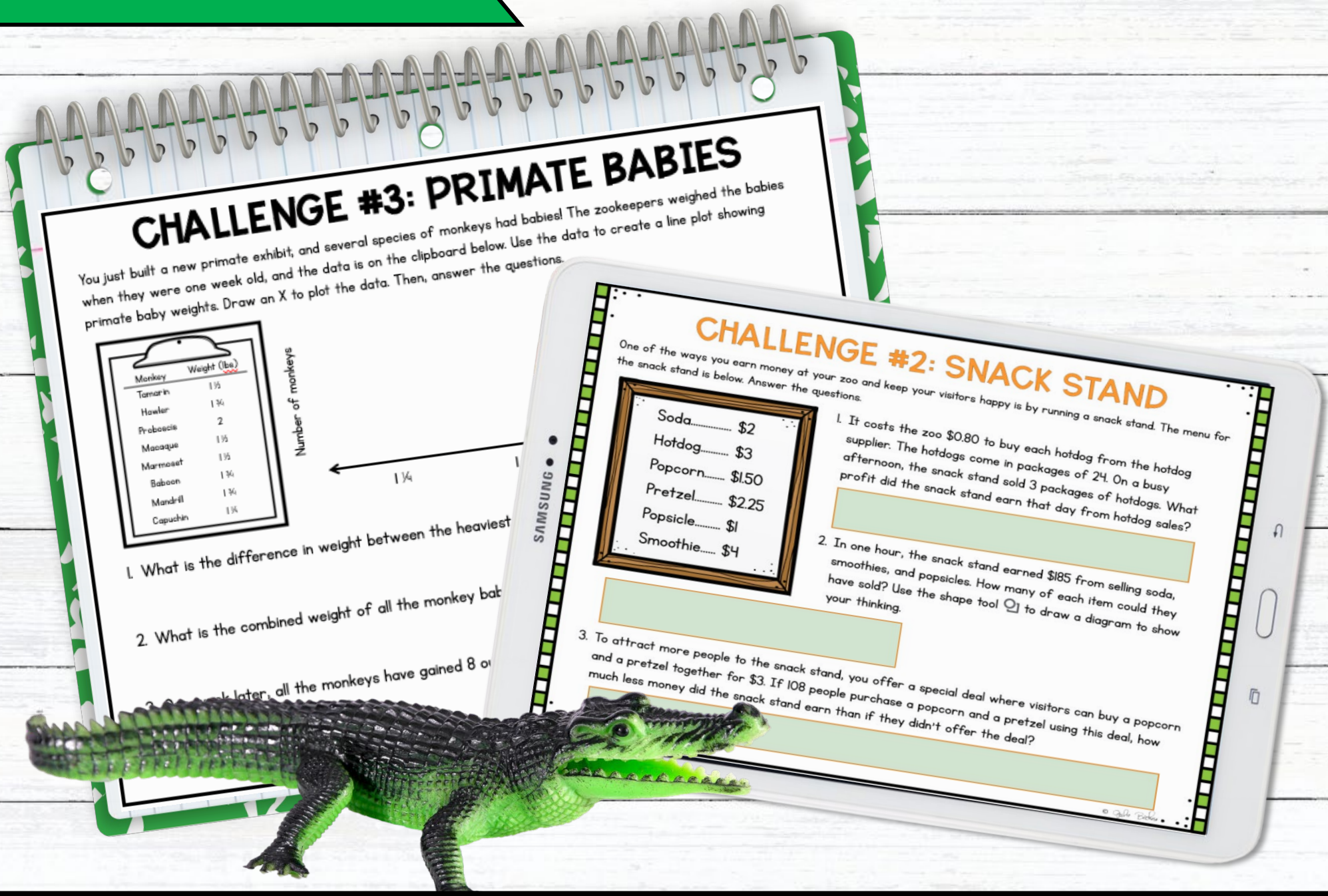
ANIMAL	Zebra	Giraffe	Lion	Flamingo	Gorilla	Crocodile
FOOD CONSUMED PER DAY	24.25 lbs.	72.5 lbs.	13.8 lbs.	1.3 lb.	68.75 lbs.	2.6 lbs.

1. How much does a giraffe eat in one week? Use the box method of multiplication to show your thinking.

2. How much more does a gorilla eat in one week than a zebra?

3. If the lion's meat costs $26.15 per pound, how much would it cost to feed one lion for a week?

Challenge Activities for Differentiation

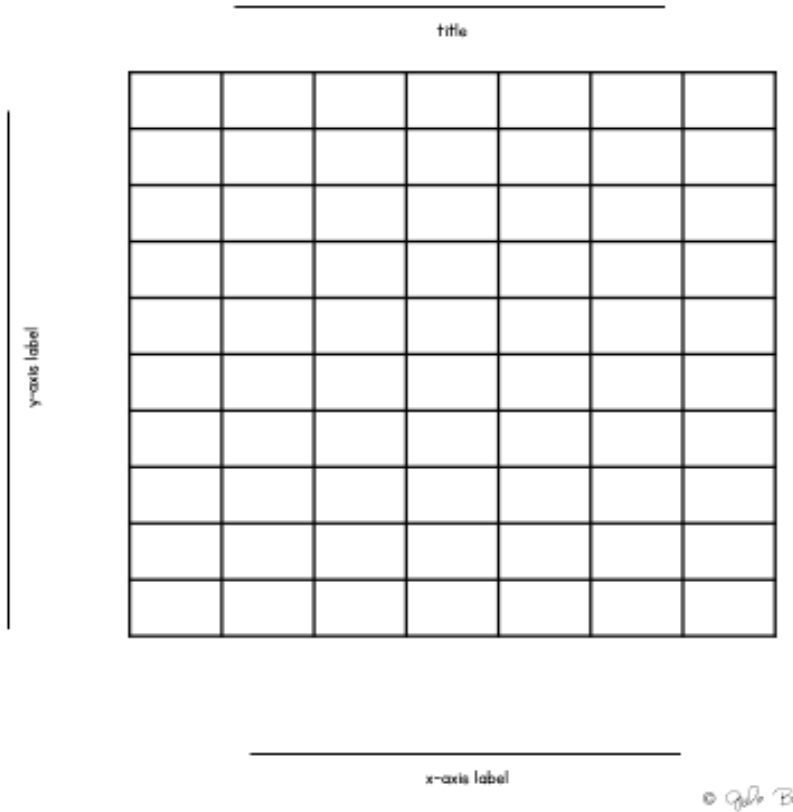


Applicable to Real World & Fun!

ZOO ATTENDANCE

The clipboard below shows how many people visited the zoo last week. Plot the data on the bar graph below and include labels where needed.

Day	# of People at Zoo
Sunday	195
Monday	110
Tuesday	143
Wednesday	138
Thursday	152
Friday	167
Saturday	204



No Prep!
Print and Go!

BUILDING THE EXHIBITS

Use the blueprint you created of your zoo to complete the table with information about each animal exhibit.

Animal	Exhibit Area (in sq. ft.)	Exhibit Perimeter (in ft.)

1. What is the combined area of all the animal exhibits altogether?

2. Find the perimeter of your smallest animal exhibit in inches.

Student Self-Reflection

SELF REFLECTION

Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

RATE THIS

Circle the statement y

I am ready for something harder. This wo

SELF EVALUATION

Drag the circle to one box per row on the rubric that expresses how you rate yourself on this Project Based Learning Activity.

+	✓	−
I felt very confident about the math in this project.	I felt pretty good about my ability to complete the math in this project.	I felt a lot of the math in this project was too hard for me to do alone.
I understood all of the math and did not need help to complete the problems.	I understand most of the math but needed a little help to solve some of the problems.	I understood some of the math but needed help to complete most of the problems.
I easily used many strategies to solve the math problems efficiently.	I needed some help to use the best strategies for solving the math problems.	I had trouble understanding the best way to solve many of the math problems.
I feel I am ready for a harder math project.	I feel I would like to spend more time practicing similar math problems.	I feel I need assistance to work on similar math problems

TABLE OF CONTENTS

THANK YOU FOR PURCHASING THIS MAGICORE DIGITAL RESOURCE!

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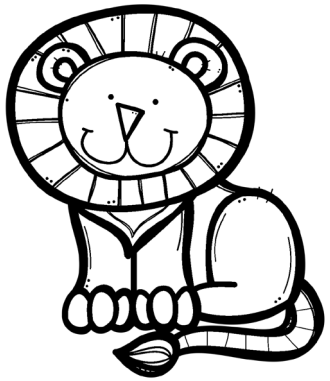
FOR THE TEACHER

BUILD A ZOO is a project-based learning task that involves using fifth grade math standards to solve problems related to building and maintaining a zoo. It is created for students in fifth grade. The following standards are addressed:

- 5.NBT.A.3 Read, write, and compare decimals to thousandths.
- 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.
- 5.NBT.B.7 Add, subtract, multiply, and divide decimals to the hundredth.
- 5.NF.A.1 Add and subtract fractions with unlike denominators.
- 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system.
- 5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit.

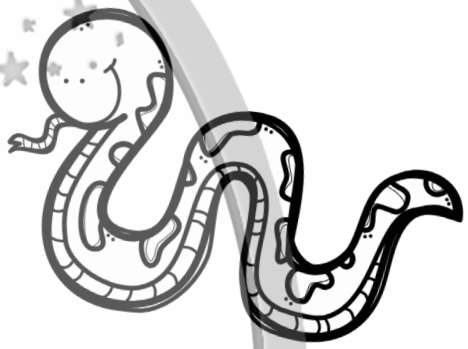
DIRECTIONS:

1. Assign students to work alone or in small groups.
2. Preview the activity with your students.
3. Allow students class time to complete the activity. This can span several days.
4. Allow students an opportunity to complete extra challenge activities (optional).
5. Allow students to complete the self-evaluation reflection and evaluation rubric.
6. Allow students an opportunity to share their completed projects.



BUILD A ZOO

You have decided to open a zoo! It is your job to choose the animals in your zoo, build and design thoughtful enclosures for your animals to live in, keep your animals happy and healthy, and attract visitors to your zoo!



Here are your tasks:

- Read through the entire packet before beginning.
- Choose the animals for your zoo.
- Create a blueprint of your zoo.
- Calculate the area and perimeter of the animal exhibits.
- Research and learn about your animals' natural habitats.
- Recreate the animal habitats in the exhibits following a budget.
- Research animal feeding habits in the wild.
- Calculate how much food will be required to feed your animals.
- Write a blurb for a brochure promoting your zoo and persuading people to visit.
- Calculate profits for your zoo based on tickets sold.
- Interpret data about zoo attendance.
- (Optional) Complete the challenge pages.
- Complete the self-reflection and evaluation rubric.

CHOOSING YOUR ANIMALS

Your first step is to choose which animals to feature in your zoo. Below are six animal types you can choose from. Think of pros and cons of including each animal type in your zoo. For example, you might consider whether an animal will be exciting to visitors or how difficult it might be to care for that type of animal. After weighing your options, choose 4 types of animal for your zoo. Circle each animal you chose.

Animal	Pros	Cons
Gorilla 		
Zebra 		
Giraffe 		
Crocodile 		
Flamingo 		
Lion 		

BUILDING THE EXHIBITS

Use the blueprint you created of your zoo to complete the table with information about each animal exhibit.

Animal	Exhibit Area (in sq. ft.)	Exhibit Perimeter (in ft.)

1. What is the combined area of all the animal exhibits altogether?

2. Find the perimeter of your smallest animal exhibit in inches.

ANIMAL HABITATS

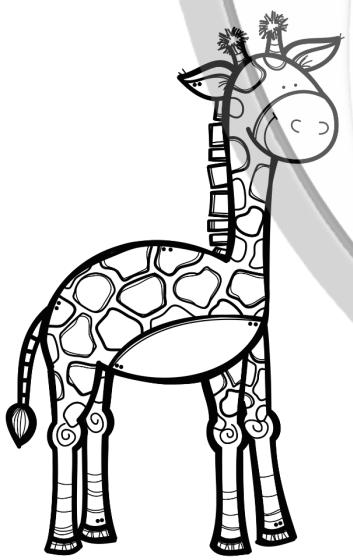
Now that the animal exhibits have been built, it is time to decorate them. You want to make each exhibit resemble the animals' natural habitat as closely as possible. Research in which type of habitat each animal lives in the wild. Take notes on what you learn.

ANIMAL #1

ANIMAL #2

ANIMAL #3

ANIMAL #4



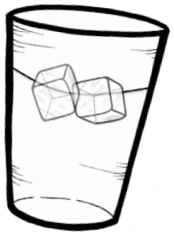
ZOO ATTENDANCE

4. Once a year, the zoo hosts Grandparents' Day, where only senior citizens are allowed in the zoo. This year, the zoo sold $832 worth of tickets on Grandparents' Day. How many visitors did the zoo have that day?

5. The shapes below show the number of visitors the zoo received during the spring and summer. Write a number 1-6 in the space under each shape to order from the fewest number of visitors per month (1) to the most (6).

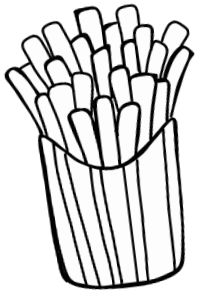
April	May	June	July	August	September
1,468 visitors	1,808 visitors	2,123 visitors	2,468 visitors	2,270 visitors	1,535 visitors
_____	_____	_____	_____	_____	_____

CHALLENGE #2: SNACK STAND



4. It's time to refill the soda machine. You can buy soda refills from your snack supplier for $0.40 per liter or $0.25 per 500 milliliters. Which option has the better price? Explain how you know.

5. You add French fries to the snack stand menu. To make the French fries, you purchase 8 kilograms of potatoes. Each individual French fry weighs about 9 grams. About how many French fries can you make from the potatoes you purchased?



6. It takes 3.75 minutes to fry each batch of French fries. How long will it take to fry 6 batches?

CHALLENGE #3: PRIMATE BABIES

To raise money to protect endangered primates in the wild, you place a donation box near the exhibits of the primate babies. The amount of money you raised each month is below.

September	October	November	December	January	February
$2,067.24	$1,773.56	$1,942.90	$2,285.07	$1,528.32	$1,206.72

4. Round each monthly amount to the nearest hundred.

5. Was more money raised from September to November or from December to February? Determine the difference in the amount of money raised.

6. The zoo was only open on weekends in January. If there were 8 weekend days in January, and an equal amount of money was raised each day, how much money was donated each day in January?

7. In March, there was approximately $59.50 in the donation box at the end of each day. If there were 31 days in March, calculate the total amount donated.

SELF REFLECTION

Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

RATE THIS PROJECT

Circle the statement you most agree with.

I am ready for something harder. This was just right. **I found this very challenging.**

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Good to Go

Not O.K.

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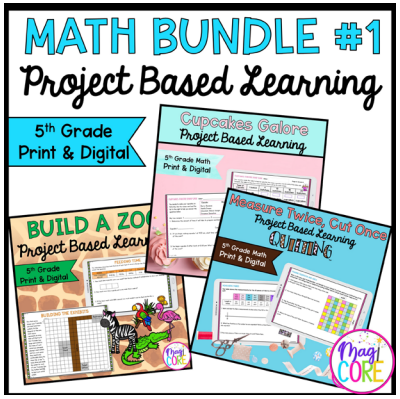

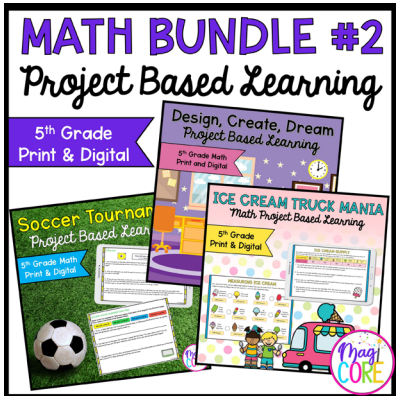

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