

# Project Based Learning

## ANIMAL HABITATS

purchase for the animals!

**BUILD A ZOO**

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

A 10x10 grid with a film strip on the right. A grey square is located in the 5th row and 7th column, labeled 'Sn St'.

## ANIMAL HABITATS

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Now that the animal exhibits have been built, it is time to decorate them. You want to make each exhibit resemble the animal's natural habitat as closely as possible. Use the resources below to research the type of habitat for each animal in the wild. Take notes on what you learn.

**RESOURCES:**

**RESOURCES:**

San Diego Zoo  
National Geographic  
Kids  
A-Z Animals

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### CHALLENGE #3: PRIMATE BABIES

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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 shown below.

Month	Amount
January	\$120
February	\$150
March	\$180
April	\$200
May	\$220
June	\$240
July	\$260
August	\$280
September	\$300
October	\$320
November	\$340
December	\$360

### ANIMAL

September	October	November
	\$1,773.56	\$1,940.00

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

- 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 animal exhibits.
- Research and learn about your animal habitats.
- Recreate the animal habitats in your zoo following a budget.
- Research animal feeding habits in order to feed your animals.
- Calculate how much food will be required to feed your animals.
- Write a blurb for a brochure promoting your zoo and persuading people.
- Calculate profits for your zoo based on tickets sold.
- Interpret data about zoo attendance.
- (Optional) Complete the challenge.
- Complete the self-reflection and evaluation rubric.

Let's see if  
you have  
enough money  
to purchase  
all the  
features you  
chose for  
your animal

# ANIMAL HABITATS

[illegible]

## ANIMAL HABITATS

Now that the animal exhibits have been built, it is time to decorate them. You want to make each exhibit resemble the animal's natural habitat as closely as possible. Use the resources below to research the type of habitat for each animal in the wild. Take notes on what you learn.

**RESOURCES:**

San Diego Zoo  
National Geographic  
Kids  
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# Aligned to Math Standards

## 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. Resize each bar by clicking on the colored bar and dragging to the correct height.

Day	# of People at Zoo
Sunday	195
Monday	110
Tuesday	143
Wednesday	138
Thursday	152
Friday	167
Saturday	201

## ZOO BROCHURE

Now that your zoo is open, you need to attract visitors! You are going to publish a brochure to entice people to come to your zoo. Below, write a blurb to include in the brochure. Your goal is to make people want to visit your zoo.

Tree  
\$650

Short grass  
\$325

Bush  
\$350

Hanging vine  
\$100



# Challenge Activities for Differentiation

## 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			

4. Round each monthly amount to the nearest hundred.

## SELF REFLECTION

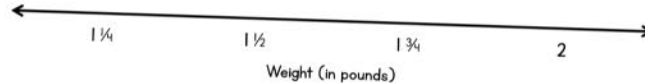
Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this project? Why or why not?

## CHALLENGE #3: PRIMATE BABIES

You just built a new primate exhibit, and several species of monkeys had babies! The zookeepers weighed the babies when they were one week old, and the data is on the clipboard below. Use the data to create a line plot showing primate baby weights. Drag an X to plot the data. Then, answer the questions.

Monkey	Weight (lbs)
Tamarin	1 1/2
Howler	1 3/4
Proboscis	2
Macaque	1 1/2
Marmoset	1 1/2
Baboon	1 3/4
Mandrill	1 3/4
Capuchin	1 1/4

Number of monkeys



What is the difference in weight between the heaviest monkey and the lightest monkey?

What is the combined weight of all the monkey babies?

One week later, all the monkeys have gained 8 ounces. Choose three monkeys and determine their new weights.

## PROJECT

statement you most agree with.

is was just right.

I found this very challenging.

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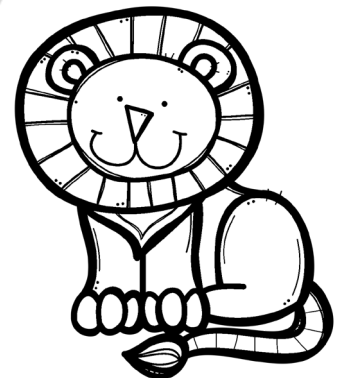
# FOR THE TEACHER

**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.

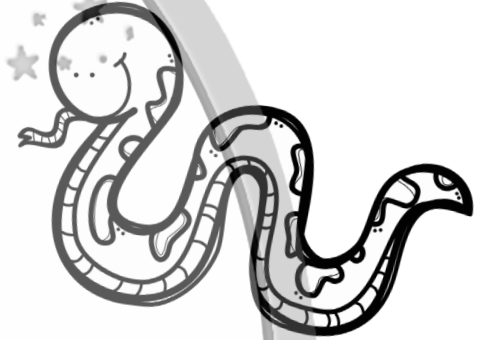


# BUILD A ZOO

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.

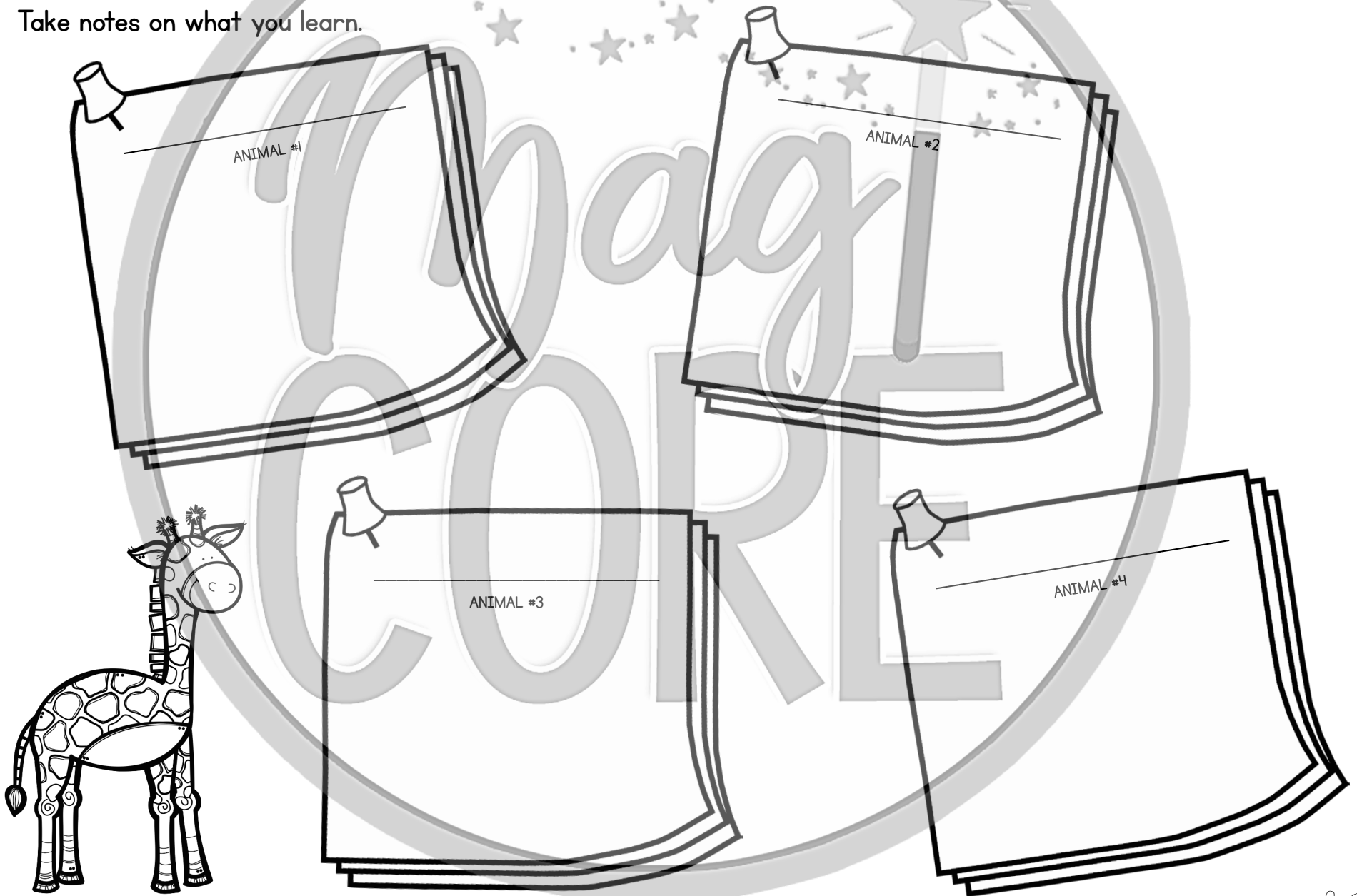
Animal	Exhibit Area (in sq. ft.)	Exhibit Perimeter (in ft.)

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.



# 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

1,468 visitors

\_\_\_\_\_

May

1,808 visitors

\_\_\_\_\_

June

2,123 visitors

\_\_\_\_\_

July

2,468 visitors

\_\_\_\_\_

August

2,270 visitors

\_\_\_\_\_

September

1,535 visitors

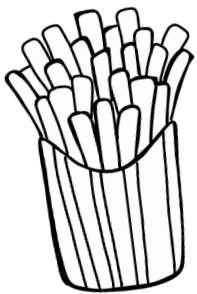
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# CHALLENGE #2: SNACK STAND

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?



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## 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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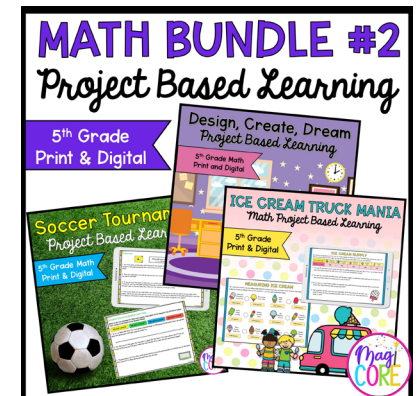
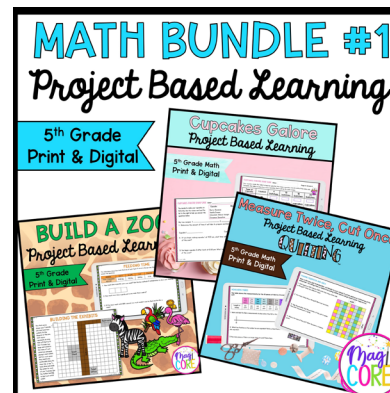
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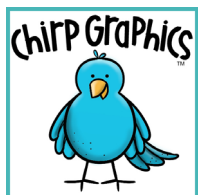


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