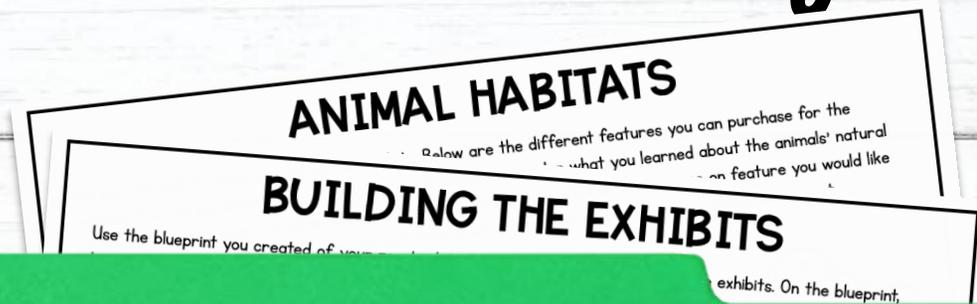


BUILD A ZOO

Project Based Learning

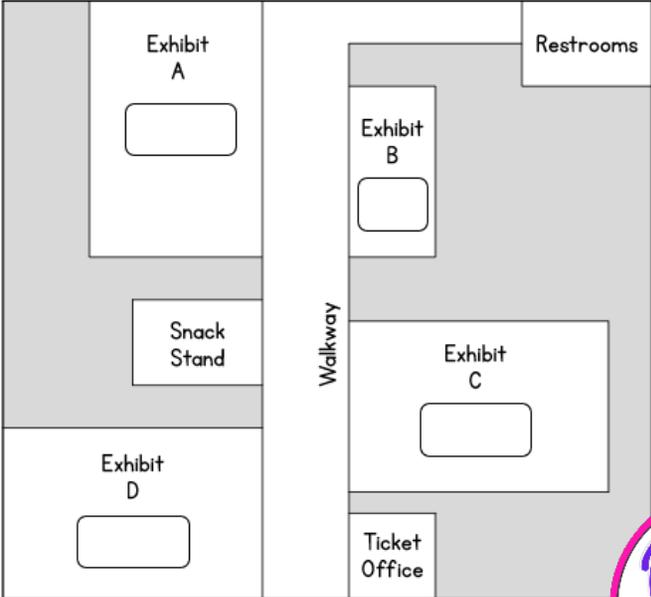
1st Grade
Print & Digital



BUILDING THE EXHIBITS

Now that you've chosen your 4 animals, you must assign them to their exhibits. Decide which animal should live in each exhibit. Consider how large each animal is, how many of each animal you anticipate placing in each exhibit, and how much space they need to live comfortably. Write the name of each animal in the space in their exhibit.

Tape Measure

The diagram shows a zoo layout with a central 'Walkway' running vertically. To the left of the walkway are four exhibit areas labeled 'Exhibit A', 'Snack Stand', 'Exhibit D', and 'Exhibit C' from top to bottom. To the right of the walkway are 'Restrooms' at the top, 'Exhibit B' in the middle, and 'Ticket Office' at the bottom. Each exhibit area contains a rectangular box for labeling.



Aligned to Math Standards



CHALLENGE #1: 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. Fill in the correct symbol $<$, $>$, or $=$ in the blank.

5.

Olive Python
89 inches

Black Mamba
96 inches

7.

Tiger Snake
42 inches

Eastern
Kingsnake
38 inches

9.

Milk Snake
72 inches

Gaboon
Viper
75 inches

6.

Northern
Copperhead

Pigmy
Rattlesnake
27 inches



CHALLENGE #1: 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. Drag the correct symbol $<$, $>$, or $=$ from the bottom of the slide into the blank.

5.

Olive Python
89 inches

Black Mamba
96 inches

6.

Northern
Copperhead
26 inches

Pigmy
Rattlesnake
27 inches

7.

Tiger Snake
42 inches

Eastern
Kingsnake
38 inches

8.

Anaconda
94 inches

Reticulated
Python
94 inches

9.

Milk Snake
72 inches

Gaboon Viper
75 inches

10.

Papua Python
83 inches

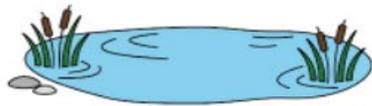
Boa
Constrictor
80 inches



Interactive Elements

ANIMAL HABITATS

You have \$100 to decorate the animal exhibits. Below are the different features you can purchase. You can purchase more than one of each feature. Think about what you learned about the animals' natural habitats, how much space is within each exhibit, and the budget. Drag an animal icon to each feature you would like in their exhibit. On the next slide, you will make a list of features to purchase. You will also calculate the cost.



Watering hole
\$20



Colorful plants
\$7



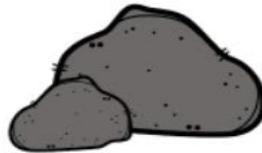
Sand
\$6



Bush
\$8



Tree
\$10



Climbing rocks
\$10



Tall grass
\$4



Tree trunk
\$5



Hanging vine
\$2



Short grass
\$3

Drag me



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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.

ANIMAL #1

ANIMAL #2



ANIMAL #3

ANIMAL #4



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FEEDING TIME

The table below shows how much food one of each type of animal is fed in one meal. Use the data on the table to answer the questions.

ANIMAL	Zebra	Giraffe	Lion	Flamingo	Gorilla	Crocodile
FOOD CONSUMED PER MEAL	8 lbs.	10 lbs.	3 lbs.	1 lb.	20 lbs.	2 lbs.

- How much more does a gorilla eat in one meal than a zebra?
- The lions are fed 3 meals every day. How much food does one lion eat in a day? Draw a diagram to show your thinking.
- How much do one flamingo and one crocodile eat in one meal in total?



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Challenge Activities for Differentiation

CHALLENGE #2: SNACK STAND

One of the ways you earn money at your zoo and keep your visitors happy is by running a snack stand. The menu for the snack stand is below. Answer the questions.

Soda.....	\$2
Hotdog.....	\$4
Popcorn.....	\$1
Pretzel.....	\$3
Popsicle.....	\$1

1. Which costs more: a pretzel or a hotdog and a popsicle?

2. Mikhail buys a hotdog. Mikhail spend at the

3. Jonah spent \$8 at the snack stand. List two different items purchased.

CHALLENGE #1: REPTILE HOUSE

Your zoo is a huge success! You expand by building a reptile house. Each reptile exhibit is a composite shape made up of several smaller shapes. Follow the instructions to build a blueprint of the reptile house below. Use the shape tools or line tools to draw the shapes that make up each composite. Use the textbox tool to label the exhibits with the reptile name.

1. The boa constrictor exhibit is made from these shapes:



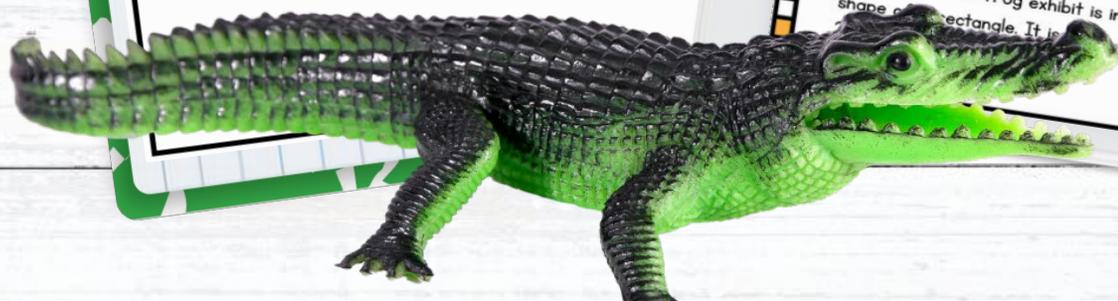
2. The two-horned chameleon exhibit is made from these shapes:



3. You have four fire-bellied toads. Each toad needs one of these shapes:



4. The poison dart frog exhibit is in the shape of a rectangle. It is made up of

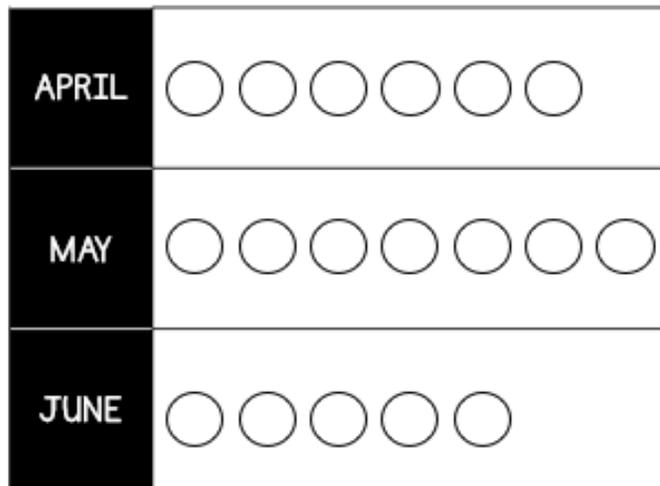


Applicable to Real
World & Fun!

ZOO ATTENDANCE

The pictograph below shows how many school groups had field trips to the zoo this spring. Use the information on the pictograph to answer the questions.

FIELD TRIPS AT THE ZOO



○ = 1 school group field trip

- Which month had the most field trips of school groups? Which had the fewest?
- How many school groups visited the zoo in April?
- How many more school groups visited the zoo in May than in June?
- How many school groups visited the zoo in total this spring?



© Julie Becker

No Prep!
Print and Go!

BUILDING THE EXHIBITS

3. Which exhibit has the longest length measurement?
4. Put exhibits A, B, and C in order from the shortest width to the longest width.
5. You want to build a fence along two sides of Exhibit A. You will build along one long side and one wide side. How many tape measure lengths of fence do you need? Draw a diagram to show your thinking.
6. The tape measure is 20 feet long. What is the width of the ticket office in feet?



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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

1. Teacher Directions & Standards Addressed
2. Student Directions
3. Choosing Your Animals
4. Building the Exhibits (Measurement)
5. Animal Habitats (Money, Addition)
6. Feeding Time (Word Problems with Addition and Subtraction)
7. Zoo Brochure
8. Zoo Attendance (Word Problems with Addition and Subtraction, Representing and Interpreting Data)
9. Challenge #1: Reptile House (Composite Shapes, Place Value)
10. Challenge #2: Snack Stand (Money, Word Problems with Addition and Subtraction)
11. Self-Reflection and Evaluation
12. Answer Key



THANK YOU FOR
PURCHASING THIS
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resource to your own Google Drive.

FOR THE TEACHER

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

- I.OA.A.1 Use addition and subtraction within 20 to solve word problems.
- I.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.
- I.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.
- I.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits with the symbols $>$, $=$, and $<$.
- I.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.
- I.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number.
- I.MD.A.1 Order three objects by length.
- I.MD.A.2 Express the length of an object as a whole number of length units by laying multiple copies of a shorter object (the length unit) end to end.

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.
5. Allow students to complete the self-evaluation reflection and evaluation rubric.
6. Allow students an opportunity to share their completed projects.
7. Assign extra challenge activities (optional).

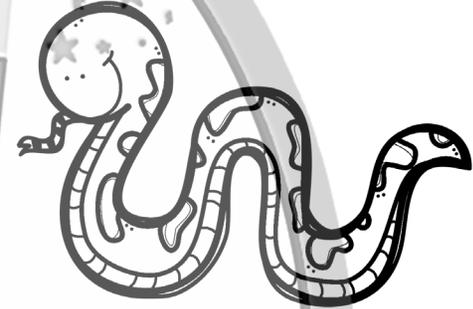


BUILD A ZOO

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 length and width of the animal exhibits.
- Research and learn about your animals' natural habitats.
- Recreate the animal habitats in the exhibits while 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.
- Analyze profits for your zoo based on tickets sold.
- Interpret data about school field trips to the zoo.
- (Optional) Complete the challenge pages.
- Complete the self-reflection and evaluation rubric.



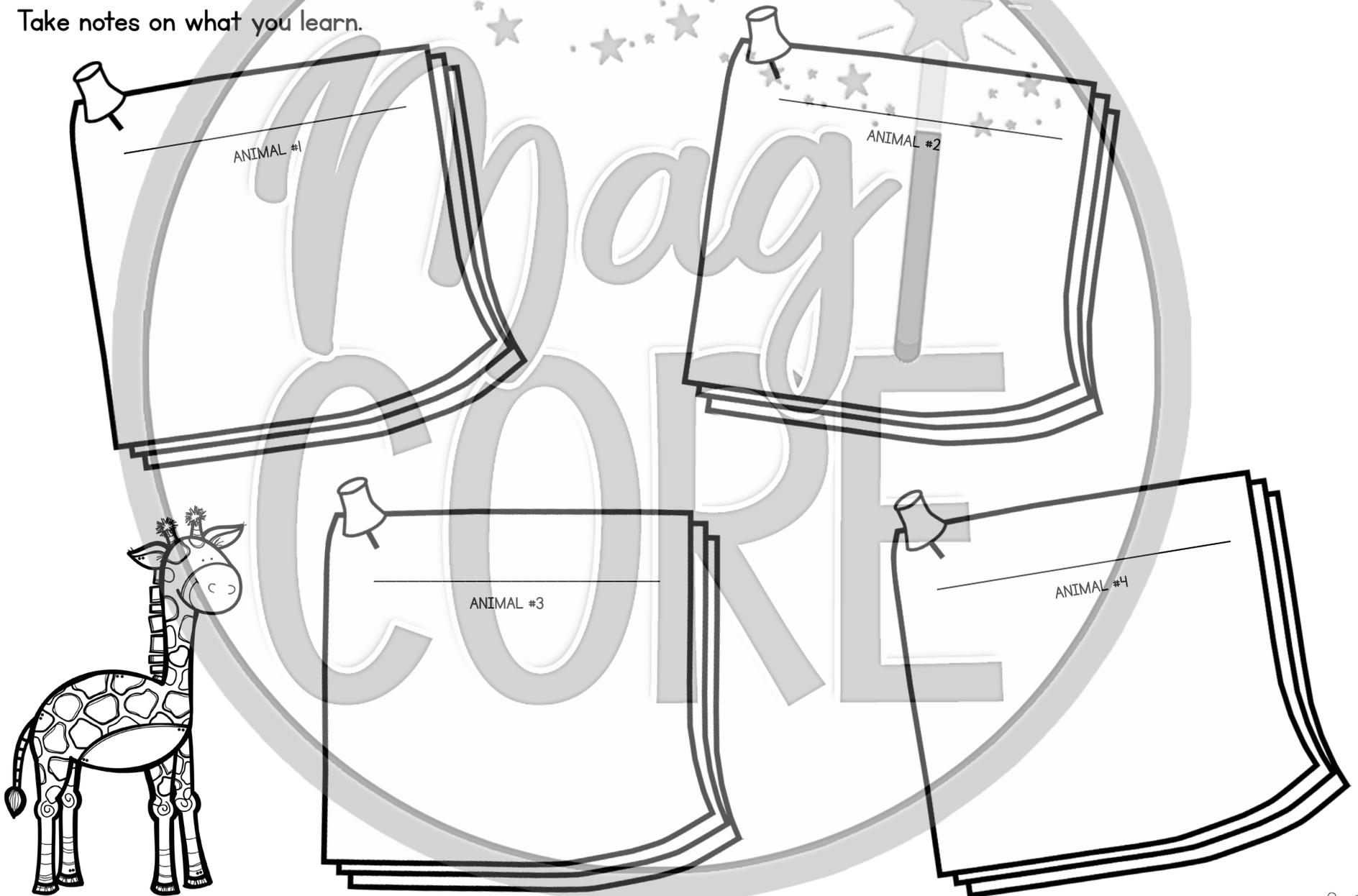
CHOOSING YOUR ANIMALS

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

Animal	Pros	Cons
Gorilla 		
Zebra 		
Giraffe 		
Crocodile 		
Flamingo 		
Lion 		

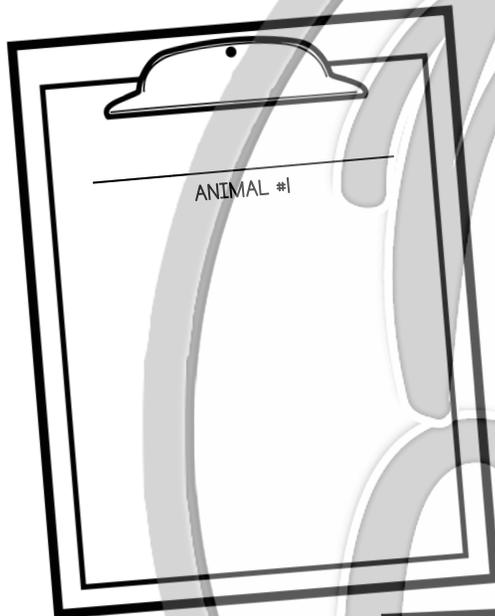
ANIMAL HABITATS

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.

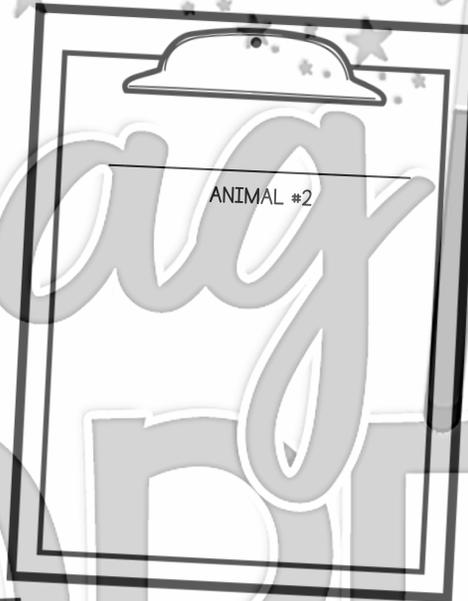


FEEDING TIME

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.



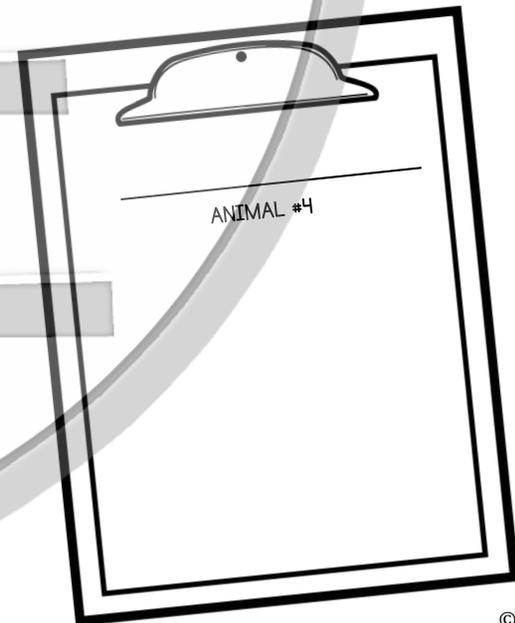
ANIMAL #1



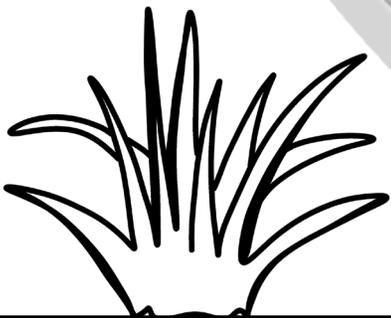
ANIMAL #2



ANIMAL #3



ANIMAL #4



ZOO ATTENDANCE

The table below shows the price of admission to your zoo. Use the information in the table to answer the questions.

TICKET TYPE	Senior Citizen (65+ years)	Adult (18-64 years)	Child (2-17 years)	Baby (0-1 years)
TICKET PRICE	\$6	\$8	\$3	Free

1. The Johansen family goes to the zoo. The family is Grandma (68 years old), Mom (38), Dad (39), Michael (8), Lara (4), and Rowan (1). How much will the Johansens spend on adult tickets?
2. How much will the Johansens spend on child tickets?
3. How much more will the Johansens spend on adult tickets than on child tickets?
4. The Johansens have a coupon for \$2 off a senior citizen ticket. How much will Grandma's ticket cost with the coupon?



CHALLENGE #1: REPTILE HOUSE



Your zoo is a huge success! You expand by building a reptile house. Each reptile exhibit is a composite shape made up of several smaller shapes. Follow the instructions to build a blueprint of the reptile house below. Draw the shapes that make up each composite shape. Label the exhibits with the reptile name.

1. The boa constrictor exhibit is made from these shapes:



2. The two-horned chameleon exhibit is made from these shapes:



3. You have four fire-bellied toads. Each toad needs one of these shapes:

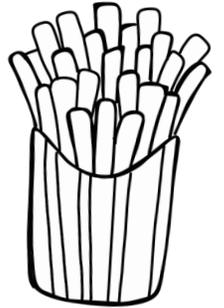


4. The poison dart frog exhibit is in the shape of a rectangle. It is made up of 3 smaller shapes.

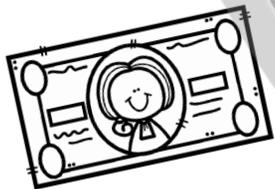


CHALLENGE #2: SNACK STAND

4. You are looking to add a new menu item. You are deciding between French fries and a turkey wrap. It will cost the zoo \$2 to purchase and prepare each order of French fries, and they can be sold for \$3. It will cost the zoo \$4 to purchase and prepare each turkey wrap, but each wrap can be sold for \$6. Which new menu item is the better choice? Explain.



5. Chrystana spent \$12 at the snack stand. Her sister Alice spent \$4 less than Chrystana at the snack stand. How much did Chrystana and Alice spend at the snack stand all together?



6. The zoo's business manager suggests raising all the prices at the snack stand by \$1 to increase profit. Why might this be a good idea? Why might it be a bad idea? Decide whether you will take your business manager's advice.

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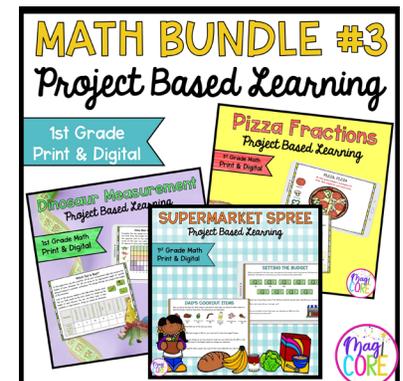
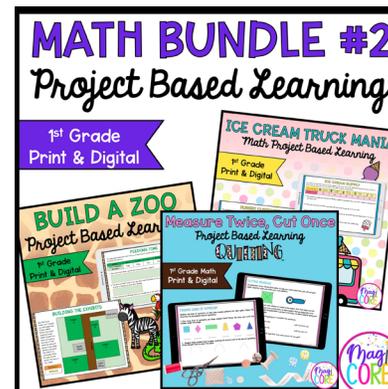
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