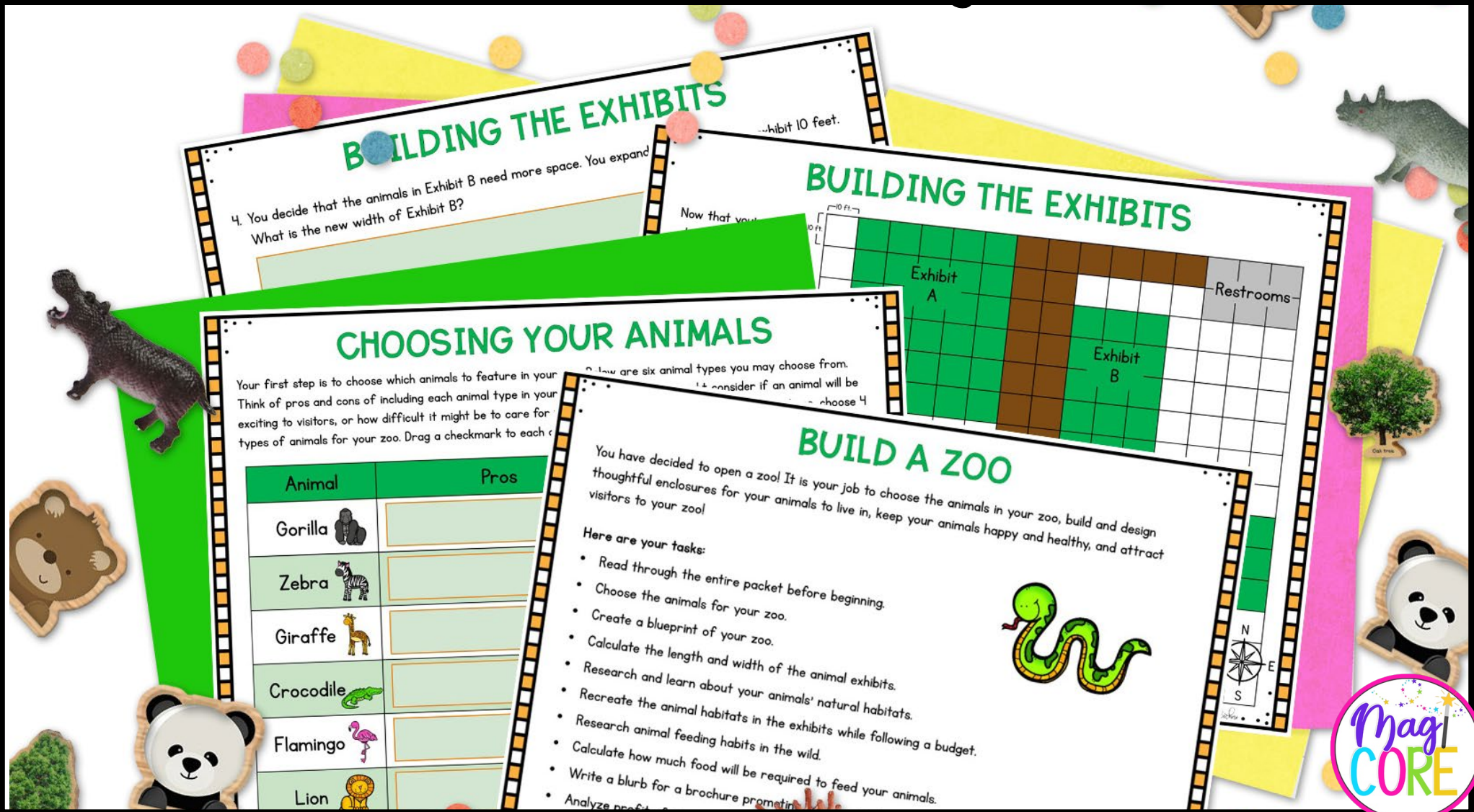
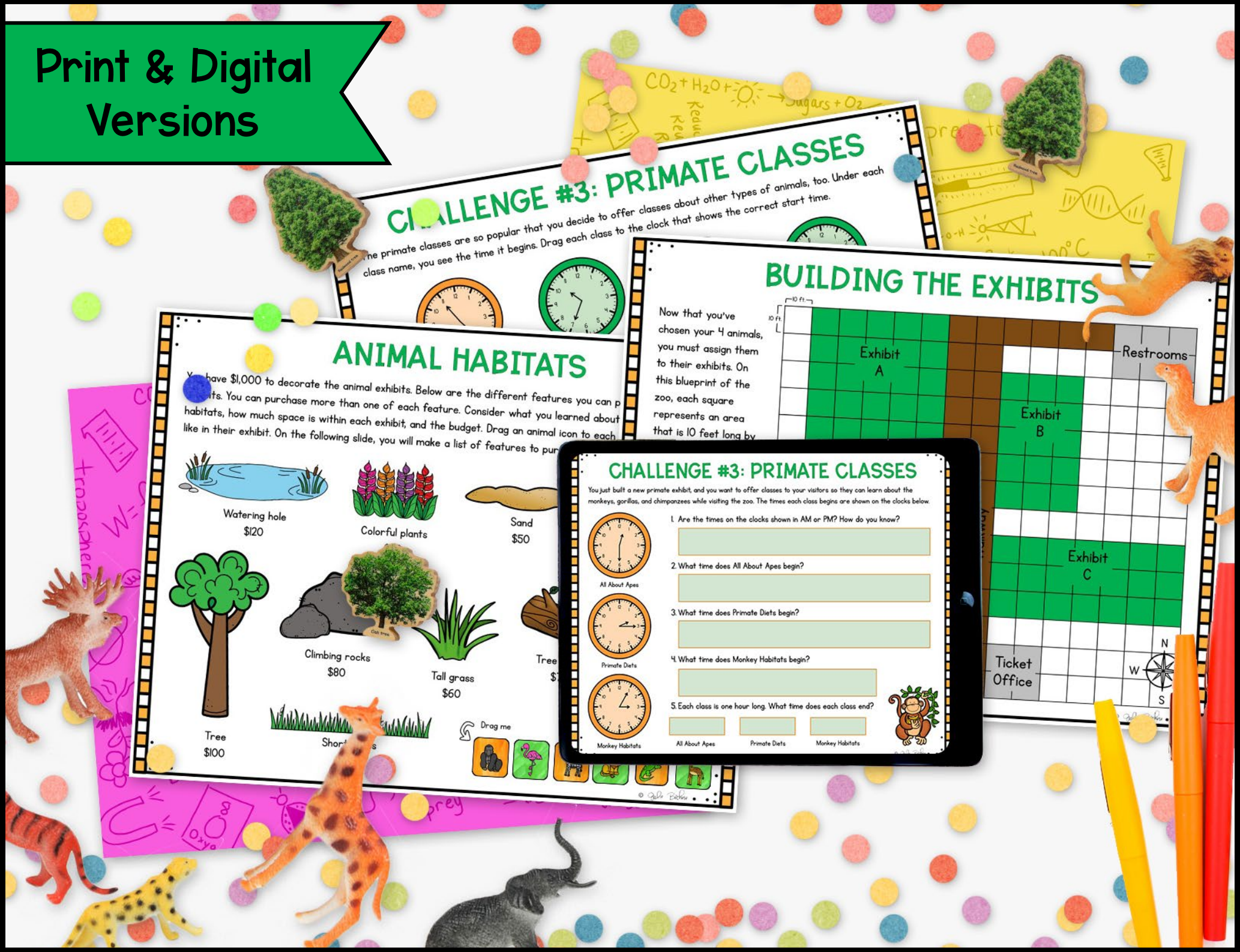
Build A Zoo

Project Based Learning

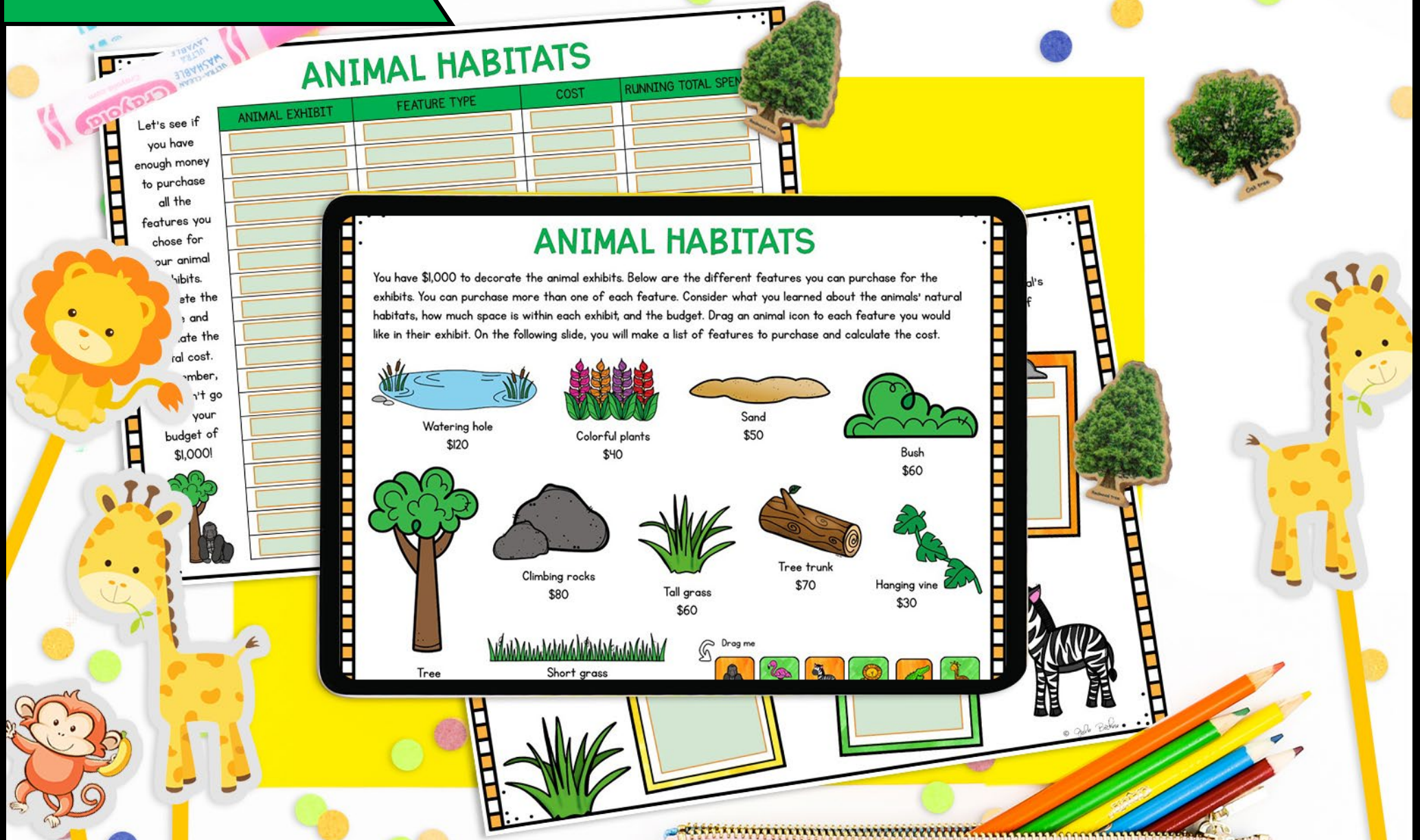
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Print & Digital Versions



Aligned to Math Standards



Challenge Activities for Differentiation

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.

4. How many more school groups

FIELD TRIPS AT THE ZOO

MARCH	● ● ●

CHALLENGE #3: PRIMATE CLASSES

You just built a new primate exhibit, and you want to offer classes to your visitors so they can learn about the monkeys, gorillas, and chimpanzees while visiting the zoo. The times each class begins are shown on the clocks below.

1. Are the times on the clocks shown in AM or PM? How do you know?

es begin?

ts begin?

abitats begin?

g. What time does each class end?

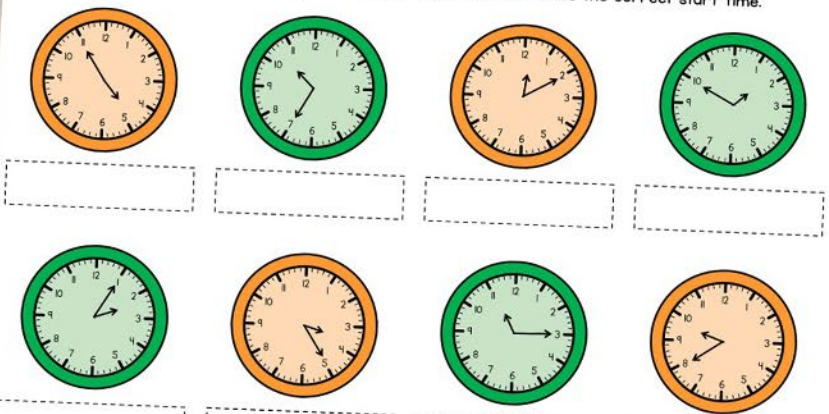
imate Diets

Monkey Habitats



CHALLENGE #3: PRIMATE CLASSES

The primate classes are so popular that you decide to offer classes about other types of animals, too. Under each cl name, you see the time it begins. Drag each class to the clock that shows the correct start time.



Nocturnal Critters 10:35 am

What's it like to be a Zookeeper? 11:15 am

Big Cats 4:55 pm

Our Penguin Pals 1:50 pm

Endangered Animals 3:25 pm

Animals of the Arctic 9:40 am

Trade Quest®

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 (Measurement)
10. Challenge #2: Snack Stand (Money, Word Problems)
11. Challenge #3: Primate Classes (Time)
12. Self-Reflection and Evaluation
13. Answer Key



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FOR THE TEACHER

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

- 2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems.
- 2.NBT.A.2 Count within 1000; skip-count by 5s, 10s, and 100s.
- 2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
- 2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
- 2.NBT.B.5 Fluently add and subtract within 100.
- 2.NBT.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.
- 2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 2.MD.C.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies.
- 2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.

DIRECTIONS:

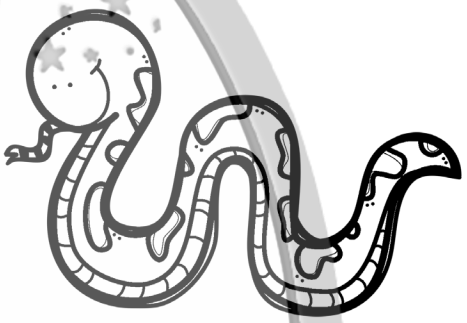
1. Assign students to work alone or in small groups.
2. Preview the activity with your students.
3. Allow students class time to complete the activity. This can span several days.
4. Allow students an opportunity to complete extra challenge activities.
5. Allow students to complete the self-evaluation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



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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.

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CHOOSING YOUR ANIMALS

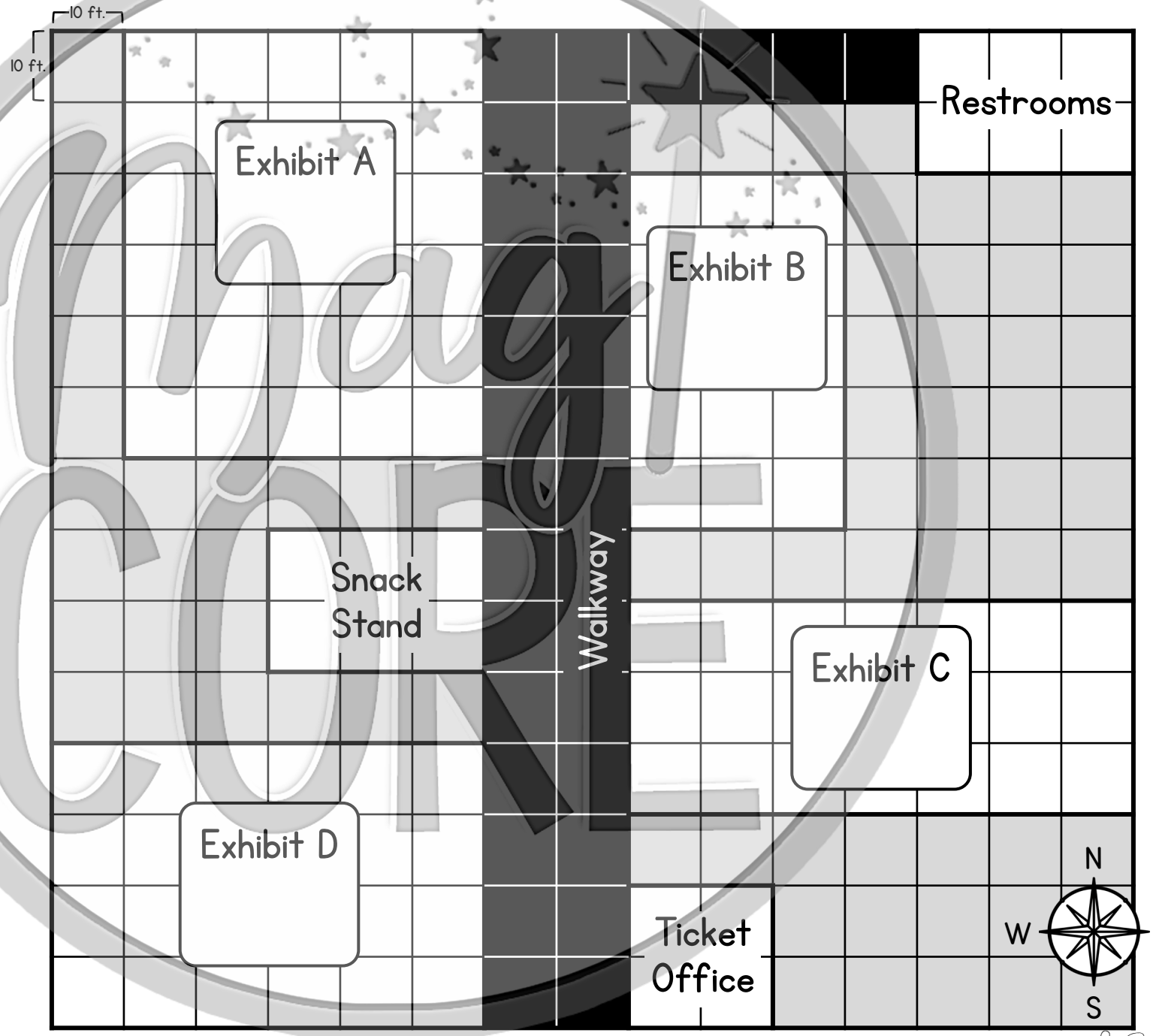
Your first step is to choose which animals to feature in your zoo. Below are six animal types you may choose from. Think of pros and cons of including each animal type in your zoo. For example, you might consider if an animal will be exciting to visitors, or how difficult it might be to care for that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

Animal	Pros	Cons
Gorilla 		
Zebra 		
Giraffe 		
Crocodile 		
Flamingo 		
Lion 		

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BUILDING THE EXHIBITS

Now that you've chosen your 4 animals, you must assign them to their exhibits. On this blueprint of the zoo, each square represents an area that is 10 feet long by 10 feet wide. 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.



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ANIMAL HABITATS

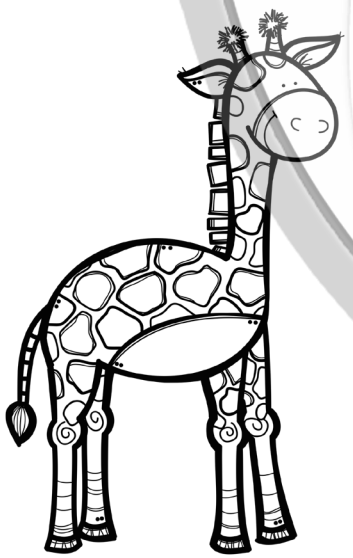
Now that the animal exhibits have been built, it is time to decorate them. You want to make each exhibit resemble the animals' natural habitat as closely as possible. Research in which type of habitat each animal lives in the wild. Take notes on what you learn.

ANIMAL #1

ANIMAL #2

ANIMAL #3

ANIMAL #4



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FEEDING TIME

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

ANIMAL	Zebra	Giraffe	Lion	Flamingo	Gorilla	Crocodile
FOOD CONSUMED PER DAY	20 lbs.	70 lbs.	8 lbs.	1 lb.	60 lbs.	2 lbs.

1. How much does a giraffe eat in three days? Draw a model to show your thinking.

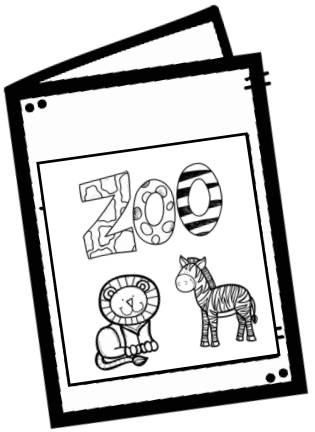
2. How much more does a gorilla eat in one day than a zebra?

3. Meat for the lions costs $10 per pound. Skip count by 10s to determine how much it costs to feed a lion for one day. Show your skip counts.



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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 come visit your zoo.

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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 wants to go to the zoo. The family consists of Grandma (68 years old), Mom (38), Dad (39), Michael (8), Lara (4), and Rowan (1). How much will the Johansens spend on tickets?

2. On Wednesday, the zoo earned $948 from adult ticket sales. They earned $523 from senior citizen ticket sales and $667 from child tickets. Write each number as a number name and in expanded form.

Number Name _____ _____ _____

Expanded Form _____ _____ _____

Adult ticket sales | Senior citizen ticket sales | Child ticket sales

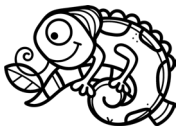
3. Compare how much money the zoo earned from selling each type of ticket. Complete the number comparisons with the symbol < , > , or = .

523 ◯ 667 948 ◯ 523 667 ◯ 948

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CHALLENGE #1: REPTILE HOUSE



Your zoo is a huge success! You want to expand by building a reptile house. Your zookeepers have given you strict instructions about requirements for the reptile exhibits. Build a blueprint of the reptile house below. Each square represents an area that is 1 foot by 1 foot. Draw the exbibits of each reptile. Label the exhibits with the reptile name. Length measurements run up and down. Width measurements run left to right.

1. The boa constrictor exhibit needs to be 5 feet long by 5 feet wide.

2. The two-horned chameleon and the Asian box turtle both need exhibits with lengths of 4 feet, but they must have different widths.

3. Each fire-bellied toad needs 1 foot of length and 1 foot of width in the exhibit. You have 4 fire-bellied toads inside the exhibit.

4. The sum of all the sides of the poison dart frog exhibit must be 8 feet.

5. The Borneo python must be in an exhibit that is in the shape of an "L." Its width at the widest point must be at least 6 feet.

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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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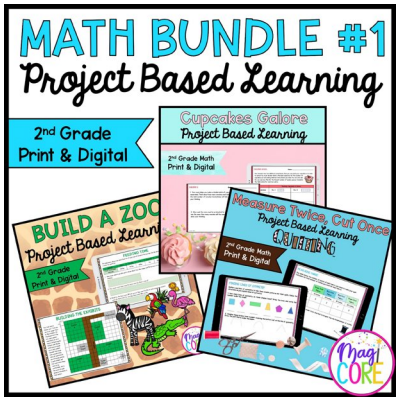
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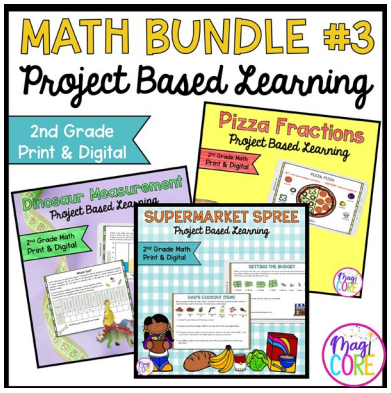
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