Unit 3 Project: Designing an Zoo

Did you know that designing a zoo requires a lot of planning?
Watch this video to learn about a large zoo in Nashville (watch until 1:43).

Now you get to design your own zoo!

Since you do not have the time to design a zoo like the Nashville Zoo, you are going to design a small town zoo. This zoo should contain some common animals people want to see.

Do some research as to which animals you want to use and what amenities your zoo will contain (bathroom, concessions…). **Explain** your choices, **using inequalities** that represent the facts given below. Include **pictures** of the animals, a **sketch** of your design, along with the **explanation** of your choices. Using **inequalities**, describe the **area** you must maintain in order to keep your animals healthy. Be sure to include **references** for information you find.

Basic Zoo Design Facts
- A zoo should be at least 20,000 square feet.
- Some animals require land and or water areas. Most animals also do better in a group than alone.
- You must have a minimum of 5 different kinds of animals and a minimum of 15 total animals.
- Include at least two amenities.

Zoo Planning Sheet

Use this chart to plan what animals to include in your zoo. You must include at least 5 different animals and 15 total animals. For the "Special Habitat Considerations" column, consider things that this animal would need to make a realistic habitat. For instance, a snapping turtle needs a pond, and you probably want to put your snakes in an a glass enclosure from which they can't escape. Giraffes will require acacia trees, and koalas need eucalyptus trees. You will need to research your animals to make their habitats as realistic as possible.

Animal	Quantity	Square Footage Required	Special Habitat Considerations

Math Project: Design Your Own Zoo

Use the following list of animals to help plan your zoo. The square footage is per individual animal. For instance, if one zebra requires 2,000 square feet, then two zebras would require 4,000.

Mammals		Birds	
Animal	**Area (sq. ft.)**	**Animal**	**Area (sq. ft.)**
zebra	2,000	peacock	1,000
elephant	2,000	ostrich	2,000
giraffe	2,000	owl	1,000
hippo	2,000	toucan	1,000
rhinoceros	2,000	stork	1,000
anteater	1,500	emu	2,000
kangaroo	1,500	flamingo	1,000
camel	1,500	macaw	1,000
llama	1,000	eagle	2,000
hyena	1,000	vulture	1,500
warthog	1,000	**Reptiles**	
sloth	500	**Animal**	**Area (sq. ft.)**
koala	500	alligator	1,000
red panda	1,000	Galapagos tortoise	1,000
porcupine	500	alligator snapping turtle	500
bats	2,000	crocodile	1,000
chimpanzee	1,500	anaconda	500
orangutan	1,000	boa	500
gorilla	2,00	Gila Monster	200
lemur	1,000	Green Iguana	200
lion	2,000	**Amphibians**	
tiger	2,000	**Animal**	**Area (sq. ft.)**
leopard	2,500	poison dart frog	100
cheetah	2,500	bullfrog	100
panther	2,500	toad	100
black bear	1,500	fire-bellied newt	100
panda bear	1,500	salamander	100

Tips for Drawing your Zoo Blueprint

1. Use your "Zoo Planning Sheet" as a guide.
2. Remember that the "Square Footage Required" is a minimum, and your area may be larger.
3. Be sure to leave space for pathways.
4. You must also choose at least 2 amenities (Bonus Areas) for your zoo. Bathrooms are needed.
5. Label each area and exhibit or use a key.

Bonus Areas	Area (sq. ft.)
restroom	800
kiddie splash pad	500
auditorium	2,500
concession stand	1,000
gift shop	1,000
playground	1,000
zoo equipment room	500

Your response will be judged on the criteria using the rubric below. Be sure to include the following.

1. Choose the animals that you want, explaining why you chose them, and include pictures (include references)
2. Finding the required dimensions and features of each enclosure, supported by inequalities from the Design Your Own Zoo sheet and the required minimum total area.
3. Design your zoo and sketch it (or including a picture of it), along with any amenities you chose (and include any references)

Categories	Points Possible	Points Earned
Choosing Animals (1 point each)	15	
Explanations and pictures for each animal (2 points each)	30	
Dimensions needed for the enclosures inequalities (3 points each)	15	
Design of your zoo (Include all enclosure dimensions and areas as well as the total area)	30	
Amenities	10	
Total	**100**	