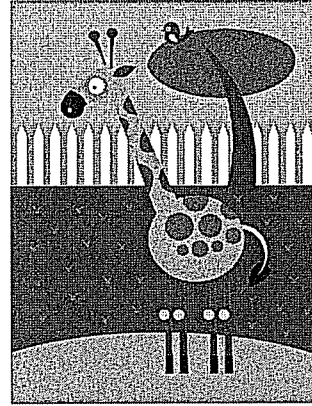


Design Your Own Zoo!!



Congratulations on your new job as Zoo Director of a new zoo in Kelowna. You are in charge of planning and running your own zoo. You have investors giving you a lot of money, so you will have to keep them informed with lots of calculations and reports. Don't forget the animal activists also. They will want some information on how you treat the animals. Get ready for an amazing adventure!!!

Make Sure You Keep This Booklet Safe

Hey everyone, paper is expensive and we don't want to have to cut down anymore trees than we have to so here's the deal. If you lose this booklet you'll have to copy another from a friend or you will have to print another one from home.

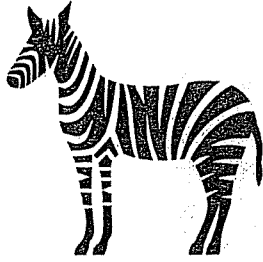
BRING THIS BOOKLET TO EVERY CLASS

To complete this project you are going to need to make sure that you bring your project booklet EVERY CLASS. If you forget your booklet you will have to do an alternative assignment. The marks for this assignment will count towards your zoo project.

THIS BOOKLET BELONGS TO: _____

SECTION: _____





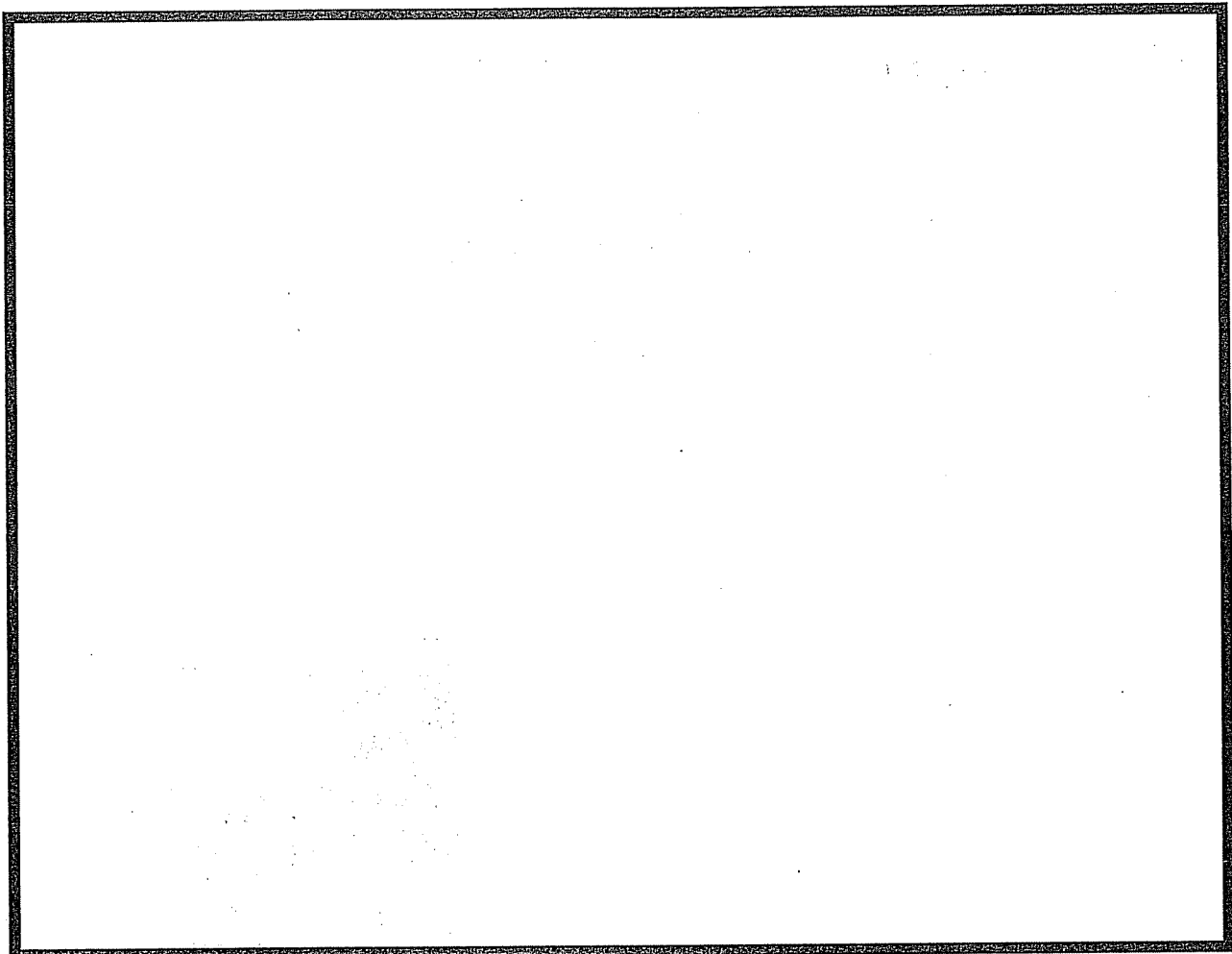
PART 1 - SO YOU WANT TO OPEN A ZOO?

You have a great zoo, so you need a great name for your zoo that will attract lots of visitors from around the world. Here are some things to consider when choosing a name for your zoo:

- What kinds of animals will you feature?
- What things besides animals will you offer (food, rides, etc.)?

What is the name of your zoo? _____

Next, you need a very very cool logo for your zoo. Your logo should feature the name of your zoo and an animal as well. This is the logo that will go on your business card, zoo brochures, zoo website, etc. Make your logo super colourful and eye-catching.



PART 2: WE NEED ANIMALS FOR OUR ZOO!!

Check out the list of animals below. You may add up to 4 other kinds of animals if you want. If there is an animal listed below you would prefer not to have in your zoo that's ok. However, you must have at least 10 different kinds of animals in your zoo, and you must have at least 50 animals, but no more than 99 animals. You must have at least one monkey. (**Here's a tip:** Your life will be a lot easier if your total number of animals is a multiple of some combination of factors 2, 3, 4, or 5).

Four-Legged		Two-Legged		No-Legs	
Animal	Number	Animal	Number	Animal	Number
Alligator		Flamingo		Dolphin	
Camel		Kangaroo		Python	
Elephant		Monkey		Shark	
Giraffe		Ostrich			
Hippo		Penguin			
Lion					
Panda					
Zebra					
Total 4-Legged		Total 2-Legged		Total No Legs	

Total Number Of Animals (show your work above) _____



Your **investors** want detailed reports on your zoo. They require that your reports are done in pencil. They insist that you **SHOW YOUR WORK** and you give all of your answers **IN LOWEST TERMS**. They're demanding, but hey, they give you money!



IF NECESSARY, ROUND DECIMALS TO THE NEAREST HUNDREDTH AND PERCENTS TO THE NEAREST ONE.

Here are some questions the investors want you to answer:



If I randomly select one animal from your zoo, what is the probability that it will be a monkey? (Probability is similar to a fraction that is put in lowest terms)

$\frac{\text{Number of monkeys in your zoo}}{\text{Total number of animals in your zoo}} = \underline{\hspace{2cm}}$

P (monkey) = $\underline{\hspace{2cm}}$ As a decimal: $\underline{\hspace{2cm}}$ As a percent: $\underline{\hspace{2cm}}\%$



Double check your work on the above question. Then, have your zoo accountant (friend) check your work. If s/he finds an error, you must correct it. Once your accountant agrees that your work is correct, have him/her initial here: $\underline{\hspace{2cm}}$

Have an investor (your teacher) initial here when she agrees that it is correct:



If I randomly selected one animal from your zoo, what is the probability that it has four legs? (Remember: probability is similar to a fraction that is put in lowest terms)

Number of animals with four legs = _____
 Number of animals in your zoo

P (four legs) = _____ Decimal: _____ Percent: _____%



What is the ratio of four-legged animals to no-legged animals?

Number of four-legged animals = _____
 Number of no-legged animals

_____ :



What percent of the animals in your zoo are birds?



Accountant initials: _____ Investor: _____



What percent of the birds in your zoo can fly?

To prove to your investors that you are a real go-getter, you are going to create an extra question for each section of your report. Write your own question - using percent, probability, rate, or ratio - similar to the ones above, and include a full solution.

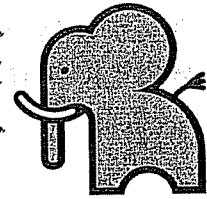




Accountant initials: _____ Investor: _____

The **Association for Happy Animals** (AHA) has gotten wind of your zoo plans! They are concerned about the animals having enough space. They want to know:

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H
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If one 4-legged animal requires 50 m^2 of space, how many square meters will your zoo require for all of the 4-legged animals?



If one 2-legged animal requires 40% of the space that one 4-legged animal requires, how many square meters will your zoo require for all of the 2-legged animals?



Accountant initials: _____

Investor: _____

Part 3: Ordering Your Animals

1. Pick an animal you have 5 or more of and write the name and how many of them you are ordering in the first box. (See order form on next page.)
2. Look in the animal pricing catalogue (see appendix of booklet) to see the cost of one of those animals and write it in the second box.

3. Calculate the cost of buying all of those animals (show work below) and write it in the third box.

4. Calculate the cost of the tax (12%) on buying all of those animals.

5. Calculate the cost of shipping all of your animals. (Flat rate of \$30 per animal.)

6. Calculate the total cost for ordering this particular animal.

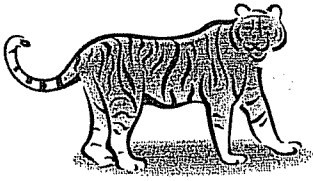
(cost for # you ordered) + (tax) + (shipping)

Order Form:

1. Animal <i>Ex. Hippo - 12</i>	2. Cost of one animal	3. Cost of all animals	4. Tax (12%)	5. Shipping	6. TOTAL COST



Accountant initials: _____ Investor: _____



Wait! You suddenly have a chance to buy some adorable white Siberian tiger cubs, always a huge crowd pleaser! The tigers normally cost \$500 each, but they are being offered at a special 10% off discount if you buy one. If you buy 2 cubs, you get 30% off the cost. If you buy 3 or more cubs, you get 50% off the cost. (You MUST buy at least one.) (Show work below order form.)

1. How many cubs are you going to buy?	2. Total cost of that many cubs before discount	3. Total cost after the discount	4. Tax (12% of box 3)	5. Shipping (\$30/cub)	Total cost of buying cub(s) (3 + 4 + 5)



Accountant initials: _____ Investor: _____

Part 4: Deciding on Admission Costs

Phew! That was a lot of work! Your investors and AHA should be happy (for now!). Now you need to decide on how much to charge your guests. (To keep things easier for your guests, you are going to **include tax** in your admission prices.) If your admission is too expensive, no one will come to your zoo. If it's too cheap, you won't make enough money and your investors will lose all of their money!

	Admission Price
Adult	
Child or Senior	



If, on opening day, you have 46 adults, 240 children, and 34 seniors come to your zoo, how much money will you take in on admission?



If you have to spend 80% of the money you made on admission on opening day to run the zoo (care for the animals, pay employees, purchase supplies, etc.) how much money would be left over for you to pay back your investors? (Round to the nearest cent.)



Of the 46 adults, 240 children, and 34 seniors, 60% are females. How many females came to your zoo that day?



Accountant initials: _____

Investor: _____



If I randomly select one guest on opening day, what is the probability that I will select a child?

P(child) = _____ As a decimal: _____ As a percent: _____



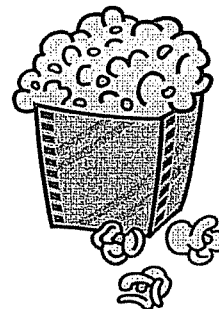


Accountant initials: _____ Investor: _____

Part 5: Running a Concession Stand

You want to keep your guests happy while they're at the zoo, and take in some more money. You are going to run a concession stand. Decide on the cost of each item (before tax).

Menu Item	Cost
Popcorn	
Hot Dog	
Can of Pop / Bottle of Water	
Ice Cream	





How much will it cost to purchase 1 popcorn, including tax (12%)?



If the Arnold family purchases 3 popcorns, 5 drinks, 6 hot dogs, and 2 ice creams, how much money would it cost them, including tax (12%)?



What percent of the items the Arnold family bought was ice cream?



Accountant initials: _____ Investor: _____



You purchase popcorn kernels in bulk. Sixty kilograms of popcorn kernels costs \$74. What is the unit cost for 1 kilogram of popcorn kernels?



When you sell one bag of popcorn, it contains 200 g of kernels. How much money do you make selling 1 kilogram of popcorn kernels (before tax)?





Accountant initials: _____ Investor: _____

Part 6: Feeding Your Animals

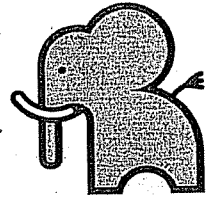


To keep all of your animals well fed, you need to buy carnivore and herbivore food at a ratio of 2:7. If you buy 150 kg of carnivore food, how many kilograms of herbivore food must you buy?



The AHA recommends that the herbivores get 80% of their food from organic sources. If, out of 300 kg, your herbivores get 270 kg of organic food, are you meeting AHA's standards? (Show the math to prove it!)

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Accountant initials: _____

Investor: _____

Part 7: Final Report

Things have gone well so far! The investors seemed convinced that you know what you're doing and that you are going to run a great zoo. The AHA is even happy. But first, you must put together one final report. Here's what you need:

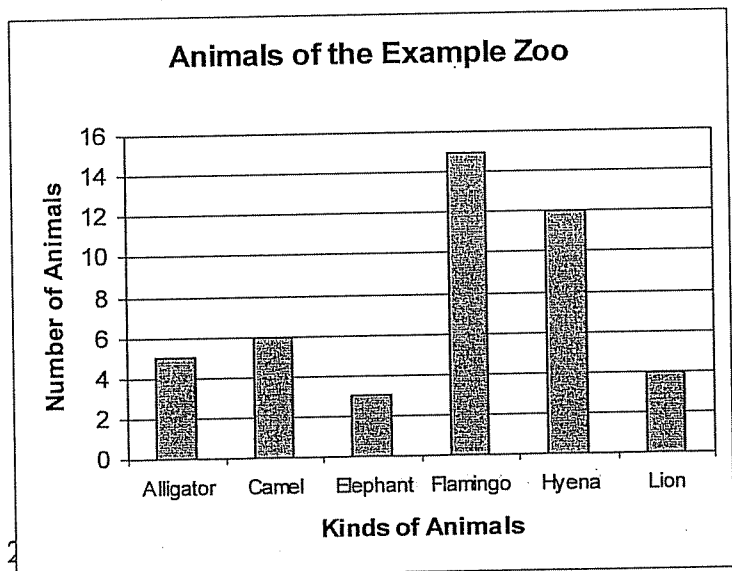
- a poster advertising your zoo (featuring the name of your zoo, admission costs, some animals you are featuring, etc.)
- a graph showing how many of each animal you have in your zoo

This is an example of the graph:
List 3 things about this graph that make it easy to read:

- 1)
- 2)
- 3)

Make sure those 3 things are true about the graph you design.

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BONUS

If you finish early or want to earn some bonus marks, design a map of your zoo. Show where each kind of animal lives and include things like the ticket office, the concession stand, washrooms, and paths for the guests to walk on. Use a ruler, colour it neatly, and create a legend if needed.

Appendix: Animal Price Catalogue

Animal Pricing Catalogue

Animal	Cost (\$)
Alligator	300
Baboon	225
Camel	280
Chimpanzee	135
Dolphin	475
Elephant	790
Flamingo	400
Gazelle	360
Giraffe	675
Hippopotamus	600
Hyena	320
Kangaroo	375
Kookaburra	100
Lion	650
Monkey	270

Animal	Cost (\$)
Ostrich	325
Otter	200
Panda Bear	800
Penguin	450
Python	190
Rhinoceros	500
Shark	550
Tiger	425
Zebra	460

