Name: _____

Unit 3c: Introduction to survey-taking
Math 9 – Wolfe

This section gives you a very, very brief introduction to some of the principles of gathering statistical data. The text for this section can be found at https://www.mathsisfun.com/data/survey-conducting.html. It is worth reading, but you can do this activity without reading or understanding all of it.

Writing a good question

Perhaps the most important – and most difficult part – of getting data is writing the question. Good questions get you good data; poor questions get you inaccurate or misleading data.

For our purposes, we want to find out what types of pets the students in a (hypothetical) Math 9 class have. We will use a list of possible answers. People can check off their types of pets on the list. Since we are asking what *type,* we don't need to record how many – just whether they have that pet or not.

Of course, some people have no pets at all or lots of different pets, so you need to have room for people to give more than one answer. For this reason, your total number of pet types might not add up to exactly the number of people you asked.

The categories are: *dog, cat, bird, fish, reptile* (such as a snake or lizard), *small mammal* (such as a rat, hamster, guinea pig, etc.). Some people might have a pet that doesn't fit into these categories, and in this survey we have just left those out. There is no "other."

What are two reason for someone to give a "null" or no answer response?

_____

_____

Will anyone check off more than one category? Why? _____

_____

If you do this survey in real life, you will be asked some questions. One of the most common is whether their horse or chickens count. You can use your judgement on whether livestock is a pet – perhaps they think of the horse more as a pet, but don't count the chickens they get eggs from. Part of your good question design was to try to sidestep this question by only including animals that are generally kept as pets and not livestock, but lots of people have chickens – which are birds! Whatever you decide to do, the important thing is to think about it ahead of time and have a response prepared.

So how should we phrase our question? Look at the section on writing questions Read the section https://www.mathsisfun.com/data/survey-questionnaire.html. Then fill out the chart on the next page giving reasons why you think the question is good, bad, or ok. There is usually more than one way to write a good question and lots of ways to write one that isn't very good!

Question	Good, bad, or ok?	Reason(s)
Do you have a cat or a dog?		
How many pets do you have?		
Do you have an awesome dog or a crappy, stupider pet?		
Which of the following pets do you have? (list the options)		
Why do you have pets?		
What different kinds of pets do you have?		

Displaying your data

Let's jump right to the end of the line and talk about displaying our data in a graph or chart. You can find out information about doing this in the section:
https://www.mathsisfun.com/data/survey-results.html

Let's say you asked a hypothetical class of 28 students, and these are your results:

Dog	Cat	Bird	Fish	Reptile	Small mammal
14	10	2	3	1	4

There is an easy tool to create a graph at https://www.mathsisfun.com/data/data-graph.php

Enter your data as follows. The commas separate the categories so it's important to write it exactly like the example.

1. Make a bar graph of your data. This is a great way to graph data that compares things.

   You can easily see things such as:

   How many people have at least one cat? _____

   What's the least common pet? _____

   What is the most common pet? _____

2. Try making a line graph. Why would you NOT use a line graph for this data? What does a line graph show? _____

   _____

3. Click the dot graph. This is a very simplified pictograph and is another good way of representing data that you would use a bar graph for.

4. Click the pie graph. A pie graph is a terrible choice for this data – it gives a very misleading picture. Why? _____

   _____