NAME: _____

WHAT'S THE VIBE?

How to Calculate the Mean

Zoo Keeper Anne Knapp is responsible for deciding how big an enclosure should be for a given animal. At the Franklin Park Zoo in Boston, where Knapp works, enclosures are grouped together into habitats to help visitors find their way around the park and understand which animals live near each other in the wild.



Explore:

Here is a table of the number of species each habitat at the Franklin Park Zoo has. (Some habitats have the same number of species.)

Habitat	Number of Species
African Penguin Coast	1
Aussie Aviary	2
Bird's World	30
Children's Zoo	14
Franklin Farm	8
Giraffe Savannah	3
Gorilla Grove	1
Kalahari Kingdom	7
Outback Trail	4
Raptor Ridge	2
Serengeti Crossing	3
Tropical Forest	33

- Looking at this data, if I were to tell you that a new habitat included 10 species would you be surprised? Why or why not?
- What if the new habitat had 50 species? Would that surprise you? Why or why not?

Apply:

One of the ways scientists can get a general sense of what their data is telling them is to calculate the *mean* (also known as the "average"). For example, if your math teacher found that the mean score on a test was 99%, that means that the class understood the information very well. But if the mean on the test was 34%, then your teacher should probably go over those lessons again.

To calculate the average, we count the number of items in the data set (the number of students who took the test), add up the sum of the data set (everyone's test scores), and then divide the sum by the number of items.

Let's calculate the average (mean) number of species in a Franklin Park Zoo habitat.

- How many habitats does the Franklin Park Zoo have?
- How many total species does the Franklin Park Zoo have? (Find their sum by adding the number of species in each habitat.)
- What is the average number of species in a habitat? (Remember to divide the total number of species by the number of habitats.)

Practice: Get better at finding the mean by solving these problems.

Environmental Scientist Eric Pallant studies how colleges can make their campuses more eco-friendly. Below is a table of colleges he's studied from around the world and how many students each one has.

College	Number of Students
North-Western University	64,081
University of Nigeria	36,000
Allegheny College	1,931
Brasilia University	38,475
Hamburg University of Applied Sciences	16,800



Use the table above to answer the following questions.

- How many colleges did Pallant study?
- How many total students went to all of the colleges?
- What is the mean number of students at the colleges in Pallant's study?

Biostatistician Andrew Vickers uses data to research cancer. One of the problems that many cancer studies face is that not enough of the participants in the study are able to finish the study. The number of participants who finish a study is called the study's accrual. Vickers and his colleagues came up with several different ways that cancer studies can improve their accrual, like by changing how they give information about the study to participants.

Here is a table of several cancer studies that used Vickers' teams strategies and were able to have very high accrual rates. The table compares what percentage of people finished the study to how many the researchers wanted to finish the study. Some of the percentages are over 100% because the researchers were able to exceed their goal!

Trial	Accrual Percent
Trial A	85
Trial B	137
Trial C	95
Trial D	135
Trial E	99
Trial F	100
Trial G	102
Trial H	55



Use the table above to answer the following questions.

- How many trials used Vickers' strategies?
- What is the next step in calculating the mean accrual of the studies? (Hint: Think about the math test example instructions in the Apply section on page 1.)
- What is the mean accrual for the studies that used Vickers' strategies?