

Jumping Jack Math

NAME _____

You are moving to planet Jumpalot, a place where people never fatigue while doing jumping jacks because of the low gravitational pull! In fact, the residents of Jumpalot wear a special device that collects energy as they do jumping jacks, in the same way that energy is collected from windmills. To make sure the power never goes out, they do jumping jacks all the time--even while reading, eating, and sleeping (it is difficult at first, but they master it easily with a little practice)!



1. To review, fill in the time conversion Jumpalot Data sheet below.

TIME CONVERSIONS CHART		
1 minute	=	_____ seconds
1 hour	=	_____ minutes
1 day	=	_____ hours
1 week	=	_____ days
1 year	=	_____ weeks
1 year (not a leap year)	=	_____ days

2. Before you move there, the officials on Jumpalot need to know how many jumping jacks you can complete in a year, so they know how much power you will be able to generate. In order to collect accurate data, you will only collect jumping jack data for 10 seconds. Since we are on Earth, you might tire if you jumped longer! You will use your knowledge of time and multiplication to complete the rest of the My Jumping Jack Data Chart on the Jumpalot Data sheet.
3. Since your classmates will also be traveling to Jumpalot, Jumpalot School District wants you to collect data as a class about the jumping jacks you will do in an hour, since you are in school 6 hours a day. This information will help them to see if your class will create enough power for the school day. Fill in your own data for the first number. Then, find a sample of nine other students from whom you can gather the necessary data. Put your data in the My Sample Data Set chart on the Jumpalot Data sheet, and then order it from least to greatest here.

4. Calculate the following for your “My Sample Data Set” chart:

a. Mean: _____

b. Median: _____

c. Mode: _____

5. Now that you have found the mean, median, and mode of your sample set, Jumpalot wants to see what happens to these numbers if you take your personal data out of the set and put in the data for your super lazy cousin Sloopy who is thinking about moving to Jumpalot. Sloopy can only do 10 jumping jacks in an hour! Rewrite your data set to include his data, and then calculate the following:

a. Mean: _____

b. Median: _____

c. Mode: _____

d. What do you notice about the mean, median, and mode for Sloopy’s Data Set when compared to Our Class Sample’s Data Set?

6. Jumpalot School District is also thinking about admitting your cousin Speedy. What happens when you add the data of your other cousin Speedy who can complete 15,000 in an hour? Complete the chart on the Jumpalot Data sheet then calculate the following:

a. Mean: _____

b. Median: _____

c. Mode: _____

d. What do you notice about the mean, median, and mode for Speedy’s Data Set when compared to Our Class Sample’s Data Set?

7. Based on the results, which of your cousins should Jumpalot School District admit? Explain why and use mean, median, or mode to support your response.

8. a. Sloopy and Speedy's jumping jack rates are called *extreme values* because they are very high and very low. Based on your analysis of these four data sets, what can you conclude about the effect of including extreme numbers in a data set?

b. Does mean, median, or mode get most effected by extreme values? Explain your answer.
