Dear Students,

Why did the student get upset when his teacher called him average?

Because it was a "mean" thing to do! (Very punny!)

This week's lesson is not only to reinforce practice with multiplying and dividing decimals, but to strengthen the concept of mean or average. The words average and mean (in math) are used interchangeably. In statistics, mean is a type of average; other averages are the median and mode. If you are interested, try the extension activity at the end of the lesson!

There are several parts to this lesson, so I suggest that you do one, maybe two steps a day, depending on your schedule. Remember, have fun with it!

By the way, I'm pretty average, when comparing myself to the family I live with. If I compare myself to the rest of my siblings, I'm probably below average! This could be a good thing, as you'll soon find out! I hope you have fun with this lesson, and if you find that you are above average in something, you may want to work out a bit more! LOL (Hopefully you'll get what I mean after you complete the lesson!)

Oh, one more thing: What's the best place to do math homework?

On a multiplication table, of course! Have Pun!!!

Ms. Strazar

Mean Measurements: A Mathematical Look at Your Family's Size & Health

Step 1: Gather your materials

* Measuring tools:

1) A measuring tape is best for linear measurement of long things, but if not available, a yardstick or ruler would do; if using a ruler, you can gather a long string or rope to create a measuring tape. (Just mark off inches and half inches on the rope or string.)

2) Scale for measuring weight (If you do not have a scale, estimate the weight portion of this activity)

* Paper and Pencil
* Computer (optional)

* Family members (can gather their data at any time and insert later)

Step 2: Create a data table

Using the attached example as a guide, create a data table for your family members. You may decide to do this on a piece of paper or on the computer.

Note the difference between a chart and a table: a table represents data in rows and columns while a chart is a graphical representation of data, such a bar graph or pie chart. You will be completing both, so you will hopefully strengthen your understanding of both!

Step 3: Gather data

1) Measure the height (in inches) of each family member available and record on your data table.

2)

Note: One of the easiest ways to measure someone's height is for them to lay down on the floor with their head against the wall/floor molding, then using a tape measure (or string, yard stick, or ruler,) measure to the heal (feet flexed, not to toe)

2) Measure weight of each family member, or estimate if no scale is available, then enter onto your data table.

Step 4: Calculate data

To calculate the mean: add values of each person/unit then divide by the number of people/units. For example, to calculate the average or mean of 1, 2, 3, 4, and 5, add them together to get 15, and then divide by 5 (since you added 5 numbers together. The mean would be three (15/5)

To convert your measurements from standard to metric:
For inches to meters (for height,) divide the number of inches by 39.37

For pounds to kilograms (weight,) divide pounds by 2.205

To calculate BMI: Try calculating both ways to see how close the numbers are. Take the weight in kg. divided by the height in meters squared and compare it to taking the weight in pounds, divided by the height in inches squared then taking the answer and multiply it by 703.

This can seem confusing, so try watching a video such as:
https://www.youtube.com/watch?v=gIZT0Ew0ugU

Note that the BMI numbers may be slightly different when comparing metric to standard, due in part to the rounding of decimals. You may round your totals, however, use unrounded numbers when calculating for mean.

Remember practice and persistence are keys to success in MANY things!!!

Step 5: Create a bar graph

Extend your thinking by creating your own bar graph using your data. There are many ways to do this, you may use the attached example to guide you, but your graph does not need to be the same. Be creative! Create on paper (graph paper works great if you have some) or use a computer.

Step 6: Share your work!

Email me your data table and bar graph. If you decide to create it on Google Docs, just share it to me at strazarmarino9@gmail.com; otherwise you may take a photo, and send it to me at either my gmail or school email (angeline.strazar@clevelandmetroschools.org).

Don't hesitate to email me questions, concerns, or say hi! Miss you!   And remember, we are all below average, average, and above average in something....just don't be mean about it!!!

Do you remember how to get the median, mode, and range?

If not, be sure to do the extension activity that follows this!

If you do, you can always practice!

Mean Measurements: A Mathematical Look at Your Family's Size & Health

Extension Activity: You've found the mean, now find the median, mode and range from your data.

First, a reminder of what this all "means!"

Median: the middle number in a set of data; list data from least to greatest then find the exact middle. If there is an even number, then halfway between the two numbers would be the median. For example, if my data set included 12, 18, 22, 39, 42, and 75, I would take the two middle numbers 22 and 39 and find the middle by subtracting the larger from the smaller (39-22=17) then divide by 2 (17/2 = 8.5). Finally, add that number to the smaller of the middle numbers (22+8.5=30.5) or subtract from the larger (39-8.5=30.5). Therefore, the median number in this data set would be 30.5.

Mode: the number that appears most often in a data set; there may be NO MODE for a data set (such as the data set above) However, there also can be more than one mode. For example, if a data set included the numbers 1, 2, 2, 5, 5, and 7, the mode would be 2 and 5.

Range: the difference between the lowest value and the highest; for example, using the data set 14, 18, 27, and 39, the range would be 39-14= 25

Now you try it using your data set. You may want to find the median, mode and range for each area of data (height, weight, age, and BMI) or use all the numbers together, or both!