

ORGANIZING DATA

- Organizing data refers to collecting, organizing, and interpreting data.
- Data is usually mathematical information in a set of numbers. If collecting data about the ages of people living on one street, the data is all the ages.
- The data can then be organized into groups, and evaluated. **Mean, mode, median** and **range** are different ways to evaluate data.
 - The **mean** is the average of the data.
 - The **mode** refers to the number that occurs the most often in the data.
 - The **median** is the middle number when the data is arranged

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- If there is a list of data given, the **mean** or average of the data can be found by adding the numbers together and dividing by the total number of data.

- Given the data below of ages, the mean can be found as follows:

Ex. 23, 35, 22, 45, 40, 22, 16, 33, 41 Added together = **277**

$$277 \div 9 = \text{a mean of } 30.777 \text{ or } 30.8$$

- If the **mean** is given, but one of the numbers of the data is missing, the missing number can be found.

Example:

Sue wants to have a 90 average in math. Her tests scores are 85, 92, 87, and 95. She has to take one more test. What should her score be to have a 90 average?

Since Sue wants a 90 average, the total she would need is $5 \cdot 90$ or 450. So far, she has an 85, 90, 87, and 95 for a total of 357. She would need $450 - 357$, or a 93 on her next test to receive a 90 average.

- The **median** of a set of data is the middle number. Given the data below of ages, the median can be found as follows:



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- The **mode** of the data: 16, 22, 22, 23, 33, 35, 40, 41, 45, is the numbers that occur the most are the mode. If all the numbers occur one time, the set of data has no mode.
- The **range** of the data: 16, 22, 22, 23, 33, 35, 40, 41, 45, is the highest number, 45, minus the lowest number, 16, which equals 29.



- Tables display data so it is easy to read. A **frequency table** is used to display intervals or categories, and how many times that interval or category is picked.
 - For example, if 25 students were asked what their favorite number was out of the numbers 1-6, a frequency table would display the numbers 1-6 and each number would have tally marks to show how many times that number was picked as shown below.

Favorite numbers	Frequency
1	
2	

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Make a **frequency table** to record the following data:

- sharks- 8
- sea turtles- 4
- angel fish- 15
- dolphins- 2