Warm-Up

Take Spring Climate survey

http://mathwithmrsbobbitt.weebly.com
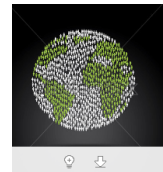
9.5 Population Density

Objective:
- To define population size and density.
- To calculate and apply population density.

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Population size: The number of individuals in a population

What are some examples of populations and their sizes?

Density: The average number of individuals in a population per unit of an area or volume. Density is a number like a ratio.   For this unit we will focus on area.

How to compute population density

$$population\ density = \frac{population}{land\ area}$$

What is the population size of this class?

31

What would be the density of this class if the dimensions of the room are 30 ft by 33 ft?

$A = 990 \, ft^2$

$\dfrac{40 \div 4}{990 \div 4} = \boxed{1.03131}$

24.75

11 3 ▱ A=33ft² 5.6 ▱ 5.6

Using the table below, find the population density for the given Arizona cities

City	Population (2010)	Land Area (mi²)
Phoenix	1,445,632	516.7 *2798*
Tuscon	520,116	226.7 *2294*
Flagstaff	65,870	63.9 *1031*

Of the three cities, which has the highest population density? The lowest?

Will the city with the largest population density always have the largest population density? Why or why not?

In a proposal to establish a new campground at Lake Mead National Recreational Area, there is a concern about the number of mountain lions. At last report there were 90 mountain lions in the park. The new campground will be accepted if there are fewer than 2 mountain lions in the campground. Use the data in the table to determine if a new campground can be established.

Location	Size
Area of park	2337 mi²
Area of new campground	10 acres

What would be the first thing that needs to be determined?

Is this enough to decide if a new campground can be established? If not, what else needs to be determined?

Can we figure the density with the information given? Why or why not?

1 acre ≈ 0.0015625 sq miles.

What is the area of the 10 acres?

What would the population density be for the new campground?

.000602 < 2

Can a new campground be established?

The population of Cornville is 18 people per acre. Exactly 1,350 people live in Cornville. How many acres is Cornville?

How can we use population density to help solve this problem?

$$population\ density = \frac{population}{land\ area}$$

$$\frac{18}{1} = \frac{1350}{X}$$

75 acres to sq mi.

Summary

What is population size?

Population size: The number of individuals in a population

What is population density?

Density: The average number of individuals in a population per unit of an area or volume. Density is a number like a ratio.   For this unit we will focus on area.