# Population Density and Dispersal Activity

**A. Population Density** = the number of individuals per unit area (land organisms) or volume (aquatic organisms).

- **Low density populations**: few individuals per unit area or volume; spaced well apart (Ex: tigers)
- **High density populations**: individuals are crowded together; many individuals per unit area or volume. (Ex: insects, coral)

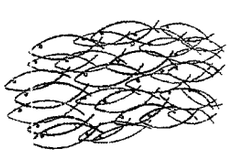
**Population Density in our Classroom**

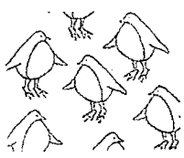
1. ***Record*** the classroom dimensions. Length =_____m. Width =_____m.
   ***Calculate*** the classroom area. Area (length x width) = _____ square meters
   ***Count*** classroom population = _____ people
   ***Calculate*** how much space each person has. _____square meters
   *Hint: space = area (length x width) divided by (# of people)*
2. ***Predict***: How much space would each person have if the number of people in the class doubled?
   *Show work.*_____
3. Calculate the **population density** = _____
   *Hint: population density = (# of people) divided by area (length x width)*
4. Does the classroom represent a low density population or a high density population? Explain.
   _____
5. Why would a school engineer want to know about the population density? _____
   _____

**B. Population Dispersion** = the spatial distribution of individuals within the population

- **Random Dispersion**: spacing between individuals is irregular; presence of one individual does not affect the location of any other (uncommon in animals but seen in plants)
- **Clumped Dispersion:** individuals are grouped around a resource; presence of one individual increases the probability of finding another close by (herds and social species)
- **Uniform Dispersion**: individuals are evenly spaced in an area; presence of one individual decreases the probability of finding another individual close by (penguins and creosote bushes)

***Label the dispersion pattern and draw dots in the box to represent the pattern. Provide a brief description of what <u>each</u> dispersion pattern tells us about the population and its <u>interactions</u>.***





_____ _____ _____

_____

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_____

***Use an R (random), C (clumped) or <u>U</u> (uniform) to indicate the type of dispersion for each example.***

1. Individual rodents competing with each other for limited resources _____
2. Orange trees growing in rows on a plantation _____
3. Bison found in herds in Yellowstone National Park _____
4. Dandelion seeds blown by wind start to grow _____
5. Bald eagle's babies in a nest who are unable to fly _____