

SUMMER ASSIGNMENT PART 2: FREE RESPONSE AND REVIEW MATH

To be submitted as per teacher instructions provided upon return to school.

20-point assignment based on completion as per instructions.

Appropriate points will be deducted for any incomplete part of the assignment or for disregarding instructions.

1. Fill in the chart below with the information about each invasive species based on the case studies you read in the notes packet.

Name of Organism	Geographic Location Introduced To	Resulting Environmental Problems	Methods Attempted to Remediate Problem
a.			
b.			
c.			
d.			
e.			
f.			

2. When you read over the notes provided, you learned about a few examples of indicator species, keystone species, generalists and specialists.

Do some research to find one more example for each type of species and give a brief explanation as to why it is classified as such.

Indicator Species:

Keystone Species:

Specialist Species:

Generalist Species:

3. Some Basic Math Review!

Remember that any time you need to make a calculation, you need to show your work. This means that you write out the complete formula, substitute the data into the formula, and then show your answer with the correct units attached. (round to whatever you feel is appropriate – whole #, tenths or hundredths place).

First up ... Scientific Notation Practice

Convert the following numbers expressed in scientific notation to standard form:

a. 4.6×10^9 _____

b. 9.4×10^7 _____

c. 1.0×10^{-4} _____

d. 3×10^{-6} _____

Convert the following numbers to scientific notation:

e. 12,000,000,000 _____

f. 11,000 _____

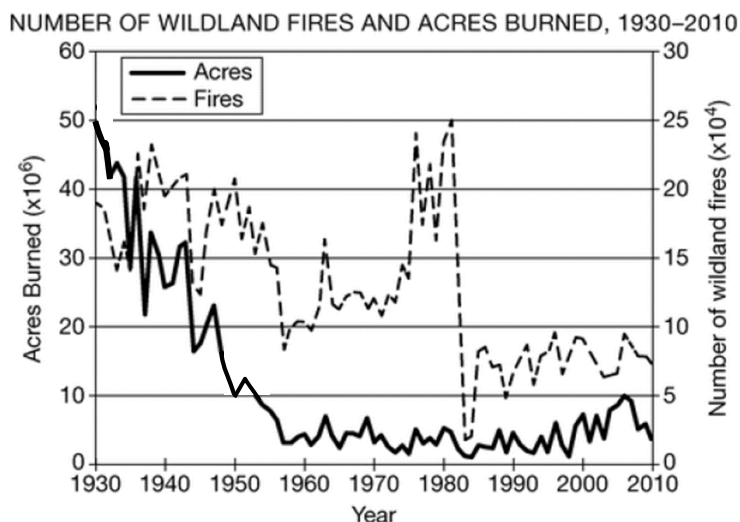
g. .000001 _____

h. 435,000 _____

Next... Rate of Change

Formula: $\text{rate} = \frac{\text{change in value}}{\text{time period}}$

- i. What is the average rate of change in acres burned between the years 1930 and 1950?



And then there is ... Percent Change (increase or decrease)

Formula: $\text{percent change} = \frac{\text{new value} - \text{original value}}{\text{original value}} \times 100$

- j. Calculate the percent change in China's births per 1000 people between the years 1994 and 2019.

Population Growth Data, China 1994 - 2019

Year	Births per 1,000	Deaths per 1,000
1994	17.6	6.8
2004	11.8	6.3
2014	12.3	7.4
2019	11.9	8.1

4. Constructing a Graph

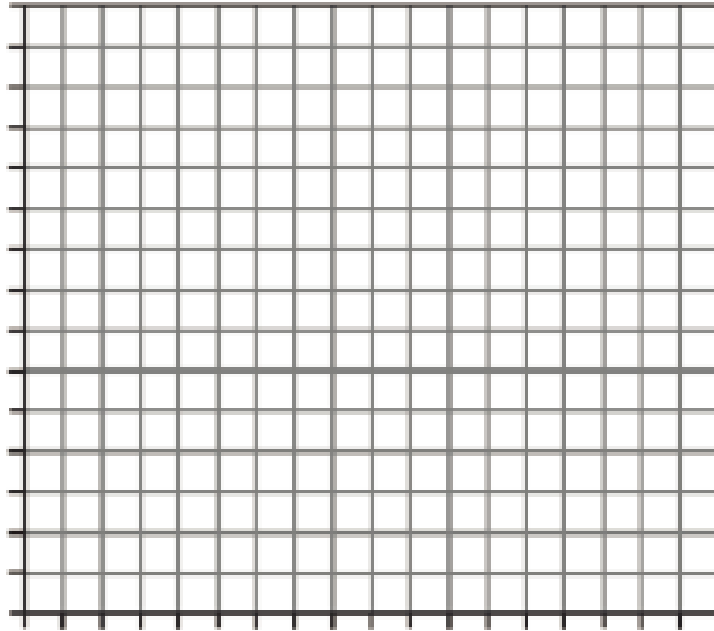
A study was done to see the how water temperature affects the concentration of dissolved oxygen in a body of water.

Water temperature (°C)	Dissolved Oxygen (ppm)
1	14
7	12
10	11
15	10
17	9.5
20	9
25	8

Use the information in the data table to construct a line graph on the grid provided.

- a. Mark an appropriate scale on each axis.
- b. Label each axis with correct units
- c. Plot the points and connect with a smooth line.

**Dissolved Oxygen Levels of the Surface Waters of Lake Erie
(January → August 2021)**



- d. Indicate the independent and dependent variables: independent: _____
dependent: _____

- e. State the relationship between the water temperature and the concentration of dissolved oxygen.

- f. If the trend continues shown in the data, what would the dissolved oxygen level most likely be if the water temperature was 30°C?
