Welcome to FLHS AP Environmental Science 2024_25

The purpose of this summer assignment is to review skills that we will be using throughout the course and to preview content we will be learning this year. The assignment will be **due on August 26th at 11:59pm**. This work will be graded and put into Infinite Campus as a summative grade. Late work will be deducted by 5% each day and the assignment will not be accepted past August 30th at 2:30pm.

If you have any questions on the assignments, you can email us at lwaack@fairfieldschools.org or mgrasso@fairfieldschools.org . Please allow for ample response time to any emails as our ability to communicate over the summer is limited.

Looking forward to class next year!

- Ms. Waack & Mr. Grasso

You should be completing these assignments on your Google Classroom page. Take a look at your schedule to ensure you are signing into the correct section:

Ms. Waack:

- 35510-2 AP Environmental Science: tekesgk
- 35510-3 AP Environmental Science: xd7mdsn

Mr. Grasso:

- 35510-1 AP Environmental Science; **Period 2 Block**: **xtgr3ph**
- 35510-4 AP Environmental Science; **Period 4 Block**: **zldx7fp**

Part 1: Experimental Design

Answer the following questions using the following statement, your knowledge of experimental design and the graph below. Need a refresh on experimental design? Watch this video or this one.

A clam farmer has been keeping records concerning the water temperature and the number of clams developing from fertilized eggs. The data is recorded below.

Water Temperature in °C	Number of developing clams
15	75
20	90
25	120
30	140
35	75
40	40
45	15
50	0

a.) Identify the dependent variable of this experiment.

b.) Identify the independent variable of this experiment.

c.) Identify the optimum (best) temperature for clam development.

d.) Identify the average temperature in this experiment.

e.) Identify at least two constants the scientists should maintain in this experiment.

Part 2: Watch the Write Like A Scholar Series

An important part of AP Environmental Science is being able to communicate your understanding of the content through writing. The AP exam has three free-response questions (FRQs) that count for 40% of your overall score. The following videos provide an introduction to get you on the path to writing successful FRQs. After watching each of the videos, provide a brief reflection on how this information will impact your writing style on our AP tests.

Video 1: Write Like A Scholar Series: Annotating AP Environmental Science FRQs

Reflection:

Video 2: Write Like A Scholar Series: Writing AP Environmental Science FRQs

Reflection:

Video 3: Write Like A Scholar Series: Scoring AP Environmental Science FRQs

Reflection:

Part 3: Reading Chapter 2 of our textbook & Completing a Google Form

To help you get acquainted with our course and our textbook, you will be reading Chapter 2 of Living in the Environment and completing a Google Form that will assess your understanding of the chapter. The Google Form is posted in our Google Classroom. You should have collected a hard copy of the textbook at the end of the school year and below you will find log-in instructions for accessing our digital textbook which you have access through Classlink.

Online Textbook Access:

Generic Student Login Information for Summer 2024 to access the e-book and corresponding Mindtap program:

- Login URL: https://nglsync.cengage.com/rostering/Account/LogOn?DistrictLoginCode=PQXS
- **Username: SummerAPstudent2024**
- **Password: Summer2024**

Part 4: Math Skills

This is a science class, why so much math? There are seven Science Practices that we will incorporate throughout the year, these are skills and a way to apply your content knowledge. You can check them all out here.

Practice 6 is Mathematical Routines: Apply quantitative methods to address environmental concepts.

6.A Determine an approach or method aligned with the problem to be solved.

6.B Apply appropriate mathematical relationships to solve a problem, with work shown (e.g., dimensional analysis).

6.C Calculate an accurate numeric answer with appropriate units.

Reminders

1. Write out all your work, even if it's something really simple. This is required on the APES exam so it will be required on all your assignments, labs, quizzes, and tests as well.
2. Include units in each step. Your answers always need units and it's easier to keep track of them if you write them in every step. No naked numbers!
3. Check your work. Go back through each step to make sure you didn't make any mistakes in your calculations. Also check to see if your answer makes sense. For example, a person probably will not eat 13 million pounds of meat in a year. If you get an answer that seems unlikely, it probably is. Go back and check your work.
4. You may use a calculator but will not be provided with a formula sheet.

PRINT OUT PAGES 5 AND 6 AND HAND IN A HARD COPY OF THIS WORK ON THE FIRST DAY OF SCHOOL

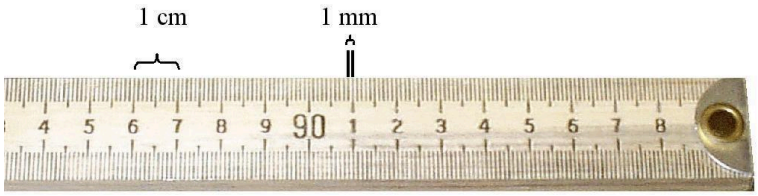
Name: _____ Section: _____ Date: _____

Metric Units: YOU MUST MEMORIZE THE METRIC CONVERSION CHART

We usually see these units in class

Prefix	Symbol	Multiply Base Unit by	Example
tera	T	1,000,000,000,000	teragram = Tg = 10^{12} g
giga	G	1,000,000,000	gigaliter = GL = 10^{9} L
mega	M	1,000,000	megagram = Mg = 10^{6} g
kilo	k	1,000	kilogram = kg = 10^{3} g
hecto	h	100	hectogram = hm = 10^{2} m
deka	da	10	decagram = dag = 10 g
deci	d	1/10	deciliter = dL = 10^{-1} L
centi	c	1/100	centimeter = cm = 10^{-2} g
milli	m	1/1000	millimeter = mm = 10^{-3} m
micro	μ	1/1,000,000	microgram = μg = 10^{-6} g

Base Unit (g, m, W, L, etc.)



1. How many mm are in a centimeter?

2. How many centimeters are in a meter? (The prefix *centi-* means 100. How many cents (pennies) are in a dollar?)

3. The prefix milli- means a thousand. How many millimeters are in a meter?

Percent change is a non-content related equation that we will use in this class. Here is a reminder of what percent change looks like:

4. If you scored a 1090 on your first PSAT and 1210 on your second PSAT. What was your percent improvement?

Percent Change

$$\text{Percent Change} = \frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \times 100\%$$

If the result is positive, it is an increase.
If the result is negative, it is a decrease.

5. If one termite can destroy 1.2mg of wood per day, how many kilograms of wood can 10 termites destroy in 1 week?

6. What is 70% of 640?

7. 400 kilograms = _____milligrams

8. 600 mm = _____ cm

9. 25 MW = _____ W

Write the following in scientific notation

10. 394 billion

11. 0.000070202

12. If I can run 6km in 24 minutes, how many cm can I run in 5 hours?

13. Fourteen percent of a 55,000 acre forest is destroyed by the invasive pine weevil. How many acres of the forest were not destroyed?

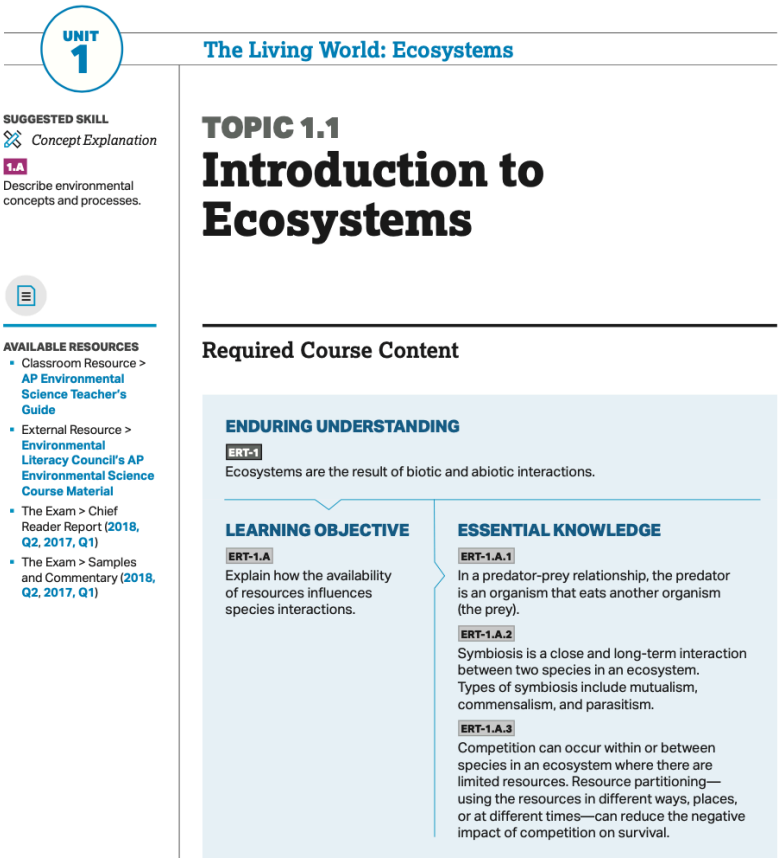
14. A pesticide was sprayed on a portion of a forest. The pesticide killed 25,000 termites. This is 71% of the local termite population. What is the total termite population?

Now that you've attempted all of these problems, review your answers here. (Try the problems before looking at the answers!!) You should be familiar with these math skills from previous math classes. If you struggled with the problems and are still confused after looking at the key that's okay! Everyone enters the course with different strengths and skill levels, you just have to be willing to put in the effort to find success in our class!

Part 5: Photo Search Challenge

Part of the interesting thing about this course is seeing how it fits into our everyday lives. There are nine units we will cover throughout the year, each unit is broken down into *Topics*. Every topic has *Learning Objectives*, which are further detailed by the *Essential Knowledge.*

Here is an example for a topic from Unit 1:


UNIT 1

The Living World: Ecosystems

SUGGESTED SKILL

Concept Explanation

1.A

Describe environmental concepts and processes.

AVAILABLE RESOURCES

- Classroom Resource > AP Environmental Science Teacher's Guide
- External Resource > Environmental Literacy Council's AP Environmental Science Course Material
- The Exam > Chief Reader Report (2018, Q2, 2017, Q1)
- The Exam > Samples and Commentary (2018, Q2, 2017, Q1)

TOPIC 1.1

Introduction to Ecosystems

Required Course Content

ENDURING UNDERSTANDING

ERT-1

Ecosystems are the result of biotic and abiotic interactions.

LEARNING OBJECTIVE

ERT-1.A

Explain how the availability of resources influences species interactions.

ESSENTIAL KNOWLEDGE

ERT-1.A.1

In a predator-prey relationship, the predator is an organism that eats another organism (the prey).

ERT-1.A.2

Symbiosis is a close and long-term interaction between two species in an ecosystem. Types of symbiosis include mutualism, commensalism, and parasitism.

ERT-1.A.3

Competition can occur within or between species in an ecosystem where there are limited resources. Resource partitioning—using the resources in different ways, places, or at different times—can reduce the negative impact of competition on survival.

Your challenge is to take a picture that represents your choice of <u>FOUR</u> units. For each picture you will need to:

1. Identify the topic it represents
2. Identify the learning objective for the topic.
3. Explain how/why it represents that topic

Your work should be compiled into Google Slides. You should use this template that is assigned on Google Classroom. Simply delete the other units so you are left with the 4 units you decided to focus on.

The pictures must be your own. You will either need to show your face in the photo (selfie style) or include an identifying object (a piece of paper with your name, a small object like a toy car, etc).

All of the units, topics, and learning objectives can be found in the Course Exam Description (CED). Here is a copy of the CED in google docs. Before you begin taking pictures, browse through the CED to see what type of content you should be looking for.