

POB HIGH SCHOOL

Pre-AP Biology Summer Packet

This packet is due on 9/16/2024.

All work should be handwritten- please either print out the packet or complete it on looseleaf/graph paper.

Welcome to Pre-AP Biology! You have chosen a challenging but worthwhile biology course. While we have taken the time to attempt to make this course as enjoyable for you and us, be aware that this class will require studying EVERY DAY, HOMEWORK, and OUT OF CLASS ASSIGNMENTS. You will be expected to study and be prepared for class every day. To demonstrate your level of commitment to Pre-AP Biology, you will first need to complete a series of summer assignments. You should consider it meaningful and worthy of your time. Please ensure all work is completed by Monday September 16th and is HANDWRITTEN (no typed responses will be accepted).

I hope you have a great summer and if you have any questions, please email us at ecangelosi@pobschools.org or hrause@pobschools.org . We normally check my email once or twice a week in the summer and will respond ASAP.

ITEMS TO BE COMPLETED AND TURNED IN ON THE FIRST DAY OF CLASS

- a. Metric Conversions Page
- b. Graphing Practice
- C. Journal Activity

Name _____ date _____ hour _____ score _____

Part A: Metric Conversion Practice

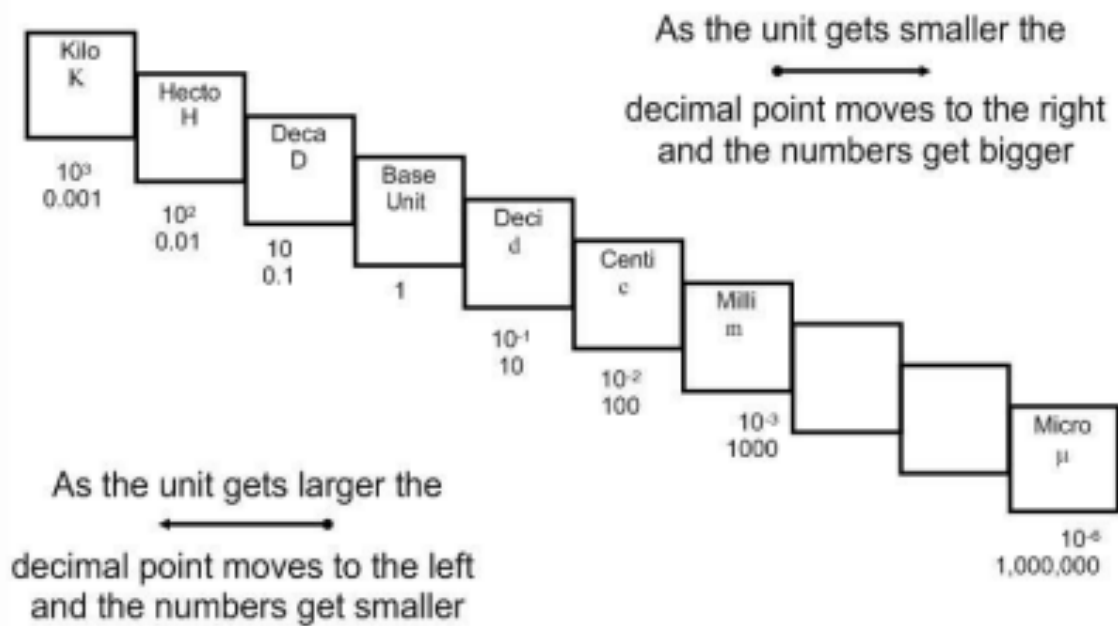
Please watch the video below on metric conversion. Then, using the conversion ladder provided, convert the following amounts. SHOW WORK ON SIDE!

Helpful Resources:

[Website](#) - Written instructions to convert metric units

[Metric Conversion Video](#) - To assist in converting metric units

Metric Conversion Ladder



1. 1 g = _____ mg
2. _____ mm = 1 cm
3. 1 kL = _____ L
4. _____ cm = 1 m
5. 1 g = _____ kg
6. 1 m = _____ μm
7. _____ mg = 10.56 g
8. 1 km = _____ mm
9. _____ ml = 1 L
10. 1.2kg = _____ g
11. 4 cm = _____ mm
12. 800 m = _____ km
13. 550 mg = _____ g
14. 250 mL = _____ L
15. _____ cm = 4.5 m
16. 35.7 g = _____ mg
17. _____ kg = 23.5 g
18. 1357.9 mm = _____ μm
19. 2468.5 g = _____ kg
20. 0.97532 km = _____ mm

- _____ 21. Sarah rides her bike 3.5 km to the store. Kim rides 852 meters to the same store. Who rides further?
- _____ 22. Sam's plant grew 325 mm during his experiment. Trey's plant grew 43.6 cm. Who's plant grew the tallest?
- _____ 23. Kelsey's puppy ate 3.89 kg of puppy food in one week. Robby's dog ate 3986 grams of puppy food in the same week. Whose puppy ate more food?
- _____ 24. Jose's fish tank holds 43.2 L of water. Terin's fish tank holds 324 dL of water. Who's fish tank holds the most water?
- _____ 25. Desi takes 250 mg of medicine twice a day. Rochelle takes 1.5 grams of the same medicine 3 times each day. Who has the highest dosage of medicine?

Circle or write each unit that is the largest of the group.

26. millimeter or centimeter
27. kilometer or decimeter
28. liter or milliliter
29. centigram or gram
30. milligram or kilogram
31. meter or millimeter or centimeter
32. milligram or kilogram or gram
33. dekagram or milligram or centigram
34. centimeter or decimeter or meter
35. milligram or gram or centigram
36. liter or milliliter or kiloliter
37. mg or g or cg
38. km or m or cm
39. kg or mg or cg
40. cL or kL or mL

What is the best unit to measure each of the following? (circle or write your response)

41. Amount of water in fish tank. (milliliter liter kiloliter)

42. Mass of a pencil. (milligram gram kilogram)

43. How thick a dime is. (millimeter meter kilometer)

44. Amount of soda in a can. (liter milliliter kiloliter)

45. Height of door. (kilometer meter centimeter)

46. Length of a dollar bill. (meter millimeter centimeter)

47. Distance to the restroom. (millimeter meter kilometer)

48. Carton of milk at lunch. (liter kiloliter milliliter)

49. Mass of an ant. (gram kilogram milligram)

50. Your body mass. (gram kilogram milligram)

Name _____ date _____ hour _____ score _____

Part B: Graphing Practice

For each graph below, please follow the instructions and use the helpful resources to review determining independent and dependent variables, labeling axes, creating a scale, and graphing data.

GRAPH CONSTRUCTION

LINE GRAPHS

- show relationship between 2 sets of numerical data.
- How does ___ affect ___?

BAR GRAPHS

- show relationship between categories and 1 set of numerical data.

VARIABLES

- Independent variable (IV)
 - factor changed by investigator.
- Dependent variable (DV)
 - factor that responds to what the investigator does.
 - DEPENDS on what is changed by investigator.

CONSTRUCTING A LINE GRAPH.

1. Identify the variables as dependent or independent.
2. label Independent variable on X axis
3. label Dependent Variable on Y axis
4. Determine numbering intervals for variables (must be a consistent interval). Use as much space as you can on the graph (up and down).
5. Plot points and connect them.
6. Create a descriptive title.

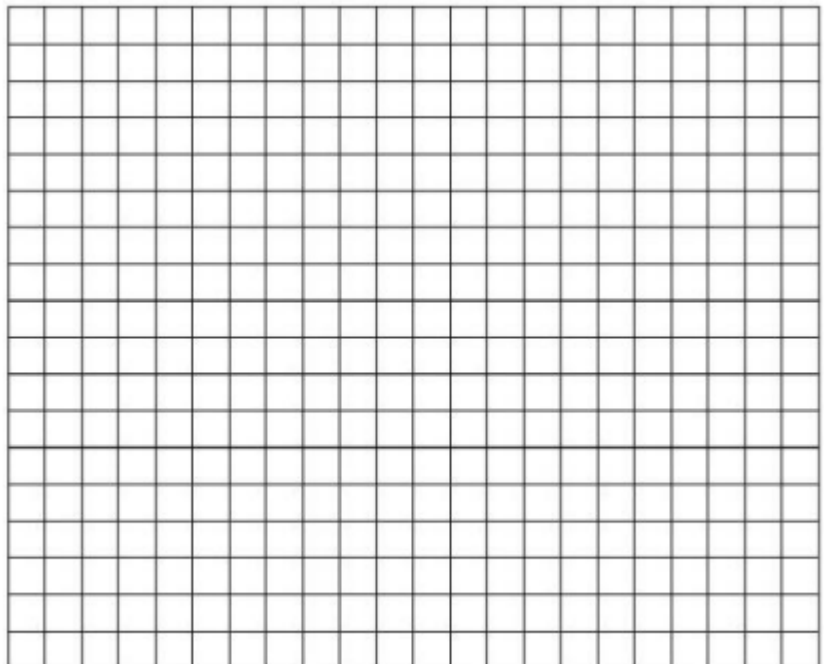
Helpful Resources

[Video](#)- Introduction to scientific graphing

[Math is fun](#) - Website with introduction to graphing

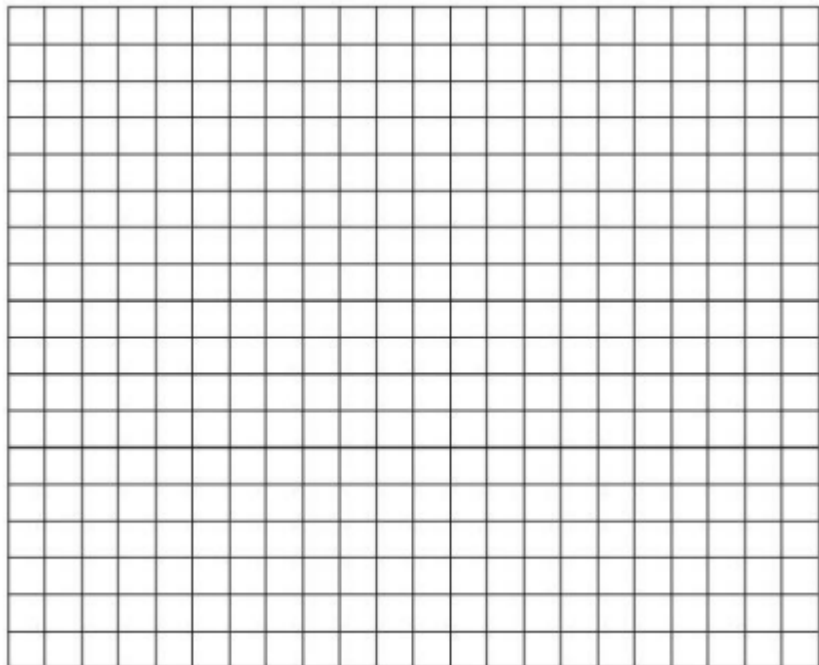
Make a line graph for the set of Rainforest data below. The data reflects the amount of rainfall during a 10 hour period. Follow the graphing guidelines discussed earlier.

Rainfall (ml)	Time (hr)
2	1
1	2
3	3
5	4
6	5
2	6
13	7
1	8
1	9
2	10



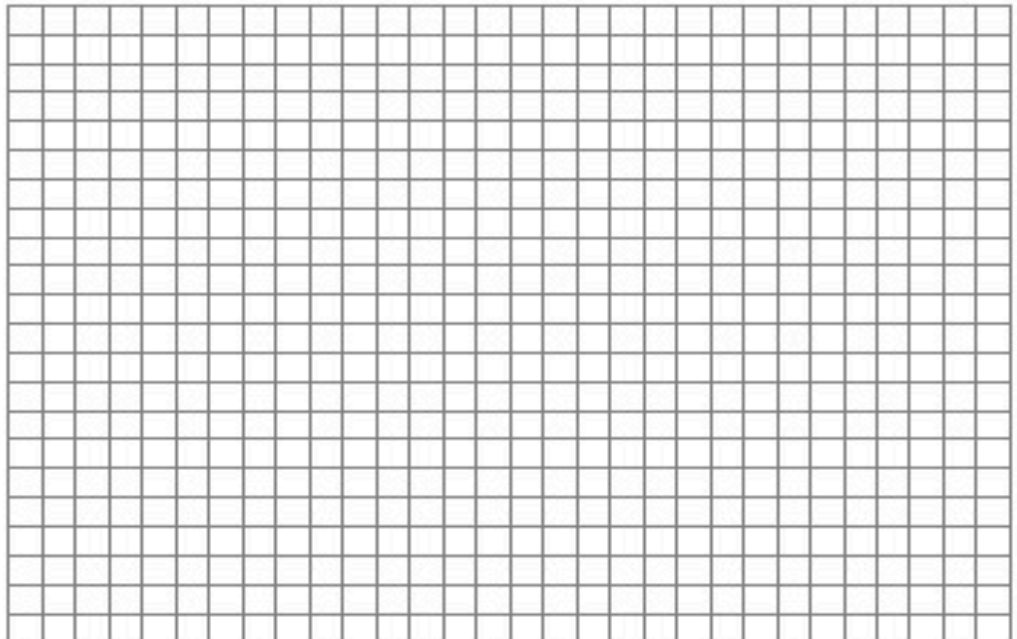
Make a line graph for the set of Rainforest data below. The data reflects temperature during a 10 hour period. Follow the graphing guidelines discussed earlier.

Temperature (°C)	Time (hr)
32	1
33	2
35	3
36	4
37	5
39	6
41	7
40	8
35	9
34	10



Graph the data below. Make a double bar graph. Color code your bars and include a key for your graph. Be sure to follow the graphing guidelines discussed earlier.

Month	Mean Daily Max. Temp (°C)	Mean Daily Min. Temp (°C)
January	31.7	18.7
February	30.9	18.6
March	29.2	16.6
April	25.1	12.6
May	20.2	8.9
June	16.6	6.1
July	16.1	4.7
August	17.8	5.8
September	21.1	8.5
October	24.8	12.1
November	27.9	14.7
December	31.1	12.1



Part C: Jornal Activities x2

Choose **two** articles from the list of choices linked below and complete **one** of the listed activities for each article. All written assignments (except the crossword and infographic) are to be handwritten. You may NOT choose the same option for more than 1x reading. Work that is found to be plagiarized or developed by AI such as chatgpt will receive no credit. If for some reason the links don't work, please try googling chem matters and the name of the article.

PICK TWO ARTICLES TO READ AND CHOOSE ONE ACTIVITY TO COMPLETE FOR EACH ARTICLE (SEE RUBRIC BELOW)

1. Choose three interesting quotes or passages from the article and write a 3-5 sentence reflection for *each* in which you explain their meaning and/or importance.
2. Write down five things you learned by reading this article. Which of these five do **you** think is the *most important* to know? Explain.
3. It's important to remain critical and question the ideas presented in any article, rather than take information at its "face value". Outline one of the claims in the article and explore it from another perspective (e.g., an economic perspective, political perspective...). Is there another "side" of the story?
4. Identify at least 20 new words in the selected article (These words do not need to be "science" specific). Hand-write these words and their definitions on loose-leaf. Create a crossword puzzle using a minimum of 20 new words.
5. Design an infographic/poster presenting the ideas you feel are most important that could be used to teach other high school students.
6. Sometimes an article is a call to action. If that is the case in the article you chose, describe this call, and detail the *specific* actions **you** believe need to be taken, and by who.

Journal Articles:

📄 2022 Leaves of Three, Let it Be- The Itchy Chemistry of Poison Ivy.pdf

📄 2023 Whats Chocolates and How does Chemistry Inspire Such Cravings.pdf

📄 2021 How to Make Fashion Sustainable.pdf

📄 2022 Bugs and the Future of Meat.pdf

📄 2020 Capturing Carbon.pdf

📄 2021 What's The Deal With Climate Change?.pdf

Rubric

Score	Description
5	<ul style="list-style-type: none"> ● Writing is strong and very organized ● Excellent grammar mechanics and spelling ● Clear and concise statements ● Writer provides strong and compelling evidence and reasoning for ideas ● Cites sources correctly, both parenthetically and on a references page
4	<ul style="list-style-type: none"> ● Writing is clear and organized ● Good grammar mechanics and spelling ● Clear statements ● Writer provides evidence and justification for ideas ● Cites sources correctly, both parenthetically and on a references page
3	<ul style="list-style-type: none"> ● Writing is fairly clear and some organization is evident ● Minimal grammar mechanics and spelling ● Clear statements ● Writer provides some evidence and reasoning for ideas ● Citations include minimal errors parenthetically and/or on a references page
2	<ul style="list-style-type: none"> ● Writing is somewhat unclear and lacks organization ● Poor grammar mechanics and spelling ● Confusing, choppy, and/or incomplete sentences ● Writer shows little attempt to include evidence and reasoning for ideas ● Citations include major errors parenthetically and/or on a references page
1	<ul style="list-style-type: none"> ● Writing is very unclear and unorganized ● Very poor grammar mechanics and spelling ● Sentences lack structure and are unreadable at times ● Writer shows no attempt to include evidence and reasoning for ideas ● No attempt to cite sources
Grade	