



## Summer Assignment Biology

**Directions:** For this summer project you will be familiarizing yourself with some of the terms and concepts you will study in Biology. As you will see when you start the course, biology will cover many, many terms and concepts, therefore this is an opportunity to get a head start. If the instructions seem long, its because I want to give you as much information as possible. The actual project is quite easy and should not take too long.

**Academic Integrity:** All work should be completed independently and without the assistance of unapproved resources. Any work violating academic integrity will be subject to a “0” and any additional consequences as outlined in the Knox Academic Integrity Policy attached to this assignment.

**Due Date:** Your work is due the first day of your Biology class. All late work will be subjected to a grade reduction or penalty as outlined in the course syllabus and copied below:

*All major assignments not submitted on the due date will face a 10% deduction of max points per day for up to five (5) days and up to a 50% deduction.*

*Summer Assignments for AP Classes that are not submitted on time will result in the student being dropped from the course.*

**If you have any questions or concerns regarding this assignment, please contact the Dean of Academics, Mrs. Pergola, at [dpergola@knoxschool.org](mailto:dpergola@knoxschool.org) .**

This is much like a scavenger hunt. You will be selecting **35 items from group 1** (2 points each) and **10 from group 2** (3 points each) Total points = 100.

For each item you select you will do the following:

- 1) Take an original photo of the item that shows you understand the concept or shows the item itself.
- 2) Find the definition of that item
- 3) Explain how the photo represents that item.
- 4) Create a slide for that item that includes the photo and the info described above.
- 5) In addition the slide should contain the slide number (1 to 50) and your name (first and last)
- 6) When completed share the slides (google Slides) with


Dr. Gonzalez. - [jgonzalez@knoxschool.org](mailto:jgonzalez@knoxschool.org)

## EXAMPLE SLIDE

### Petals

Definition: Petals are usually found in flowers and are modified leaves that surround the reproductive parts of a flower. They are usually colorful to attract pollinators.

Example: In this photo the yellow structures are the petals.



Slide 1 - Dr. G

## THE PHOTOS

Each photo has to be an **original**. Which means YOU must take the photo. **Photos from the internet are not allowed**. You also can't take a photo of a photo. In order to show that you took the photo you must include either your face, or an identifying item that appears in each photo. It should be something small that **has your name on it**. It can be a toy, a personal item like a brush, even a photo ID is OK. However it must have your name on it. The same item must appear in all your photos and It must appear clearly enough that I can read your name. In the sample above I used a whistle and wrote my name on it. If it is not possible to take a photo, a colored drawing (also of your own creation) will be accepted

**BE CREATIVE:**

If you choose an item that is internal to a plant or animal, like the term “xylem”, you could submit a photograph of the whole organism or a close up of one part of the organism, and provide an explanation of what xylem is and where xylem is found in your specimen.

**NATURAL ITEMS ONLY:**

All items must be from something that you have found in nature. Take a walk around your yard, neighborhood, and town. **DON'T SPEND ANY MONEY!** Research what the term means and in what organisms it can be found... and then go out and find examples.

**TEAM WORK:**

You may work with other students, but each student must turn in his or her own work with a unique set of terms (in other words, **DO NOT** use the same exact terms as your team members). Working with other students means brainstorming, collaborating, discussing, going on collecting trips together. It doesn't mean using the same items! There are many choices (more if you're creative), providing plenty of variety.

**GUIDELINES**

- Please take care in **NOT DESTROYING** any habitats as you collect or visit.
- Do not remove any item from the habitat in which it is found. That means you must take your picture in the field, not bring the item home with you to photograph. A photograph of an item from the list can only count once.
- There are many terms. If you learn about them, you can group them together. For example you can group genotype and phenotype under a genetics category. - This will make finding and collecting objects easier.
- Familiarize yourself with the items in both groups. This way if you spot something, you know to take a photo.
- Do your research beforehand -- use your book, internet or library references to determine what some of the photos can be.

## BIOLOGY SCAVENGER HUNT TERMS

Below are the items you are to “collect” (photograph). An individual organism in a photograph can only be used once. You must take all photos yourself; **no Internet photos! And don't forget to include your ID Item.**

### Group 1 - pick 35 items

1. adaptation of an animal
2. adaptation of a plant
3. Adhesion (property of water)
4. Aerobic respiration
5. Amino acid
6. amniotic egg
7. Autotroph
8. Anaerobic respiration
9. analogous structures
10. archaeobacteria
11. asexual reproduction
12. ATP
13. bilateral symmetry
14. biological magnification
15. Calvin cycle
16. Cellulose
17. Chlorophyll
18. Chromosome
19. codominance
20. Coevolution
21. cohesion
22. Commensalism
23. cuticle layer of a plant
24. detritivore
25. Decomposer
26. diffusion
27. disaccharide
28. enzyme
29. epithelial tissue
30. ethylene
31. eubacteria
32. eukaryote
33. fermentation
34. Gametophyte
35. Gene expression
36. genetic variation within a population
37. genetically modified organism
38. glucose
39. glycogen
40. homeostasis
41. hydrophilic
42. hydrophobic
43. introduced species
44. Incomplete dominance
45. Innate behavior
46. Invasive species
47. keystone species
48. Krebs cycle
49. lipid used for energy storage
50. mutualism
51. phenotype
52. Phloem
53. Phospholipid
54. photosynthesis
55. Pollinator
56. Point mutation
57. polysaccharide
58. population
59. Prokaryote
60. protein
61. radial symmetry (animal)
62. seed dispersal (animal, wind, water)
63. succession
64. Taxis
65. transpiration
66. tropism
67. unicellular organism
68. xylom

## Group 2 - pick 10

In this group most items include 2 or more objects. The photos must be different from the ones used above and where possible show the organisms in the same picture.

1. Find and name two organisms that belong to the same phylum
2. Find a parasite and its host. (2 different photos can be used)
3. Find and name three different heterotrophs. Make sure to show - specifically why they are labeled as heterotrophs.
4. Name two organisms that are in competition with one another. What are they competing for?
5. Find two examples of adaptations being used by organisms to prevent dehydration.
6. Find 2 invertebrates.
7. Find an example of a predator/prey relationship.
8. Find members of and describe what makes them a population.
9. Find a dominant trait and compare it to expression of its recessive trait
10. Find and describe a defense mechanism.
11. Find an organism that carries out photosynthesis.
12. Find 2 abiotic factors and how they are affected by 1 abiotic factor
13. Find an organism with an exoskeleton.
14. Find and list three organisms that make a food chain.
15. Find two structures that are homologous to one another.
16. Pick any living organism and describe its niche.
17. Find an example of a symbiotic relationship.
18. Find an organism that is doing cellular respiration. Explain using the formula
19. Find an organism that is responding to the environment. Describe its response. \_
20. Find an organism that appears to be a plant but is incapable of doing photosynthesis.
21. Find an adaptation of an animal and how this adaptation has helped with its survival
22. Find an adaptation of a plant and how this adaptation has helped with its survival
23. Show an example of a biotic and abiotic interaction
24. Show an example of two phenotypic expressions expressed by the same gene.
25. Create a model (on paper) showing a phenomenon that occurs in nature. Describe how this model is representative.