

Honors Biology Summer Assignment

Biological Scavenger Hunt

Directions: These directions are lengthy so that you have detailed instructions. Please read them carefully. Remember, this is an honors level class. You will not automatically pass the project just because you submit one.

Below, you have several sets of clues. For each set, define and research the terms to help you identify the proper answers for the clues.

- Completing the clues
 - Define the terms
 - Define the words in the first bullet of each set
 - Define any bold faced items in the clues
 - Reference websites are provided to help you define the terms. Do not copy and paste.
 - Picture taking guidelines
 - You may use either digital or film photography.
 - You need to be in the pictures. This shows that you actually found the items in the real world, not just on the internet. Some pictures may be hard to get your face in the photo because of the nature of the specimen (ex: the beetle is almost ready to fly away). You are allowed up to 5 pictures where you are not in the photo.
 - Photos should have the specimen large enough to be easily identified.
 - Photos should be focused.
 - No animal or plant should be harmed when taking the photo.
 - If the clue contains a question or asks for an explanation, answer in complete sentences using formal academic language.
 - Identify the main specimen(s) in the photo. Common names are fine. For instance, you could identify a tree as “pine tree in my yard”.
- Submitting the project
 - Complete a google docs or google slides file.
 - Submit by sharing with sneal@g.bwschools.net
 - Organize and number all clues, definitions, answers and explanations.
 - You may also submit a paper version (portfolio or poster) if necessary
 - The project will be due the second day of school. The first day, the teacher will respond to questions about the work.
- Questions: Email your teachers at their school email address. It’s summer time, so response may not be same day.
- Hint: Remember that humans are animals!

Set 1

- Reference Websites:
 - http://www.diffen.com/difference/Autotroph_vs_Heterotroph
 - http://www.biology.arizona.edu/cell_bio/tutorials/pev/main.html
- Define: organism, heterotroph, autotroph, eukaryote, and prokaryote.
- Clue 1: Find and take a picture of an **angiosperm**. Is this organism a heterotroph or an autotroph? Is this organism a eukaryote or prokaryote?
- Clue 2: Find and take a picture of an **arthropod**. Is this organism a heterotroph or an autotroph? Is this organism a eukaryote or prokaryote?
- Clue 3: Find and take a picture of a **chordate**. Is this organism a heterotroph or an autotroph? Is this organism a eukaryote or prokaryote?
- Clue 4: Find and take a picture of an organism whose cells have a cell wall made of **chitin**. Is this organism a heterotroph or an autotroph? Is this organism a eukaryote or prokaryote? (**Caution: not all things made of chitin are cell walls. Make sure you are finding the correct organism!**)
- Clue 5: Find and take a picture of a **gymnosperm**. Is this organism a heterotroph or an autotroph? Is this organism a eukaryote or prokaryote?

Set 2

- Reference Websites:
 - <http://www.learner.org/courses/essential/life/session2/closer4.html>
 - <http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWlatin.html>
- Define: taxonomy, kingdom*, domain*, phylum*, species, binomial nomenclature (*use definitions related to taxonomy)
- Clue 6: Find and take a picture of an earthworm. To what domain, kingdom, and phylum does this organism belong?
- Clue 7: Find and take a picture of a moss. To what domain, kingdom, and phylum does this organism belong?
- Clue 8: Find and take a picture of a **basidiomycota**. To what domain, kingdom, and phylum does this organism belong?
- Clue 9: Find and take a picture of **algae**. To what domain and kingdom does this organism belong?
- Clue 10: Find and take a picture of a **mollusk**. To what domain, kingdom, and phylum does this organism belong?
- Clue 11: Take a picture of any organism for which you can find the scientific and common names. Include both names in the clue. Identify the organism's genus. What are the capitalization and formatting rules of writing a scientific name?
- Short answer: Why do you think were you not required to take pictures of organisms in domains Bacteria and Archae?

Set 4

- Reference websites:
 - <http://www.biology101.org/biologystudyguides/buildingblocksoflife.php>

- Define: macromolecules, carbohydrates, lipids, proteins, nucleic acids
- Clue 12: Take a picture of 2 foods in your kitchen that are composed of **saccharides**. To which group of macromolecules do these foods belong?
- Clue 13: Take a picture of 2 foods in your kitchen that composed of **amino acids**. One needs to be a plant and the other animal (unless you are a vegetarian household!) To which group of macromolecules do these foods belong?
- Clue 14: Take a picture of 2 foods in your kitchen: one a **saturated fat** and one an **unsaturated fat**. Identify which sample is saturated and which is unsaturated. To which group of macromolecules do these foods belong?

Set 6

- Reference websites:
 - <http://eschooltoday.com/ecosystems/levels-of-organisation-in-an-ecosystem.html>
 - <http://eschooltoday.com/ecosystems/ecosystem-trophic-levels.html>
- Define: Ecology, population, community, ecosystem, trophic levels
- Clue 15: Take a picture of a local ecosystem. Either in the picture or on a separate paper you need to identify:
 - An individual organism
 - A specific population
 - The organisms in a community
 - 2 **abiotic** and 2 **biotic** components of the ecosystem.
- Clue 16: Take a picture of a meal you might eat. For at least 3 parts of the meal identify what type of consumer/trophic level you will be when you eat that item.