

Biology Final Scavenger Hunt Items:

- _____ 1. An example of a polar molecule. Sketch the molecule, label the atoms involved, and indicate the polarity.
- _____ 2. Something that contains things surrounded by a phospholipid bilayer. Sketch the structure of a phospholipid bilayer.
- _____ 3. A sample of the energy-yielding biomolecule that might be found in the central vacuole of a plant. Sketch the structural formula, and tell the process by which the molecule is formed and write the chemical equation for the process.
- _____ 4. A substance made of amino acids. Define *amino acid*, sketch the structural formula, and tell which type of biomolecules are composed of amino acids.
- _____ 5. A structure containing an organelle that carries out photosynthesis. Sketch the organelle and label the parts. What is the source of the energy used in photosynthesis?
- _____ 6. A sample of matter which contains only one kind of atom. Identify the kind of atom with its symbol, atomic number, atomic mass and number of protons, neutrons, and electrons.
- _____ 7. An organism that carries out anaerobic fermentation. Explain, and list a product of anaerobic fermentation.
- _____ 8. The document providing information about all known elements. Mark off areas representing different groups of elements and tell the properties of each group.
- _____ 9. An object containing the substance with this chemical formula: $C_{55}H_{72}O_5N_4Mg$.
Give the name this substance and tell its function in the object.
- _____ 10. An example of an organism that carries out aerobic respiration. Explain how you know this organism carries out aerobic respiration. List the stages in aerobic respiration and briefly describe what is produced in each.
- _____ 11. Hand-drawn diagrams of a cell in the stages of mitosis. Label each stage. Label at least one homologous chromosome pair.
- _____ 12. A likeness of a cell that is produced as a result of meiosis. Show, in the diagram, how this cell is different from a cell produced by mitosis. Explain.
- _____ 13. A compound with at least 3 different elements. Give the common name and correct chemical formula.
- _____ 14. An enzyme. Identify and explain the functions of enzymes, and their fate in unfavorable conditions. (What conditions are unfavorable?)
- _____ 15. A substance with strong hydrogen bonds. Sketch the molecule and label the hydrogen bonds.
- _____ 16. Sketch of a purine and a pyrimidine that pair in the larger molecule. Explain how this is known.
- _____ 17. A plant that does not have roots at any stage in its life cycle. Label the structure that anchors the plant to the earth.
- _____ 18. A solution from which water would diffuse *into* a plant cell placed in the solution. Describe the solution and explain why water would diffuse into the cell.
- _____ 19. A solution from which water would diffuse out of a plant cell placed into the solution. Describe the solution and explain why water would diffuse out of a cell.
- _____ 20. An adaptation. Explain why it is an adaptation, using terms from your notes on Impact of Mutations
- _____ 21. An animal-like protist. Explain clearly why the protist is animal-like.
- _____ 22. An item worn in lab whenever chemicals, glassware, or heat are present. (You may borrow this object from the lab for your photo)
- _____ 23. A gymnosperm. Define gymnosperm. Label with both the common name and specific epithet.
- _____ 24. An angiosperm. Define angiosperm. Label with both the common name and specific epithet.
- _____ 25. A substance with high surface tension. Explain surface tension and its role in the living world.
- _____ 26. A fern. What characteristics define a fern? Label with both the common name and specific epithet.
- _____ 27. A hypotonic solution. Explain what it is and why it is hypotonic.

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- _____ 28. A living thing that is considered amniotic. Explain why the living thing is considered to be amniotic, and explain the significance.
- _____ 29. A product of translation (the kind that occurs after transcription.) Explain.
- _____ 30. An example of an energy transformation. Label the source and the types of energy involved. Indicate where the transformation itself occurs.
- _____ 31. A model of the structure necessary for life as proposed by Watson and Crick. Label 2 types of bonds and 3 different types of molecules that compose the structure.
- _____ 32. Hand-sketches diagram of a cell with structures involved in protein synthesis clearly labeled.
- _____ 33. An environment in which you might find members of the Archaeobacteria (Domain Archea.) Explain.
- _____ 34. A sketch of an organism that undergoes chemosynthesis. Where is this organism found?
- _____ 35. An example of a living thing. List the 6 characteristics of living things.
- _____ 36. A substance with a low pH. Define pH and tell the pH of the substance. How would this substance affect an enzyme?
- _____ 37. An example of a structure used for support in a vertebrate. To which class did the vertebrate who supplied the structure belong?
- _____ 38. A sample of a substance produced by a ribosome. Explain.
- _____ 39. A hand-sketches representation of the structure providing the mechanism Darwin needed (but did not know about) for his theory of natural selection. Explain.
- _____ 40. A handwritten list, with descriptions, of the 5 types of evidence supporting evolution.
- _____ 41. A likeness of an animal used as an example in the Theory of Inheritance of Acquired Characteristics. Explain, including the name of the scientist proposing this theory.
- _____ 42. An example of a transition element. Label with number of protons, neutrons, and electrons in one atom of this element.
- _____ 43. A multicellular organism. Define multicellularity and explain how you know this organism is multicellular.
- _____ 44. A reproductive part from a plant having at least 7 traits on separate chromosomes. Explain the importance of those 7 independent traits in Gregor Mendel's work.
- _____ 45. For at least 2 appropriate characteristics, give the phenotype and possible genotypes of the item, above (Item # 46).
- _____ 46. A Punnett square documenting the phenotype of a pea plant that can produce both purple and white flowered offspring. Explain.
- _____ 47. A eukaryotic animal cell. Explain how the eukaryotic cell is different from a prokaryotic cell.
- _____ 48. A eukaryotic plant cell. Explain how the eukaryotic plant cell is different from a eukaryotic animal cell.
- _____ 49. A sketch of a heterotrophic protist, made at a magnification of 400X. Include the nucleus and 2 other visible organelles; label all 3. Explain how you calculated the magnification. What is the name of the organism?
- _____ 50. A sketch of a photosynthetic protist. Tell briefly how this protist maintains homeostasis when placed in a hypotonic solution. Describe the role of active transport and passive transport.
- _____ 51. The humerus from a chicken. Explain how this bone is an example of an adaptation.
- _____ 52. An adaptation other than a forelimb. Explain *thoroughly* how your item is an adaptation.
- _____ 53. A substance with the following properties: high specific heat and surface tension. Explain why the property of high specific heat is important to living things.
- _____ 54. A structure, between 2.5 and 3.0 cm in length, that contains xylem and phloem. Indicate where you would find the xylem and phloem and write the length of the structure.
- _____ 55. An explanation and sample calculation showing why cells are limited in size.
- _____ 56. A sketch of a chloroplast and a mitochondria. Label any similarities. List the similarities, and briefly describe them.
- _____ 57. A substance produced by autotrophs that provides energy to both autotrophs and heterotrophs. Draw the structure of the substance and indicate specifically where the energy is stored.

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- _____ 58. Sketch the basic structure of the molecule produced by and used by both heterotrophs and autotrophs that is used to store energy. Indicate on the sketch how the energy is released and restored to the molecule.
- _____ 59. The sequence of amino acids, written out in order, that corresponds to this sequence of DNA:
TAC CTC GTA TTG ATC
- _____ 60. A normal human karyotype. Label the sex chromosomes. Explain how you would determine if this karyotype were from a male or a female.
- _____ 61. A karyotype of a person, either male or female, having a chromosomal mutation. You may use a normal karyotype and sketch the modification. What chromosome is missing or extra?
- _____ 62. A carbohydrate polymer. Sketch the monomers. What biomolecule are they?
- _____ 63. A protein polymer. Sketch the monomers. What biomolecule are they?
- _____ 64. A substance that is moved through a cell membrane by active transport. Explain.
- _____ 65. An example of biological evolution that can currently be observed. Explain.
- _____ 66. An organism that does glycolysis. What is glycolysis, and how does glycolysis happen in the organism?
- _____ 67. The animal that is the Waynesfield-Goshen High School Mascot, classified to Genus and species.
- _____ 68. A sample of phenylethylamine, in the original wrapper. Explain.
- _____ 69. A Punnett square showing a sex-linked characteristic. Explain.
- _____ 70. A plant or animal showing incomplete dominance. What is incomplete dominance? How is incomplete dominance shown in this individual?
- _____ 71. A cladogram including these organisms: horse, cow, termite, yeast, geranium, donkey, platypus, and human. Include correct characteristics.

Name _____

Class period _____

Total number of slides in show: _____

Total number of actual items used to complete project: _____

(You likely used some items for more than one slide. Count each item only once, no matter how many slides on which you used the item.)

If an item or substance is used for more than 1 photo, list the slide numbers showing the same substance or item below. You may use more than 1 substance or item more than 1 time.

Item _____ slide #s _____

Item _____ slide #s _____