

Pre-AP Biology Test #1 – Study Guide

The test will be multiple choice, true/false, identification questions, matching, fill in the blank, short answer, and essay. (Short answer and essay questions should be answered in **complete sentences**, if you fail to do so you will not receive full credit.)

Resources to study from: Notes packet, science knowledge survey, peanut activity, safety rules, design detective, and cancer warrior video.

- Define science.
- Identify the two types of data.
- Distinguish observation and inference.
- Define hypothesis and be able to form a testable hypothesis in the correct format.
- Know the steps of the scientific method in order.
- Apply the scientific method to everyday life
- Describe the set up of a controlled experiment; identify the different types of variables.
- Know the list of the characteristics of life.
- Distinguish unicellular and multicellular organisms.
- Distinguish sexual from asexual reproduction.
- Distinguish growth and development.
- Explain how the sun is the source of energy for most living things.
- Distinguish between biotic and abiotic factors.
- Define and explain homeostasis and its importance.
- Describe the mechanism of homeostasis for the following conditions: human body temperature, human blood sugar levels (make sure you know the roles of both insulin and glucagon), plant water content (make sure you know the relationship between guard cells and the opening/closing of stomata), and at least one additional example of homeostasis.
- Explain how a break down in homeostasis can lead to disease or death.
- Distinguish these terms: adaptation, natural selection, and evolution.
- Know what angiogenesis and angiogenesis inhibitors are and how they relate to cancer (and battling cancer).
- Be able to recognize errors in safety precautions/rules.
- Be able to explain safety rules, identify safety equipment, and explain proper behaviors in lab situations.
- Be able to take situations and identify which property of life is being described.

Terms you should know:

Science	Biology	Homeostasis
Observation	Sexual reproduction	Insulin
Data	Asexual reproduction	Glucagon
Inference	Growth	Stomata
Quantitative data	Development	Guard cells
Qualitative data	Organic molecule	Adaptation
Hypothesis	Deoxyribonucleic acid	Evolution
Theory	Metabolism	Stem cells
Controlled experiment	Photosynthesis	
Constants (Controlled variables)	Decomposers	Cancer
Independent (Manipulated) variable	Biotic factors	Angiogenesis
Dependent (Responding) variable	Abiotic factors	Chemotherapy
Control group	Stimulus	Thalidomide
Experimental group	Response	Metastasis