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Unit One - Semester 1, Biology

Name: _____

Success Criteria...

	<i>I can...statements...</i>	<i>Rating ____</i>
1	Explain the characteristics that all living things share	
2	Demonstrate and give examples of homeostasis	
3	Explain and give examples of positive feedback	
4	Explain and give examples of negative feedback	
5	Give examples of each level of the biological hierarchy	
6	Describe the organization of living things from the atom to the biosphere.	
7	Explain the relationship between an independent variable and a dependent variable in an experiment	
8	Demonstrate an observation for a scientific process.	
9	Explain and give an example of an inference in regards to a scientific process	
10	Identify the parts of a feedback loop	
11	Relate life processes and features to within-class experiments.	
12	Apply the meaning of word roots to learn new vocabulary.	

The Work this week...check next to the things you completed...goal for this unit is 80 points (MAX IS 120)

	Roots quiz work(10 points)		Notebook Entries (12-15)		Practice test (20)
	Roots quiz (10 points)		Parts of a homeostasis loop (5-10)		Proved 11 life properties to Mr. Bartsch (11)
	Retrieval Practice (10 pts)		Negative feedback (5-10)		Teach someone (5)
	Lab - Life characteristics and processes (10-20)		Positive feedback (5-10)		Hierarchy of life example (10 to 15)
	Homeostasis girl (10-15)		Life property - cool project (20)		Be here now (25)

...TEST is on Friday _____ will be added to point total

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The Anchor: Vocabulary for Unit One...

Observation, Inference, Hypothesis, Evidence, Experiment, Data, Variable, Analysis, Conclusion, Theory, Positive feedback, Negative feedback, homeostasis, independent variable, dependent variable, receptor, stimulus, response, DNA, RNA, energy, reproduction, respiration, circulation, responsiveness, boundary maintenance, movement, adaptation, digestion, absorption, synthesis, excretion, Biotic, Abiotic, Cells, Prokaryotic, Eukaryotic, DNA, Energy, Metabolism, cellular respiration, Photosynthesis, Evolution, tissue, organ, organ system, population, community, ecosystem, biome, biosphere.



Steering or Motor: Relationships and application -

What are the parts of a feedback loop?

What are processes that all living things conduct?

What are characteristics of living things?

What are the important root words for this unit?

What do you measure in an experiment?



The LightHouse: These are the big questions, that ensure you've earned an A on any given unit - if you can answer them, when asked, you definitely know your stuff.



1. How is homeostasis happening in you everyday?
2. Explain how slime molds exhibit life characteristics?
3. Why are the eleven life properties in a certain order?
4. How is metabolism related to respiration?
5. How is your CO₂ tolerance test related to respiration?
6. What life process is related to your Nervous System Tap test?
7. What is a biological hierarchy?
8. Explain how heart rate relates to any of the life properties.
9. Replicate a nervous system tap test.
10. Identify by name, at least 10 other people who are in this classroom with you. .

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Unit One - Semester 1, Biology _____ Name: _____

Success Criteria...

	<i>I can...statements...</i>	<i>Rating 9/19</i>
1	Explain the _____ that all _____ things share	
2	Explain and give examples of _____	
3	Explain and give examples of _____ feedback	
4	Explain and give examples of _____	
5	Give examples of each _____ of the _____ hierarchy	
6	Describe the _____ of living things from the _____ to the _____	
7	Explain the _____ between an _____ variable and a _____ variable in an experiment	
8	Demonstrate an _____ for a scientific process.	
9	Explain and give an _____ of an _____ in regards to a scientific process	
10	Identify the parts of a _____ loop	
11	Relate life _____ to within-class experiments.	
12	Apply the meaning of word _____ to learn new _____	

The Work...check next to the things you completed...goal for this unit is ____ points (MAX IS 120) which will be averaged with the test on this unit. The halfway point goal is _____. The Test will be on _____.

	Roots quiz work(10 points)		Notebook Entries (12-15)		Practice test (20)
	Roots quiz (10 points)		Parts of a homeostasis loop (5-10)		Proved 11 life properties to Mr. Bartsch (11)
	Retrieval Practice (10 pts)		Negative feedback (5-10)		Teach someone (5)
	Lab - Life characteristics and processes (10-20)		Positive feedback (5-10)		Hierarchy of life example (10 to 15)
	Homeostasis girl (10-15)		Life property - cool project (20)		Be here now (25)

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Scientific Terms and Concepts Reference Guide

Scientific Method and Research Terms

Observation: The act of carefully watching and recording a phenomenon using your senses or scientific instruments

Inference: A reasonable conclusion drawn from observations and prior knowledge

Hypothesis: A testable prediction or explanation for an observation

Evidence: Facts, measurements, or observations that support or refute a hypothesis

Experiment: A controlled test designed to support or refute a hypothesis

Data: Information collected during scientific investigations

Variable: A factor that can change in an experiment

Analysis: The process of examining data to find patterns and draw conclusions

Conclusion: A final statement based on experimental results

Theory: A well-tested explanation for a broad set of observations

Biological Systems and Processes

Positive feedback: A process that amplifies a change in the body

Negative feedback: A process that reduces or reverses a change to maintain balance

Homeostasis: The maintenance of stable internal conditions in an organism

Independent variable: The factor that is changed by the researcher in an experiment

Dependent variable: The factor that is measured as a result of changing the independent variable

Receptor: A structure that detects changes in the environment

Stimulus: A change in the environment that triggers a response

Response: An organism's reaction to a stimulus

DNA: Deoxyribonucleic acid; genetic material that carries hereditary information

RNA: Ribonucleic acid; molecule involved in protein synthesis and other cellular functions

Life Functions

Energy: The capacity to do work or cause change

Reproduction: The process of producing new organisms

Respiration: The process of breaking down nutrients to release energy

Circulation: The movement of materials through an organism

Responsiveness: The ability to react to changes in the environment

Boundary maintenance: Maintaining separation between internal and external environments

Movement: The ability to change position

Adaptation: A characteristic that helps an organism survive in its environment

Digestion: The breakdown of food into usable nutrients

Absorption: The uptake of substances into cells or tissues

Synthesis: The production of new substances in an organism

Excretion: The removal of waste products

Environmental and Cellular Concepts

Biotic: Living components of an ecosystem

Abiotic: Non-living components of an ecosystem

Cells: The basic unit of life

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Prokaryotic: Simple cells without a nucleus (like bacteria)

Eukaryotic: Complex cells with a nucleus and organelles

Metabolism: All chemical reactions in an organism

Cellular respiration: Process of breaking down glucose to produce energy

Photosynthesis: Process where plants convert light energy into chemical energy

Evolution: Change in species over time through natural selection

Levels of Biological Organization

Tissue: Group of similar cells working together

Organ: Structure made of different tissues working together

Organ system: Group of organs working together for a specific function

Population: Group of organisms of the same species in an area

Community: All populations interacting in an area

Ecosystem: All living and non-living things interacting in an area

Biome: Large region with similar climate and organisms

Biosphere: All ecosystems on Earth combined

Note: These definitions are simplified for 10th-grade understanding while maintaining scientific accuracy. Students should refer to their textbooks and class materials for more detailed explanations.