

Biology GA Standards – 1st Semester Biology

Characteristics of Science

SCSh2

You will understand lab safety and correctly use science equipment.

SCSh1

You will show the importance of using the following traits in your science courses: curiosity, openness and asking questions.

SCSh3

You will demonstrate how to investigate well and solve science problems. This involves developing well thought-out hypotheses and use correct steps and data in a science experiment.

SCSh4

You will use science equipment to produce tables and graphs, organize information and develop models.

SCSh5

You will show how measurements, tables, graphs are correctly used mathematically to analyze data and develop good scientific explanations.

SCSh6

You will write clear, logical reports and explanations that support and make clear your findings in your labs and research work.

SCSh7

You will analyze how broad areas of science knowledge have been developed in history and present.

SCSh8

You will understand the important characteristics used in science investigations.

SCSh9

You will read a variety of materials from different sources related to the science topics you are studying.

1st Semester Biology Standards

SB4

You will work with ecological concepts and terms that involve the dependence of all organisms one another and the flow of energy and matter in ecosystems.

SB1

You will study and analyze the relationships between the chemistry of living things and cells. This includes the study of atoms and macromolecules, enzymes, cell parts, meiosis, photosynthesis and respiration.

SB2

You will study heredity and genetic concepts including the history of heredity, predicting genetic outcomes and the role of mitosis. You will also examine the role of DNA and RNA in passing on genetic material. Finally you will look how DNA is used in forensic work.

Biology 1st Semester

Student Pacing Chart

Week	Mon.	Tue.	Wed.	Thurs.	Fri.
1	Unit 0	Unit 0	Unit 0	Unit 0	Unit 0
	Orientation; Rev. syllabus; Lab contract Pre-test	<i>Video: Lab safety</i> symbols Lab/Activity 1: Safety; Lab write-up	Processing Skills Lab/Activity 2: Using All Your Senses	<u>Quiz #1:</u> Rules & Equipment; Lab/Activity 3: P. Skills & SI Measurements	Lab/Activity 4: Using SI Measurements in Experiments
2	Unit 0	Unit 0	Unit 0	Unit 1	Unit 1
	Writing a Lab Report Lab/Activity 5: Liquid Density	Review, Re-teach, Enrichment	Unit 0 Assessment 1	Introduce Ecology Lab/Activity 6: Salt Tolerance of Seeds	Introduce Food Webs and Trophic Levels
3	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1
	Lab/Activity 7: Food Webs and Food Chains	Introduce Biomes	Making Biomes Project 1 <i>(due in 1 week)</i>	Making Biomes Project 1 cont. <i>(due in 1 week)</i>	Ecology internet work
4	Unit 1	Unit 1	Unit 1	Unit 1	Unit 1
	Lab/Activity 8: Researching Exotic Animals	Endangered Species Video	Lab/Activity 9: Acid Rain	Review, Re-teach, Enrichment	Unit 1 Assessment 2
5	Unit 2	Unit 2	Unit 2	Unit 2	Unit 2
	Introduce Cells and Cell Chemistry	Lab/Activity 10: Atomic Bonding Models	Cell Chemistry reading worksheets	Lab/Activity 11: Macromolecule <i>(due in 1 week)</i>	Lab/Activity 11 cont: Macromolecule <i>(due in 1 week)</i>
6	Unit 2	Unit 2	Unit 2	Unit 2	Unit 2
	Enzymes Lab/Activity 12: Enzyme Soaps	Enzymes Lab/Activity 13 Food Enzymes	Introduce Cells with Cell Drawings	Cell reading worksheets	Lab/Activity 14: Using a Microscope
7	Unit 2	Unit 2	Unit 2	Unit 2	Unit 2
	Lab/Activity 15: Looking at Cells	Lab/Activity 16: Cell Membrane Model <i>(due in 3 days)</i>	Lab/Activity 16- cont. Cell Membrane Model <i>(due in 3 days)</i>	Lab/Activity 17: Diffusion and Osmosis	Intro to Cell Division
8	Unit 2	Unit 2	Unit 2	Unit 2	Unit 2
	Lab/Activity 18: Looking at Cell Division	Lab/Activity 19 Meiosis Models	Lab/Activity 19 Cont Mitosis Models	Project 4 Analyzing the Effect of Diets on Cells <i>(due in 1 week)</i>	Project 4 Analyzing the Effect of Diets on Cells <i>(due in 1 week)</i>

9	Unit 2	Unit 2	Unit 3	Unit 3	Unit 3
	Review, Re-teach, Enrichment	Unit 2 Assessment 3	Introduce Genetics	Heredity reading worksheets	Lab/Activity 20: Making Baby Smiley
10	Unit 3	Unit 3	Unit 3	Unit 3	Unit 3
	Lab/Activity 21: Genetics Web Quest	Introduce DNA/RNA	Genetics worksheets	Project 5 Genetic Disorders Research and Presentations (due in 1 week)	Lab/Activity 22 DNA Models
11	Unit 3	Unit 3	Unit 3	Unit 3	Unit 3
	Lab/Activity 23: Transcription Translation worksheets	Lab/Activity 24: DNA web activity	Lab/Activity 25: Karyotype Analysis	Project 5 Presentations	Introduce Forensics
12	Unit 3	Unit 3	Unit 3	Unit 3	Unit 3
	Lab/Activity 26: Forensics Lab	Review, Re-teach, Enrichment	Unit 3 Assessment 4	Comprehensive Review	Final Exam

The daily schedule may vary throughout the semester due to school-related functions.

It is the teacher's discretion to adjust the schedule as needed.

At the beginning of each class period, expect a short sponge activity and/or various journal entry assignments.

All Assignments are due the day they are given except projects. All projects are due 1 week after the assigned date.

Assignments turned in late will receive the following grade penalties:

1 day late - 90% of total grade

2 days late – 85% of total grade

3-5 days late - 80% of total grade

1-2 weeks late - 75% of total grade

More than 2 weeks late – 70% of total grade

Essential Questions for Biology 1st Semester

1. What could happen in a lab if good safety practices are used?
2. What kind of things do you see when you look carefully at a plant?
3. Which cookie is the best value for the money?
4. Do you remember what density is?
5. Does salt affect the way plants grow?
6. Who eats who in the real world?
7. What kind of biome do you live in?
8. Why are there so many different animals and plants in the world?
9. Why are some animals and plants endangered?
10. What does acid rain do to you?
11. What do atoms do?
12. Why do you need protein?
13. What kind of soap gets a stain out the best?
14. How do enzymes help you?
15. What do organelles do for cells?
16. How do cells get energy?
17. What holds a salt molecule together?
18. What can you see with a microscope that you can't with your regular eyesight?
19. How do cells divide?
20. How does what you eat affect your cells?
21. Why do puppies have the same coloring as their parents?
22. What makes a baby look sort of like his/her's mother and father?
23. Where's DNA found in the cell?
24. Where's RNA found in the cell?
25. What's the shape of DNA?
26. Where does DNA come from?
27. How does a genetic counselor help parents with potential problems?
28. What happens when someone has sickle cell anemia?
29. What kind of diseases are inherited?
30. How is DNA used to help at the scene of the crime?