

OGT BOOTCAMP Unit Plan – Biology

Mr. Tommy Renfro - February 17 – March 13

Schedule of Events

Monday	Tuesday	Wednesday	Thursday	Friday
	Feb. 18 Introduction to the OGT Science Teams and Station Games		Feb. 20 Full-Length OGT Science Practice Test	
Feb. 24 Review scores from Practice test Day 1 Earth Science Blitz: Short Answers		Feb. 26 Day 2 Physical Science Blitz: Extended Responses		Feb. 28 Day 3 Science and Technology Blitz: Graphs and Tables
	March 4 Day 4 Cells/Genetics Blitz: Charts and Clusters		March 6 Day 5 Ecology Blitz: Passages	
March 10 Day 6 Evolution Blitz: Interpreting Data		March 12 Day 7 Final Prep Blitz: Units		

What is the Science OGT?

The Science OGT consists of four basic Pillars: Physical Science, Earth Science, Life Science, and Scientific Processes. Even though there is oftentimes variation in the exact content of the questions, the average numbers fall somewhere in the following window.

Multiple Choice

Physical Science – 12 Multiple Choice Questions

Earth Science – 12 Multiple Choice Questions

Life Science – 12 Multiple Choice Questions

Scientific Processes – Weave into the aforementioned disciplines

Short Answers

2-point questions are typically part of cluster Questions (See page). They can be parts of Earth, Physical, or Life sciences. Below is an example of a short answer question.

When designing the investigation, one student suggested painting the wooden box black. Predict how painting the box black would affect the temperature readings from the four thermometers. Explain your reasoning. Respond in the space provided in your Answer Document. (2 points)

Extended Responses

4-point questions require students to restate, answer, and defend a given topic of science. Please make sure that you answer all questions, defend all answers, and give details to support your point. Below is an example of an extended response questions.

A university student wants to perform an experiment using mice as test subjects. The procedure would require the mice to be injected with a specific bacterial infection and then treated with an antibiotic. Their response to the treatment would be observed and recorded. Provide two questions that an ethics review board would raise regarding the proposed work. For each question, explain why it is important that the question be answered prior to granting permission for the experiment. Respond in the space provided in your Answer Document. (4 points)

Physical Science

Students demonstrate an understanding of the composition of physical systems and the concepts and principles that describe and predict physical interactions and events in the natural world. This includes demonstrating an understanding of the structure and properties of matter, the properties of materials and objects, chemical reactions and the conservation of matter. In addition, it includes understanding the nature, transfer and conservation of energy, as well as motion and the forces affecting motion, the nature of waves and interactions of matter and energy. Students also demonstrate an understanding of the historical perspectives, scientific approaches and emerging scientific issues associated with the physical sciences.

Bench	Description	Number Asked 05-10
A	Atoms/Elements	7
B	Atomic Structure	6
C	Chemical/Physical Properties	13
D	Newton's Laws	13
E	Kinetic/Potential Energy	6
F	Law of Conservation of Energy	12
G	Sound/Light Waves	7
H	Scientific History and Theories	2

Earth Science

Students demonstrate an understanding about how Earth systems and processes interact in the geosphere resulting in the habitability of Earth. This includes demonstrating an understanding of the composition of the Universe, the Solar System and Earth. In addition, it includes understanding the properties and the interconnected nature of Earth's systems, processes that shape Earth and Earth's history. Students also demonstrate an understanding of how the concepts and principles of energy, matter, motion and forces explain Earth systems, the Solar System, and the Universe. Finally, they grasp an understanding of the historical perspectives, scientific approaches and emerging scientific issues associated with Earth and space sciences.

Below is a chart that expresses the number of questions asked on the OGT verses its standard.

Bench	Description	Number Asked 05-10
A	Stars and Galaxies	4
B	Earth's Systems	15
C	Geological Time Scale	9
D	Human Impact on Atmosphere	7
E	The Changing Earth (Plate Tectonics, weathering, etc)	14
F	History of theories	12

Life Science

Students demonstrate an understanding of how living systems function and how they interact with the physical environment. This includes an understanding of the cycling of matter and flow of energy in living systems. An understanding of the characteristics, structure, and function of cells, of organisms and of living systems are developed as well as a deeper understanding of the principles of heredity, biological evolution, and the diversity and interdependence of life. Students also demonstrate an understanding of different historical perspectives, scientific approaches and emerging scientific issues associated with the life sciences.

Bench	Description	Number Asked 05-10
A	Climate and Biomes	4
B	Weather	15
C	Geological Time Scale	9
D	Human Impact on Atmosphere	7
E	Urban Growth and Waste Disposal	14
F	Human Activity on Biogeochemical Cycles	12
G&H	Long lasting human impacts	4