Course Description
The Liberty University Online Academy’s 6th Grade science course provides students with an opportunity to discover scientific topics through interactive and engaging activities and lessons. Students will dive into God’s world through the units that will employ imperative Christian values. The truths of Creation and God’s design will be interwoven continuously throughout the entire course allowing students to gain solid scientific knowledge with a Biblical worldview. Students will explore a wide range of topics which include the following: Creation, Tools of Science, Matter, Chemistry, Water and the Water Cycle, the Earth and its Atmosphere, Biomes and Oceans, the Earth and its Surface, Earth’s Resources, and the Universe and Solar System.

Rationale
The 6th grade science course offers students an examination of the biblical foundations and an appreciation of science—the study of God and His creation. God is awesome! He created you and the world around you. Think of the amazing way a human body works. Ponder the world around you. Think of how beautiful the mountains are and how amazing the moon and stars look at night. The ocean is filled with life! God is amazing! His creations are amazing, as well. We could spend our entire lives investigating God’s works yet never begin to scratch the surface. God wants us to learn about His amazing creation. He equips us to learn about His works. God created a spark of curiosity in each of us in desiring to learn more about Him through studying His creation.

Prerequisite
None

Biblical Integration Outcomes
A. The student will identify and describe Creation and The Universe from a biblical worldview

Measurable Learning Outcomes
A. Demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations.
B. Investigate and understand basic sources of energy, their origins, transformations, and uses.
C. Investigate and understand the role of solar energy in driving most natural processes within the atmosphere, the hydrosphere, and on Earth’s surface.

D. Investigate and understand that all matter is made up of atoms.

E. Investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment.

F. Investigate and understand the properties of air and the structure and dynamics of Earth’s atmosphere.

G. Investigate and understand the natural processes and human interactions that affect watershed systems.

H. Investigate and understand the organization of the solar system and the interactions among the various bodies that comprise it.

I. Investigate and understand public policy decisions relating to the environment.

Course Materials

See LUOA’s Systems Requirements for computer specifications necessary to operate LUOA curriculum. Also view Digital Literacy Requirements for LUOA’s expectation of users’ digital literacy.

This course contains additional physical materials. See the materials page toward the end of this syllabus for a listing of course materials.

This course makes use of third-party digital resources to enhance the learning experience. LUOA staff and faculty have curated these resources. Students can safely access them to complete coursework. Please ensure that internet browser settings, pop-up blockers, and other filtering tools allow for these resources to be accessed. See Technologies and Resources Used in this Course below for a specific list.

- Note: Embedded YouTube videos may be utilized to supplement LUOA curriculum. YouTube videos are the property of the respective content creator, licensed to YouTube for distribution and user access. As a non-profit educational institution, LUOA is able to use YouTube video content under the YouTube Terms of Service. For additional information on copyright, please contact the Jerry Falwell Library.

Technologies and Resources Used in this Course

The following resource(s) are used throughout this course:

- Education City
- RightNow Media
- Reading Eggspress

Course Grading Policies

The student’s grades will be determined according to the following grading scale and assignment weights. The final letter grade for the course is determined by a 10-point scale. Assignments are weighted according to a tier system, which can be referenced on the Grades Page in Canvas. Each tier is weighted according to the table below. Items that do not affect the student’s grade are found in Tier 0.
Grading Scale

A  90-100%
B  80-89%
C  70-79%
D  60-69%
F  0-59%

Assignment Weights

Tier 0 0%
Tier 1 25%
Tier 2 35%
Tier 3 40%

Course Policies

Students are accountable for all information in the Student Handbook. Below are a few policies that have been highlighted from the Student Handbook.

Types of Assessments

To simplify and clearly identify which policies apply to which assessment, each assessment has been categorized into one of four categories: Lesson, Assignment, Quiz, or Test. Each applicable item on the course Modules page has been designated with an identifier chosen from among these categories. Thus, a Quiz on the American Revolution may be designated by the title, “1.2.W Quiz: The American Revolution.” These identifiers were placed on the Modules page to help students understand which Honor Code and Resubmission policies apply to that assessment (see the Honor Code and Resubmission policies on the pages that follow for further details).

- **Lesson:** Any item on the Modules page designated as a “Lesson”
  These include instructional content and sometimes an assessment of that content. Typically, a Lesson will be the day-to-day work that a student completes.

- **Assignment:** Any item on the Modules page designated as an “Assignment”
  Typical examples of Assignments include, but are not limited to, papers, book reports, projects, labs, and speeches. Assignments are usually something that the student should do his or her best work on the first time.

- **Quiz:** Any item on the Modules page designated as a “Quiz”
  This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Quizzes cover a smaller amount of material than Tests.

- **Test:** Any item on the Modules page designated as a “Test”
  This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Tests cover a larger amount of material than Quizzes.

Resubmission Policy

Students are expected to submit their best work on the first submission for every Lesson, Assignment, Quiz, and Test. However, resubmissions may be permitted in the following circumstances:

- **Lesson:** Students are automatically permitted two attempts on a Lesson. The student may freely resubmit for their first two attempts without the need for teacher approval.
• **Assignment:** Students are intended to do their best work the first time on all Assignments. However, any resubmissions must be completed before the student moves more than one module ahead of that Assignment. For example, a student may resubmit an Assignment from Module 3 while in Module 4 but not an Assignment from Modules 1 or 2. High School students may not resubmit an Assignment without expressed written permission from the teacher in a comment.

• **Quiz:** Students may NOT resubmit for an increased grade.

• **Test:** Students may NOT resubmit for an increased grade.

If a student feels that he or she deserves a resubmission on a Lesson, Assignment, Quiz, or Test due to a technical issue such as a computer malfunction, the student should message his or her teacher to make the request, and that request will need to be approved by a Department Chair.

**Consequences for Violations to the Honor Code**

Every time a student violates the Honor Code, the teacher will submit an Honor Code Incident Report. The Student Support Coordinator will review the incident and allocate the appropriate consequences. Consequences, which are determined by the number of student offenses, are outlined below:

• **Warning:** This ONLY applies to high school Lessons and elementary/middle school Assignments and Lessons. Students should view these actions as learning opportunities.
  - **Lessons:** A zero will be assigned for the question only.
  - **Elementary/Middle School Assignment:** The student must redo his or her work; however, the student may retain his or her original grade.

• **1st Offense:**
  - **Lesson, Quiz, or Test:** The student will receive a 0% on the entire assessment.
  - **Assignment:** The student will either:
    - Receive a 0% on the original assignment
    - Complete the Plagiarism Workshop
    - Retry the assignment for a maximum grade of 80%

• **2nd Offense:** The student will receive a 0% and be placed on academic probation.

• **3rd Offense:** The student will receive a 0% and the Faculty Chair will determine the consequences that should follow, possibly including withdrawal from the course or expulsion from the academy.
Materials List
6th Grade Science

Module 1
No extra materials needed

Module 2
- Bag of M&M’s candy

Module 3
- Cane sugar
- Drinking Glass - clear
- Pencil
- Food coloring
- String

Module 4
- 3 1.5 liter beakers or 3 quart jars
- 3 fresh eggs
- Salt

Module 5
- Scissors
- Brass fastener or something similar
- Camera or smart phone to take pictures of projects and upload to assignments
- Various materials to create models for a weather event

Module 6
No extra materials needed

Module 7
- 6 cups of flour
- 2 cups of salt
- 4 tablespoons cooking oil
- 2 tablespoons of baking soda
- dishwashing detergent
- food coloring
- vinegar
- warm water
- baking dish or pan
Module 8
- Model of the layers of the earth – can be made out of any materials.

Module 9
No extra materials needed

Module 10
No extra materials needed
Scope and Sequence
6th Grade Science

Module 1: Creation and the Universe
Week 1: God and Creation
Week 2: Creation vs Evolution
Week 3: Beginnings
Week 4: Creation Project

Module 2: What is Science?
Week 5: Scientific Method
Week 6: Tools of a Scientist
Week 7: Science and Data

Module 3: Chemistry
Week 8: Data
Week 9: Matter
Week 10: Physical/Chemical Properties

Module 4: Water
Week 11: Water Cycle
Week 12: Watersheds and Estuaries
Week 13: All About Water

Module 5: Atmosphere and Weather
Week 14: Overview
Week 15: Weather
Week 16: Clouds
Week 17: Wild Weather
Week 18: Wild Weather cont.

Module 6: Climate Zones
Week 19: Overview
Week 20: Oceans
Week 21: Biomes

Module 7: Earthquakes, Volcanoes, and Tsunamis
Week 22: Plate Tectonics
Week 23: Earthquakes
Week 24: Volcanoes
Week 25: Tsunamis

Module 8: Earth’s Surface
Week 26: Rock’s and Minerals
Week 27: Weathering and Erosion
Week 28: Earth’s Core
Week 29: Geology

Module 9: Energy
Week 30: Energy Sources
Week 31: Types of Energy
Week 32: Recycling and Renewable Resources

Module 10: Solar System
Week 33: Astronomy
Week 34: Exploring Space
Week 35: Planets
Week 36: Planets cont.