**CURRICULUM GUIDE**

 GRADE(S): 8th grade

 SUBJECT: Earth Science

 PRIMARY TEXT: *Earth Science*

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| **Week #** | **Unit** | **Instructional Objectives****“The students will . . .”** | **Biblical Worldview Integration** | **Methods/Activities** | **Books/Resources/****Materials/Media** | **Evaluation Method** | **Field Trips, Projects, Reports** |
|  | **Chapter 1: The World of Earth Science** |
| 1 | Why Study Earth Science? | 1. Explain why Christians do science
2. Explain how earth science helps Christians declare God’s glory
3. Defend the idea that earth science can play a role in God’s work of redemption
 | * Gen. 1:26-28 This is the Creation Mandate, which includes the idea that people should fill the earth and study it to discover the best ways to use it. Following the Christian Mandate includes 1) a life of service to others and 2) giving God glory.
 | * Lecture
* Inquire students of their knowledge
* Lab 1A Feeding the World through Earth Science
 | * Text
* Bible
 | * Homework (Section Review 1A)
* Quiz 1A (Schoology)
* Participation in class discussions
 |  |
|  2 | Christian Approach to Earth Science | 1. Define worldview
2. Explain how one’s worldview is a key part of doing science
3. Compare and contrast the secular and Christian worldviews
4. Explain how models are important to science
5. Differentiate between different types of data and how to present the data in tables and graphs.
 | * Discuss the Big Bang Theory for the origin of the universe
* Discuss the Gap Theory for the origin of the universe and consider this theory against biblical evidence. (Gen1 and 2)
 | * Lecture
* Inquiry
* Stimulate a discussion that compares and contrasts secular and Christian worldview and how that affects scientific inquiry;
* Students search for and identify different types of scientific models in the classroom (eg. Model volcano, globe, picture of an atom on the board, scientific formula written on the board.).
 | * Text
* Bible
 | * Homework (SR 1B)
* Quiz1B (Schoology)
* Participation
 | Lab Worksheet for Lab 1A Lab (Feeding the World Through Earth Science) |
| 2 | Earth Science in Action | 1. Explain how scientists do science
2. Compare and contrast operational and historical science
3. Identify different types of earth scientists and briefly describe their work
 |  | * Lecture
* Inquiry
* Read “Do Bumbles Bounce” story (taken from *The Abominable Snowman* story and activity to illustrate the process of testing a hypothesis.
* Produce different hypotheses to test the hypothesis “Do bumbles bounce”
 | * Text
* Story of “The Abominable Snowman” taken from “Rudolf the Red-Nosed Reindeer” Television show
 | * Homework (SR 1C)
* Quiz1C (Schoology)
* Chapter 1 Test (Schoology)
* Participation
 |  |
|  | **Chapter 2: Matter, Forces, and Energy** |
| 3 | Matter | 1. Show the impact of worldview on science
2. Describe what an operational definition is.
3. Describe matter and the different forms it can take
4. Describe how matter changes from one state to another
5. Demonstrate three ways to measure matter
 | * Highlight the way worldview affects how people view things like matter, forces, and energy by discussing the Big Bang experiment being conducted near Geneva and dark matter.
* Discuss the Day-Age Theory, one Christian view of the origin of the universe, and consider this theory against biblical evidence.(Exodus 20;10-11; Genesis 1)
 | * Lecture
* Inquiry
* Measure different substances using a balance scale, spring scale, and graduated cylinder.
* Activity: Students form operational definitions for various vague terms, such as “how *fast* can students run:” or how *acidic* is a substance?”
* Observe various physical and chemical changes and identify which is occurring. (e.g. Camp fire, sugar dissolving in water)
 | * Text
* Bible
 | * Homework (SR 2A)
* Quiz 2A (Schoology)
* Worksheet identifying reversible physical changes between matter
* Participation
 |  |
| 3 | Forces and Matter | 1. Classify forces and identify the various kinds of forces
2. Investigate and describe how forces work in the universe
3. Discuss the significance of the force of gravity
 |  | * Lecture
* Inquiry
* Discuss types of forces (contact vs field forces)
* Practice identifying the direction and magnitude of forces
* Identify the type of force applied using real-world examples.
* Clarify weight vs. mass
 | * Text
 | * Homework (SR 2B)
* Quiz 2B(Schoology)
* Participation
 |  |
| 3 | Energy and Matter | * Define work and energy
* Classify different types of energy
* Discuss the significance of the principle of the conservation of energy
 |  | * Lecture
* Inquiry
* Discuss types of energy (kinetic and potential)
* Discuss sources of Energy (thermal, heat, sound, magnetic, chemical, light, nuclear)
* Identify type and source of energy using real world examples.
* Discuss the Inverse Square Law and how that applies to field forces
 | * Text
 | * Homework (SR 2C)
* Quiz 2C (Schoology)
* Participation
 |  |
| 4 | Composition of Matter | 1. Describe the structure of atoms
2. Recognize that protons determine an element’s identity
3. Compare and contrast ions and atoms
4. Tell the difference between elements and compounds
5. Show how a chemical formula is used to identify the elements in a molecule
6. Describe the structure of matter at the atomic level
7. State ways that we can know the different changes of matter have taken place
 |  | * Lecture
* Inquiry
 | * Text
* Periodic Table of Elements
 | * Homework (SR 2D)
* Quiz 2D (Schoology)
* Test Chapter 2 (Schoology)
* Participation
 |  |
|  | **Chapter 3: Maps and Mapping** |
| 5 | Why Do We Use Maps | 1. Show why maps are important for life
2. Explain how mapmaking is modeling
3. Discuss why maps need coordinate systems
4. Describe how to find you location on a map
5. Summarize standard map features
 | * Demonstrate how mapping can be used to help people (Chapter opener-using a map to identify the cause of cholera in 1854)
 | * Lecture
* Inquiry
 | * Text
 | * Homework (SR3A)
* Quiz 3A (Schoology)
* Participation
 | * Map activity giving students experience e identifying the source of a disease.
 |
| 6 | Types of Maps | 1. Identify the three main types of map projections
2. Briefly discuss the properties and uses of the common map projections
3. Identify three standard types of maps
4. Briefly discuss the use of contour lines in topographic maps
5. Discuss the concept of a map theme
6. Identify thematic maps
 | * Discuss Progressive Creationism, one Christian view of the origin of the universe, and consider this theory against biblical evidence (Gen, 3:19; Rom. 5:12; 8:19-23)
 | * Lecture
* Inquiry
* Demonstration: Flattening a Sphere using an orange and identifying where maps would be least accurate
 | * Text
* Various types of maps and globe
* Bible
 | * Homework (SR3B)
* Quiz 3B (Schoology)
* Participation
 | * Google Maps Activity finding locations on Google Maps
 |
| 6 | Maps and GIS | 1. Define a geographic information system (GIS)
2. State the main uses for a GIS
3. Identify sources of GIS data
4. Explain how GIS maps are used to help people
 |  | * Lecture
* Inquiry
 | * Text
 | * Homework (SR3C)
* Quiz 3C (Schoology)
* Test Chapter 3 (Schoology)
* Participation
 |  |
|  | **Chapter 18: The Earth’s Atmosphere** |
| 7 | What Is the Atmosphere? | 1. Describe how people can affect the atmosphere
2. Identify evidence of design in the atmosphere
3. Sketch the atmosphere’s composition, temperature, and structure
4. Trace the flow of carbon and nitrogen in the atmosphere
 | * Discuss the importance of taking care of our atmosphere in light of Genesis 1. We’re commanded to take care of the earth, yet as Earth’s population increases, our cities are getting polluted (Chapter 18 opener)
 | * Lecture
* Inquiry
* Watch and discuss video on Magdeburg Hemispheres which demonstrate the strength of atmospheric pressure.
* Examine the Urey-Miller experiment in evolution and why this was a failure.
 | * Text
* YouTube Video https://youtu.be/3A9jj54fwmE?list=PLRzQDyX1DZ2OeAVeDVT8Jgh0bVRvwJpCP
 | * Homework (SR18A)
* Atmosphere Layers Worksheet
* Quiz 18A (Schoology)
* Participation
 |  |
| 8 | Special Zones in the Atmosphere | 1. Relate special zones of the atmosphere to the other layers
2. Explain how special zones in the atmosphere are evidence of God’s good design
 | * Contrast the old- and young-earth stories of the origin of the atmosphere.
* Discuss how God’s design of the special layers of the atmosphere protect us from potentially harmful sun rays and objects.
 | * Lecture
* Inquiry
 | * Text
* Article: “Climatologist vs. Meteorologist” by Shane Hall & Demand Media
 | * Homework (SR 18B)
* Quiz 18B (Schoology)
* Participation
 |  |
| 8 | Energy in the Atmosphere | 1. Sketch the flow of energy in the atmosphere
2. Compare radiation, conduction, and convection
 |  | * Lecture
* Inquiry
* Demonstration of radiation, conduction, and convection heat transfer (oil and spice mixture heated by candle)
 | * Text
 | * Homework (SR18C)
* Quiz 18C (Schoology)
* Test Chapter 18 (Schoology)
* Participation
 |  |
|  | **Chapter 19: Weather** |
| 9 | What Is Weather? | 1. Evaluate the risks and benefits of wind power
2. Describe the weather data that meteorologists collect
3. Compare and contrast the different aspects of weather to one another
 | * Discuss how the study of weather helps us exercise dominion by predicting weather.
 | * Lecture
* Inquiry
 | * Text
 | * Homework (SR19A)
* Quiz 19A (Schoology)
* Participation
 |  |
| 10 | Winds | 1. Explain what factors affect winds
2. Locate and name the major global wind belts
3. Identify sources of local winds
 | * Discuss using dominion by using God’s resources to design alternative forms of energy, such as wind turbines or solar energy.
 | * Lecture
* Inquiry
* Watch and discuss video describing the Coriolis effect
* Watch and discuss video on global atmospheric circulation
* Apply knowledge of pressure differences to local wind patterns, eg. Sea and land breezes
 | * Text
* YouTube Video: Coriolis Effect. By Costas Papachristou
* YouTube Video: Global Atmospheric Circulation by Keith Meldahl
 | * Homework (SR 19B)
* Quiz 19B (Schoology)
* Participation
 |  |
| 11 | Clouds and Precipitation | 1. Explain how clouds form
2. Relate clouds, air temperature, and humidity to precipitation
3. Compare and contrast the different forms of precipitation
 |  | * Lecture
* Inquiry
* Identify cloud types from various pictures of clouds
* Identify different forms of precipitation and where that type of precipitation forms (inside clouds, in the air or on the ground)
 | * Text
 | * Homework (SR 19C)
* Quiz 19C (Schoology)
* Lab worksheet for “Dong the Dew”
* Test Chapter 19 (Schoology)
* Participation
 | “Doing the Dew” lab |
|  | **Chapter 20: Storms and Weather Prediction** |
| 12 | Air Masses and Fronts | 1. Explain how air masses move with weather\
2. Identify air masses by their source regions
3. Connect weather to the interaction of two or more air masses
4. Describe processes that produce precipitation
 | * Understand how predicting sever weather to prevent loss of life and property
* Feature the career box on “Serving God as a Meteorologist.”
 | * Lecture
* Apply the knowledge of temperature and density to identify and understand how fronts form and affect one another
 | * Text
 | * Homework (SR20A)
* Quiz 20A (Schoology)
* Participation
 | Experiment: “How does temperature affect the density of a fluid?” (demonstration of hot liquid sitting on top of a cold liquid) |
| 13 | Severe Weather | 1. Classify storms and explain how they form
2. Describe the major hazards of each kind of storm
3. Identify the key actions to take to remain safe in each kind of storm
 |  | * Lecture
* Inquiry
* Analyze how tornadoes and hurricanes form
* Discuss the hazards of major storms (hurricanes, thunderstorms, ices/snow storms, hail storms, tornadoes, floods, etc). Brainstorm how to remain safe in each type of storm.
 | * Text
*
 | * Homework 20B
* Quiz 20B (Schoology)
* Participation
 |  |
| 13 | Weather Forecasts | 1. Describe weather station models
2. Explain how weather data is used to construct weather maps
3. Evaluate the probable accuracy of a weather forecast
 |  | * Lecture
* Inquiry
 | * Text
 | * Homework (SR 20C)
* Worksheet for weather data and maps
* Quiz 20C (Schoology)
* Test Chapter 20 (Schoology)
* Participation
 |  |
|  | **Chapter 21: Climate and Climate Change** |
| 14 | What Is Climate | 1. Evaluate both a lack of conservation and extreme environmentalism from a Christian worldview
2. Contrast climate with weather
3. Analyze how different factors may affect climate
 | * Discuss conservation and environmentalism in relation to biblical dominion.
 | * Lecture
* Inquiry
* Class discussion: Compare and contrast the differences between anti-environmentalism and radical environmentalism.
* Examine word climate maps and discuss why the climate varies in different parts of the world.
 | * Text
 | * Homework (SR21A)
* Quiz 21A (Schoology)
* Participation
 | Power Point poster project on individually assigned climate zones. |
| 15 | Climate Zones | 1. Identify six major kinds of climates
2. Give examples of the different kinds of climates
 |  | * Lecture
 | * Text
 | * Homework (SR21B)
* Quiz 21B (Schoology)
* Participation
 |  |
| 16 | Climate Change | 1. Analyze potential causes for climate change
2. Critique worldview assumptions behind global climate models
3. Evaluate current fears of climate change
4. Formulate a Christian perspective of climate change
 |  | * Lecture
* Inquiry
 | * Text
 | * Homework (SR21C)
* Quiz 21B (Schoology)
* Test Chapter 21 (Schoology)
* Participation
 |  |
| 16 | END-OF-SEMESTER REVIEW | * Quizlet Vocabulary terms
* Plickers Review Questions
* Review Slides of material covered during semester
 | Test Chapters 1-3 & 18-21 (Schoology) |

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| 17 | **The Heavens (Chap. 22-25)** | * Analyze and discuss the 1st and 4th days of creation where God first created light and 3 days later created the sun.
 | * Lecture
* Inquiry
 | * Bible
* Article by Jonathan Sarfati:: *How could the days of Genesis 1 be literal if the Sun wasn’t created until the fourth day?*
 | * Participation in class discussion
* Questions on test
 | Science Fair Project: Students pick a science fair project that they will work on for the next 3 months. They will present their results in a school-wide science fair. Students will also write a formal report. |
|  | **Chapter 22: The Sun, Moon, and Earth System** |
| 17 | The Sun | 1. Describe the sun’s structure, activity, and energy
2. Summarize the sun’s influence on Earth
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
* Photos from NASA of the Sun displaying solar prominences, solar flares, CMSs, and solar spots.
* Reference for the field of “Space Weather” [http://www.swpc.noaa.gov/http://www.swpc.noaa.gov/](http://www.swpc.noaa.gov/)
 | * Homework (SR22A)
* Quiz 22A (Schoology)
* Participation
* Plickers Pop Quizzes
 |  |
| 18 | The Moon | 1. Sketch the moon’s structure
2. Describe the moon’s surface
 | * Analyze the secular and Christian views for the origin of the moon. The Bible states that the moon was formed on the 4th day of creation, and that its purpose is to mark sacred times, and days and years. (Gen. 1:14)
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
* Photo “Earthrise” taken by Apollo 8 Astronauts (NASA)
* Audio recording of Christmas Eve message from Apollo 8 Crew (NASA)
* Video of original moon landing (NASA)
* Reference for Earth/Moon activity <http://chandra.harvard.edu/edu/formal/ems/ems_earthMoon.pdf>
 | * Homework (SR22B)
* Quiz 22b (Schoology)
* Plickers Pop Quizzes
* Lab worksheet for Earth Moon activity
* Participation
 | * Activity: Earth Moon System and Relative Size<http://chandra.harvard.edu/edu/formal/ems/ems_earthMoon.pdf>
 |
| 19 | The Sun, Moon, and Earth as a System | 1. Describe how sun and earth interactions cause seasons
2. Identify and explain the moon’s phases
3. Analyze how sun, moon, and earth interactions create eclipses
4. Define Tidal Force and describe how this creates tides.
5. Differentiate between ocean tides and earth
 | * Isaiah 45:18 God created the heavens and the earth, and the earth was created to be inhabited. Understand how special the sun, moon, and earth system is unique to supporting life.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
* Bible
* SHOW SLIDE OF SIDEREAL TIME OF EARTH http://www.astro.cornell.edu/academics/courses/astro201/sidereal.htm
* Video by SciShow explaining why we have seasons: [**https://youtu.be/wwdB22opre0**](https://youtu.be/wwdB22opre0)
 | * Homework (SR22C)
* Quiz 22C (Schoology)
* Plickers Pop Quizzes
* Participation
* Test Chapter 22 (Schoology)
 |  |
|  | **Chapter 23: Our Solar System** |
| 19 | Modeling the Solar System | 1. Analyze models of the solar system
2. Discuss the cultural significance of the adoption of the heliocentric system
3. Describe the properties of planetary orbits
 | * Modeling is used in science to help scientists understand our physical world, but models tend to be slightly inaccurate. Modeling in science is about workability, but the Bible establishes what is true.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
* Watch Crash Course Anatomy: What Causes the Tides
* Watch video on “What Would Earth Be Like Without a Moon?:
 | * Text
* Bible
* Video by Crash Course:
* Video by SciShow Space: https://www.youtube.com/watch?v=XMlrdUNb1is&feature=youtu.be
 | * Homework (SR23A)
* Quiz 23A (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 20 | The Planets | 1. Categorize objects in the solar system
2. Describe the position, appearance, size, composition, motion, and special features of the planets in our solar system
3. Contrast other planets in the solar system with Earth
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
* Students watch Crash Course Videos on the planets
 | * Text
* Crash Course Astronomy
 | * Homework (SR23B)
* Quiz 23B (Schoology)
* Response questions for each Planet video watched
* Plickers Pop Quizzes
* Participation
 |  |
| 20-21 | Non-planetary Objects | 1. Classify non-planetary objects in the solar system
2. Describe the small bodies in our solar system
3. Explain where non-planetary objects may be found in the solar system
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR 23C)
* Quiz 23C (Schoology)
* Plickers Pop Quizzes
* Participation
 | Make a comet in class |
|  | **Chapter 24: Stars, Galaxies, and the Universe** |
| 21 | Stars | 1. Find stars in the sky using constellations
2. Describe ways stars are named
3. Identify and describe the common properties of stars
4. Compare the sun to other stars
5. Classify stars by their luminosity and color
6. Describe the common remnants of stars after they die
 | This is the key worldview chapter for the Astronomy unit. Help students get the perspective of their place in the universe by discussing the opener on the Hubble Space Telescope. Human beings may be seemingly insignificant, byt we are important to God. | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR24A)
* Quiz 24A (Schoology)
* Plickers Pop Quizzes
* Participation
* Lab worksheets for 24A & 24B
 | Lab 24A: Sky MapLab 24B: Going the distance |
| 22 | Gas to Galaxies | 1. Describe and classify various objects in the universe
2. Differentiate between a double star and a binary star
3. Identify and classify various kinds of star clusters
4. Summarize the history leading to the recognition of what a galaxy is
5. Classify galaxies by their shapes and sizes
 | * Discuss the scientist Danny Faulkner who is a rare breed as a Christian astronomer.
* Discuss secular cosmology and the questions about the universe that still need answers. Bolster their faith in God’s Word in a field that is largely philosophical
* Discuss and clarify which questions in cosmology can have no definite answers.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR24)
* Quiz 24B (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 22-23 | The Universe | 1. Validate the significance of humans in a vast universe
2. Differentiate between the two competing cosmologies
3. Discuss evidence secular scientists use to support a large, very old universe
4. Summarize various ways Christians try to solve the starlight/distance problem in a young creation
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR24C)
* Quiz 24C (Schoology)
* Plickers Pop Quizzes
* Participation
* Test Chapter 24 (Schoology)
 | Power Point presentations on individually assigned topics related to the universe. |
|  | **Chapter 25: Space Exploration** |
| 23 | Telescopes | 1. Evaluate the importance of space exploration
2. Classify telescopes by their structure
3. Explain the function and limitations of various kinds of telescopes
 | * Discuss the chapter opener about space exploration and how space exploration helps us to exercise biblical dominion and to love people through technology we use ever day.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR25A)
* Quiz 25A (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 23 | Rockets, Satellites, and Probes | 1. Explain how a rocket works
2. Identify the challenges of exploring the solar system
3. Contrast satellites, probes, and landers
4. Explain how satellites, probes, and landers are used
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR25B)
* Quiz 25B (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 24-25 | Manned Space Exploration | 1. Summarize the challenges of sending humans into space
2. Summarize the history of manned space exploration
3. Evaluate the risks and benefits of manned space exploration
 | * Discuss the benefits and risks of space exploration and how the right balance of these helps us exercise dominion and love our neighbor.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR25C)
* Quiz 25C (Schoology)
* Plickers Pop Quizzes
* Participation
* Test Chapter 25 (Schoology)
* Student Power Point presentations on the universe
 | Launch various rockets in soccer field |

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|  | **Chapter 4: Geology-The Earth Speaks** |
| 26 | The Earth, a Special Place | 1. Explain why Earth is well-suited for life
2. Show how Earth is unique by comparing it to other planets
3. Explain how Earth’s design helps humans explore the heavens
 | * Discuss Earth as a special place by highlighting the chapter opener on the Apollo 8 Christmas Eve broadcast.
* Focus on evidences for God’s design in our Earth-a place designed for life
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | Text | * Homework (SR4A)
* Quiz 4A (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 27 | Geology, the Science | 1. Summarize the history of geology
2. Explain the dangers of viewing the history of the earth as very old and as the product of natural processes
3. Describe how geology is used
 | * Compare and contrast secular and creationary geology and the assumptions of each.
* Discuss how theories for the source of earth’s magnetic field depend on one’s presuppositions.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | Text | * Homework (SR4B)
* Quiz 4B (Schoology)
* Lab Worksheet for Lab 4B
* Plickers Pop Quizzes
* Participation
 |  |
| 27,28 | The Earth’s Structure | 1. Explain how scientists study the interior of the earth
2. Describe the different layers of the earth and their properties
3. Sketch the earth’s interior, labeling its regions and layers
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | Text | * Homework (SR4C)
* Quiz 4C
* (Schoology)
* Plickers Pop Quizzes
* Participation
 | Lab 4B: Listening to the Earth |
| 28 | The Earth’s Natural Resources | 1. Identify natural resources
2. Explain how to manage natural resources
3. List factors that affect environmental quality
4. Explain why Christians should be concerned about the environment
5. Analyze the relationship between Earth’s resources and population
 | * Discus how Earth’s resources can and should be used in the context of God’s provision for man and his responsibility to wisely manage resources.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR4D)
* Quiz 4D
* (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
|  | **Chapter 5: The Changing Earth** |
| 29 | Origin of the Earth | 1. Explain why creating a history of the world depends on one’s assumptions about the beginning of the world
2. Compare and contrast the processes and sequence of the origin of the earth from the old-earth and young-earth viewpoints
3. Evaluate the scientific problems with the old-earth origins theory of the earth
 | * Expose students to views of origins that claim to be biblical.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR5A)
* Quiz 5A (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 29 | A History of Change | 1. Provide examples of geologic observations today that show that the earth has changed in the past and is changing today
2. Compare and contrast the old-earth and young-earth histories, emphasizing when changes happened and how long they took to occur
3. Evaluate the scientific problems with the old-earth view of the earth’s history
4. Compare and contrast the arrangement and significance of the old-earth and young-earth geologic columns
 | * Help students analyze and contrast both secular and creationary views of how the earth changed after its formation.
* Emphasize and discuss the biblical chronologies of the pre-Flood period and the timeline of the Flood itself. (Genesis 7-8)
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
* Bible
* Article by Bodie Hodge: Biblical Overview of the Flood Timeline (
* Answers in Genesis)
 | * Homework (SR5B)
* Quiz 5B

(Schoology)* Plickers Pop Quizzes
* Participation
 |  |
| 30 | Tectonics: An agent of Change | 1. Compare and contrast the secular and creationary theories of plate tectonics
2. Relate the significance of plate tectonics to the overall study of geology
3. Evaluate the two major views of plate tectonics, and propose possible solutions to the problems in each view
 | * Analyze and contrast secular and creationary views of how tectonic forces could have shaped Earth’s surface.
* Genesis 1:9-10 Discuss how the tectonic plates could have broken apart and move during the flood-the bible refers to one land and one sea at the beginning of creation.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
* Bible
 | * Homework (SR5C)
* Quiz 5C (Schoology)
* Plickers Pop Quizzes
* Lab Worksheet Lab 5C
* Participation
* Test Chapter 5 (Schoology)
 | Lab 5C: Going with the Flow (a look at how density affects movement of fluids) |
|  | **Chapter 6: Earthquakes** |
| 30 | Tectonic Forces | 1. Summarize how tectonic forces trigger earthquakes
2. Show how certain kinds of tectonic processes are most likely the cause of earthquakes
3. Identify the material properties of rocks that help cause earthquakes
 | * Explore and discuss how using seismometers and studying earth waves can help people exercise biblical dominion by issuing earthquake warnings.
* Discuss the “Analogous Days Theory” about the origins of the earth that claims to be biblical. (Gen 1; Exodus 20:8-11; Isa 7:14; Matt. 28-6; John 5:28-29)
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
* Bible
 | * Homework (SR6A)
* Quiz 6A (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 31 | Faults and Joints | 1. Explain how joints, faults, and earthquakes are related
2. Summarize and be able to describe how an earthquake happens.
3. Be able to identify the major types of faults.
 |  | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR6B)
* Quiz 6B (Schoology)
* Plickers Pop Quizes
* Participation
 |  |
| 31 | Earth Waves and Seismology | 1. Describe how seismologists collet earth wave data
2. Compare and contrast the types of seismic waves
3. Explain how to find an earthquake’s epicenter
 | * Learn why mountains are the battleground of old- and young-earth scientists. When “younger” fossils are in strata beneath “older” fossils, the principle of superposition is violated. Geologist answer this with the overthrust explanation.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR6C)
* Quiz 6C (Schoology)
* Plickers Pop Quizzes
* Participation
 |  |
| 32 | Effects of Earthquakes | 1. Describe how scientists rate earthquakes
2. Explain why earthquakes can be so dangerous
3. Evaluate the difficulty and benefits of predicting earthquakes
 | * Discuss how you can serve God as a Siesmologist.
 | * Lecture
* Inquiry
* Quizlet Vocabulary Terms
 | * Text
 | * Homework (SR6D)
* Quiz 6D (Schoology)
* Plickers Pop Quizzes
* Participation
* Test Chapter 6
 |  |
| 32 | END-OF-SEMESTER REVIEW | * Quizlet Vocabulary terms
* Plickers Review Questions
* Review Slides of material covered during semester
 | End-of-Semester Test (Schoology) |