

TEACHER GUIDE

Includes Student
Worksheets



Weekly Lesson Schedule



Student Worksheets



Quizzes & Tests



Answer Key

3rd–8th Grade

Science

God's Design: Heaven & Earth



Master Books Creative Team:

Authors: Richard and Debbie Lawrence

Editor: Craig Froman

Design: Terry White

Cover Design: Diana Bogardus

Copy Editors: Judy Lewis,
Willow Meek

Curriculum Review: Kristin
Pratt, Laura Welch, Diana
Bogardus



First printing: May 2018

Fifth printing: May 2021

Copyright © 2018 by Richard and Debbie Lawrence and Master Books®. All rights reserved. No part of this book may be used or reproduced in any manner whatsoever without written permission of the publisher, except in the case of brief quotations in articles and reviews.

For information write:

Master Books®, P.O. Box 726, Green Forest, AR 72638

Master Books® is a division of the New Leaf Publishing Group, Inc.

ISBN: 978-1-68344-130-4

ISBN: 978-1-61458-654-8 (digital)

Scripture taken from the New King James Version. Copyright © 1982 by Thomas Nelson, Inc. Used by permission. All rights reserved.

Printed in the United States of America

Please visit our website for other great titles:

www.masterbooks.com

Permission is granted for copies of reproducible pages from this text to be made for use with immediate family members living in the same household. However, no part of this book may be reproduced, copied, broadcast, stored, or shared in any form beyond this use. Permission for any other use of the material must be requested by email from the publisher at info@nlpg.com.

The God's Design Science series is based on a biblical worldview and reveals how science supports the biblical account of creation. **Richard and Debbie Lawrence**, authors of the series, have a long history of enjoying science. They have both worked as electrical engineers and now Debbie teaches chemistry and physics at a homeschool co-op. While homeschooling their children for 16 years, there was almost always a science experiment going on in the kitchen. Today that tradition is being continued with the next generation as the grandkids enjoy Grandma Science Day once a week.

““

Your reputation as a publisher is stellar. It is a blessing knowing anything I purchase from you is going to be worth every penny!

—Cheri ★★★★★

““

Last year we found Master Books and it has made a HUGE difference.

—Melanie ★★★★★

““

We love Master Books and the way it's set up for easy planning!

—Melissa ★★★★★

““

You have done a great job. MASTER BOOKS ROCKS!

—Stephanie ★★★★★

““

Physically high-quality, Biblically faithful, and well-written.

—Danika ★★★★★

““

Best books ever. Their illustrations are captivating and content amazing!

—Kathy ★★★★★””

Affordable
Flexible
Faith Building



Master Books®
Curriculum

Table of Contents

Welcome to God’s Design	5
Daily Suggested Schedule	15
Our Weather & Water Worksheets	23
Our Universe Worksheets	99
Our Planet Earth Worksheets	181
Our Weather & Water Quizzes and Final Exam	265
Our Universe Quizzes and Final Exam	285
Our Planet Earth Quizzes and Final Exam	301
Answer Keys	315
Our Weather & Water Worksheets.....	317
Our Universe Worksheets.....	329
Our Planet Earth Worksheets.....	341
Our Weather & Water Quizzes.....	355
Our Universe Quizzes	361
Our Planet Earth Quizzes.....	365
Our Weather & Water Final Exam	369
Our Universe Final Exam.....	371
Our Planet Earth Final Exam	373
Appendices	375

Publisher’s note: Internet links on the Works Cited pages in the appendices were valid at the time of the first printing. Those on sites other than masterbooks.com that we do not maintain may be changed or deleted by that particular company. We apologize for any inconvenience this may cause.

Activities warning: The publisher and authors have made every reasonable effort to ensure that the activities recommended in this book are safe when performed as instructed but assume no responsibility for any damage caused or sustained while conducting the experiments and activities. It is the parents’, guardians’, and/or teachers’ responsibility to supervise all recommended activities. Please protect surfaces when using food coloring, paint, and other materials that may stain surfaces.



Welcome to GOD'S DESIGN®

HEAVEN & EARTH



God's Design for Heaven and Earth is a series that has been designed for use in teaching earth science to elementary and middle school students. It is divided into three units: *Our Universe*, *Our Planet Earth*, and *Our Weather and Water*. Each unit has 35 lessons including a final project that ties all of the lessons together.

In addition to the lessons, special features in each unit include biographical information on interesting people as well as fun facts to make the subject more fun.

Although this is a complete curriculum, the information included here is just a beginning, so please feel free to add to each lesson as you see fit. A resource guide is included in the appendices to help you find additional information and resources. A list of supplies needed is included at the beginning of each lesson, while

a master list of all supplies needed for the entire series can be found in the appendices.

Answer keys for all review questions, worksheets, quizzes, and the final exam are included. If you wish to get through *God's Design: Heaven & Earth* in one year, plan on covering approximately three to four lessons per week. The time required for each lesson varies depending on how much additional information you include, but plan on about 40 to 45 minutes. A helpful daily schedule starts on page 15. Quizzes may be given at the conclusion of each unit, and a final exam may be given at the completion of each section. If you wish to cover the material in more depth, you may add additional information and take a longer period of time to cover all the material, or you could choose to do only one or two of the sections as a unit study.

Why Teach Earth Science?

It is not uncommon to question the need to teach children hands-on science in elementary or middle school. We could argue that the knowledge gained in science will be needed later in life in order for children to be more productive and well-rounded adults. We could argue that teaching children science also teaches them

logical and inductive thinking and reasoning skills, which are tools they will need to be more successful. We could argue that science is a necessity in this technological world in which we live. While all of these arguments are true, not one of them is the main reason that we should teach our children science. The most important reason to

teach science in elementary school is to give children an understanding that God is our Creator, and the Bible can be trusted. Teaching science from a creation perspective is one of the best ways to reinforce our children's faith in God and to help them counter the evolutionary propaganda they face every day.

God is the Master Creator of everything. His handiwork is all around us. Our great Creator put in place all of the laws of physics, biology, and chemistry. These laws were put here for us to see His wisdom and power. In science, we see the hand of God at work more than in any other subject. Romans 1:20 says, "For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they [men] are without excuse." We need to help our children see God as Creator of the world around them so they will be able to recognize God and follow Him.

The study of earth science helps us to understand and appreciate this amazing world God gave us. Studying the processes that shape the earth, and exploring the origins of the earth and the universe often brings us into direct conflict with evolutionary theories. This is why it is so critical to teach our children the truth of the Bible, how to evaluate the evidence, how to distinguish fact from theory, and to realize that the evidence, rightly interpreted, supports biblical creation not evolution.

It's fun to teach earth science! It's interesting too. Rocks, weather, and stars are all around us. Children naturally collect rocks and gaze at the stars. You just need to direct their curiosity.

Finally, teaching earth science is easy. It's where you live. You won't have to try to find strange materials for experiments or do dangerous things to learn about the earth.

How Do I Teach Science?

In order to teach any subject you need to understand how people learn. Most people, and children in particular, have a dominant or preferred learning style in which they absorb and retain information more easily.

If a student's dominant style is:

Auditory He needs not only to hear the information but he needs to hear himself say it. This child needs oral presentation as well as oral drill and repetition.
Visual She needs things she can see. This child responds well to flashcards, pictures, charts, models, etc.
Kinesthetic He needs active participation. This child remembers best through games, hands-on activities, experiments, and field trips.

Also, some people are more relational while others are more analytical. The relational student needs to know why this subject is important, and how it will affect him personally. The analytical student, however, wants just the facts.

If you are trying to teach more than one student, you will probably have to deal with more than one learning style. Therefore, you need to present your lessons in several different ways so that each student can grasp and retain the information.

Grades 3–8

The first part of each lesson should be completed by all upper elementary and junior high students. This is the main part of the lesson containing a reading section, a hands-on activity that reinforces the ideas in the reading section (blue box), and a review section that provides review questions and application questions.

Grades 6–8

In addition, for middle school/junior high age students, we provide a "Challenge" section that contains more challenging material as well as additional activities and projects for older students (green box).

We have included periodic biographies to help your students appreciate the great men and women who have gone before us in the field of science.

We suggest a threefold approach to each lesson:

Introduce the topic

We give a brief description of the facts. Frequently you will want to add more information than the essentials given in this book. In addition to reading this section aloud (or having older children read it on their own), you may wish to do one or more of the following:

- Read a related book with your students.
- Write things down to help your visual learners.
- Give some history of the subject. We provide some historical sketches to help you, but you may want to add more.
- Ask questions to get your students thinking about the subject.

Make observations and do experiments

- Hands-on projects are suggested for each lesson. This part of each lesson may require help from the teacher.
- Have your students perform the activity by themselves whenever possible.

Review

- The “What did we learn?” section has review questions.
- The “Taking it further” section encourages students to:
 - Draw conclusions
 - Make applications of what was learned
 - Add extended information to what was covered in the lesson
- The “FUN FACT” section adds fun or interesting information.

By teaching all three parts of the lesson, you will be presenting the material in a way that children with any learning style can both relate to and remember.

Also, this approach relates directly to the scientific method and will help your students think more scientifically. The *scientific method* is just a way to examine a subject logically and learn from it. Briefly, the steps of the scientific method are:

1. Learn about a topic.
2. Ask a question.
3. Make a hypothesis (a good guess).
4. Design an experiment to test your hypothesis.
5. Observe the experiment and collect data.
6. Draw conclusions. (Does the data support your hypothesis?)

Note: It’s okay to have a “wrong hypothesis.” That’s how we learn. Be sure to help your students understand why they sometimes get a different result than expected.

Our lessons will help your students begin to approach problems in a logical, scientific way.

How Do I Teach Creation vs. Evolution?

We are constantly bombarded by evolutionary ideas about the earth in books, movies, museums, and even commercials. These raise many

questions: What is the big bang? How old is the earth? Do fossils show evolution to be true? Was there really a worldwide flood? When did dinosaurs live? Was there

an ice age? How can we teach our children the truth about the origins of the earth? The Bible answers these questions and this book accepts the historical accuracy of the Bible as written. We believe this is the only way

we can teach our children to trust that everything God says is true.

There are five common views of the origins of life and the age of the earth:

Historical biblical account	Progressive creation	Gap theory	Theistic evolution	Naturalistic evolution
Each day of creation in Genesis is a normal day of about 24 hours in length, in which God created everything that exists. The earth is only thousands of years old, as determined by the genealogies in the Bible.	The idea that God created various creatures to replace other creatures that died out over millions of years. Each of the days in Genesis represents a long period of time (day-age view) and the earth is billions of years old.	The idea that there was a long, long time between what happened in Genesis 1:1 and what happened in Genesis 1:2. During this time, the “fossil record” was supposed to have formed, and millions of years of earth history supposedly passed.	The idea that God used the process of evolution over millions of years (involving struggle and death) to bring about what we see today.	The view that there is no God and evolution of all life forms happened by purely naturalistic processes over billions of years.

Any theory that tries to combine the evolutionary time frame with creation presupposes that death entered the world before Adam sinned, which contradicts what God has said in His Word. The view that the earth (and its “fossil record”) is hundreds of millions of years old damages the gospel message. God’s completed creation was “very good” at the end of the sixth day (Genesis 1:31). Death entered this perfect paradise *after* Adam disobeyed God’s command. It was the punishment for Adam’s sin (Genesis 2:16–17, 3:19; Romans 5:12–19). Thorns appeared when God cursed the ground because of Adam’s sin (Genesis 3:18).

The first animal death occurred when God killed at least one animal, shedding its blood, to make clothes for Adam and Eve (Genesis 3:21). If the earth’s “fossil record” (filled with death, disease, and thorns) formed over millions of years before Adam appeared (and before he sinned), then death no longer would be the

penalty for sin. Death, the “last enemy” (1 Corinthians 15:26), diseases (such as cancer), and thorns would instead be part of the original creation that God labeled “very good.” No, it is clear that the “fossil record” formed some time *after* Adam sinned—not many millions of years before. Most fossils were formed as a result of the worldwide Genesis Flood.

When viewed from a biblical perspective, the scientific evidence clearly supports a recent creation by God, and not naturalistic evolution and millions of years. The volume of evidence supporting the biblical creation account is substantial and cannot be adequately covered in this book. If you would like more information on this topic, please see the resource guide in Appendix A. To help get you started, just a few examples of evidence supporting biblical creation are given on the following pages.

Evolutionary Myth: The earth is 4.6 billion years old.

The Truth: Many processes observed today point to a young earth of only a few thousand years. The rate at which the earth's magnetic field is decaying suggests the earth must be less than 10,000 years old. The rate of population growth and the recent emergence of civilization suggests only a few thousand years of human population. And, at the current rate of accumulation, the amount of mud on the sea floor should be many kilometers thick if the earth were billions of years old. However, the average depth of all the mud in the whole ocean is less than 400 meters, giving a maximum age for the earth of not more than 12 million years. All this and more indicates an earth much younger than 4.6 billion years.

John D. Morris, *The Young Earth* (Creation Life Publishers, 1994), pp. 70–71, 83–90. See also "Get Answers: Young Age Evidence" at www.answersingenesis.org/go/young.

Evolutionary Myth: The universe formed from the big bang.

The Truth: There are many problems with this theory. It does not explain where the initial material came from. It cannot explain what caused that material to fly apart in the first place. And nothing in physics indicates what would make the particles begin to stick together instead of flying off into space forever. The big bang theory contradicts many scientific laws. Because of these problems, some scientists have abandoned the big bang and are attempting to develop new theories to explain the origin of the universe.

Jason Lisle, "Does the Big Bang Fit with the Bible?" in *The New Answers Book 2*, Ken Ham, ed. (Master Books, 2008). See also "What are some of the problems with the big bang hypothesis?" at www.answersingenesis.org/go/big-bang.

Evolutionary Myth: Fossils prove evolution.

The Truth: While Darwin predicted that the fossil record would show numerous transitional fossils, even more than 145 years later, all we have are a handful of disputable examples. For example, there are no fossils showing something that is part way between a dinosaur and a bird. Fossils show that a snail has always been a snail; a squid has always been a squid. God created each animal to reproduce after its kind (Genesis 1:20–25).

Evolutionary Myth: There is not enough water for a worldwide flood.

The Truth: Prior to the Flood, just as today, much of the water was stored beneath the surface of the earth. In addition, Genesis 1 states that the water below was separated from the water above, indicating that the atmosphere may have contained a great deal more water than it does today. Also, it is likely that before the Flood the mountains were not as high as they are today, but that the mountains rose and the valleys sank *after* the Flood began, as Psalm 104:6–9 suggests. At the beginning of the Flood, the fountains of the deep burst forth and it rained for 40 days and nights. This could have provided more than enough water to flood the entire earth. Indeed, if the entire earth's surface were leveled by smoothing out the topography of not only the land surface but also the rock surface on the ocean floor, the waters of the present-day oceans would cover the earth's surface to a depth of 1.7 miles (2.7 kilometers). Fossils have been found on the highest mountain peaks around the world showing that the waters of the Flood did indeed cover the entire earth.

Ken Ham & Tim Lovett, "Was There Really a Noah's Ark and Flood?" in *The New Answers Book 1*, Ken Ham, ed. (Master Books, 2006).

Evolutionary Myth: Slow climate changes over time have resulted in multiple ice ages.

The Truth: There is widespread evidence of glaciers in many parts of the world indicating one ice age. Evolutionists find the cause of the Ice Age a mystery. Obviously, the climate would need to be colder. But global cooling by itself is not enough, because then there would be less evaporation, so less snow. How is it possible to have both a cold climate and lots of evaporation? The Ice Age was most likely an aftermath of Noah's Flood. When "all the fountains of the great deep" broke up, much hot water and lava would have poured directly into the oceans. This would have warmed the oceans, increasing evaporation. At the same time, much volcanic ash in the air after the Flood would have blocked out much sunlight, cooling the land. So the Flood would have produced the necessary combination of increased evaporation from the warmed oceans and cool continental climate from the volcanic ash in the air. This would have resulted in increased snowfall over the continents. With the snow falling faster than it melted, ice sheets would have built up. The Ice Age probably lasted less than 700 years.

Michael Oard, *Frozen in Time* (Master Books, 2004). See also www.answersingenesis.org/go/ice-age.

Evolutionary Myth: Thousands of random changes over millions of years resulted in the earth we see today.

The Truth: The second law of thermodynamics describes how any system tends toward a state of zero entropy or disorder. We observe how everything around us becomes less organized and loses energy. The changes required for the formation of the universe, the planet earth and life, all from disorder, run counter to the physical laws we see at work today. There is no known mechanism to harness the raw energy of the universe and generate the specified complexity we see all around us.

John D. Morris, *The Young Earth* (Creation Life Publishers, 1994), p. 43. See also www.answersingenesis.org/go/thermodynamics.

Despite the claims of many scientists, if you examine the evidence objectively, it is obvious that evolution and millions of years have not been proven. You can be confident that if you teach that what the Bible says is true, you won't go wrong. Instill in your student a confidence in the truth of the Bible in all areas. If scientific thought seems to contradict the Bible, realize that scientists often make mistakes, but God does not lie. At one time scientists believed that

the earth was the center of the universe, that living things could spring from non-living things, and that blood-letting was good for the body. All of these were believed to be scientific facts but have since been disproved. The Word of God remains true. If we use modern "science" to interpret the Bible, what will happen to our faith in God's Word when scientists change their theories yet again?

Integrating the Seven C's

The Seven C's is a framework in which all of history, and the future to come, can be placed. As we go through our daily routines we may not understand how the details of life connect with the truth that we find in the Bible. This is also the case for students. When discussing the importance of the Bible you may find yourself telling students that the Bible is relevant in everyday activities. But how do we help the younger generation see that? The Seven C's are intended to help.

The Seven C's can be used to develop a biblical worldview in students, young or old. Much more than entertaining stories and religious teachings, the Bible has real connections to our everyday life. It may be hard, at first, to see how many connections there are, but with practice, the daily relevance of God's Word will come alive. Let's look at the Seven C's of History and how each can be connected to what the students are learning.



Creation

God perfectly created the heavens, the earth, and all that is in them in six normal-length days around 6,000 years ago.

This teaching is foundational to a biblical worldview and can be put into the context of any subject. In science, the amazing design that we see in nature—whether in the veins of a leaf or the complexity of your hand—is all the handiwork of God. Virtually all of the lessons in *God's Design for Science* can be related to God's creation of the heavens and earth.

Other contexts include:

Natural laws—any discussion of a law of nature naturally leads to God's creative power.

DNA and information—the information in every living thing was created by God's supreme intelligence.

Mathematics—the laws of mathematics reflect the order of the Creator.

Biological diversity—the distinct kinds of animals that we see were created during the Creation Week, not as products of evolution.

Art—the creativity of man is demonstrated through various art forms.

History—all time scales can be compared to the biblical time scale extending back about 6,000 years.

Ecology—God has called mankind to act as stewards over His creation.



Corruption

After God completed His perfect creation, Adam disobeyed God by eating the forbidden fruit. As a result, sin and death entered the world, and the world has been in decay since that time. This point is evident throughout the world that we live in. The struggle for survival in animals, the death of loved ones, and the violence all around us are all examples of the corrupting influence of sin.

Other contexts include:

Genetics—the mutations that lead to diseases, cancer, and variation within populations are the result of corruption.

Biological relationships—predators and parasites result from corruption.

History—wars and struggles between mankind, exemplified in the account of Cain and Abel, are a result of sin.



Catastrophe

God was grieved by the wickedness of mankind and judged this wickedness with a global Flood. The Flood covered the entire surface of the earth and killed all air-breathing creatures that were not aboard the Ark. The eight people and the animals aboard the Ark replenished the earth after God delivered them from the catastrophe.

The catastrophe described in the Bible would naturally leave behind much evidence. The studies of geology and of the biological diversity of animals on the planet are two of the most obvious applications of this event. Much of scientific understanding is based on how a scientist views the events of the Genesis Flood.

Other contexts include:

Biological diversity—all of the birds, mammals, and other air-breathing animals have populated the earth from the original kinds which left the Ark.

Geology—the layers of sedimentary rock seen in roadcuts, canyons, and other geologic features are testaments to the global Flood.

Geography—features like mountains, valleys, and plains were formed as the floodwaters receded.

Physics—rainbows are a perennial sign of God’s faithfulness and His pledge to never flood the entire earth again.

Fossils—most fossils are a result of the Flood rapidly burying plants and animals.

Plate tectonics—the rapid movement of the earth’s plates likely accompanied the Flood.

Global warming/Ice Age—both of these items are likely a result of the activity of the Flood. The warming we are experiencing today has been present since the peak of the Ice Age (with variations over time).



Confusion

God commanded Noah and his descendants to spread across the earth.

The refusal to obey this command and the building of the tower at Babel caused God to judge this sin. The common language of the people was confused and they spread across the globe as groups with a common language. All people are truly of “one blood” as descendants of Noah and, originally, Adam.

The confusion of the languages led people to scatter across the globe. As people settled in new areas, the traits they carried with them became concentrated in those populations. Traits like dark skin were beneficial in the tropics while other traits benefited populations in northern climates, and distinct people groups, not races, developed.

Other contexts include:

Genetics—the study of human DNA has shown that there is little difference in the genetic makeup of the so-called “races.”

Languages—there are about seventy language groups from which all modern languages have developed.

Archaeology—the presence of common building structures, like pyramids, around the world confirms the biblical account.

Literature—recorded and oral records tell of similar events relating to the Flood and the dispersion at Babel.



Christ

God did not leave mankind without a way to be redeemed from its sinful state. The Law was given to Moses to show how far away man is from God’s standard of perfection. Rather than the sacrifices, which only covered sins, people needed a Savior to take away their sin. This was accomplished when Jesus Christ came to earth to live a perfect life and, by that obedience, was able to be the sacrifice to satisfy God’s wrath for all who believe.

The deity of Christ and the amazing plan that was set forth before the foundation of the earth is the core of Christian doctrine. The earthly life of Jesus was the fulfillment of many prophecies and confirms the truthfulness of the Bible. His miracles and presence in human form demonstrate that God is both intimately concerned with His creation and able to control it in an absolute way.

Other contexts include:

Psychology—popular secular psychology teaches of the inherent goodness of man, but Christ has lived the only perfect life. Mankind needs a Savior to redeem it from its unrighteousness.

Biology—Christ’s virgin birth demonstrates God’s sovereignty over nature.

Physics—turning the water into wine and the feeding of the five thousand demonstrate Christ’s deity and His sovereignty over nature.

History—time is marked (in the western world) based on the birth of Christ despite current efforts to change the meaning.

Art—much art is based on the life of Christ and many of the masters are known for these depictions, whether on canvas or in music.



Cross

Because God is perfectly just and holy, He must punish sin. The sinless life of Jesus Christ was offered as a substitutionary sacrifice for all of those who will repent and put their faith in the Savior. After His death on the Cross, He defeated death by rising on the third day and is now seated at the right hand of God.

The events surrounding the crucifixion and resurrection have a most significant place in the life of Christians. Though there is no way to scientifically prove the resurrection, there is likewise no way to prove the stories of evolutionary history. These are matters of faith founded in the truth of God's Word and His character. The eyewitness testimony of over 500 people and the written Word of God provide the basis for our belief.

Other contexts include:

Biology—the biological details of the crucifixion can be studied alongside the anatomy of the human body.

History—the use of crucifixion as a method of punishment was short-lived in historical terms and not known at the time it was prophesied.

Art—the crucifixion and resurrection have inspired many wonderful works of art.



Consummation

God, in His great mercy, has promised that He will restore the earth to its original state—a world without death, suffering, war, and disease. The corruption introduced by Adam's sin will be removed. Those who have repented and put their trust in the completed work of Christ on the Cross will experience life in this new heaven and earth. We will be able to enjoy and worship God forever in a perfect place.

This future event is a little more difficult to connect with academic subjects. However, the hope of a life in God's presence and in the absence of sin can be inserted in discussions of human conflict, disease, suffering, and sin in general.

Other contexts include:

History—in discussions of war or human conflict the coming age offers hope.

Biology—the violent struggle for life seen in the predator-prey relationships will no longer taint the earth.

Medicine—while we struggle to find cures for diseases and alleviate the suffering of those enduring the effects of the Curse, we ultimately place our hope in the healing that will come in the eternal state.

The preceding examples are given to provide ideas for integrating the Seven C's of History into a broad range of curriculum activities. The first seven lessons of this curriculum cover the Seven C's and will establish a solid understanding of the true history, and future, of the universe.

Even if you use other curricula, you can still incorporate the Seven C's teaching into those. Using this approach will help students make firm connections between biblical events and every aspect of the world around them, and they will begin to develop a truly biblical worldview and not just add pieces of the Bible to what they learn in "the real world."

First Semester Suggested Daily Schedule

Date	Day	Assignment	Due Date	✓	Grade
First Semester-First Quarter					
Week 1	Day 1	Our Weather & Water Unit 1: Atmosphere & Meteorology Read Lesson 1: A Christian View of Weather Pages 14-15 • <i>God's Design: Heaven & Earth</i> • (GDHE) Complete Worksheet • Pages 25-26 • <i>Teacher Guide</i> • (TG)			
	Day 2	Read Lesson 2: Structure of the Atmosphere • Pages 16-18 • (GDHE) Complete Worksheet • Pages 27-28 • (TG)			
	Day 3	Read Lesson 3: The Weight of Air • Pages 19-21 • (GDHE) Complete Worksheet • Pages 29-30 • (TG)			
	Day 4	Read Special Feature: Discovery of Air • Page 22 • (GDHE)			
	Day 5				
Week 2	Day 6	Read Lesson 4: The Study of Weather • Pages 23-25 • (GDHE) Complete Worksheet • Pages 31-32 • (TG)			
	Day 7	Complete Our Weather & Water Quiz 1 (Lessons 1-4) Pages 267-268 • (TG)			
	Day 8	Our Weather & Water Unit 2: Ancient Weather & Climate Read Lesson 5: Weather vs. Climate • Pages 27-30 • (GDHE) Complete Worksheets • Pages 33-36 • (TG)			
	Day 9	Read Lesson 6: Pre-Flood Climate • Pages 31-33 • (GDHE) Complete Worksheet • Pages 37-38 • (TG)			
	Day 10				
Week 3	Day 11	Read Lesson 7: Climate Changes Due to the Genesis Flood Pages 34-37 • (GDHE) Complete Worksheet • Pages 39-40 • (TG)			
	Day 12	Read Special Feature: Weather and the Bible • Pages 38-39 • (GDHE)			
	Day 13	Read Lesson 8: Global Warming • Pages 40-42 • (GDHE) Complete Worksheet • Pages 41-42 • (TG)			
	Day 14	Complete Our Weather & Water Quiz 2 (Lessons 5-8) Pages 269-270 • (TG)			
	Day 15				
Week 4	Day 16	Our Weather & Water Unit 3: Clouds Read Lesson 9: Water Cycle • Pages 44-46 • (GDHE) Complete Worksheet • Pages 43-44 • (TG)			
	Day 17	Read Lesson 10: Cloud Formation • Pages 47-49 • (GDHE) Complete Worksheet • Pages 45-46 • (TG)			
	Day 18	Read Lesson 11: Cloud Types • Pages 50-52 • (GDHE) Complete Worksheet • Pages 47-48 • (TG)			
	Day 19	Read Lesson 12: Precipitation • Pages 53-56 • (GDHE) Complete Worksheet • Pages 49-50 • (TG)			
	Day 20				

Date	Day	Assignment	Due Date	✓	Grade
Week 5	Day 21	Read Special Feature: The Dust Bowl • Pages 57-58 • (GDHE)			
	Day 22	Complete Our Weather & Water Quiz 3 (Lessons 9-12) Pages 271-272 • (TG)			
	Day 23	Our Weather & Water Unit 4: Storms Read Lesson 13: Air Masses & Weather Fronts Pages 60-62 • (GDHE) Complete Worksheet • Pages 51-52 • (TG)			
	Day 24	Read Lesson 14: Wind • Pages 63-66 • (GDHE) Complete Worksheet • Pages 53-54 • (TG)			
	Day 25				
Week 6	Day 26	Read Lesson 15: Thunderstorms • Pages 67-70 • (GDHE) Complete Worksheet • Pages 55-56 • (TG)			
	Day 27	Read Lesson 16: Tornadoes • Pages 71-74 • (GDHE) Complete Worksheet • Pages 57-58 • (TG)			
	Day 28	Read Lesson 17: Hurricanes • Pages 75-79 • (GDHE) Complete Worksheet • Pages 59-60 • (TG)			
	Day 29	Complete Our Weather & Water Quiz 4 (Lessons 13-17) Pages 273-274 • (TG)			
	Day 30				
Week 7	Day 31	Our Weather & Water Unit 5: Weather Information Read Lesson 18: Gathering Weather Information Pages 81-85 • (GDHE) Complete Worksheet • Pages 61-62 • (TG)			
	Day 32	Read Special Feature: Weather Myths • Pages 86-87 • (GDHE)			
	Day 33	Read Lesson 19: More Weather Instruments • Pages 88-92 • (GDHE) Complete Worksheet • Pages 63-64 • (TG)			
	Day 34	Read Lesson 20: Reporting & Analyzing Weather Information Pages 93-95 • (GDHE) Complete Worksheet • Pages 65-66 • (TG)			
	Day 35				
Week 8	Day 36	Read Lesson 21: Forecasting the Weather • Pages 96-98 • (GDHE) Complete Worksheet • Pages 67-68 • (TG)			
	Day 37	Read Lesson 22: Weather Station: Final Project Pages 99-100 • (GDHE) Complete Worksheet • Pages 69-71 • (TG)			
	Day 38	Complete Our Weather & Water Quiz 5 (Lessons 18-22) Pages 275-276 • (TG)			
	Day 39	Our Weather & Water Unit 6: Ocean Movement Read Lesson 23: Overview of the Oceans • Pages 102-104 • (GDHE) Complete Worksheet • Pages 73-74 • (TG)			
	Day 40				
Week 9	Day 41	Read Lesson 24: Composition of Seawater Pages 105-107 • (GDHE) Complete Worksheet • Pages 75-76 • (TG)			
	Day 42	Read Lesson 25: Ocean Currents • Pages 108-111 • (GDHE) Complete Worksheet • Pages 77-78 • (TG)			
	Day 43	Read Special Feature: El Niño • Pages 112-113 • (GDHE)			
	Day 44	Read Lesson 26: Waves • Pages 114-117 • (GDHE) Complete Worksheet • Pages 79-80 • (TG)			
	Day 45				

Date	Day	Assignment	Due Date	✓	Grade
First Semester-Second Quarter					
Week 1	Day 46	Read Lesson 27: Tides • Pages 118-120 • (GDHE) Complete Worksheet • Pages 81-82 • (TG)			
	Day 47	Read Lesson 28: Wave Erosion • Pages 121-123 • (GDHE) Complete Worksheet • Pages 83-84 • (TG)			
	Day 48	Read Lesson 29: Energy from the Ocean • Pages 124-125 • (GDHE) Complete Worksheet • Pages 85-86 • (TG)			
	Day 49	Complete Our Weather & Water Quiz 6 (Lessons 23-29) Pages 277-278 • (TG)			
	Day 50				
Week 2	Day 51	Our Weather & Water Unit 7: Sea Floor Read Lesson 30: Sea Exploration • Pages 127-130 • (GDHE) Complete Worksheet • Pages 87-88 • (TG)			
	Day 52	Read Lesson 31: Geography of the Ocean Floor Pages 131-134 • (GDHE) Complete Worksheet • Pages 89-90 • (TG)			
	Day 53	Read Lesson 32: Ocean Zones • Pages 135-137 • (GDHE) Complete Worksheet • Pages 91-92 • (TG)			
	Day 54	Read Special Feature: Intertidal Zones • Page 138 • (GDHE)			
	Day 55				
Week 3	Day 56	Read Lesson 33: Vents & Smokers • Pages 139-141 • (GDHE) Complete Worksheet • Pages 93-94 • (TG)			
	Day 57	Read Lesson 34: Coral Reefs • Pages 142-144 • (GDHE) Complete Worksheet • Pages 95-96 • (TG)			
	Day 58	Read Lesson 35: Conclusion • Page 145 • (GDHE) Complete Worksheet • Page 97 • (TG)			
	Day 59	Complete Our Weather & Water Quiz 7 (Lessons 30-34) Pages 279-280 • (TG)			
	Day 60				
Week 4	Day 61	Complete Our Weather & Water Final Exam (Lessons 1-34) Pages 281-284 • (TG)			
	Day 62	Our Universe Unit 1: Space Models Read Lesson 1: Introduction to Astronomy Pages 154-155 • (GDHE) Complete Worksheet • Pages 101-103 • (TG)			
	Day 63	Read Lesson 2: Space Models • Pages 156-160 • (GDHE) Complete Worksheet • Pages 105-106 • (TG)			
	Day 64	Read Special Feature: Nicolaus Copernicus • Pages 161-162 • (GDHE)			
	Day 65				
Week 5	Day 66	Read Lesson 3: The Earth's Movement • Pages 163-166 • (GDHE) Complete Worksheet • Pages 107-109 • (TG)			
	Day 67	Read Lesson 4: Tools for Studying Space • Pages 167-172 • (GDHE) Complete Worksheet • Pages 111-112 • (TG)			
	Day 68	Read Special Feature: Galileo Galilei • Pages 173-174 • (GDHE)			
	Day 69	Complete Our Universe Quiz 1 (Lessons 1-4) Pages 287-288 • (TG)			
	Day 70				

Date	Day	Assignment	Due Date	✓	Grade
Week 6	Day 71	Our Universe Unit 2: Outer Space Read Lesson 5: Overview of the Universe • Pages 176-178 • (GDHE) Complete Worksheet • Pages 113-114 • (TG)			
	Day 72	Read Lesson 6: Stars • Pages 179-181 • (GDHE) Complete Worksheet • Pages 115-116 • (TG)			
	Day 73	Read Lesson 7: Heavenly Bodies • Pages 182-185 • (GDHE) Complete Worksheet • Pages 117-118 • (TG)			
	Day 74	Read Special Feature: Astronomy vs. Astrology • Page 186 • (GDHE)			
	Day 75				
Week 7	Day 76	Read Lesson 8: Asteroids • Pages 187-189 • (GDHE) Complete Worksheet • Pages 119-120 • (TG)			
	Day 77	Read Lesson 9: Comets • Pages 190-192 • (GDHE) Complete Worksheet • Pages 121-122 • (TG)			
	Day 78	Read Lesson 10: Meteors • Pages 193-196 • (GDHE) Complete Worksheet • Pages 123-124 • (TG)			
	Day 79	Complete Our Universe Quiz 2 (Lessons 5-10) Pages 289-290 • (TG)			
	Day 80				
Week 8	Day 81	Our Universe Unit 3: Sun & Moon Read Lesson 11: Overview of Our Solar System Pages 198-201 • (GDHE) Complete Worksheet • Pages 125-126 • (TG)			
	Day 82	Read Lesson 12: Our Sun • Pages 202-204 • (GDHE) Complete Worksheet • Pages 127-128 • (TG)			
	Day 83	Read Lesson 13: Structure of the Sun • Pages 205-208 • (GDHE) Complete Worksheet • Pages 129-130 • (TG)			
	Day 84	Read Lesson 14: Solar Eclipse • Pages 209-211 • (GDHE) Complete Worksheet • Pages 131-132 • (TG)			
	Day 85				
Week 9	Day 86	Read Lesson 15: Solar Energy • Pages 212-214 • (GDHE) Complete Worksheet • Pages 133-135 • (TG)			
	Day 87	Read Lesson 16: Our Moon • Pages 215-217 • (GDHE) Complete Worksheet • Pages 137-138 • (TG)			
	Day 88	Read Special Feature: Newton & the Apple Pages 218-219 • (GDHE)			
	Day 89	Read Lesson 17: Motion & Phases of the Moon Pages 220-223 • (GDHE) Complete Worksheets • Pages 139-142 • (TG)			
	Day 90				
		Mid-Term Grade			

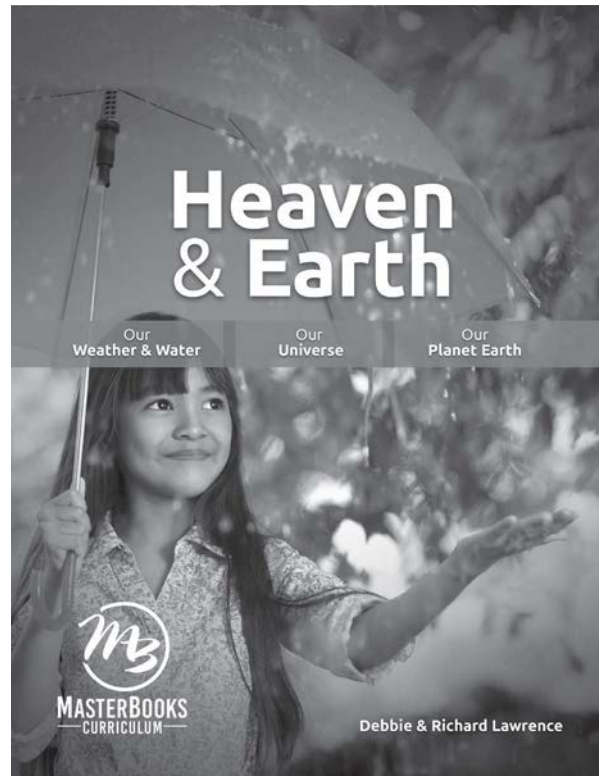
Second Semester Suggested Daily Schedule

Date	Day	Assignment	Due Date	✓	Grade
Second Semester-Third Quarter					
Week 1	Day 91	Read Lesson 18: Origin of the Moon • Pages 224-226 • (GDHE) Complete Worksheet • Pages 143-144 • (TG)			
	Day 92	Complete Our Universe Quiz 3 (Lessons 11-18) Pages 291-292 • (TG)			
	Day 93	Our Universe Unit 4: Planets Read Lesson 19: Mercury • Pages 228-230 • (GDHE) Complete Worksheet • Pages 145-146 • (TG)			
	Day 94	Read Lesson 20: Venus • Pages 231-233 • (GDHE) Complete Worksheets • Pages 147-149 • (TG)			
	Day 95				
Week 2	Day 96	Read Lesson 21: Earth • Pages 234-236 • (GDHE) Complete Worksheets • Pages 151-152 • (TG)			
	Day 97	Read Lesson 22: Mars • Pages 237-239 • (GDHE) Complete Worksheets • Pages 153-154 • (TG)			
	Day 98	Read Lesson 23: Jupiter • Pages 240-242 • (GDHE) Complete Worksheets • Pages 155-156 • (TG)			
	Day 99	Read Lesson 24: Saturn • Pages 243-245 • (GDHE) Complete Worksheets • Pages 157-158 • (TG)			
	Day 100				
Week 3	Day 101	Read Lesson 25: Uranus • Pages 246-248 • (GDHE) Complete Worksheets • Pages 159-160 • (TG)			
	Day 102	Read Lesson 26: Neptune • Pages 249-251 • (GDHE) Complete Worksheets • Pages 161-162 • (TG)			
	Day 103	Read Lesson 27: Pluto & Eris • Pages 252-254 • (GDHE) Complete Worksheets • Pages 163-164 • (TG)			
	Day 104	Read Special Feature: Planet Statistics • Page 255 • (GDHE)			
	Day 105				
Week 4	Day 106	Complete Our Universe Quiz 4 (Lessons 19-27) Page 293 • (TG)			
	Day 107	Our Universe Unit 5: Space Program Read Lesson 28: NASA • Pages 257-260 • (GDHE) Complete Worksheet • Pages 165-166 • (TG)			
	Day 108	Read Lesson 29: Space Exploration • Pages 261-265 • (GDHE) Complete Worksheet • Pages 167-168 • (TG)			
	Day 109	Read Lesson 30: Apollo Program • Pages 266-270 • (GDHE) Complete Worksheet • Pages 169-170 • (TG)			
	Day 110				

Date	Day	Assignment	Due Date	✓	Grade
Week 5	Day 111	Read Lesson 31: The Space Shuttle • Pages 271-274 • (GDHE) Complete Worksheet • Pages 171-172 • (TG)			
	Day 112	Read Special Feature: Rick D. Husband • Page 275 • (GDHE)			
	Day 113	Read Lesson 32: International Space Station Pages 276-279 • (GDHE) Complete Worksheet • Pages 173-174 • (TG)			
	Day 114	Read Lesson 33: Astronauts • Pages 280-282 • (GDHE) Complete Worksheet • Pages 175-176 • (TG)			
	Day 115				
Week 6	Day 116	Read Special Feature: Jeffery Nels Williams Pages 283-284 • (GDHE)			
	Day 117	Read Lesson 34: Solar System Model: Final Project Pages 285-286 • (GDHE) Complete Worksheet • Pages 177-178 • (TG)			
	Day 118	Read Lesson 35: Conclusion • Pages 287-288 • (GDHE) Complete Worksheet • Page 179 • (TG)			
	Day 119	Complete Our Universe Quiz 5 (Lessons 28-33) Pages 295-296 • (TG)			
	Day 120				
Week 7	Day 121	Complete Our Universe Final Exam (Lessons 1-34) Pages 297-299 • (TG)			
	Day 122	Our Planet Earth Unit 1: Origins & Glaciers Read Lesson 1: Introduction to Earth Science Pages 294-297 • (GDHE) Complete Worksheet • Pages 183-184 • (TG)			
	Day 123	Read Lesson 2: Introduction to Geology Pages 298-300 • (GDHE) Complete Worksheet • Pages 185-186 • (TG)			
	Day 124	Read Lesson 3: The Earth's History • Pages 301-304 • (GDHE) Complete Worksheet • Pages 187-188 • (TG)			
	Day 125				
Week 8	Day 126	Read Special Feature: Dating Methods Pages 305-306 • (GDHE)			
	Day 127	Read Lesson 4: The Genesis Flood • Pages 307-308 • (GDHE) Complete Worksheet • Pages 189-190 • (TG)			
	Day 128	Read Special Feature: The Search for Noah's Ark Pages 309-310 • (GDHE)			
	Day 129	Read Lesson 5: The Great Ice Age • Pages 311-313 • (GDHE) Complete Worksheets • Pages 191-194 • (TG)			
	Day 130				
Week 9	Day 131	Read Lesson 6: Glaciers • Pages 314-317 • (GDHE) Complete Worksheet • Pages 195-196 • (TG)			
	Day 132	Read Special Feature: Sir Ernest Shackleton & the <i>Endurance</i> Pages 318-319 • (GDHE)			
	Day 133	Read Lesson 7: Movement of Glaciers • Pages 320-322 • (GDHE) Complete Worksheet • Pages 197-198 • (TG)			
	Day 134	Complete Our Planet Earth Quiz 1 (Lessons 1-7) Pages 303-304 • (TG)			
	Day 135				

Date	Day	Assignment	Due Date	✓	Grade
Second Semester-Fourth Quarter					
Week 1	Day 136	Our Planet Earth Unit 2: Rocks & Minerals Read Lesson 8: Design of the Earth • Pages 324-327 • (GDHE) Complete Worksheet • Pages 199-200 • (TG)			
	Day 137	Read Lesson 9: Rocks • Pages 328-330 • (GDHE) Complete Worksheet • Pages 201-202 • (TG)			
	Day 138	Read Lesson 10: Igneous Rocks • Pages 331-334 • (GDHE) Complete Worksheet • Pages 203-204 • (TG)			
	Day 139	Read Lesson 11: Sedimentary Rocks • Pages 335-338 • (GDHE) Complete Worksheet • Pages 205-206 • (TG)			
	Day 140				
Week 2	Day 141	Read Lesson 12: Fossils • Pages 339-341 • (GDHE) Complete Worksheet • Pages 207-208 • (TG)			
	Day 142	Read Lesson 13: Fossil Fuels • Pages 342-345 • (GDHE) Complete Worksheet • Pages 209-210 • (TG)			
	Day 143	Read Lesson 14: Metamorphic Rocks • Pages 346-347 • (GDHE) Complete Worksheets • Pages 211-214 • (TG)			
	Day 144	Read Special Feature: Artificial Islands Pages 348-349 • (GDHE)			
	Day 145				
Week 3	Day 146	Read Lesson 15: Minerals • Pages 350-352 • (GDHE) Complete Worksheet • Pages 215-216 • (TG)			
	Day 147	Read Lesson 16: Identifying Minerals • Pages 353-355 • (GDHE) Complete Worksheets • Pages 217-220 • (TG)			
	Day 148	Read Lesson 17: Valuable Minerals • Pages 356-358 • (GDHE) Complete Worksheets • Pages 221-222 • (TG)			
	Day 149	Read Lesson 18: Natural & Artificial Gems Pages 359-360 • (GDHE) Complete Worksheets • Pages 223-224 • (TG)			
	Day 150				
Week 4	Day 151	Complete Our Planet Earth Quiz 2 (Lessons 8-18) Pages 305-306 • (TG)			
	Day 152	Our Planet Earth Unit 3: Mountains & Movement Read Lesson 19: Plate Tectonics • Pages 362-365 • (GDHE) Complete Worksheet • Pages 225-226 • (TG)			
	Day 153	Read Lesson 20: Mountains • Pages 366-367 • (GDHE) Complete Worksheets • Pages 227-230 • (TG)			
	Day 154	Read Lesson 21: Types of Mountains • Pages 368-371 • (GDHE) Complete Worksheets • Pages 231-232 • (TG)			
	Day 155				

Date	Day	Assignment	Due Date	✓	Grade
Week 5	Day 156	Read Lesson 22: Earthquakes • Pages 372-376 • (GDHE) Complete Worksheets • Pages 233-234 • (TG)			
	Day 157	Read Lesson 23: Detecting & Predicting Earthquakes Pages 377-379 • (GDHE) Complete Worksheets • Pages 235-236 • (TG)			
	Day 158	Read Lesson 24: Volcanoes • Pages 380-382 • (GDHE) Complete Worksheets • Pages 237-238 • (TG)			
	Day 159	Read Special Feature: Mt. Vesuvius • Pages 383-384 • (GDHE)			
	Day 160				
Week 6	Day 161	Read Lesson 25: Volcano Types • Pages 385-388 • (GDHE) Complete Worksheets • Pages 239-240 • (TG)			
	Day 162	Read Lesson 26: Mount St. Helens • Pages 389-391 • (GDHE) Complete Worksheets • Pages 241-242 • (TG)			
	Day 163	Complete Our Planet Earth Quiz 3 (Lessons 19-26) Pages 307-308 • (TG)			
	Day 164	Our Planet Earth Unit 4: Water & Erosion Read Lesson 27: Geysers • Pages 393-396 • (GDHE) Complete Worksheet • Pages 243-244 • (TG)			
	Day 165				
Week 7	Day 166	Read Lesson 28: Weathering & Erosion Pages 397-398 • (GDHE) Complete Worksheets • Pages 245-248 • (TG)			
	Day 167	Read Lesson 29: Mass Wasting • Pages 399-401 • (GDHE) Complete Worksheet • Pages 249-250 • (TG)			
	Day 168	Read Lesson 30: Stream Erosion • Pages 402-405 • (GDHE) Complete Worksheet • Pages 251-252 • (TG)			
	Day 169	Read Lesson 31: Soil • Pages 406-408 • (GDHE) Complete Worksheets • Pages 253-255 • (TG)			
	Day 170				
Week 8	Day 171	Read Lesson 32: Grand Canyon • Pages 409-411 • (GDHE) Complete Worksheet • Pages 257-258 • (TG)			
	Day 172	Read Lesson 33: Caves • Pages 412-414 • (GDHE) Complete Worksheet • Pages 259-260 • (TG)			
	Day 173	Read Lesson 34: Rocks & Minerals Collection: Final project Pages 415-416 • (GDHE) Complete Worksheet • Pages 261-262 • (TG)			
	Day 174	Read Lesson 35: Conclusion • Page 417 • (GDHE) Complete Worksheet • Page 263 • (TG)			
	Day 175				
Week 9	Day 176	Review Day for Quiz 4			
	Day 177	Complete Our Planet Earth Quiz 4 (Lessons 27-34) Pages 309-310 • (TG)			
	Day 178	Review Day for Final Exam			
	Day 179	Complete Our Planet Earth Final Exam (Lessons 1-34) Pages 311-313 • (TG)			
	Day 180				
		Final Grade			



Weather & Water Worksheets

for Use with

Our Weather & Water

(God's Design: Heaven & Earth)

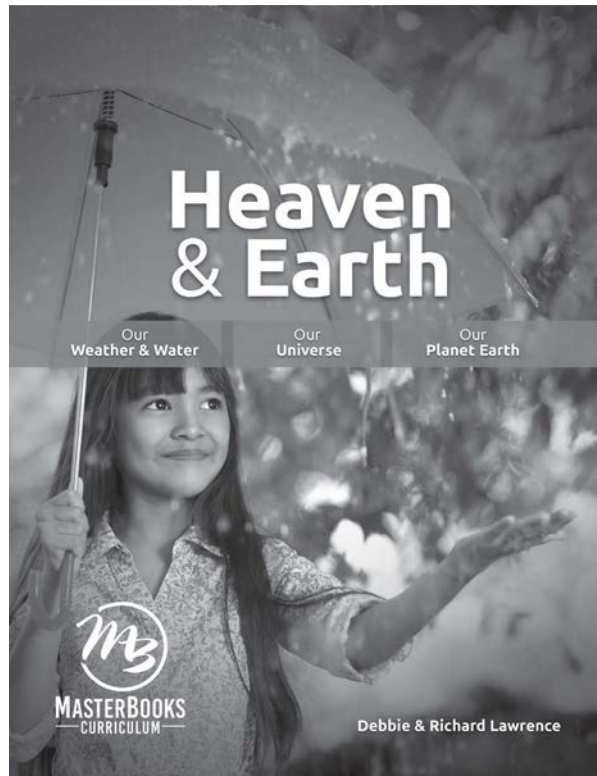
Name _____

Date _____

Weather Across the Country Worksheet

City	High temperature	Low temperature	Weather conditions
San Francisco, CA			
Las Vegas, NV			
Phoenix, AZ			
Denver, CO			
Houston, TX			
St. Louis, MO			
Chicago, IL			
Miami, FL			
Atlanta, GA			
Philadelphia, PA			
Washington, D.C.			

1. How does the weather in your town compare to the weather in other cities across the country?
2. Why do you think the weather is so different from one city to another?



Worksheet Answer Keys
for Use with
God's Design: Heaven & Earth

Our Weather & Water Worksheet Answer Keys

1. A Christian View of Weather

What did we learn?

1. Is there a Christian view of weather? **Yes, there is a Christian view of everything. Either the weather is only naturalistic, or it is a result of a system designed by God the Creator.**
2. What three events described in the Bible have greatly affected the weather on earth? **Creation, the Curse due to the Fall of man, and the Flood.**
3. List three things you can learn about the weather from a newspaper weather report. **Actual high and low temperatures, predicted high and low temperatures, precipitation amounts, weather front locations, record high and low temperatures, weather conditions across the country.**

Taking it further

1. Why is it important to have a Christian view of weather? **It allows us to recognize God's handiwork.**
2. What are some geographical or physical characteristics that affect the weather in a particular area? **Large bodies of water, mountains, deserts, latitude, altitude.**

2. Structure of the Atmosphere

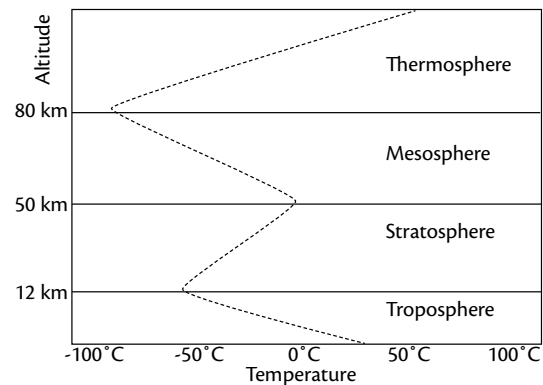
What did we learn?

1. What are the two main components of air? **Nitrogen—78%, Oxygen—21%.**
2. What are the five levels of the atmosphere? **Troposphere, stratosphere, mesosphere, thermosphere, exosphere. The lesson also mentioned the ionosphere and magnetosphere.**
3. What are some ways that the atmosphere protects us? **It protects us from extreme temperatures, vacuums, solar radiation and meteors, and provides oxygen to breathe.**

Taking it further

1. How would the earth be different if there were a higher concentration of oxygen? **Fires would burn uncontrollably.**
2. What would happen if the nitrogen in the atmosphere was replaced with a more reactive element, such as carbon? **The carbon would combine with the oxygen and form carbon dioxide, making the air unbreathable.**

Challenge: Atmospheric Temperature



3. The Weight of Air

What did we learn?

1. What causes air to have weight? **Gravity pulling down on the air molecules.**
2. How much air pressure do we experience at sea level? **About 15 pounds per square inch.**
3. Why don't we feel the weight of the air molecules? **Our bodies push out with the same amount of pressure.**
4. Do you expect air pressure to be the same at all locations in the world? **No, as you go up in altitude, gravity exerts less force on the air molecules so there is less air pressure. Also, the pressure varies from one area to another causing weather fronts.**

Taking it further

1. Why is it important that air has weight? **The weight of the air allows us to have wind and moving air fronts.**

- Why must aircraft be pressurized when flying at high altitudes? **The air pressure is much lower at high altitudes than it is on the ground and the lack of pressure can be painful for passengers, especially on their ears as they try to adjust to the lower pressure. If the pressure is low enough, there might not be enough oxygen to breathe.**

4. The Study of Weather

What did we learn?

- What is meteorology? **The study of the atmosphere; particularly the study of the conditions of the troposphere.**
- What are the five important conditions in the troposphere that meteorologists study? **Temperature, atmospheric/air pressure, humidity, wind, and precipitation.**

Taking it further

- Why are meteorologists interested in studying the conditions of the troposphere? **They want to understand what affects the weather and be able to predict future weather conditions.**
- How does the sun heat areas of the earth that do not receive much direct sunlight? **The sunlight is most concentrated in areas close to the equator. The air is warmer there than at the poles. However, because of air and water currents, warmer air and warmer water move toward the poles and cooler air and cooler water move toward the equator so the earth is more evenly heated.**

Challenge: Weather Ingredients worksheet

	Earth	Sun	Air	Water
W	Winter	Waves	Warm/Wind	Wet/White caps
E	Elevation	Eclipse	Expands	Evaporation
A	Absorbs	Angle	Atmosphere	Acid rain
T	Tilted axis	Temperature	Troposphere	Thunderstorm
H	Huge	Heat	Humidity	Hail/Humidity
E	Equator	Energy	Electricity	El Niño/Eye of storm
R	Rotation/Revolution	Radiation/Reflect	Relative humidity	Rain

5. Weather vs. Climate

What did we learn?

- What is weather? **The atmospheric conditions present in an area at a given time.**

- What is climate? **The average weather conditions for an area over a long period of time, including average temperatures and average precipitation.**
- What are the five major climates found on earth? **Polar, desert, tropical, subtropical, and temperate.**

Taking it further

- How does the Gobi Desert help create the monsoon? **The Gobi Desert heats the dry air around it. That air rises, allowing cooler air to move in. The cooler air comes from the Bay of Bengal and has a high moisture content, thus bringing rain to the area near the bay.**
- Which of the following phrases describe weather and which describe climate?
 Cloudy with a chance of rain: **Weather.**
 Average of 20 inches of rain per year: **Climate.**
 Average summer temperature of 70°F: **Climate.**
 3 inches of snow in the past 24 hours: **Weather.**

6. Pre-Flood Climate

What did we learn?

- Using clues from the Bible and science, what was the climate most likely like on earth before the Flood? **Warm; possibly no rain and more water vapor in the atmosphere; more constant temperature.**

Taking it further

- How does the Bible say that plants were watered in the beginning? **The Bible says they were watered by springs and rivers. They were also probably watered by dew and from underground sources.**
- How might the breaking up of the original landmass have contributed to the Flood? **Superheated water from inside the earth would have shot into the atmosphere and then rained back to earth.**

Challenge: Climate Clues worksheet

Clue #1:

- Where do swamp cypress trees grow today? **Swampy areas in Georgia and Florida.**
- What is the climate like in the Arctic Islands today? **Very cold and snowy.**

Our Weather & Water Master Supply List

The following table lists all the supplies used for *God's Design for Heaven & Earth: Our Weather & Water* activities. You will need to look up the individual lessons in the student book to obtain the specific details for the individual activities (such as quantity, color, etc.). The letter "c" denotes that the lesson number refers to the challenge activity. Common supplies such as colored pencils, construction paper, markers, scissors, tape, etc., are not listed.

Supplies needed (see lessons for details)	Lesson	Supplies needed (see lessons for details)	Lesson
<input type="checkbox"/> Aquarium or other empty case	31	<input type="checkbox"/> Plastic bottle (empty, 2-liter)	11c, 13, 16, 22, 26
<input type="checkbox"/> Baking dish	4	<input type="checkbox"/> Plastic grocery bag	3c
<input type="checkbox"/> Balloons	3	<input type="checkbox"/> Plastic tornado tube (optional but recommended)	16
<input type="checkbox"/> Bible	35	<input type="checkbox"/> Plastic tubing (clear)	22
<input type="checkbox"/> Bottle with lid	22, 28	<input type="checkbox"/> Plastic zipper bag	10
<input type="checkbox"/> Candle	2	<input type="checkbox"/> Playing cards	30
<input type="checkbox"/> Cotton balls	11	<input type="checkbox"/> Poster board/tagboard	22
<input type="checkbox"/> Dry ice	10c	<input type="checkbox"/> Rubber band	18
<input type="checkbox"/> Duct tape	16, 22	<input type="checkbox"/> Salt	24
<input type="checkbox"/> Flour	12	<input type="checkbox"/> Sand	19, 28
<input type="checkbox"/> Food coloring	4, 13, 22, 25	<input type="checkbox"/> Shoe box	10c
<input type="checkbox"/> Global warming articles	8	<input type="checkbox"/> Short ruler (6-inch)	22
<input type="checkbox"/> Gloves	10c	<input type="checkbox"/> Sling psychrometer (optional)	18
<input type="checkbox"/> Graph paper	2c, 21c	<input type="checkbox"/> Slinky	26
<input type="checkbox"/> House plant	6	<input type="checkbox"/> Straw	22
<input type="checkbox"/> Ice	10	<input type="checkbox"/> String	3, 12, 22, 26
<input type="checkbox"/> Jar with lid	2, 3c, 10, 19, 25, 26, 28	<input type="checkbox"/> Stuffed animal	15
<input type="checkbox"/> Masking tape	3, 4, 14, 19, 26	<input type="checkbox"/> Styrofoam cups	4
<input type="checkbox"/> Matches	2, 11c	<input type="checkbox"/> Syrup	13
<input type="checkbox"/> Metal clothes hanger	14	<input type="checkbox"/> The Magic School Bus on the Ocean Floor	29
<input type="checkbox"/> Mirror	6	<input type="checkbox"/> Thermometer	18
<input type="checkbox"/> Modeling clay	2, 22, 29, 31, 34	<input type="checkbox"/> Trash bag (large)	14
<input type="checkbox"/> Newspaper	1, 5, 21	<input type="checkbox"/> Weather station (optional)	22
<input type="checkbox"/> Paint roller pan	28	<input type="checkbox"/> Wooden stick (small, skewer-like)	22
<input type="checkbox"/> pH testing paper (optional)	12c	<input type="checkbox"/> World atlas/map	5, 23
<input type="checkbox"/> Piece of cloth	15, 18	<input type="checkbox"/> Yard stick/meter stick	3

Our Universe Master Supply List

The following table lists all the supplies used for *God's Design for Heaven & Earth: Our Universe* activities.

You will need to look up the individual lessons in the student book to obtain the specific details for the individual activities (such as quantity, color, etc.). The letter "c" denotes that the lesson number refers to the challenge activity. Common supplies such as colored pencils, construction paper, markers, scissors, tape, etc., are not listed.

Supplies needed (see lessons for details)	Lesson
<input type="checkbox"/> Aluminum foil	20, 29
<input type="checkbox"/> Aquarium or other empty case	22
<input type="checkbox"/> Balloons	30
<input type="checkbox"/> Basketball or volleyball	3, 14, 25
<input type="checkbox"/> Bathroom scale	27
<input type="checkbox"/> Bible	1, 18c, 35
<input type="checkbox"/> Building blocks	33
<input type="checkbox"/> Calculator	6c, 27
<input type="checkbox"/> Candle	22
<input type="checkbox"/> Cardboard	11c
<input type="checkbox"/> Cereal bowls	23
<input type="checkbox"/> Clipboard	15c
<input type="checkbox"/> Craft wire	34
<input type="checkbox"/> Cups (clear plastic or glass)	15, 19c, 21c, 22, 23c, 26
<input type="checkbox"/> Dry ice	22
<input type="checkbox"/> Flashlight	3, 4, 6, 7, 14, 15c, 16, 19c, 21c, 26, 35
<input type="checkbox"/> Flour	10
<input type="checkbox"/> Food coloring	26
<input type="checkbox"/> Glitter	9
<input type="checkbox"/> Globe of the earth	21
<input type="checkbox"/> Gloves	22
<input type="checkbox"/> Golf ball	2, 10
<input type="checkbox"/> Graph paper	20c
<input type="checkbox"/> Hairdryer	19

Supplies needed (see lessons for details)	Lesson
<input type="checkbox"/> Ice	15, 19
<input type="checkbox"/> Index card	12c, 19c, 25c, 34c
<input type="checkbox"/> Liquid dish soap	22
<input type="checkbox"/> Magnet	28
<input type="checkbox"/> Magnifying glass	4, 19c
<input type="checkbox"/> Marbles	10, 23
<input type="checkbox"/> Masking tape	3, 18
<input type="checkbox"/> Matches	22
<input type="checkbox"/> Milk	21c
<input type="checkbox"/> Mirror	4, 12, 33
<input type="checkbox"/> Model rocket and launch pad (optional)	29
<input type="checkbox"/> Modeling clay	3c, 20c, 25c, 29
<input type="checkbox"/> Motorcycle helmet with face plate, or bike helmet (optional)	33
<input type="checkbox"/> Nut and bolt	33
<input type="checkbox"/> Orange (fruit)	21
<input type="checkbox"/> Paint	25, 34
<input type="checkbox"/> Pencils (wooden)	25c
<input type="checkbox"/> Ping-pong ball	2, 25
<input type="checkbox"/> Plastic lid or dish	28
<input type="checkbox"/> Plastic wrap	20
<input type="checkbox"/> Plastic zipper bag	
<input type="checkbox"/> Poster board/tagboard	9, 28, 29
<input type="checkbox"/> Prism (optional)	12
<input type="checkbox"/> Protractor	25c
<input type="checkbox"/> Reflector (like from a bicycle)	16
<input type="checkbox"/> Ruler	6, 20c
<input type="checkbox"/> Salt	10
<input type="checkbox"/> Shoe box	20, 20c
<input type="checkbox"/> Sidewalk chalk	13
<input type="checkbox"/> Star chart	5
<input type="checkbox"/> Steel BBs	28
<input type="checkbox"/> Straw	30

Supplies needed (see lessons for details)	Lesson	Supplies needed (see lessons for details)	Lesson
<input type="checkbox"/> String	11c, 20c, 26c, 30	<input type="checkbox"/> Toy houses, cars, etc.	10
<input type="checkbox"/> Styrofoam balls	9, 29, 34	<input type="checkbox"/> Tripod	3c
<input type="checkbox"/> Styrofoam rings	34	<input type="checkbox"/> Turntable (swivel chair, stool, Lazy Susan, etc.)	3c
<input type="checkbox"/> Tea bag	23c	<input type="checkbox"/> Washer	20c, 26c
<input type="checkbox"/> Telescope (optional)	4, 16c	<input type="checkbox"/> Waxed paper	32
<input type="checkbox"/> Tennis ball	14	<input type="checkbox"/> Winter clothes	33
<input type="checkbox"/> Thermometer	15, 20	<input type="checkbox"/> World atlas/map	21
<input type="checkbox"/> Thumb tacks	11c	<input type="checkbox"/> Yard stick/meter stick	6, 12c
<input type="checkbox"/> Tops (spinning toys)	18		
<input type="checkbox"/> Towel	19		

Our Planet Earth Master Supply List

The following table lists all the supplies used for *God's Design for Heaven & Earth: Our Planet Earth* activities. You will need to look up the individual lessons in the student book to obtain the specific details for the individual activities (such as quantity, color, etc.). The letter "c" denotes that the lesson number refers to the challenge activity. Common supplies such as colored pencils, construction paper, markers, scissors, tape, etc., are not listed.

Supplies needed (see lessons for details)	Lesson	Supplies needed (see lessons for details)	Lesson
<input type="checkbox"/> Alum (look in grocery spice aisle)	10	<input type="checkbox"/> Ice	6
<input type="checkbox"/> Baking soda	24	<input type="checkbox"/> Ice cream	25
<input type="checkbox"/> Bar of soap	28	<input type="checkbox"/> Jar with lid	3, 6, 7c, 8
<input type="checkbox"/> Bible	35	<input type="checkbox"/> Magnifying glass	10c, 16, 31
<input type="checkbox"/> Brown sugar	10	<input type="checkbox"/> Marshmallows (large)	6, 8
<input type="checkbox"/> Building blocks	22	<input type="checkbox"/> Masking tape	1, 16
<input type="checkbox"/> Butterscotch candy	10	<input type="checkbox"/> Milk carton (empty, ½-gallon)	7
<input type="checkbox"/> Cardboard	33	<input type="checkbox"/> Modeling clay	12, 21c, 22c, 28, 32
<input type="checkbox"/> Chocolate chip cookies	17	<input type="checkbox"/> Newspaper	7c, 21, 24, 31c
<input type="checkbox"/> Chocolate chips	8, 8c, 25	<input type="checkbox"/> Paint	11
<input type="checkbox"/> Chocolate syrup	25	<input type="checkbox"/> Paper cups	10, 11c, 30c, 31c, 33
<input type="checkbox"/> Colander	31c	<input type="checkbox"/> Peanut butter (creamy) or frosting	19c
<input type="checkbox"/> Cookie crumbs	25	<input type="checkbox"/> Petroleum jelly	12
<input type="checkbox"/> Cornstarch	11	<input type="checkbox"/> Plaster of Paris	11c, 12
<input type="checkbox"/> Craft sticks	10	<input type="checkbox"/> Plastic bottle (empty, 2-liter)	24
<input type="checkbox"/> Dirt/soil (from your yard)	29, 30, 30c, 31, 31c	<input type="checkbox"/> Plastic zipper bag	7c, 8c, 28c
<input type="checkbox"/> Display box (optional)	34	<input type="checkbox"/> Poster board/tagboard	34
<input type="checkbox"/> Egg carton	15c	<input type="checkbox"/> Potting soil	31
<input type="checkbox"/> Epsom salt	13, 33	<input type="checkbox"/> Raw sugar	10
<input type="checkbox"/> Eye protection (goggles)	16	<input type="checkbox"/> Real chalk (made from limestone, not sidewalk chalk) or limestone rock	28
<input type="checkbox"/> Fine mesh strainer	31c	<input type="checkbox"/> Rock and mineral guide	10c, 11c, 14c, 16, 34
<input type="checkbox"/> Food coloring	24	<input type="checkbox"/> Rock and mineral samples	9c, 10c, 11c, 14c, 15c, 16, 34
<input type="checkbox"/> Gloves	7, 7c	<input type="checkbox"/> Rolling pin	23
<input type="checkbox"/> Graham crackers	19c	<input type="checkbox"/> Sand	11
<input type="checkbox"/> Gumballs	8	<input type="checkbox"/> Shaved ice (or fresh snow if available)	14
<input type="checkbox"/> Hammer	16	<input type="checkbox"/> Shoe box	23
		<input type="checkbox"/> Soda pop (unopened can)	25c
		<input type="checkbox"/> Sponges	13
		<input type="checkbox"/> Steel wool without soap	28c
		<input type="checkbox"/> Stop watch	31c

Supplies needed (see lessons for details)	Lesson	Supplies needed (see lessons for details)	Lesson
<input type="checkbox"/> Straw	27, 28	<input type="checkbox"/> Towel	19
<input type="checkbox"/> String	1, 33	<input type="checkbox"/> Toy houses, cars, etc.	10
<input type="checkbox"/> Taffy or other soft candy	14	<input type="checkbox"/> Tripod	3c
<input type="checkbox"/> Tennis ball	1	<input type="checkbox"/> Turntable (swivel chair, stool, Lazy Susan, etc.)	3c
<input type="checkbox"/> Toothpicks	8, 17	<input type="checkbox"/> Washer	20c, 26c
<input type="checkbox"/> Toy boat	6	<input type="checkbox"/> Waxed paper	32
<input type="checkbox"/> Tracing paper	19	<input type="checkbox"/> Winter clothes	33
<input type="checkbox"/> Unglazed ceramic tile	16	<input type="checkbox"/> World atlas/map	21
<input type="checkbox"/> Vinegar	24, 28	<input type="checkbox"/> Yard stick/meter stick	6, 12c
<input type="checkbox"/> Waxed paper	8, 14, 19c		
<input type="checkbox"/> World atlas/map	5c, 20c, 24c		
<input type="checkbox"/> Tops (spinning toys)	18		