

TABLE OF CONTENTS

UNIT 1 - ATMOSPHERE & METEOROLOGY

Lesson 1	A Christian View of Weather	8
Lesson 2	Structure of the Atmosphere	11
Lesson 3	The Weight of Air	15
Special Feature	Discovery of Air	18
Lesson 4	The Study of Weather	19

UNIT 2 - ANCIENT WEATHER & CLIMATE

Lesson 5	Weather vs. Climate	24
Lesson 6	Pre-Flood Climate	28
Lesson 7	Climate Changes Due to the Genesis Flood	31
Special Feature	Weather & the Bible	36
Lesson 8	Global Warming	38

UNIT 3 - CLOUDS

Lesson 9	Water Cycle	43
Lesson 10	Cloud Formation	47
Lesson 11	Cloud Types	50
Lesson 12	Precipitation	54
Special Feature	The Dust Bowl	59

UNIT 4 - STORMS

Lesson 13	Air Masses & Weather Fronts	62
Lesson 14	Wind	65
Lesson 15	Thunderstorms	69
Lesson 16	Tornadoes	73
Lesson 17	Hurricanes	78

UNIT 5 - WEATHER INFORMATION

Lesson 18	Gathering Weather Information	85
Special Feature	Weather Myths	91
Lesson 19	More Weather Instruments	93
Lesson 20	Reporting & Analyzing Weather Information	98
Lesson 21	Forecasting the Weather	102
Lesson 22	Weather Station—Final Project	105

UNIT 6 - OCEAN MOVEMENT

Lesson 23	Overview of the Oceans	108
Lesson 24	Composition of Seawater	112
Lesson 25	Ocean Currents	116
Special Feature	El Niño	120
Lesson 26	Waves	122
Lesson 27	Tides	127
Lesson 28	Wave Erosion	130
Lesson 29	Energy from the Ocean	133

UNIT 7 - SEA FLOOR

Lesson 30	Sea Exploration	137
Lesson 31	Geography of the Ocean Floor	141
Lesson 32	Ocean Zones	145
Special Feature	Intertidal Zones	148
Lesson 33	Vents & Smokers.	149
Lesson 34	Coral Reefs	152
Lesson 35	Conclusion	155
Glossary	156
Index	160



WELCOME TO



GOD'S DESIGN[®] FOR HEAVEN & EARTH

You are about to start an exciting series of lessons on earth science. *God's Design[®] for Heaven and Earth* consists of three books: *Our Universe*, *Our Planet Earth*, and *Our Weather and Water*. Each of these books will give you insight into how God designed and created our world and the universe in which we live.

No matter what grade you are in, first through eighth grade, you can use this book.

1st–2nd grade

Read only the “Beginner” section of each lesson, answer the questions at the end of that section, and then do the activity in the  box (the worksheets will be provided by your teacher).

3rd–5th grade

Skip the “Beginner” section and read the regular part of the lesson. After you read the lesson, do the activity in the  box and test your understanding by answering the questions in the  box.

6th–8th grade

Skip the “Beginner” section and read the regular part of the lesson. After you read the lesson, do the activity in the  box and test your understanding by answering the questions in the  box. Also do the “Challenge” section in the  box. This part of the lesson will challenge you to go beyond just elementary knowledge and do more advanced activities and learn additional interesting information.

Everyone should read the Special Features and do the final project. There are also unit quizzes and a final test to take.

Throughout this book you will see special icons like the one to the right. These icons tell you how the information in the lessons fit into the Seven C's of History: Creation, Corruption, Catastrophe, Confusion, Christ, Cross, Consummation. Your teacher will explain these to you.

Let's get started learning about God's design of our weather and water!



UNIT 1

ATMOSPHERE & METEOROLOGY

- ◇ **Describe** three major events that have shaped the earth we see today.
- ◇ **Identify and describe** the layers of earth's atmosphere.
- ◇ **Describe** the five atmospheric conditions studied by meteorologists.

- 1 A Christian View of Weather • 8
- 2 Structure of the Atmosphere • 11
- 3 The Weight of Air • 15
- 4 The Study of Weather • 19

KEY CONCEPTS | UNIT LESSONS



A CHRISTIAN VIEW OF WEATHER

What does the Bible say?

LESSON

1



What events in history
have affected our
weather?

BEGINNERS

What is the weather like where you live today? Is it raining or snowing? Is the sun shining brightly? God has designed our planet so that rain falls to water crops, and the sun shines to help the plants grow. The Bible tells us that God controls the weather. Jesus spoke to the storm, and the wind and the rain stopped immediately (Matthew 8:23–27). We can be thankful that God is in control.

God created the world and it was very good. The weather was pleasant and plants grew in the Garden of Eden to supply food for Adam and Eve. But when Adam and Eve disobeyed, God cursed the earth and it changed. This curse caused the earth to be different than it was at creation. Later, people became so wicked that God sent a Flood to destroy the earth. After the Flood, the weather was very different than before the Flood. We are going to learn about all of these events and how they affect the weather we have today. As you study weather in this book, remember that God designed it all and controls what happens. Aren't you glad that you can trust God?

- **Who designed the weather patterns on earth?**
- **What is one way that rain and sunshine work together to help people?**
- **What major event in the Bible greatly changed the weather on earth?**



Is there a Christian view of weather? Isn't weather just what happens outside? How can there be a Christian or non-Christian view of precipitation? Many people believe that you can separate your beliefs about God from your understanding of science. However, what you believe about God affects how you approach everything in life, so it even affects your understanding of weather. If you believe what the Bible says, then you know God sends the rain (see Jeremiah 5:24 and Jeremiah 14:22) and withholds the rain (see Amos 4:7). God controls storms (see Matthew 8:23–27). But most importantly, God created the earth and everything in it. He set up the way the weather operates, and He can work within the natural laws He has established as well as outside those laws to accomplish His purposes.

The planet that we live on has been affected by three major events in history. The first was the creation. In the beginning, everything was very good. But man rebelled against God and as a result God cursed the earth. Later, because of man's continual sin, God destroyed all of the people, except those in Noah's family, by sending a worldwide flood. This Flood had a tremendous effect on the planet, including changing the weather. We will look at the weather before and after the Flood in later lessons.

Our belief about God determines whether we recognize the weather patterns as random changes of nature or as a lovely system with an intelligent designer. Do we recognize the water cycle as a gift from God or just a random happening? If we view the planet earth and its weather from a Christian perspective, we will know that it was supernaturally created, it is designed by God, it is relatively young (about 6,000 years), it was created in perfection, and it was created for mankind to show God's love and provision for us. If we recognize these things when we study weather, we will see God's hand and understand Him more clearly. ■



WEATHER REPORTS

Look at a weather report from your local newspaper. Most likely you will find information on the temperature and precipitation that your town received yesterday as well as a prediction for the weather conditions for today and several days in the future. What other information does your weather report give? Local weather can be affected by many factors, making it difficult to accurately predict. Do you live near the ocean or a large lake? That will affect the weather. Do you live near the mountains? That will affect your weather too. The amount of humid-

ity and the wind will affect how you feel when you are outside.

Your weather report probably includes information on the weather across your state, as well as across the country. If your newspaper does not have this information, you can find it on the internet.

Purpose: To compare weather across the country

Materials: weather report from newspaper or Internet, "Weather Across the Country" worksheet

Procedure:

1. Enter your city or town on the first line of the chart and enter

the weather conditions for your home town.

2. Enter the predicted weather conditions for each of the cities listed.

Questions:

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

Conclusion: You will begin to understand the complexities of weather and how difficult it is to predict the weather as we go through the lessons in this book.

WHAT DID WE LEARN?

- Is there a Christian view of weather?
- What three events described in the Bible have greatly affected the weather on earth?
- List three things you can learn about the weather from a newspaper weather report.

TAKING IT FURTHER

- Why is it important to have a Christian view of weather?
- What are some geographical or physical characteristics that affect the weather in a particular area?



BIBLE-BELIEVING SCIENTISTS

Today, many people say that if you believe that God created you cannot be a good scientist. But is this true? Of course not! Many great scientists in the past believed the Bible. Sir Isaac Newton, considered by many to be one the greatest scientists of all time, was a Christian and a creationist. Sir Francis Bacon, credited with developing the scientific method, recognized God's hand in the world around him. This is why he believed that you could test your hypotheses to see if you were right, because God had created an orderly universe just waiting for us to discover the wonders that He had placed there.

Today, many scientists believe the Bible and are contributing to scientific research. If you are interested in meteorology and weather, you can be a good scientist, too. If you believe the Bible and recognize that God designed our weather system, you can contribute to a better understanding of our world by being a Bible-believing scientist.

Choose a Christian scientist from the past and research his contributions to science. Write a short report on what you learned and share it with your class or family. You can be encouraged by knowing that many of the greatest scientists have believed that God

created this world and not that it evolved by chance. Below is a list of scientists you can choose from.

- Sir Isaac Newton (physics)
- Lord Kelvin (thermodynamics)
- Blaise Pascal (hydrostatics)
- Johannes Kepler (astronomy)
- Carl Linneaus (biology)
- Robert Boyle (chemistry)
- Charles Babbage (computers)
- Joseph Lister (surgery)
- David Brewster (mineralogy)
- Louis Pasteur (bacteriology)
- James Clerk Maxwell (electronics)