

GOD'S  
DESIGN®

# Heaven & Earth

*for beginners*

Weather and Water  
for Beginners

Universe  
for Beginners

Planet Earth  
for Beginners



MASTERBOOKS®  
— CURRICULUM —

Debbie & Richard Lawrence



## MASTERBOOKS® — CURRICULUM —

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### About the Authors:

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's Science Day once a week.



Teacher Introduction	6
Weather and Water for Beginners — Supply List	8
Universe for Beginners — Supply List	9
Planet Earth for Beginners — Supply List	10
Schedule	11



## Weather and Water for Beginners

### Unit 1: Atmosphere and Meteorology 19

Lesson 1: God Made Weather	20
Lesson 2: The Atmosphere	23
Lesson 3: The Weight of Air	26
Lesson 4: The Study of Weather	28

### Unit 2: Ancient Weather and Climate 33

Lesson 5: Weather vs. Climate	34
Lesson 6: Climate Before the Flood	37
Lesson 7: The Great Flood	39
Lesson 8: Climate After the Flood	42

### Unit 3: Clouds 45

Lesson 9: Water Cycle	46
Lesson 10: Forming Clouds	48
Lesson 11: Cloud Types	51
Lesson 12: Precipitation	54

### Unit 4: Storms 57

Lesson 13: Air Masses and Weather Fronts	58
Lesson 14: Wind	60
Lesson 15: Thunderstorms	63
Lesson 16: Tornadoes	66
Lesson 17: Hurricanes	69

### Unit 5: Weather Information 73

Lesson 18: Measuring Temperature and Air Pressure	74
Lesson 19: Measuring Rainfall and Wind Speed	77
Lesson 20: Predicting Weather	80
Lesson 21: Weather Sayings	82
Lesson 22: Weather Review	85

### Unit 6: Ocean Movements 89

Lesson 23: Oceans	90
Lesson 24: Why Is Seawater Salty?	93
Lesson 25: Ocean Currents	95
Lesson 26: Waves	98
Lesson 27: Tides	101
Lesson 28: Wave Erosion	104
Lesson 29: Building Beaches	106

### Unit 7: Seafloor 111

Lesson 30: Sea Exploration	112
Lesson 31: The Ocean Floor	115
Lesson 32: Ocean Zones	118
Lesson 33: Vents and Smokers	121
Lesson 34: Coral Reefs	124
Lesson 35: Conclusion	127



## Universe for Beginners

### Unit 1: Space Models and Tools 133

Lesson 1: Introduction to Astronomy	134
Lesson 2: The Earth Is Moving	136
Lesson 3: Why Do We Have Seasons?	140
Lesson 4: Telescopes	143

### Unit 2: Outer Space 147

Lesson 5: Overview of the Universe	148
Lesson 6: Stars	151
Lesson 7: Our Galaxy	154
Lesson 8: Asteroids	157
Lesson 9: Comets	160
Lesson 10: Meteors	163

### Unit 3: Sun and Moon 167

Lesson 11: Our Solar System	168
Lesson 12: Our Sun	171
Lesson 13: The Surface of the Sun	174
Lesson 14: Solar Eclipse	177
Lesson 15: Solar Energy	181
Lesson 16: Our Moon	183
Lesson 17: Phases of the Moon	186
Lesson 18: Where Did the Moon Come From?	188

### Unit 4: Planets 191

Lesson 19: Mercury	192
Lesson 20: Venus	195
Lesson 21: Earth	198
Lesson 22: Mars	202
Lesson 23: Jupiter	206
Lesson 24: Saturn	209
Lesson 25: Uranus	211
Lesson 26: Neptune	214
Lesson 27: Pluto and Eris	216

### Unit 5: Space Program 219

Lesson 28: NASA	220
Lesson 29: Space Exploration	223
Lesson 30: Apollo Program	226
Lesson 31: The Space Shuttle	230
Lesson 32: International Space Station	233
Lesson 33: Astronauts	236
Lesson 34: Final Project	
— Solar System Model	240
Lesson 35: Conclusion	241





## Planet Earth for Beginners

### Unit 1: Origins and Glaciers 247

Lesson 1: Introduction to Earth Science	248
Lesson 2: The Earth Is Special	251
Lesson 3: The Earth's History	254
Lesson 4: The Genesis Flood	258
Lesson 5: The Great Ice Age	261
Lesson 6: Glaciers	264
Lesson 7: Movement of Glaciers	267

### Unit 2: Rocks and Minerals 271

Lesson 8: Design of the Earth	272
Lesson 9: Rocks	275
Lesson 10: Igneous Rocks	278
Lesson 11: Sedimentary Rocks	280
Lesson 12: Fossils	283
Lesson 13: Fossil Fuels	286
Lesson 14: Metamorphic Rocks	289
Lesson 15: Minerals	292
Lesson 16: Identifying Rocks	294
Lesson 17: Rock Cycle	296
Lesson 18: Gems	299

### Unit 3: Mountains and Movement 303

Lesson 19: The Earth Has Plates	304
Lesson 20: Mountains	308
Lesson 21: Types of Mountains	310
Lesson 22: Earthquakes	313
Lesson 23: Preparing for an Emergency	316
Lesson 24: Volcanoes	319
Lesson 25: Volcano Types	322
Lesson 26: Mount St. Helens	325

### Unit 4: Water and Erosion 329

Lesson 27: Geysers	330
Lesson 28: Erosion	333
Lesson 29: Landslides	336
Lesson 30: Stream Erosion	339
Lesson 31: Soil	342
Lesson 32: Grand Canyon	344
Lesson 33: Caves	347
Lesson 34: Rock Collection	350
Lesson 35: Appreciating Planet Earth	352

### Optional Activities 355

### Answer Key - Weather and Water 361

### Answer Key - Universe 377

### Answer Key - Planet Earth 391

# Teacher Introduction

Welcome to God’s Design Science for Beginners! *God’s Design for Heaven and Earth* includes Weather and Water, Universe, and Planet Earth.

The textbook is organized into three units of 35 lessons each. These lessons include a section to read, vocabulary words to trace, review questions, and one or more activities. These may be a pen-on-paper activity, a Scripture verse to trace, or a hands-on experiment. Each unit concludes with a vocabulary review.

In the back of this book, you will find answer keys for puzzles, review questions, and additional activities and experiments you can do with your student. We encourage you to do as many additional activities and experiments as possible since children learn more, and retain more, when they actively engage with the material.

The supply list for each section is included on pages 8–10. Be sure to consult the lists and gather the supplies you’ll need in advance.

There is no set timeline for completing each book. You can decide how many days each week you want to do science. We suggest that you review previous lessons often to help your students retain the information they’ve learned.

This course also includes unit vocabulary reviews. These can be used as assessments when given as a quiz or test if you wish.

A course schedule is included in this book. And as always, you can adjust it per the needs of your student. All activities can also be modified as needed to best fit your school year per your discretion.

We hope that you have a wonderful time of discovery as you explore the history of the planet earth – exploring rocks, volcanoes, and glaciers, as well as learning about our world’s climate, clouds, types of weather, oceans, and also about the wonderful universe God created – planets, meteors, solar energy, and more!

If you are using both the God’s Design Science for Beginners book in conjunction with the *God’s Design for Heaven and Earth* course for older students to create a multi-age level study for your students, please keep in mind the following tips:

**1**

Be flexible with the schedule for your students. Adjust as needed.

**2**

Focus on the ability of each student to master the material and make it fun!

**3**

Encourage students to help one another as they learn the material.

You can download a schedule that will help you teach this course at the same time as the course for the older student. It is available at [www.nlpg.com/classroom-aids](http://www.nlpg.com/classroom-aids).

Watch for the added activities symbol – these give you additional hands-on learning opportunities.



## Special Project

At the end of this course, the student will have the opportunity to do a special project. This can be:

- ✓ A poster sharing something you have learned from the course (e.g., focused on the earth, the universe, or weather)
- ✓ A short report from any of the three sections – planet earth, weather and water, or the universe. Can be focused on a specific area of interest (e.g., rocks, geologic processes, types of weather, weather events in history, the planets, the solar system, etc).
- ✓ A short oral presentation for your teacher: explain what you enjoyed most about the course and why.

Be as creative as you want to be!



# Weather and Water for Beginners – Supply List

Lesson	✓	Supplies
2		Small candle, glass jar, modeling clay
3		Balloons, string, yardstick, tape
4		Paper plate, weather symbols from the lesson, glue
5		Construction paper, pictures of various climates, yarn
7		An old calendar
8		Yellow finger paint
10		Glass jar with lid, pan, plastic zip bag, ice
11		Blue construction paper, cotton balls, glue
12		White paper
14		Metal hanger, trash bag, tape
15		Stuffed animal, cloth
16		Two 2-liter soda bottles, tornado tube connector (available from many science suppliers) or duct tape (works but may leak)
18		Thermometer
19		Clear jar, masking tape, permanent marker, ruler
22		Glass bottle, balloon, pan
24		Dark-colored construction paper, salt water, paint brush
25		Pie pan, water, pepper, straw
26		Sink or bathtub, small bottle, large bottle
28		Paint roller pan/tray with ramp, empty plastic bottle, sand
29		Several colors of sand or a box of fruit ring cereal, baby food jars
31		Empty aquarium, fish bowl or other glass or clear plastic container, modeling clay or play dough
32		Mural or butcher block paper, crayons, water color paints
33		Gummy worms, ice cream, whipped cream, chocolate syrup
34		Modeling clay or play dough

# Universe for Beginners – Supply List

Lesson	✓	Supplies
3		Access to a recording of Vivaldi’s Four Seasons. Available on the Internet.
4		Magnifying glass, telescope (optional)
5		Dark construction paper, white crayon, star stickers
6		Tagboard (heavy-weight cardboard) and string, or glow in the dark stars (optional)
7		Black construction paper, glue, sand (or glitter)
8		A variety of rocks, ball
9		Styrofoam™ ball, tagboard, glue, glitter
12		Pie pan, small mirror
13		Sidewalk chalk
14		Globe or large ball, small ball, flashlight
16		Sand box sand, corn starch
17		Sandwich cookies (like Oreos™)
19		Towel, hair dryer, ice
20		Styrofoam™ ball, glue, chocolate chips, cotton or polyester quilt batting
21		6 sided die
23		Two cereal bowls, marbles or round cereal
25		Apple, popsicle stick
27		Blocks, tape measure
29		Balloon
30		Round crackers, graham crackers, peanut butter
32		Waxed paper, butter knife
33		Winter clothes such as coat, snow pants, boots and gloves, bike helmet
34		Modeling clay – optional – you can use a Styrofoam™ or plastic kit instead of the modeling clay.

# Planet Earth for Beginners – Supply List

Lesson	✓	Supplies
4		Large jar, sand, dirt, pebbles, rocks, twigs, dried leaves
5		2 bowls, ice cubes
6		Glass container, ice cubes
7		Bowl, dirt or pebbles, ice cubes
8		Apple
10		Old crayons, muffin pan, foil cup liners
11		Rice Krispies®, candy pieces, raisins, marshmallows, butter, sidewalk chalk
12		Modeling clay or play dough, plaster of Paris, small toy animal or a seashell
14		Old crayons, aluminum foil, oven mitts, hair dryer
16		Many different rocks, rocks and minerals guidebook
19		Globe, baking sheet, frosting, graham crackers
20		Modeling clay or play dough
21		Newspaper or paper towels
22		Building blocks
23		Items for an emergency – suggestions from the lesson include: non-perishable food (such as dried fruit or peanut butter), can opener (manual), first aid kit, flashlight with extra batteries, matches, toothbrush, toothpaste, soap, paper plates, plastic cups and utensils, paper towels, water – at least a gallon per person, per day – sleeping bag or warm blanket for each person
24		Bottle, baking soda, vinegar, cookie sheet or pan, modeling clay or play dough
25		Ice cream, chocolate syrup, cookie crumbs; alternative supplies: mashed potatoes, gravy, bread crumbs
27		Soda straws
28		Baking sheet, dirt or sand
29		Baking sheet, dirt or potting soil
30		Baking sheet
31		Potting soil, yard soil, magnifying glass
33		Salt, dark construction paper
34		A container with many different sections for displaying a rock collection, rocks, rocks and minerals guidebook

Date	Day	Assignment	Due Date	✓	Grade
First Semester-First Quarter					
Week 1	Day 1	Weather and Water for Beginners Unit 1: Atmosphere and Meteorology Do Lesson 1: God Made Weather • Pages 20–22			
	Day 2	Do Lesson 2: The Atmosphere • Pages 23–25			
	Day 3	Do Lesson 3: The Weight of Air • Pages 26–27			
	Day 4				
	Day 5				
Week 2	Day 6	Do Lesson 4: The Study of Weather • Pages 28–31			
	Day 7	Complete <b>Atmosphere and Meteorology Unit Vocabulary Review</b> (Lessons 1–4) • Page 32			
	Day 8	Weather and Water for Beginners Unit 2: Ancient Weather and Climate Do Lesson 5: Weather vs. Climate • Pages 34–36			
	Day 9				
	Day 10				
Week 3	Day 11	Do Lesson 6: Climate Before the Flood • Pages 37–38			
	Day 12	Do Lesson 7: The Great Flood • Pages 39–41			
	Day 13	Do Lesson 8: Climate After the Flood • Pages 42–43			
	Day 14	Complete <b>Ancient Weather and Climate Unit Vocabulary Review</b> (Lessons 5–8) • Page 44			
	Day 15				
Week 4	Day 16	Weather and Water for Beginners Unit 3: Clouds Do Lesson 9: Water Cycle • Pages 46–47			
	Day 17	Do Lesson 10: Forming Clouds • Pages 48–50			
	Day 18	Do Lesson 11: Cloud Types • Pages 51–53			
	Day 19	Do Lesson 12: Precipitation • Pages 54–55			
	Day 20				
Week 5	Day 21	Complete <b>Clouds Unit Vocabulary Review</b> (Lessons 9–12) Page 56			
	Day 22	Weather and Water for Beginners Unit 4: Storms Do Lesson 13: Air Masses and Weather Fronts • Pages 58–59			
	Day 23	Do Lesson 14: Wind • Pages 60–62			
	Day 24	Do Lesson 15: Thunderstorms • Pages 63–65			
	Day 25				
Week 6	Day 26	Do Lesson 16: Tornadoes • Pages 66–68			
	Day 27	Do Lesson 17: Hurricanes • Pages 69–71			
	Day 28	Complete <b>Storms Unit Vocabulary Review</b> (Lessons 13–17) • Page 72			
	Day 29	Weather and Water for Beginners Unit 5: Weather Information Do Lesson 18: Measuring Temperature and Air Pressure • Pages 74–76			
	Day 30				

Date	Day	Assignment	Due Date	✓	Grade
Week 7	Day 31	Do Lesson 19: Measuring Rainfall and Wind Speed • Pages 77–79			
	Day 32	Do Lesson 20: Predicting Weather • Pages 80–81			
	Day 33	Do Lesson 21: Weather Sayings • Pages 82–84			
	Day 34	Do Lesson 22: Weather Review • Pages 85–87			
	Day 35				
Week 8	Day 36	Complete <b>Weather Information Unit Vocabulary Review</b> (Lessons 18–22) • Page 88			
	Day 37	Weather and Water for Beginners Unit 6: Ocean Movements Do Lesson 23: Oceans • Pages 90–92			
	Day 38	Do Lesson 24: Why Is Seawater Salty? • Pages 93–94			
	Day 39	Do Lesson 25: Ocean Currents • Pages 95–97			
	Day 40				
Week 9	Day 41	Do Lesson 26: Waves • Pages 98–100			
	Day 42	Do Lesson 27: Tides • Pages 101–103			
	Day 43	Do Lesson 28: Wave Erosion • Pages 104–105			
	Day 44	Do Lesson 29: Building Beaches • Pages 106–108			
	Day 45				
First Semester-Second Quarter					
Week 1	Day 46	Complete <b>Ocean Movements Unit Vocabulary Review</b> (Lessons 23–29) • Pages 109–110			
	Day 47	Weather and Water for Beginners Unit 7: Seafloor Do Lesson 30: Sea Exploration • Pages 112–114			
	Day 48	Do Lesson 31: The Ocean Floor • Pages 115–117			
	Day 49	Do Lesson 32: Ocean Zones • Pages 118–120			
	Day 50				
Week 2	Day 51	Do Lesson 33: Vents and Smokers • Pages 121–123			
	Day 52	Do Lesson 34: Coral Reefs • Page 124–126			
	Day 53	Do Lesson 35: Conclusion • Pages 127–128			
	Day 54	Complete <b>Seafloor Unit Vocabulary Review</b> (Lessons 30–35) • Pages 129–130			
	Day 55				
Week 3	Day 56	Universe for Beginners Unit 1: Space Models and Tools Do Lesson 1: Introduction to Astronomy • Pages 134–135			
	Day 57	Do Lesson 2: The Earth Is Moving • Pages 136–139			
	Day 58	Do Lesson 3: Why Do We Have Seasons? • Pages 140–142			
	Day 59				
	Day 60				

Date	Day	Assignment	Due Date	✓	Grade
Week 4	Day 61	Do Lesson 4: Telescopes • Pages 143–145			
	Day 62	Complete <b>Space Models and Tools Unit Vocabulary Review</b> (Lessons 1–4) • Page 146			
	Day 63	Universe for Beginners Unit 2: Outer Space Do Lesson 5: Overview of the Universe • Pages 147–150			
	Day 64				
	Day 65				
Week 5	Day 66	Do Lesson 6: Stars • Pages 151–153			
	Day 67	Do Lesson 7: Our Galaxy • Pages 154–156			
	Day 68	Do Lesson 8: Asteroids • Pages 157–159			
	Day 69				
	Day 70				
Week 6	Day 71	Do Lesson 9: Comets • Pages 160–162			
	Day 72	Do Lesson 10: Meteors • Pages 163–165			
	Day 73	Complete <b>Outer Space Unit Vocabulary Review</b> (Lessons 5–10) • Page 166			
	Day 74				
	Day 75				
Week 7	Day 76	Universe for Beginners Unit 3: Sun and Moon Do Lesson 11: Our Solar System • Pages 168–170			
	Day 77	Do Lesson 12: Our Sun • Pages 171–173			
	Day 78	Do Lesson 13: The Surface of the Sun • Pages 174–176			
	Day 79				
	Day 80				
Week 8	Day 81	Do Lesson 14: Solar Eclipse • Pages 177–180			
	Day 82	Do Lesson 15: Solar Energy • Pages 181–182			
	Day 83	Do Lesson 16: Our Moon • Pages 183–185			
	Day 84				
	Day 85				
Week 9	Day 86	Do Lesson 17: Phases of the Moon • Pages 186–187			
	Day 87	Do Lesson 18: Where Did the Moon Come From? • Pages 188–189			
	Day 88	Complete <b>Sun and Moon Unit Vocabulary Review</b> (Lessons 11–18) • Page 190			
	Day 89				
	Day 90				
		Mid-Term Grade			

Date	Day	Assignment	Due Date	✓	Grade
Second Semester-Third Quarter					
Week 1	Day 91	Universe for Beginners Unit 4: Planets Do Lesson 19: Mercury • Pages 192–194			
	Day 92	Do Lesson 20: Venus • Pages 195–197			
	Day 93	Do Lesson 21: Earth • Pages 198–201			
	Day 94				
	Day 95				
Week 2	Day 96	Do Lesson 22: Mars • Pages 202–205			
	Day 97	Do Lesson 23: Jupiter • Pages 206–208			
	Day 98	Do Lesson 24: Saturn • Pages 209–210			
	Day 99				
	Day 100				
Week 3	Day 101	Do Lesson 25: Uranus • Pages 211–213			
	Day 102	Do Lesson 26: Neptune • Pages 214–215			
	Day 103	Do Lesson 27: Pluto and Eris • Pages 216–217			
	Day 104				
	Day 105				
Week 4	Day 106	Complete <b>Planets Unit Vocabulary Review</b> (Lessons 19–27) • Page 218			
	Day 107	Universe for Beginners Unit 5: Space Program Do Lesson 28: NASA • Pages 220–222			
	Day 108	Do Lesson 29: Space Exploration • Pages 223–225			
	Day 109				
	Day 110				
Week 5	Day 111	Do Lesson 30: Apollo Program • Pages 226–229			
	Day 112	Do Lesson 31: The Space Shuttle • Pages 230–232			
	Day 113	Do Lesson 32: International Space Station • Pages 233–235			
	Day 114				
	Day 115				
Week 6	Day 116	Do Lesson 33: Astronauts • Pages 236–239			
	Day 117	Do Lesson 34: Solar System Project • Page 240			
	Day 118	Complete your Special Project			
	Day 119				
	Day 120				
Week 7	Day 121	Do Lesson 35: Conclusion • Page 241–243			
	Day 122	Complete <b>Space Program Unit Vocabulary Review</b> (Lessons 28–35) • Page 244			
	Day 123				
	Day 124				
	Day 125				

Date	Day	Assignment	Due Date	✓	Grade
Week 8	Day 126	Planet Earth for Beginners Unit 1: Origins and Glaciers Do Lesson 1: Introduction to Earth Science • Pages 248–250			
	Day 127	Do Lesson 2: The Earth Is Special • Pages 251–253			
	Day 128	Do Lesson 3: The Earth's History • Pages 254–257			
	Day 129				
	Day 130				
Week 9	Day 131	Do Lesson 4: The Genesis Flood • Pages 258–260			
	Day 132	Do Lesson 5: The Great Ice Age • Pages 261–263			
	Day 133	Do Lesson 6: Glaciers • Pages 264–266			
	Day 134				
	Day 135				
Second Semester-Fourth Quarter					
Week 1	Day 136	Do Lesson 7: Movement of Glaciers • Pages 267–269			
	Day 137	Do the <b>Origins and Glaciers Unit Vocabulary Review</b> (Lessons 1–7) • Page 270			
	Day 138	Planet Earth for Beginners Unit 2: Rocks and Minerals Do Lesson 8: Design of the Earth • Pages 272–274			
	Day 139				
	Day 140				
Week 2	Day 141	Do Lesson 9: Rocks • Pages 275–277			
	Day 142	Do Lesson 10: Igneous Rocks • Pages 278–279			
	Day 143	Do Lesson 11: Sedimentary Rocks • Pages 280–282			
	Day 144				
	Day 145				
Week 3	Day 146	Do Lesson 12: Fossils • Pages 283–285			
	Day 147	Do Lesson 13: Fossil Fuels • Pages 286–288			
	Day 148	Do Lesson 14: Metamorphic Rocks • Pages 289–291			
	Day 149	Do Lesson 15: Minerals • Pages 292–293			
	Day 150				
Week 4	Day 151	Do Lesson 16: Identifying Rocks • Pages 294–295			
	Day 152	Do Lesson 17: Rock Cycle • Pages 296–298			
	Day 153	Do Lesson 18: Gems • Pages 299–301			
	Day 154	Complete <b>Rock and Minerals Unit Vocabulary Review</b> (Lessons 8–18) • Page 302			
	Day 155				
Week 5	Day 156	Planet Earth for Beginners Unit 3: Mountains and Movement Do Lesson 19: The Earth Has Plates • Pages 304–307			
	Day 157	Do Lesson 20: Mountains • Pages 308–309			
	Day 158	Do Lesson 21: Types of Mountains • Pages 310–312			
	Day 159	Do Lesson 22: Earthquakes • Pages 313–315			
	Day 160				

Date	Day	Assignment	Due Date	✓	Grade
Week 6	Day 161	Do Lesson 23: Preparing for an Emergency • Pages 316–318			
	Day 162	Do Lesson 24: Volcanoes • Pages 319–321			
	Day 163	Do Lesson 25: Volcano Types • Pages 322–324			
	Day 164	Do Lesson 26: Mount St. Helens • Pages 325–327			
	Day 165				
Week 7	Day 166	Complete <b>Mountains and Movement Unit Vocabulary Review</b> (Lessons 19–26) • Page 328			
	Day 167	Planet Earth for Beginners Unit 4: Water and Erosion Do Lesson 27: Geysers • Pages 330–332			
	Day 168	Do Lesson 28: Erosion • Pages 333–335			
	Day 169				
	Day 170				
Week 8	Day 171	Do Lesson 29: Landslides • Pages 336–338			
	Day 172	Do Lesson 30: Stream Erosion • Pages 339–341			
	Day 173	Do Lesson 31: Soil • Pages 342–343			
	Day 174	Do Lesson 32: Grand Canyon • Pages 344–346			
	Day 175				
Week 9	Day 176	Do Lesson 33: Caves • Pages 347–349			
	Day 177	Do Lesson 34: Rock Collection • Pages 350–351			
	Day 178	Do Lesson 35: Appreciating Planet Earth • Pages 352–353			
	Day 179	Complete <b>Water and Erosion Unit Vocabulary Review</b> (Lessons 27–35) • Page 354			
	Day 180				
		Final Grade			

# ***Weather and Water for Beginners***



**GOD'S  
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# **Atmosphere and Meteorology**

**UNIT  
1**

**Weather and Water  
for Beginners**

**Lessons 1-4**



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# God Made Weather



What is the weather like outside right now? God created all different kinds of weather. What kinds of weather can you think of? In most parts of the world, the weather is different during different times of the year.

We call these different times of the year seasons. Do you know what the four seasons are called? They are spring, summer, fall (or autumn), and winter.

In the spring, the weather is often cool and rainy at the beginning but becomes warmer later on. Weather is usually warm and sunny in the summer. In the fall, the weather starts to cool down and leaves usually fall off of trees. Winter is when the weather is the coldest. Many places get snow in the winter.

When the world was first created, God said that everything was very good. But Adam and Eve sinned and disobeyed God. As part of their punishment God cursed the earth. This resulted in different weather than before. Later there was a flood over the whole world. This made even more changes to the weather. So the weather we have today is different from the weather at creation.

Sometimes weather events like storms can be very dangerous. But God is in charge. So you do not need to be afraid of the weather. The Bible tells us that God controls the weather. Jesus spoke to the storm, and the wind and the rain stopped (Matthew 8:23–27). We can be thankful that God is in control.

- ? What do you like to do on a sunny day?
- ? What kinds of things can you do on a rainy day?
- ? What are your favorite things to do on a snowy day?
- ? What are the four seasons?



## Scripture Trace

What sort of man is this,  
that even winds and sea  
obey him? — Matthew 8:27



## Favorite Season

Fill in the missing vowels of the names of the four seasons. Then draw a line to match each picture with the right season. Circle your favorite season.

s \_ mm \_ r

a \_ t \_ mn

spr \_ ng

w \_ nt \_ r



# The Atmosphere

Earth is a very special planet. It is the only planet that has people and animals living on it. Earth is surrounded by air. Another name

for air is the atmosphere. The earth's

atmosphere is made up of mostly nitrogen and

oxygen. Animals and people need oxygen to breathe. No other planet has the right amount of oxygen in its atmosphere.

Air protects us from the very hot and very cold temperatures in space. Planets that do not have an



## Scripture Trace

When it is evening, you say,  
"It will be fair weather, for  
the sky is red." Matthew 16:2

atmosphere are very hot when the sun shines on them. They are very cold when the sun does not shine on them. Earth is not too hot or too cold.

The atmosphere is where weather happens. The air moves around. When it is windy, the air is moving quickly. When air moves, it moves rain and snow from one place to another.

The atmosphere also protects us from small meteors and other things in space that might crash into our planet. These space rocks usually burn up in the atmosphere before hitting the earth. We can see how important our atmosphere is by looking at the moon. The moon does not have an atmosphere. It is very hot in the sun and cold in the dark. It is covered with pits called craters where rocks have crashed into it. It does not have any life.



## Air Has Oxygen

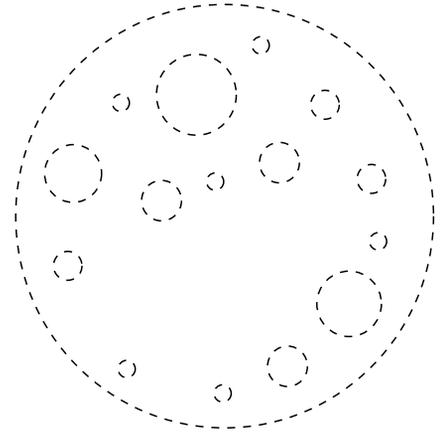
Place a lump of modeling clay onto a table. Push a small candle into the clay to hold it upright. Light the candle and watch it burn for a few seconds. The candle can burn because there is oxygen in the air. Cover the candle with a glass jar. What happened to the flame? It goes out after a few seconds. The flame uses up the oxygen in the air. The jar stops more air from getting to the candle. How long does it take for the flame to go out if you use a bigger jar?

- ? What is the atmosphere?
- ? What are the two main ingredients in air?
- ? What are some good things that our atmosphere does for us?
- ? Why does the moon have so many more craters than the earth?



# Atmosphere Makes a Difference

Trace the land on the earth and color the land green and the water blue.  
Trace the craters on the moon, then draw more craters.



# The Weight of Air

How much does air weigh? Many people think that air does not weigh anything. Air is very light. But air actually does weigh a small amount. Air is made up mostly of oxygen and nitrogen. And these things have weight.

Gravity pulls down on everything on Earth. It even pulls down on the air. Air is pressing down on everything.

This is called air pressure.  
Air pressure is important because it affects the weather.



## Air Has Weight

You can see that air has weight by doing the following experiment.

1. Tape an empty balloon to each end of a yardstick.
2. Tie a string to the center of the yardstick. Tape the other end of the string to the edge of a table. The stick should hang down in front of the table. Adjust the string on the stick until you get the stick to balance. Then tape the string in place on the stick.
3. Remove one of the balloons. Fill it with air and tie it shut. Tape it back in the same place on the stick.
4. Watch what happens to the yardstick.

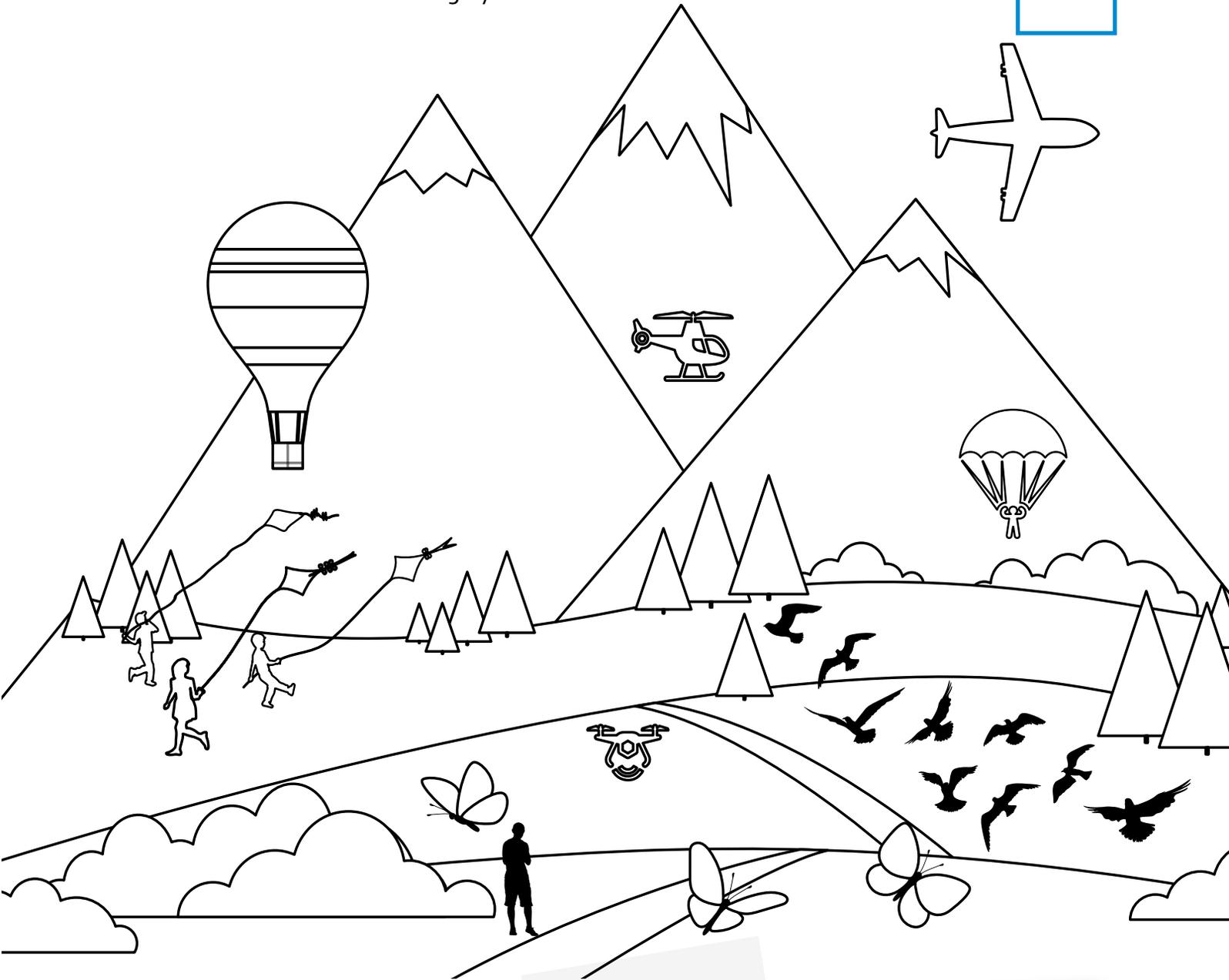
The side of the yardstick with the filled balloon will tip toward the ground. This is because the balloon with air weighs more than the balloon without any air. Air has weight.



## Air Helps Things Fly

Many things are able to fly because of air pressure.  
Count the number of things in the picture that can fly.  
Color the things you found.

Write the  
number here:



- ? Does air have weight?
- ? What do we call air pressing down on things?
- ? Why is air pressure important?

# Lesson 4

## The Study of Weather

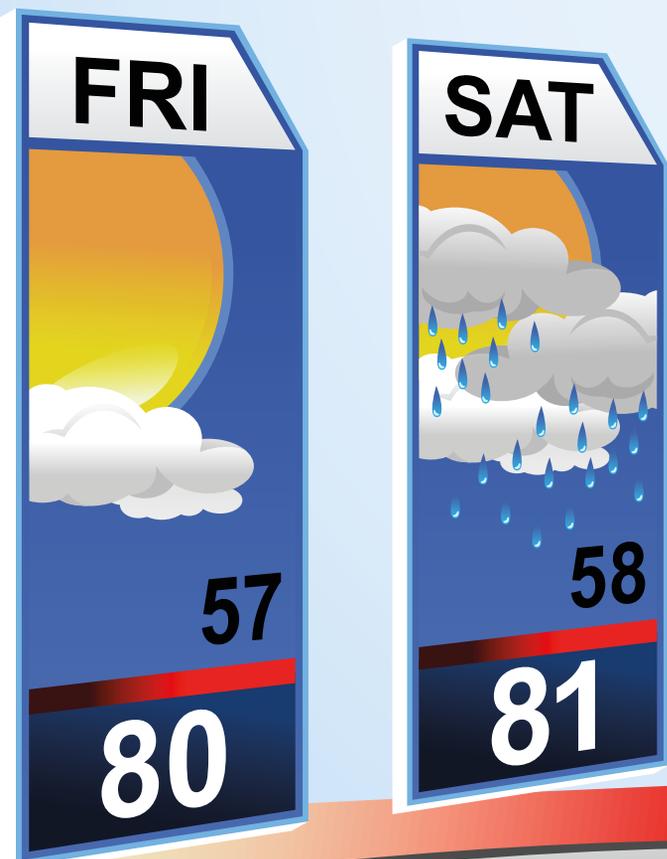
Weather is something that affects everyone. People want to know if the weather will be nice enough for a picnic. Or they might want to know if it is going to snow tomorrow. Some people are so interested in weather that they study it as their job. Someone who studies the weather is called a

meteorologist.

Meteorologists look at what the weather is like today. They look at

how the air is moving. Then they predict what the weather will be like tomorrow.

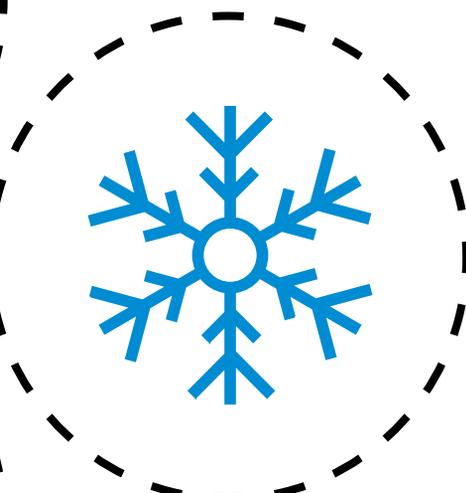
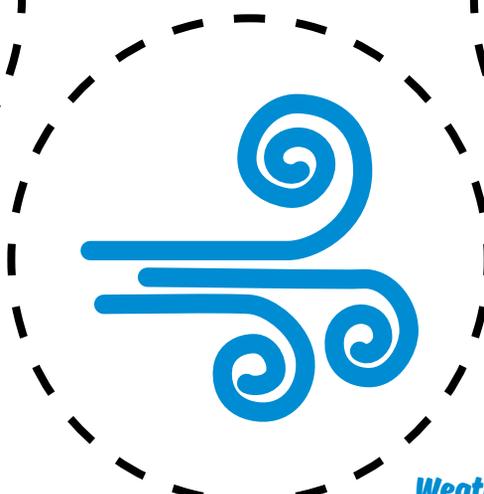
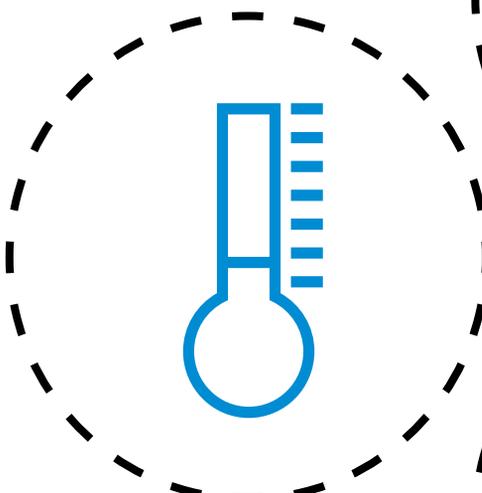
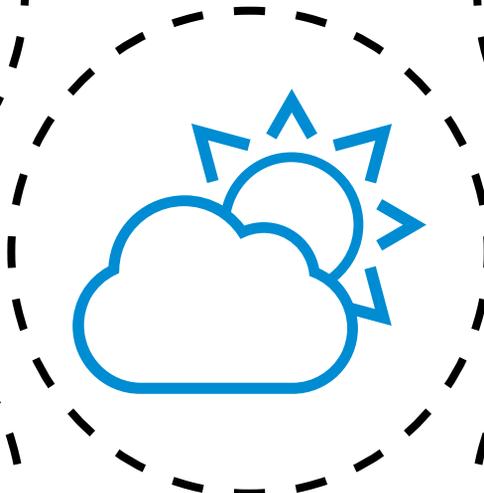
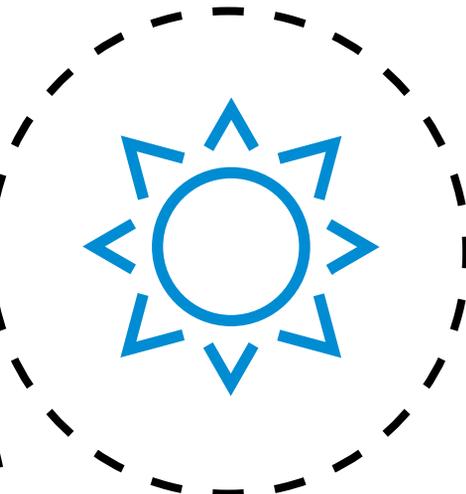
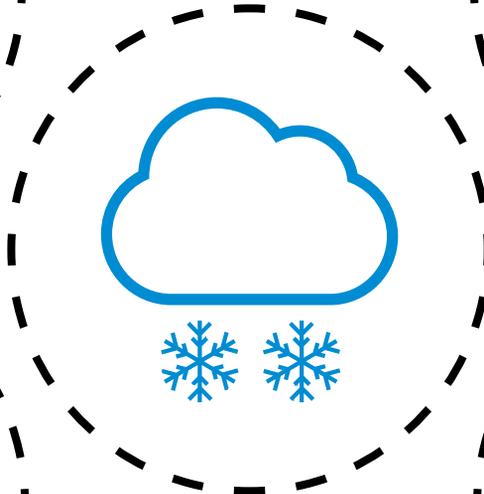
predict





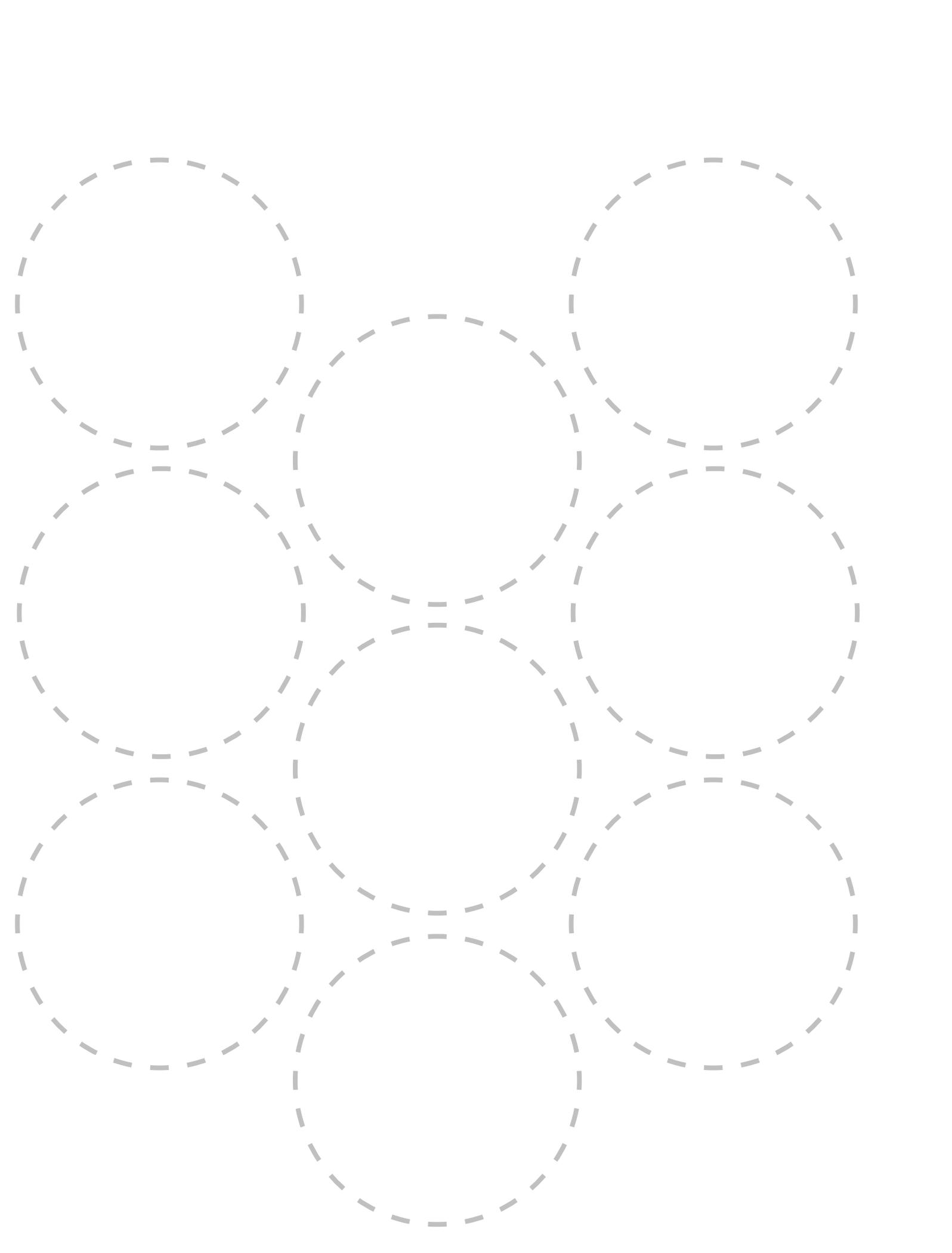
# Weather Wreath

Make a weather wreath.  
Cut out the center of a paper plate. Use the outer ring of the plate to make your wreath.



Cut out the weather symbols on this page. Color each of the symbols and glue them onto the wreath.

Hang the wreath where you can see it. This can remind you of the different kinds of weather you might have.





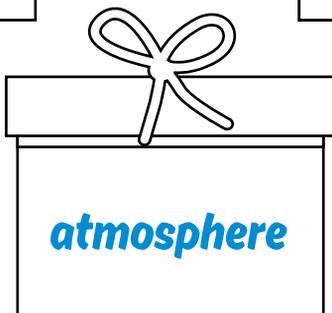
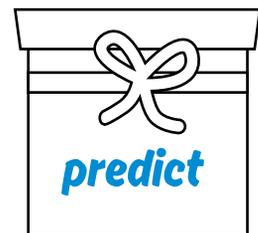
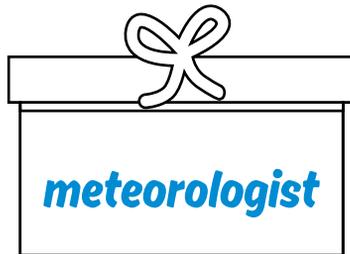
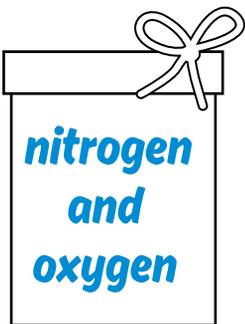
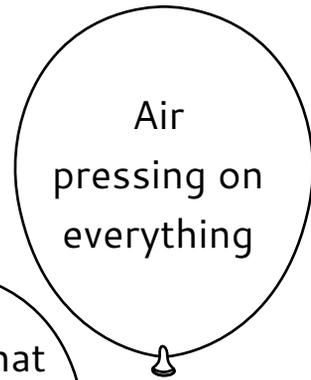
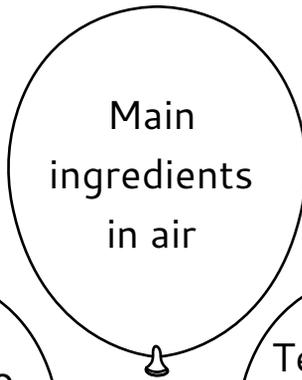
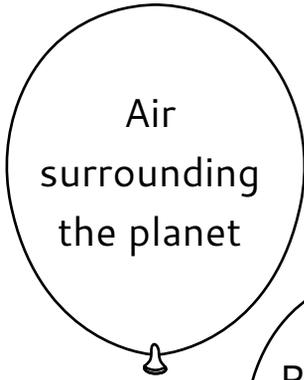
# Predict the Weather

Circle the weather picture that should come next in the pattern.




# Unit Vocabulary Review

Draw a string from the definition balloon to the correct vocabulary word gift.



# *Universe for Beginners*

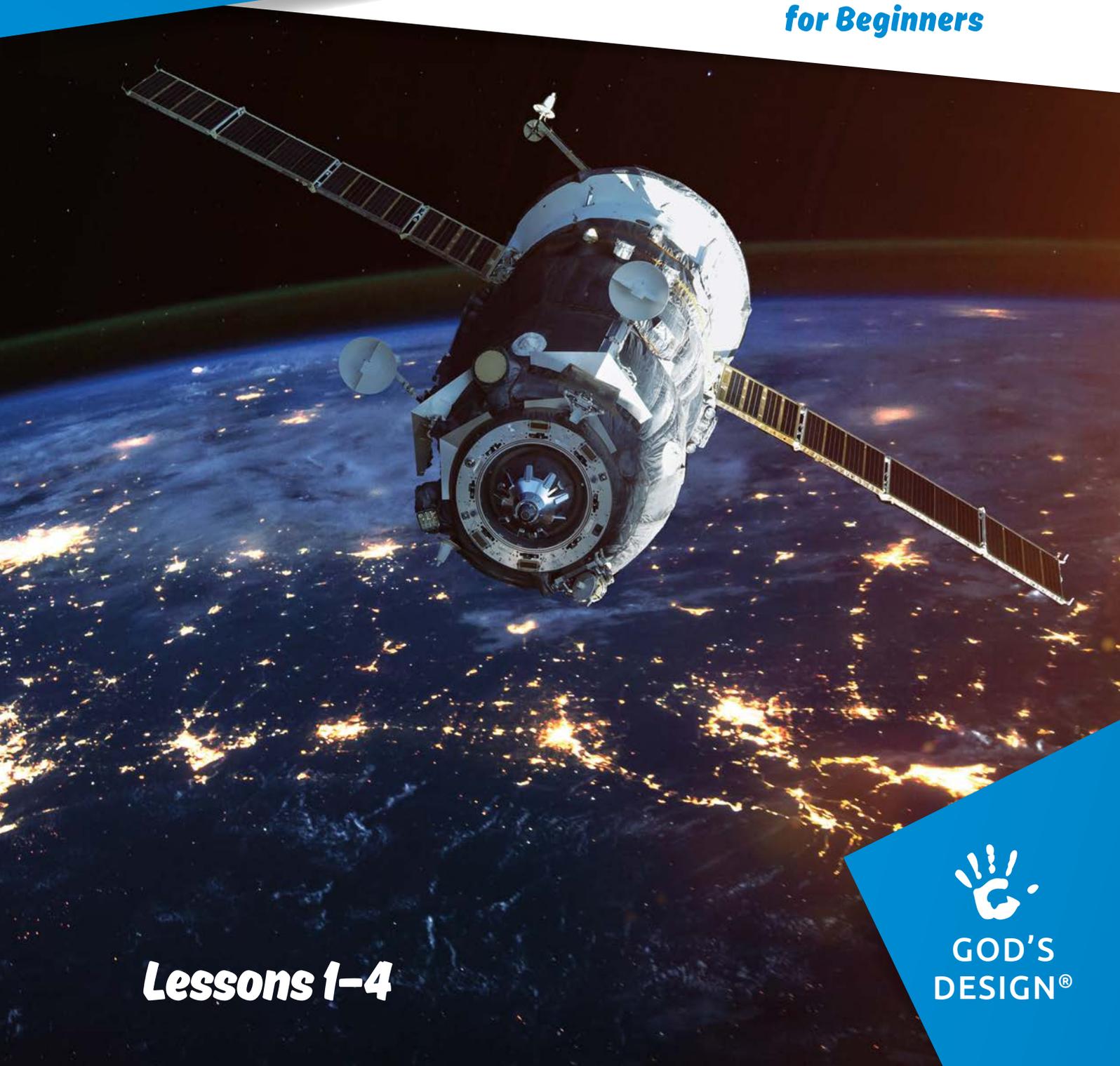


**GOD'S  
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# Space Models and Tools

UNIT  
1

**Universe**  
for Beginners



**Lessons 1-4**

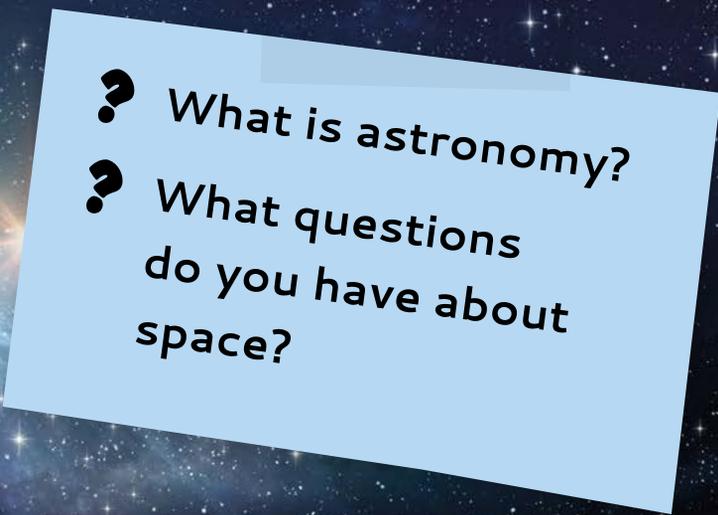


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# Introduction to Astronomy

We are getting ready to learn all about space and the things that God has put there. This study is called

astronomy. You are going to learn about the planets. You will learn about the sun, the moon, and the stars. And you will learn about our planet, Earth. All of these things were created by God.

- 
- ? What is astronomy?
  - ? What questions do you have about space?



## Scripture Trace

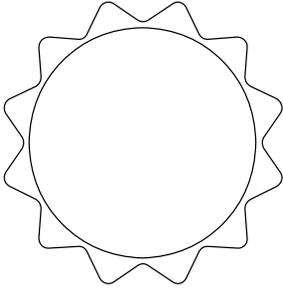
For by him all things were  
created, in heaven and on  
earth.

Colossians 1:16



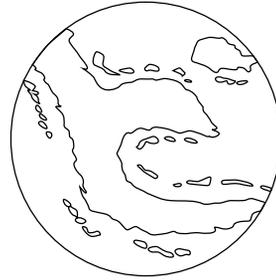
## In the Beginning Worksheet

Read Genesis chapter 1 with your parent or teacher. This is the true story of creation. Look at the pictures of the different things that God made. Next to each picture write the day of creation on which that item was created.



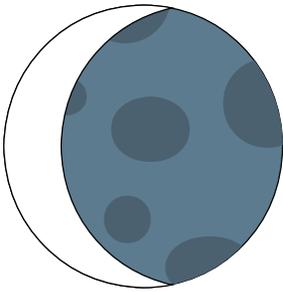
sun

Created on \_\_\_\_\_  
day \_\_\_\_\_



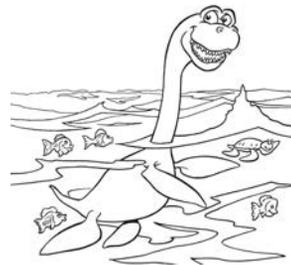
the earth  
(dry land and seas)

Created on \_\_\_\_\_  
day \_\_\_\_\_



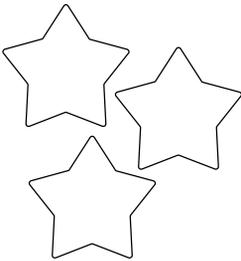
moon

Created on \_\_\_\_\_  
day \_\_\_\_\_



water animals

Created on \_\_\_\_\_  
day \_\_\_\_\_



stars

Created on \_\_\_\_\_  
day \_\_\_\_\_



land animals

Created on \_\_\_\_\_  
day \_\_\_\_\_



light

Created on \_\_\_\_\_  
day \_\_\_\_\_



the first man

Created on \_\_\_\_\_  
day \_\_\_\_\_

# Lesson 2

## The Earth Is Moving

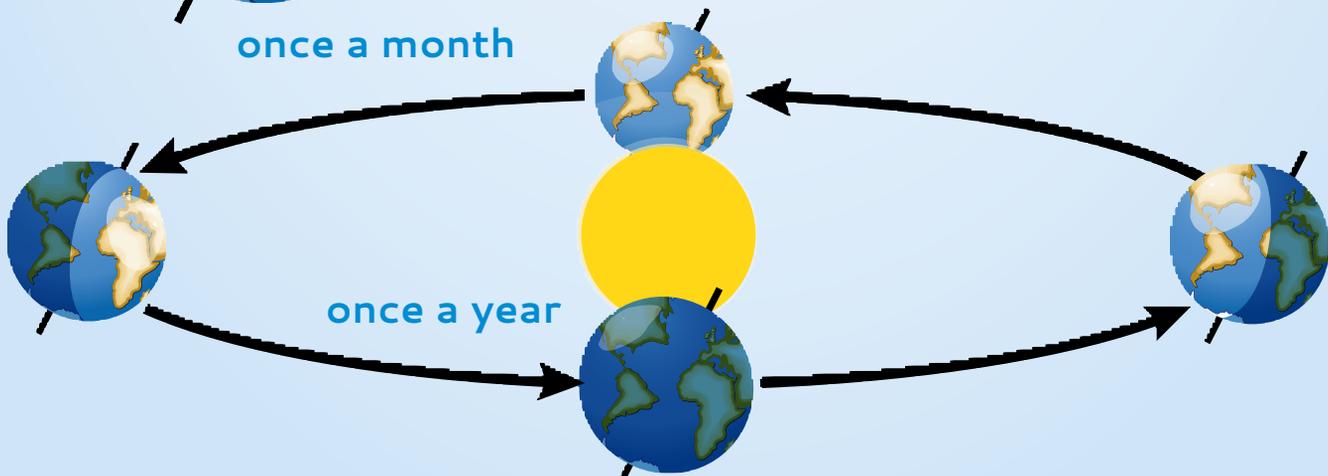
Everything in the universe is moving. The earth moves in a circle around the sun. This is called

orbiting the sun. It takes one year for the earth to orbit the sun one time. The moon moves in a circle around the earth. It orbits the earth once each month.



The earth is also spinning. We call this spinning

motion rotation. The rotation of the earth is what makes the sun appear to rise and set. The earth spins all the way around one time each day. You don't feel the earth moving because you are moving with the earth.



The force that keeps the planets moving around the sun is called

gravity. You cannot see gravity. But gravity is keeping you on earth. The earth's gravity pulls everything down. God created gravity to keep everything in its place.





## What Moves Around the Sun?

On one piece of paper, draw a large yellow circle. This represents the sun. On a second piece of paper, draw a medium-sized blue circle. This represents the earth. On a third piece of paper, draw a small gray circle. This represents the moon. Have one person hold each piece of paper. The person holding the sun should stand in the middle of the room. The person holding the earth should slowly walk around the sun in a large circle. The person holding the moon should walk quickly in a small circle around the earth.

This exercise shows how the earth and the moon both move around the sun and how the moon also moves around the earth.

- ? How long does it take for the earth to go around the sun one time?
- ? How long does it take for the earth to spin around one time?
- ? What do we call the spinning motion of the earth?
- ? What force keeps all of the planets moving around the sun?



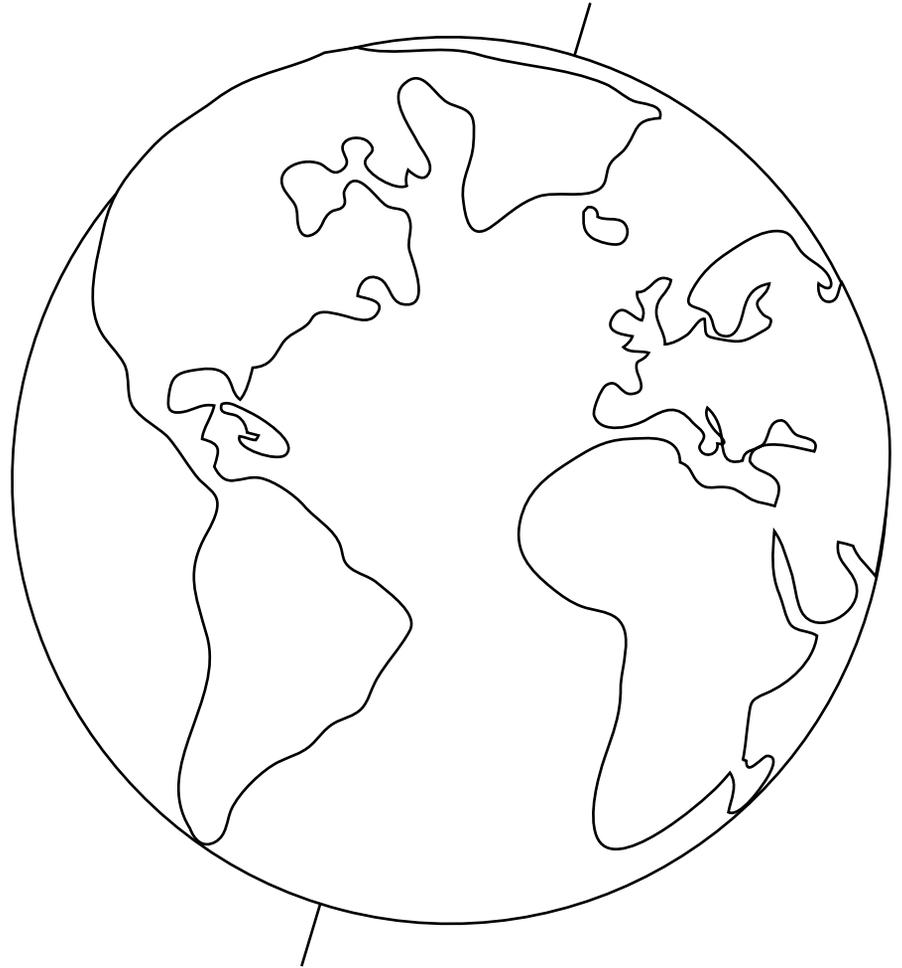
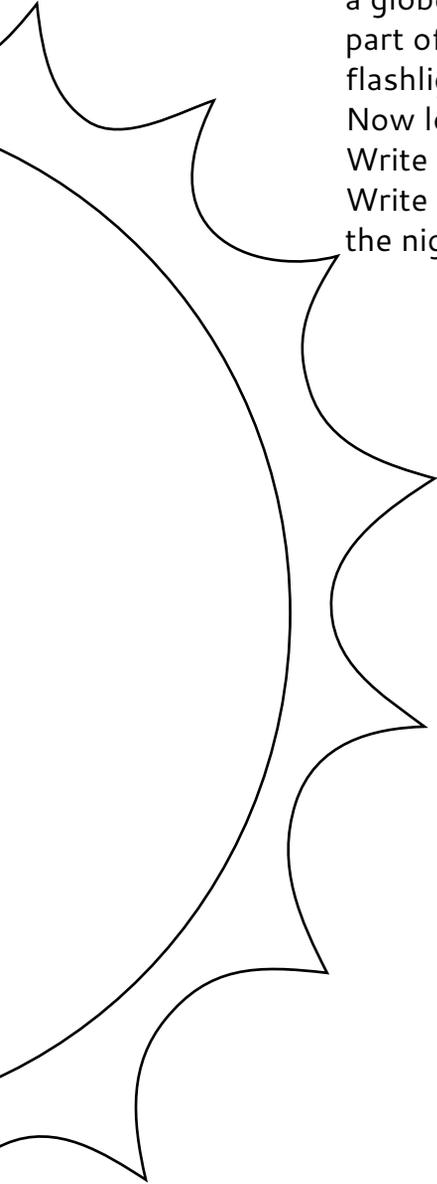
## Day and Night Worksheet

As the earth rotates, a different part of the planet is facing the sun. It is daytime on the part of the earth that is facing the sun. The part facing away from the sun is dark. It is night there. Use a flashlight as the sun and a globe as the earth. Shine the flashlight on the globe. Notice how the part of the globe near the flashlight is lit up while the part away from the flashlight is darker.

Now look at the worksheet.

Write the word **Day** on the side of the earth that the sun is shining on.

Write the word **Night** on the side that is facing away from the sun. Shade the night side of the earth with a pencil.



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# Lesson 3

## Why Do We Have Seasons?

As the earth moves around the sun over the year, we have different seasons. The earth is tilted in space. Look at a globe. You will see that the planet is not straight up and down. Now, place a large ball in the center of a table to represent the sun. Move the globe slowly around the ball without turning the stand. You will see that sometimes the top part of the globe is pointing toward the “sun” and sometimes it is pointing away from the sun. When the part of the earth where you live is tilted toward the sun, it is summer. The sun shines more directly there. This makes it warmer during the summer. During the winter, your part of the earth is tilted away from the sun. The sunshine comes to the earth at more of an angle. This makes it colder outside. When it is summer in the north part of the earth it is winter in the south part of the earth. The earth’s tilt and

movement around the sun cause the seasons.





Fall



Winter

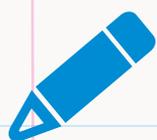


## Musical Seasons

Listen to Vivaldi's *Four Seasons*. How does each movement of the music remind you of that season? Dance/move as if you were outside during that season. (For example, during winter, pretend you are walking in a snowstorm.)

? What are the four seasons?

? Why do we have different seasons?



## Scripture Trace

And let them be for signs and  
for seasons, and for days and  
years. Genesis 1:14b



# Four Seasons Coloring Sheet

Because the earth is tilted, we get different amounts of sunshine at different times of the year. Most places have four different seasons each year. The spring is when new plants begin to grow. During the summer, it is warm, and you can do lots of fun things outside. In the fall the leaves on the trees change colors and fall off. In the winter it is often cold and sometimes snowy. Then spring comes again, and the cycle starts over. Each season has its own special things that you can do. Trace the name of each season, then color the pictures and think about what you like to do during each season.



Spring



Summer



Fall



Winter

# Telescopes

Do you like to look at the stars? Many people do. The Bible tells us that “the heavens declare the glory of God” (Psalm 19:1). God created the beautiful night sky. We can see many stars just by looking up at night. But many people want to see more than just the lights in the sky.

Scientists are people who study the things God created. Some scientists study space. They have developed many special instruments to help them.

One of the most important instruments for looking at space is the

telescope. A telescope is like a special magnifying glass. It uses lenses and mirrors to make things look bigger. This allows us to see things in space much more clearly. With a telescope, you can see the surface of the moon. You can even see some of the planets in our solar system.

Telescopes also help people see stars that are very far away.





## Making Things Look Bigger

Use a magnifying glass to see how a lens can make things look bigger. A magnifying glass works the same way that a telescope works. A magnifying glass makes something that is small look bigger. A telescope makes something that is far away, like the moon or a star, look closer. If you have a telescope, use it to look at the moon. You can see the surface of the moon in great detail with a good telescope. If you do not have a telescope, you can use binoculars to look at the moon.

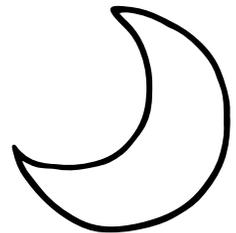
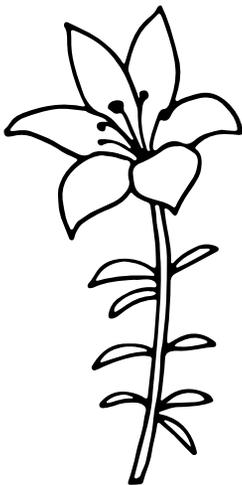
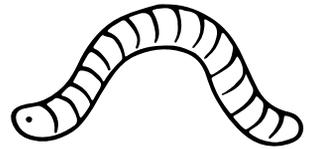
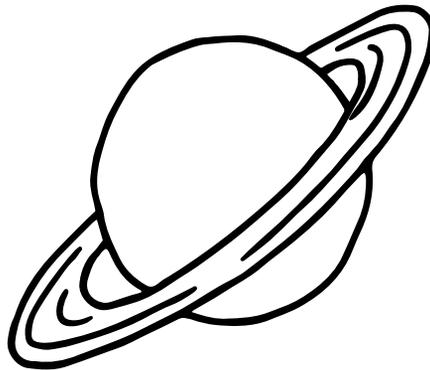
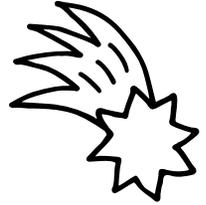
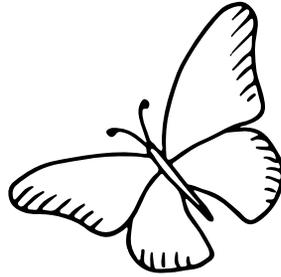
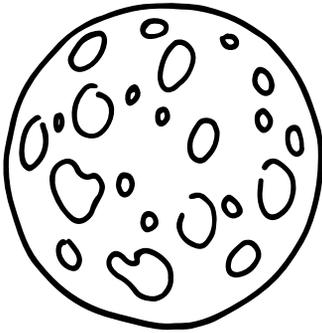


- ? Why do people like to use a telescope?
- ? How is a telescope like a magnifying glass?



## What Can I See With a Telescope?

Color the things that a telescope would most likely help you see.





## Unit Vocabulary Review

Two possible definitions are given for each vocabulary word below.  
Draw a line through the wrong definition.

Astronomy

---

The study of space

---

The study of water

Orbiting

---

The earth spinning

---

The earth moving around the sun

Rotation

---

The earth spinning

---

The earth moving around the sun

Gravity

---

Force pulling down on things

---

Force pushing things away

Seasons

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Salt, pepper, cinnamon, nutmeg

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Summer, winter, spring, fall

Telescope

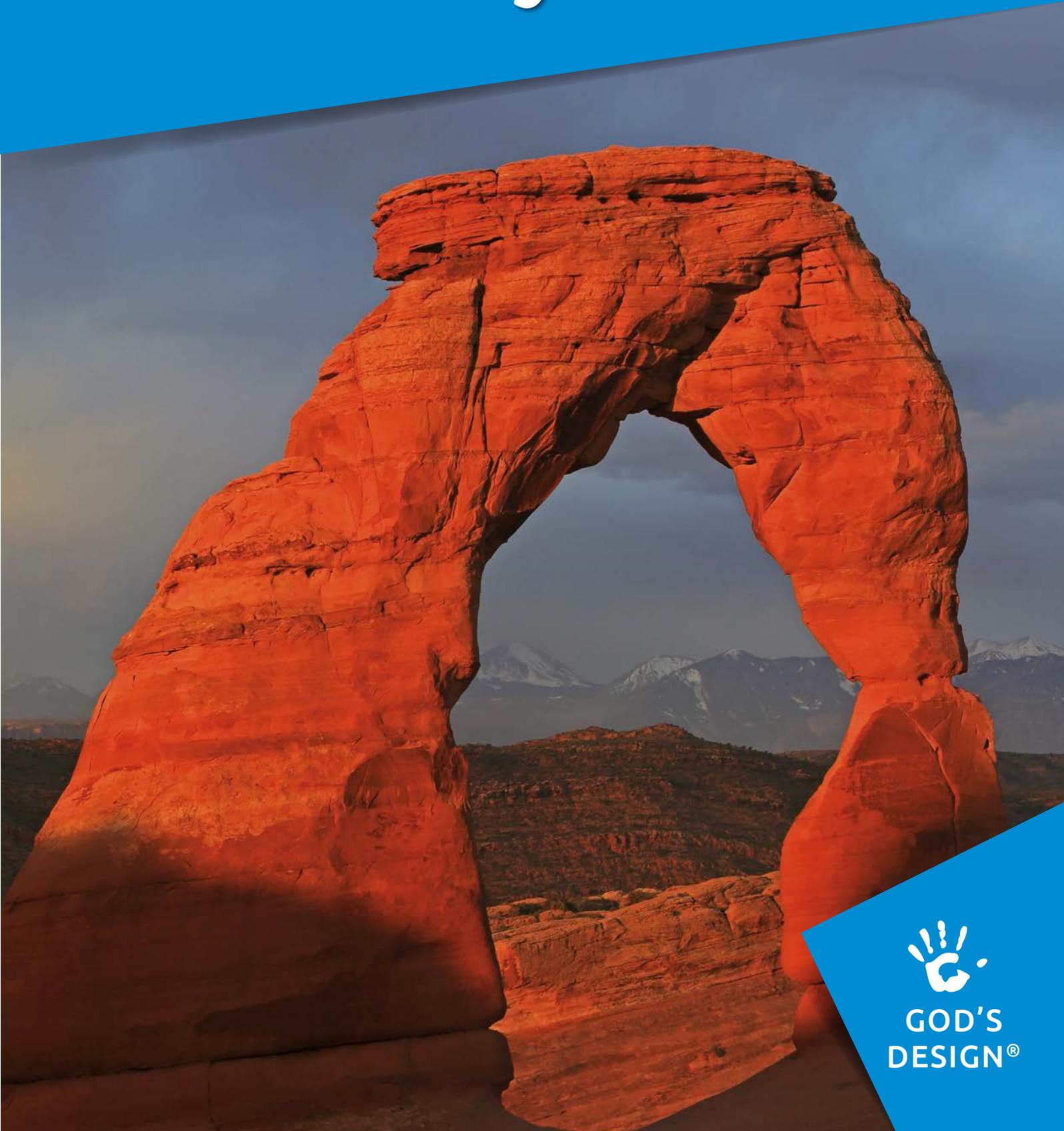
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Instrument used to see things that are far away

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Instrument used to see things that are very small

# *Planet Earth for Beginners*



**GOD'S  
DESIGN®**

# Origins and Glaciers

UNIT  
1

**Planet Earth**  
for Beginners

**Lessons 1-7**



**GOD'S  
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# Introduction to Earth Science

We all live on a planet called Earth.

Earth science

is learning all about the planet earth. There are many questions we can ask about the earth. Where do rocks come from? What is a cave? What makes a volcano erupt? We will learn the answers to these questions.





The most important thing you can know about the earth is that God created it. In the Bible, in Genesis 1:1, it says, "In the beginning God created the heavens and the earth." The Bible tells us that God also created the sun, moon, stars, sky, dry land, and every kind of plant and animal. So, as you learn about the earth, look for things that God made. You will find that He created a really wonderful place for us to live.

- ? What is earth science?
- ? Where did the earth come from?
- ? What other things did God create?



## Scripture Trace

In the beginning, God  
created the heavens and  
the earth.

Genesis 1:1



# Creation Scavenger Hunt

Go outside. Look all around you. You are on a hunt for things that God created. Your scavenger hunt worksheet has pictures of things God created. Check off each item as you see it. For more fun, take a sheet of paper and draw pictures of other things that God created that were not listed on this worksheet.



# The Earth Is Special

The earth is a special place. Most of our planet is covered with water. People, animals and plants all need water. No other planet has water like earth does. God placed

the earth just the right distance from the sun. The sun keeps our planet warm. But we are not too close. Planets that are closer to the sun are too hot to live on.



God also put many important things in the ground when he made the earth. The land has soil so that plants can grow to provide us food, medicine, and wood for building. There is metal in the ground. People use metal to make cars and other machines. There is oil in the ground. People use oil to make plastic and gasoline. Everything you use comes from our planet. God made Earth special.

- ? What are some things in your house that are made of metal?
- ? What are some things in your house that are made of plastic?
- ? What are some things in your house that are made of wood?
- ? Why is Earth a special planet?



## Earth Products Scavenger Hunt

Make a chart for your wall with three columns labeled Metal, Plastic, and Wood. Now look around your house for items that are made from metal, plastic, and wood. Draw a picture of each item or write its name in the correct column.





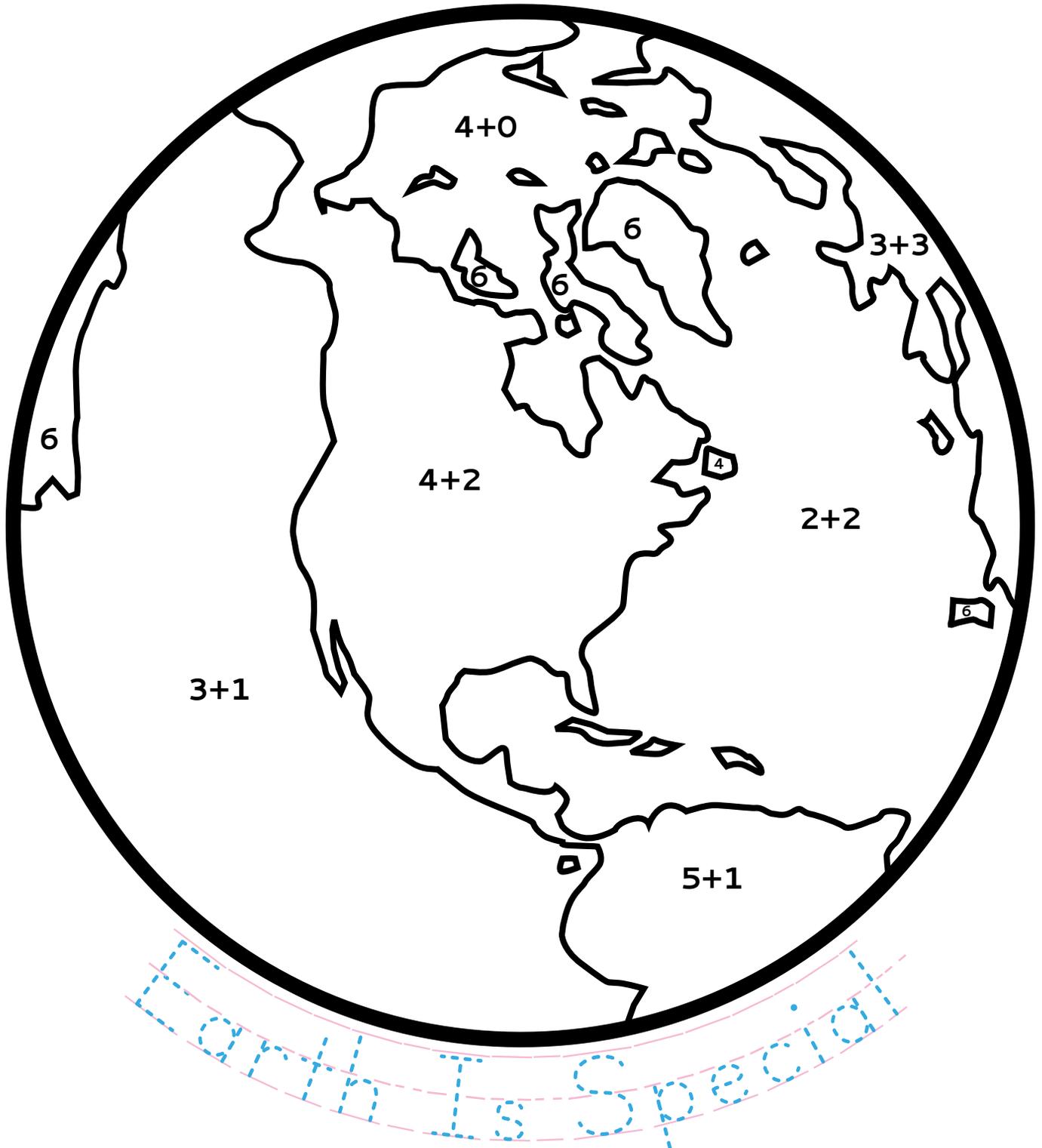
## Earth by Number

Color the picture of our special planet using the addition facts.

If the numbers add up to 4, color that space blue.

If the numbers add up to 6, color the space green.

After you color the picture, trace the words below it.



# The Earth's History



The Bible tells us that God created the earth about 6,000 years ago. This

creation

happened in only six days. The earth was very good when God made it.

God also created Adam and Eve, who were the first man and woman.

But Adam and Eve disobeyed God. They ate from the tree that God told them not to eat from (Genesis 3). This is called the

fall of

man

. As part of their punishment, God cursed the earth.



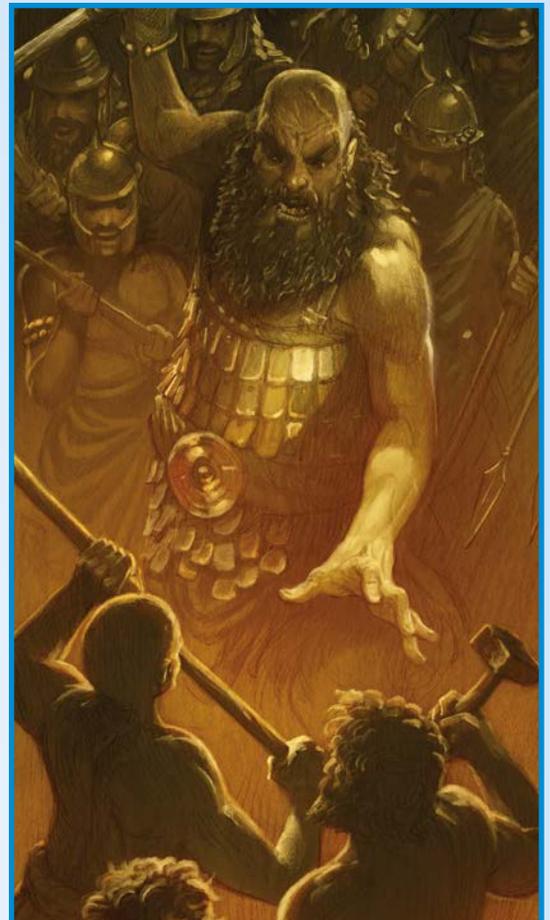
The earth is different from the way God originally created it.

The earth now produces weeds and thorns. This makes it difficult to grow the plants that we want.

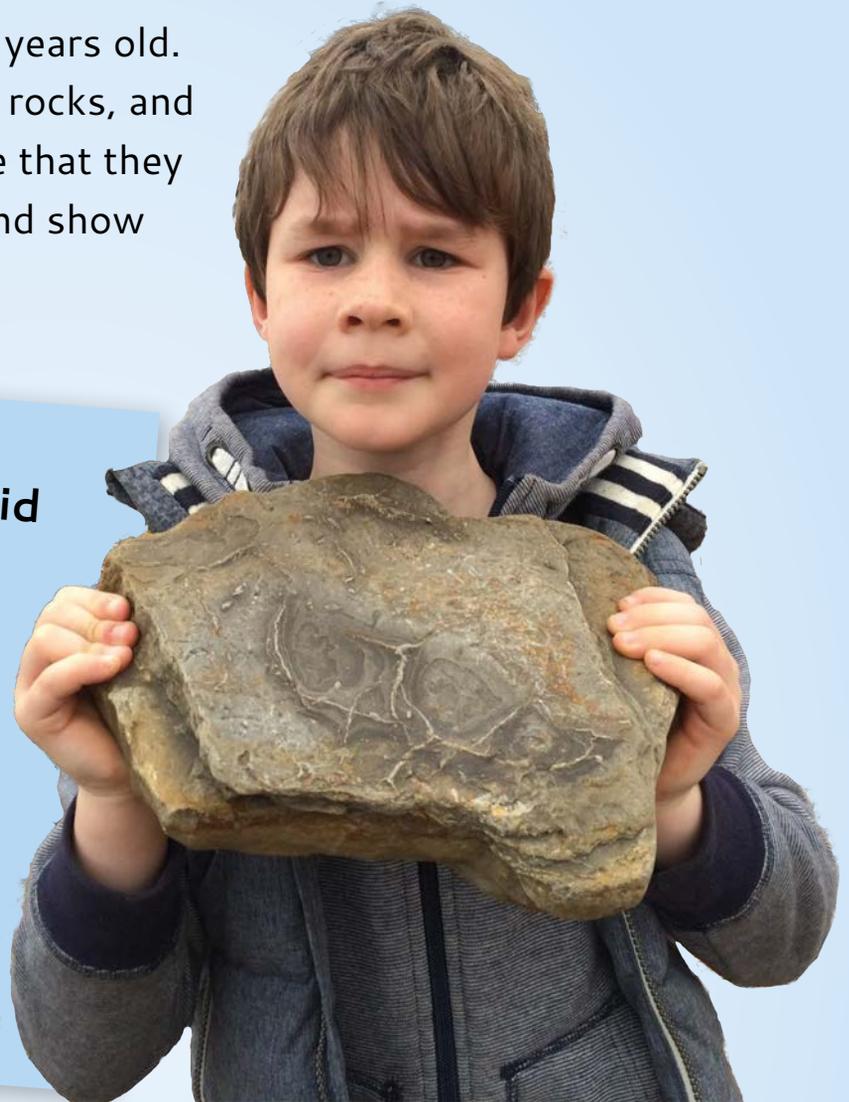
By the time Noah was alive, (Genesis 6–8) the people had become very wicked. God sent a great

flood to punish them.

Water covered the whole earth. This again changed the way the earth looks.



Some people do not believe the Bible and think that the earth is millions of years old. But when we learn about fossils, rocks, and other things on earth, we will see that they agree with what the Bible says and show that God's Word is true.



? What three events did you learn about that have changed the earth?

? Does the Bible tell us the earth is young or old (thousands or millions of years)?



## Scripture Trace

Cursed is the ground because of you; . . . thorns and thistles it shall bring forth for you.

Genesis 3:17–18



# Events Worksheet

These are major events in the history of the earth.

Write **1** in the circle next to the picture of creation.

Write **2** in the circle next to the picture of Adam and Eve disobeying God.

Write **3** in the circle next to the picture of God punishing all the wicked people during Noah's time.



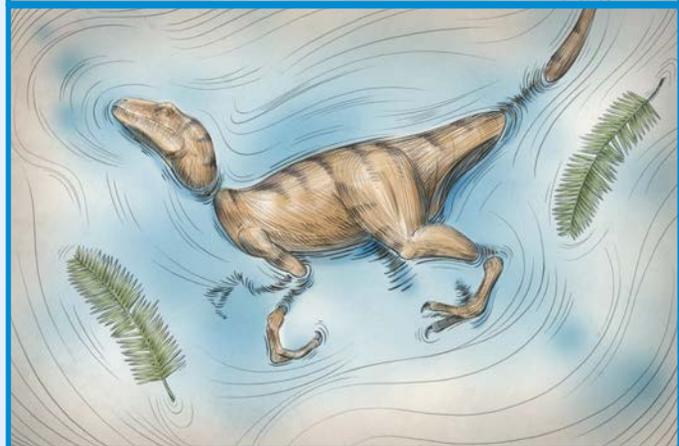
# Lesson 4

## The Genesis Flood

When Noah was alive most people were very evil. This made God very sad. He had to get rid of all of the evil. So God decided to send a flood that would cover the whole world. But Noah loved God. So, God saved Noah, his wife, their three sons, and their sons' wives. God told Noah to build a giant boat. This boat is called

the ark.

God sent at least two of every kind of land animal and bird to Noah so they could be saved on the ark. All of the animals (including dinosaurs and flying reptiles like pteradons) went into the ark. Noah's family also went into the ark. Then God shut the door. God sent a great flood that covered the entire world. All of the wicked people died. All of the animals that lived on the land died. But the people and animals on the ark were saved.





## **Flood in a Jar**

Put a handful of sand in the bottom of a large jar. Add a handful of dirt on top of the sand. Add a handful of pebbles then a few rocks on top. Add a few twigs and dried leaves. The jar should be about half full. These are the types of things that were on the earth before the Flood.

Fill the jar most of the way with water. Put the lid on the jar. Shake the jar for 30 seconds. Set the jar down. The water will be filled with mud and dirt. This is how the floodwaters looked during the Flood.

Wait 30 minutes, then look at the jar again. You should see layers forming in the bottom of the jar. Many of the rock layers were formed around the world as particles in the waters of the Flood settled out into layers.

Did any of the twigs get buried by the mud? Animals and plants were buried in the mud during the Flood. This is how animals and plants became fossils after the Flood.

The floodwaters carried mud and dirt with them. This mud covered many of the animals. Some of these animals eventually turned into fossils. Layers of dirt and mud piled up. Much of this dirt and mud turned into rocks. In other areas, the water washed away rock and dirt. This changed the way the earth looks. When we study the earth today, we see many results of this great flood.

- ? Why did God send the Great Flood?**
- ? What is the ark?**
- ? How did the Flood change the surface of the earth?**
- ? Were there dinosaurs on the ark?**

name \_\_\_\_\_

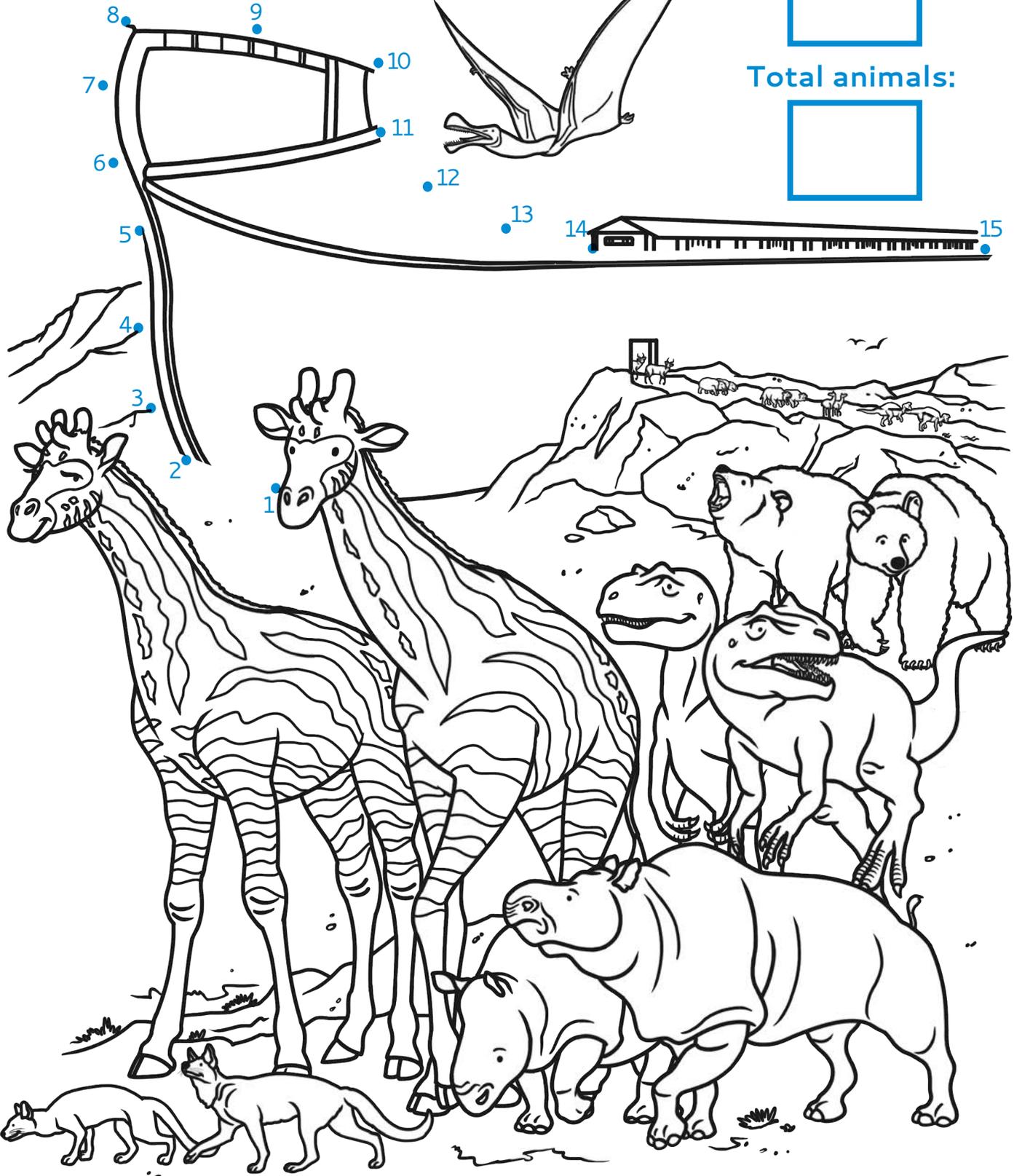


# After the Great Flood

Connect the dots to reveal the ark. Then count the animals coming off the ark and color the picture.

Total pairs:  
(count by twos)

Total animals:



# The Great Ice Age

Before the Genesis Flood, the weather was warm over most of the earth. After the Flood, things were different. The land was cooler. There were more clouds. There was ash in the air because of volcanoes. It began to snow in many areas. In some areas the snow did not melt, even during the summer. The ice began to build up in these areas. So much snow and ice formed in parts of

the world that it was called the

Ice Age.



During the Ice Age, many parts of the world were covered with ice. But other areas were still warm. People and animals lived in these warmer areas. The Ice Age lasted for several hundred years. The land eventually warmed up. Finally, the climate (weather over a long time) became much like it is today.



## *Ice That Won't Melt*

You need two bowls. Put an ice cube in each bowl. Place one bowl in the refrigerator. Place the other bowl on the counter. It is warm on the counter. This is how the weather was before the Flood. It is cold in the refrigerator. This is how the weather was in some areas after the Flood. Which ice cube will melt the fastest? Wait 30 minutes. See which ice cube has melted the most. (If you have access to a small scale or balance, you could weigh the ice cubes before you put one in the refrigerator and again after 30 minutes to see how much they change.)

When the weather is cold, the ice does not melt very quickly. This is how ice lasted for hundreds of years during the Ice Age.

- ?** How were things different on the earth after the Flood?
- ?** Why did the ice last so long during the Ice Age?



# Ice Age Animals

During the Ice Age, many animals had long fur to protect them from the cold.

**X** Mark out the animals that would not live in the snowy areas during the Ice Age.

Find the name of each animal at the bottom of the page. Draw a line from each animal to its name.



elk

frog

mammoth

toucan

arctic fox

lizard

snake

# Lesson 6

## Glaciers

Glaciers

are thick sheets of ice. The ice in a glacier never completely melts. Snow falls during the winter. During the summer, some, but not all, of the snow melts. The next winter, more snow falls. The new snow presses the older snow down. This turns it into ice. Each summer, some of the ice melts. Each winter more ice is added. Many of the glaciers that exist today have been around since the Ice Age. Most glaciers today are found near the north and south poles. You can look at a globe to see where the North and South Poles are.



Sometimes glaciers reach the water. When this happens, chunks of the glacier break off. Ice is less dense (lighter) than water, so these chunks float in the water. These floating chunks of ice are called

icebergs.

Icebergs can be small or very large. When they are large, most of the iceberg stays below the surface of the water. Only part of the iceberg can be seen above the water. This can be dangerous for ships. If a ship sails too close to an iceberg, it could hit the part that is underwater. In 1912, a ship called the *Titanic* hit an iceberg and sank.



### **Tiny Icebergs**

Fill a glass container with water. Add a few ice cubes. The ice cubes are like tiny icebergs. Look at the ice cubes through the side of the container. How much of the ice cube is above the surface? How much is below the surface? Icebergs that break off of glaciers are floating in the ocean like these ice cubes. A large part of the iceberg is below the surface. It cannot be easily seen.

- ❓ What is a glacier?
- ❓ Where are most glaciers found today?
- ❓ What is an iceberg?



# Floating Ice

name \_\_\_\_\_

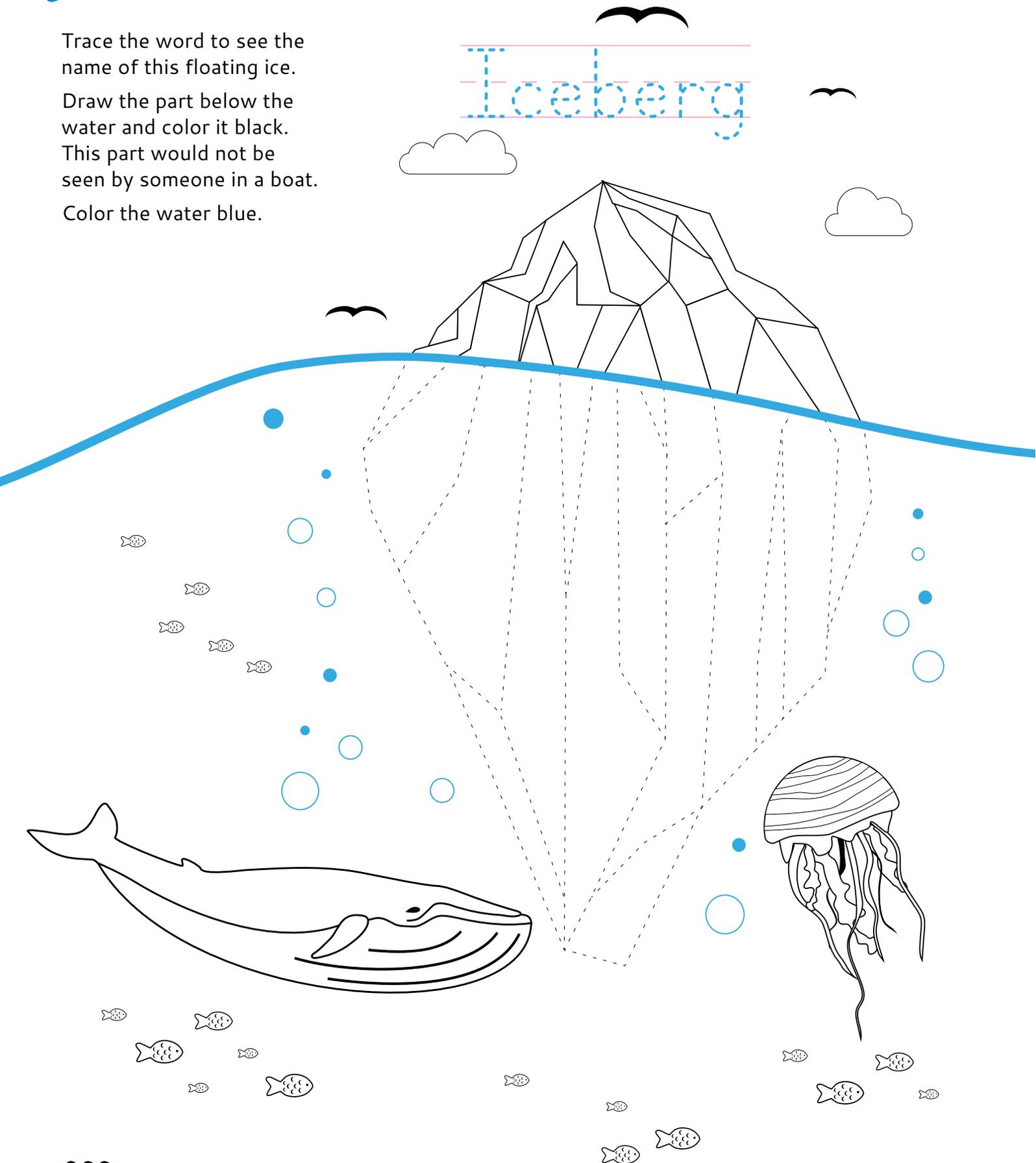
Trace the word to see the name of this floating ice.

Draw the part below the water and color it black.

This part would not be seen by someone in a boat.

Color the water blue.

Iceberg



# Movement of Glaciers

Glaciers are large sheets of ice. Glaciers don't just stay in one place.

They can move. Gravity is the force that pulls everything down toward the earth.

Gravity pulls on glaciers. This makes the ice move slowly down a mountain. When the ice moves, it drags rocks and dirt with it. When the weather is warm, the ice begins to melt. Water flows into the soil and rocks under the glacier. When the weather becomes cold, this water freezes. The rocks become frozen in the ice. When the ice is pulled down a hill by gravity, the rocks in the ice act like sandpaper. They scrape the ground underneath the glacier.



Glaciers also push rocks and dirt ahead of them. When the glacier melts, it leaves a line of rocks showing where the ice has been. Glaciers usually move very slowly. They move only a few inches each day.



## Caught in a Glacier

Place a few pebbles or some sand in the bottom of a bowl. Set several ice cubes on top of the pebbles. Leave the bowl sitting on the counter for a few minutes. The ice will begin to melt. This is what happens to glaciers during the summer. Once there is some water in the bottom of the bowl, place it in the freezer. This is what happens during the winter. After one hour, take the bowl out of the freezer. Remove the ice cubes. You should see that the rocks have become frozen in your "glacier."

- ? What makes glaciers move down a mountain?
- ? How do rocks get caught in a glacier?
- ? What do glaciers push in front of them?
- ? Do glaciers move quickly or slowly?



## Scripture Trace

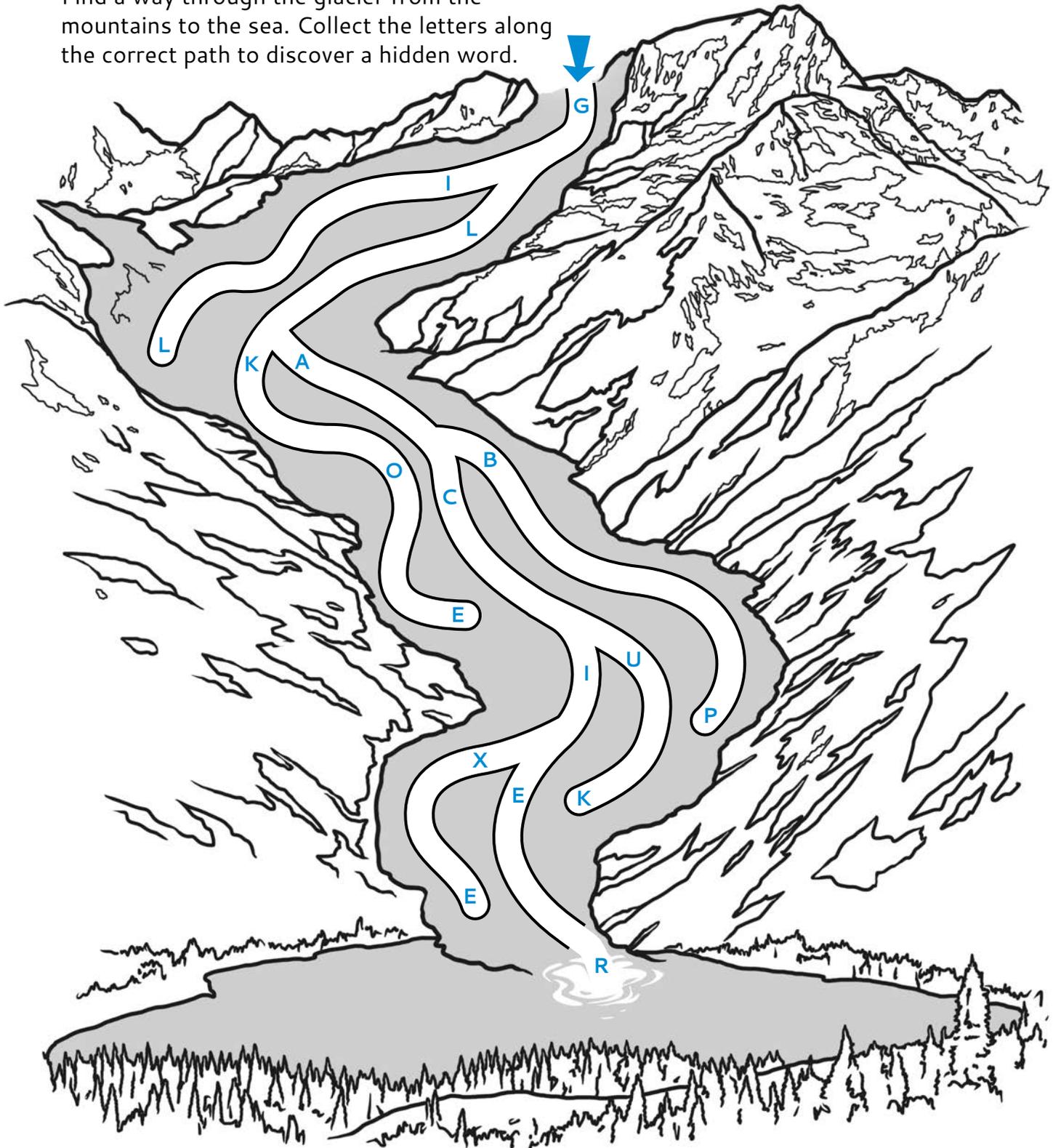
The waters become hard like stone, and the face of the deep is frozen.

Job 38:30



## Glacier Maze

Find a way through the glacier from the mountains to the sea. Collect the letters along the correct path to discover a hidden word.



Put your  
collected letters  
in order here:

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## Unit Vocabulary Review

Fill in each blank with one of the vocabulary words below.

1. E \_\_\_\_\_ S \_\_\_\_\_ is the study of our planet.
2. Two things that make Earth special are the w \_\_\_\_\_ that covers most of the surface and the distance we are from the s \_\_\_\_\_.
3. Three major events that have changed the way the earth looks are c \_\_\_\_\_, the s \_\_\_\_\_ of man, and the Great F \_\_\_\_\_.
4. Noah built a very large boat which we call the a \_\_\_\_\_.
5. During the I \_\_\_\_\_ A \_\_\_\_\_ many parts of the earth were covered with ice.
6. E \_\_\_\_\_ are large sheets of ice that do not completely melt in the summer.
7. I \_\_\_\_\_ are chunks of ice that fall off of glaciers and float in the water.
8. G \_\_\_\_\_ pulls glaciers down mountains.

**ark**

**fall**

**gravity**

**sun**

**creation**

**Flood**

**Ice Age**

**water**

**Earth science**

**glaciers**

**icebergs**