

# Appendix

## A CHILD'S GEOGRAPHY: EXPLORE HIS EARTH

***Copywork selections have been compiled by Ruth Marshall***

### Notes:

- » Most of the following selections are directly from A Child's Geography. However, a sufficient number of selections are offered to allow each child some choice of copywork passages. Please, do not expect that children will necessarily copy every single one of the selections below! Perhaps assign geography copywork only once a week. Do what works best for you and your geographers!
- » Selections which are not taken from A Child's Geography are prefixed by two asterisks.
- » Where only a part of a quotation was included from another writer, here it is included, if possible, in full.
- » Older children are expected to write more than their younger siblings. For the purposes of this list, "older children" refers to anyone over the age of 12 (or thereabouts).
- » Unless otherwise stated, all Scripture verses are quoted here in the KJV.

### Introduction

- » **Isaiah 6:3—**
  - Holy, holy, holy, is the LORD of hosts: the whole earth is full of his glory.
- » **\*\* 1 Corinthians 13:2—**
  - [Not from A Child's Geography, but this was inspired by the "Reaching Out" section. Remember to point out that "charity" is an old word for "love". See the Appendix for the whole of 1 Corinthians 13: older children may like to copy more than just one verse]....though I have the gift of prophecy, and understand all mysteries, and all knowledge; and though I have all faith, so that I could remove mountains, and have not charity, I am nothing.
- » **\*\* John Donne—**
  - A selection from his "**Devotions upon Emergent Occasions**" (1623), XVII: **Nunc Lento Sonitu Dicunt, Morieris**—"Now, this bell tolling softly for another, says to me: Thou must die." [Not from A Child's Geography, but this was inspired by the "Reaching Out" section. More of this same passage is wonderfully quotable, but it may be too much for our copy-writers; however I include it in the "Appendix" for interest's sake.]

- o No man is an island, entire of itself; every man is a piece of the continent, a part of the main.  
If a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as if a manor of thy friend's or of thine own were: any man's death diminishes me, because I am involved in mankind, and therefore never send to know for whom the bells tolls; it tolls for thee.

## Chapter 1: Auntie Em, There Is No Place Like Home

### » Definitions:

- o **Home**—Home is where we all belong, a place we come back to, a place just for us.
- o **Geographer**—A geographer is someone who wants to explore our home, Earth, to ask questions about what is under our feet and over our heads, to ask why some areas of our home look so very different from other areas, and to meet all the different kinds of people who live in your home with you!
- o **Geography**—The word “geography” comes from the Greek language and simply means “to write about the earth.”

*one stanza of Geography*

*Islands and peninsulas, continents and capes,  
Dromedaries, cassowaries, elephants and apes,  
Rivers, lakes and waterfalls, whirlpools and the sea,  
Valley-beds and mountain-tops— are all Geography!*

~Eleanor Farjeon

Sphere—Geographers refer to earth as a “sphere” because in Latin “sphere” means “ball.”

### » Hebrews 11:3—

- o Through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear.

### » Quote from Edgar Mitchell (U.S. astronaut)—

- o Suddenly from behind the rim of the Moon in long, slow-motion moments of immense majesty, there emerges a sparkling blue and white jewel, a light, delicate sky-blue sphere laced with slowly swirling veils of white, rising like a small pearl in a thick sea of black mystery. It takes more than a moment to fully realize this is Earth . . . home.

### » Quote from astronaut, Prince Sultan Bin Salman Al-Saud of Saudi Arabia—

- o The first day or so we all pointed to our countries. The third or fourth day we pointed to our continents. By the fifth day we were aware of only one Earth.

## A Child's Geography

### » **Quote from James Irwin (U.S. astronaut)—**

- o The Earth reminded us of a Christmas tree ornament hanging in the blackness of space. As we got farther and farther away it diminished in size. Finally it shrank to the size of a marble, the most beautiful marble you can imagine. That beautiful, warm, living object looked so fragile, so delicate, that if you touched it with a finger it would crumble and fall apart. Seeing this has to change a man, has to make a man appreciate the creation of God and the love of God.

### » **Genesis 2:18—**

- o And the LORD God said, "It is not good that the man should be alone."

### » **If the world were a village...**

*[There are several versions of this online: this is one of them. A slightly different version is available as a slide show at <http://www.miniature-earth.com/>] —*

### » **Miniature Earth**

- o If we could turn the population of the earth into a small community of 100 people, keeping the same proportions we have today, it would be something like this:

60 Asians  
12 Europeans  
14 Americans (from North and South America)  
13 Africans  
1 Australian (Oceania)

50 women  
50 men

33 are Christian (Catholics, Protestants and Orthodox)  
18 are Muslims  
16 are Hindus  
16 are non-religious  
6 are Buddhists  
11 practice other religions

41 live without basic sanitation  
16 live without an improved water source

6 people own 59% of the entire wealth of the community

13 are hungry or malnourished  
14 can't read

only 7 are educated at a secondary level  
only 8 have a computer  
only 4 have an internet connection

Of the village's total annual expenditures of just over US\$ 3,000,000 per year:

US\$ 181,000 is spent on weapons and warfare...  
US\$ 159,000 is spent on education...  
US\$ 132,000 is spent on health care.

If you keep your food in a refrigerator  
And your clothes in a closet  
If you have a roof over your head  
And have a bed to sleep in  
You are richer than 75% of the entire world population.

If you have a bank account  
You are one of the 30 wealthiest people in the world.

25 struggle to live on US\$ 1.00 per day or less...  
47 struggle to live on US\$ 2.00 per day or less.

Work with passion  
Love without needing to be loved  
Appreciate what you have  
And do your best for a better world.

#### » **Acts 4:24—**

- Lord, thou art God, which hast made heaven, and earth, and the sea, and all that in them is.

## Chapter 2: Peeling An Onion

#### » **Definitions:**

- **Atmosphere**—“Atmos” comes from the Greek language and means “vapor” (that is what our clouds and air are made of, water vapor) and “sphere” comes from the Latin language, meaning “ball.” So atmosphere is literally the vapor wrapped around our ball.
- **Gas**—A gas is a substance with no fixed volume or shape but expands to fill any volume of space available. Our atmosphere is composed of 78% nitrogen, 21% oxygen and trace amounts of other gases.

- **Troposphere** — The layer that first blankets Earth is called the “troposphere.” “Tropos” stems from the Greek word meaning “turning” or “mixing.”
- **Stratosphere** — Stratosphere means a spreading out (stratus means spreading out in Latin) around our ball.
- **Ozone** — Ozone comes from the Greek word “ozein” which means “to smell.” It is this layer of ozone that causes the temperature to become warmer in the stratosphere.
- **Mesosphere** — The mesosphere’s main attraction is shooting stars.

### » Psalm 24:1—

- The earth is the LORD’s, and the fullness thereof; the world, and they that dwell therein.

### » Psalm 115:16—

- The heaven, even the heavens, are the LORD’s: but the earth hath he given to the children of men.

### » 1 Peter 4:10-11—

- As every man hath received the gift, even so minister the same one to another, as good stewards of the manifold grace of God.
- If any man speak, let him speak as the oracles of God; if any man minister, let him do it as of the ability which God giveth: that God in all things may be glorified through Jesus Christ, to whom be praise and dominion for ever and ever. Amen.

*a selection from The Meteors*

*The meteors are slipping*

*Like skaters on the sky!*

*The meteors are whipping*

*Their lashes round the sky!*

*Here another splashes!*

*There another flashes!*

*And smashes into ashes*

*Far from the sky.*

*~ Eleanor Farjeon*

## Chapter 3: Falling Through The Sky

### » Definitions:

- **Thermosphere**—“Therme” means “heat” in the Greek language. The thermosphere is a place that is sizzling hot but is NOT!
- **Ionosphere**—The ionosphere is a unique shield that God created for Earth. There are explosions happening on the surface of the sun called “solar flares.” Searingly hot particles from the sun fling out into space at speeds over a million kilometers per hour! And when these sun particles, these ions, come charging towards our home, our shield of the ionosphere defends earth.

- o **Exosphere**—Exo means “out of” in Greek. And up in the exosphere, lighter molecules escape out of the atmosphere and drift off into space.
- o **Robert Service, poem** [See the Appendix below for the full text of “The Ballad of the Northern Lights.” Older children may like to copy more of the poem] —

*The skies of night were alive with light...  
 They were rose and silver shod;  
 It was not good for the eyes of man —  
 'Twas a sight for the eyes of God.*

» **Ezekiel 1:4—**

- o And I looked, and, behold, a whirlwind came out of the north, a great cloud, and a fire infolding itself, and a brightness was about it, and out of the midst thereof as the colour of amber, out of the midst of the fire.

» **Genesis 9: 12-16\*\* (see p. 40—Rainbows)—**

- o And God said, This is the token of the covenant which I make between me and you and every living creature that is with you, for perpetual generations:
- o I do set my bow in the cloud, and it shall be for a token of a covenant between me and the earth.
- o And it shall come to pass, when I bring a cloud over the earth, that the bow shall be seen in the cloud:
- o And I will remember my covenant, which is between me and you and every living creature of all flesh; and the waters shall no more become a flood to destroy all flesh.
- o And the bow shall be in the cloud; and I will look upon it, that I may remember the everlasting covenant between God and every living creature of all flesh that is upon the earth.

» **Isaiah 40:22—**

- o It is he that sitteth upon the circle of the earth, and the inhabitants thereof are as grasshoppers; that stretcheth out the heavens as a curtain, and spreadeth them out as a tent to dwell in.

» **Ecclesiastes 1:5—\*\* (See p.47—Sunrise and sunset)—**

- o The sun also ariseth, and the sun goeth down, and hasteth to his place where he arose.

» **The Rainbow (A Fragment)**

- o “The Rainbow,” by William Wordsworth (1770-1850), accords with every child’s feelings. It voices the spirit that imagines it “a bridge to heaven.”

*My heart leaps up when I behold  
 A rainbow in the sky;  
 So it was when my life began,  
 So is it now I am a man,  
 So be it when I shall grow old,  
 Or let me die!*

## Chapter 4 : Puzzle Directions

### » Definitions:

- **Continent**—The word “continent” comes from the Latin word “continens” which means “continuous mass of land.”
- **Hemisphere**—Geographers have thought up a name for each half of the ball of Earth. “Hemisphere” is the Latin word for “half ball.”
- **Equator**—The Earth is also divided in half, right around its waist, by an invisible line called the equator. The equator is where the sun appears almost directly overhead year round.

### » Names of the continents:

- **Europe**—The name of the continent Europe comes from the Greek words “Eurys” (broad) and “Ops” (face).
- **Asia**—The word “Asia” is actually thought to have derived from the ancient Assyrian word “asu,” meaning that Asia is the “land of the sunrise.”
- **Africa**—It is possible that “Africa” comes from the Latin word “Aprica,” meaning “basking in the sun.”
- **Australia**—The word “Australia” comes from the Latin word “auster” which means “southern wind.”
- **North and South America**—Amerigo Vespucci was the first to call these land masses the “New World.” So the continents, “North and South America,” are named after him.
- **Antarctica**—The name “Antarctica” comes from the Greek, meaning “opposite the bear.” Looking at the sky in the north, the Greeks thought they saw a group of stars that made the shape of “arktos,” meaning “bear.” “Antarctica” lies in the opposite direction of this northern shape of stars.

### » Amos 9:6—

- It is he that buildeth his stories in the heaven, and hath founded his troop in the earth; he that calleth for the waters of the sea, and poureth them out upon the face of the earth: The LORD is his name.

### » Psalm 95:5—

- The sea is his, and he made it: and his hands formed the dry land.

### » 1 Timothy 2:1-3—

- I exhort therefore, that, first of all, supplications, prayers, intercessions, and giving of thanks, be made for all men; For kings, and for all that are in authority; that we may lead a quiet and peaceable life in all godliness and honesty. For this is good and acceptable in the sight of God our Saviour.

## » \*\* Hymn by John Ellerton

- o [See <http://www.cyberhymnal.org/htm/d/a/daythoug.htm> for the music] —

*The Day Thou Gavest, Lord, Is Ended  
 The day Thou gavest, Lord, is ended,  
 The darkness falls at Thy behest;  
 To Thee our morning hymns ascended,  
 Thy praise shall sanctify our rest.*

*We thank Thee that Thy church, unsleeping,  
 While earth rolls onward into light,  
 Through all the world her watch is keeping,  
 And rests not now by day or night.*

*As o'er each continent and island  
 The dawn leads on another day,  
 The voice of prayer is never silent,  
 Nor dies the strain of praise away.*

*The sun that bids us rest is waking  
 Our brethren 'neath the western sky,  
 And hour by hour fresh lips are making  
 Thy wondrous doings heard on high.*

*So be it, Lord; Thy throne shall never,  
 Like earth's proud empires, pass away:  
 Thy kingdom stands, and grows forever,  
 Till all Thy creatures own Thy sway.*

- o [Copywork for this chapter may also be taken from the Audio Memory Geography Songs Kit — <http://www.audiomemory.com/geography.php>]

**Chapter 5: The Swirling Soup in My Father's Hands**

## » Definitions:

- o **Current**—One of the ways our ocean moves is in a streaming, flowing motion called a “current.” Currents are much like racing rivers that flow. And these “river” ocean currents flow in two ways: either near the surface of the ocean, or deep in the dark black of the oceans.

- **Gyres** —A **gyre** is a large, nearly circular, system of wind-driven currents on the ocean's surface.
- **Coriolis Effect** —The **Coriolis effect** is the tendency for moving objects traveling large distances on the Earth's surface, such as gyres, to actually bend, or veer, either to the left or to the right.
- **Gravity** —The moon exerts a strong invisible force called "gravity" on the oceans, acting like a magnet, drawing Earth's waters towards itself. Gravity is a force that causes one mass to be attracted to another mass — and the bigger the object the more gravitational force it has to draw things unto itself.
- **High tide** —High tide is when the ocean waters rise high up on the beach or the coastline because of the moon's pull on the Earth's oceans.
- **Low tide** —Low tide is when the ocean waters are at their lowest level on the beach or coastline.
- **Hydrosphere** —Both our sky and our ocean are water, water, water! Geographers call this the "hydrosphere." The word "hydro" comes from the Greek word for "water." So the "water sphere" refers to all the water on or in the air around our ball of Earth.

### » **Names of the oceans:**

- **Pacific Ocean** —The Pacific Ocean is the biggest and deepest part of the Earth's Ocean.
- **Atlantic Ocean** —Only half as big as the tremendous Pacific Ocean, the Atlantic Ocean is the world's most traveled ocean.
- **Indian Ocean** —The warm waters of the Indian Ocean are the only waters in the whole wide world that twice every year change the direction of their current, or the way the water flows.
- **Arctic Ocean** —The icy Arctic Ocean in the north is the smallest ocean of the world's waters. It also is the most mysterious ocean as one third of it remains ice that never melts.
- **Southern Ocean** —The frigid Southern Ocean around Antarctica has the most blustery, strongest average winds found anywhere on the whole Earth — so navigating the waters of the Southern Ocean means to ride monstrous waves.

### » **Isaiah 40:12—**

- Who hath measured the waters in the hollow of his hand, and meted out heaven with the span, and comprehended the dust of the earth in a measure, and weighed the mountains in scales, and the hills in a balance?

### » **Psalm 24:2—**

- For he hath founded it upon the seas, and established it upon the floods.

### » **Job 28:24-25—**

- For he looketh to the ends of the earth, and seeth under the whole heaven;
- To make the weight for the winds; and he weigheth the waters by measure.

### » **Ecclesiastes 1:6—**

- The wind goeth toward the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to his circuits.

» **Habakkuk 2:14—**

- o For the earth shall be filled with the knowledge of the glory of the LORD, as the waters cover the sea.

» **\*\* Hymn by Arthur Ainger (1841-1919)**

- o [For the tune see here: [http://www.billysloan.co.uk/songs/god\\_is\\_working\\_his\\_purpose\\_out.html](http://www.billysloan.co.uk/songs/god_is_working_his_purpose_out.html) — but note that this site omits verse 2. For an alternative tune see here: <http://www.cyberhymnal.org/htm/g/i/giworkhp.htm>]

*God is Working His Purpose Out  
God is working His purpose out  
As year succeeds to year;  
God is working his purpose out,  
And the time is drawing near;  
Nearer and nearer draws the time,  
The time that shall surely be,  
When the earth shall be filled  
With the glory of God  
As the waters cover the sea.*

*From utmost east to utmost west,  
Where'er man's foot hath trod,  
By the mouth of many messengers  
Goes forth the voice of God:  
"Give ear to Me, ye continents,  
Ye isles, give ear to Me,"  
That the earth may be filled  
With the glory of God  
As the waters cover the sea.*

*What can we do to work God's work,  
To prosper and increase  
The brotherhood of all mankind,  
The reign of the Prince of Peace?  
What can we do to hasten the time,  
The time that shall surely be,  
When the earth shall be filled  
With the glory of God  
As the waters cover the sea.*

*March we forth in the strength of God,  
With the banner of Christ unfurled,  
That the light of the glorious Gospel of truth  
May shine throughout the world;  
Fight we the fight with sorrow and sin  
To set their captives free,  
That the earth may be filled  
With the glory of God  
As the waters cover the sea.*

*All we can do is nothing worth  
Unless God blesses the deed;  
Vainly we hope for the harvest-tide  
Till God gives life to the seed;  
Yet near and nearer draws the time,  
The time that shall surely be,  
When the earth shall be filled  
With the glory of God  
As the waters cover the sea.*

## Chapter 6: The Woodstove That Heats up Everything Outside the Window

### » Definitions:

- **Seasons**—There are only four seasons: winter, spring, summer, fall (or autumn). What season you are living in all depends where on Earth you are living, and where the Earth is in its revolving, annual trip around the sun.
- **Axis**—An axis is a line around which an object turns. Earth spins on its axis with a permanent tilt! As Earth spins, it is tipped on a 23.5 degree angle — towards the North Pole, Polaris.
- **\*\*Solstice**—[the following definition is taken from Arthur Mee's Children's Encyclopedia, and has been edited slightly. Be sure to read the explanation in A Child's Geography first!] — The path of direct sunlight is at its most northerly position about June 22, when it lies about 1600 miles north of the Equator; and at its most southerly position about December 22, when it is an equal distance on the other side. These two dates are known as the Solstices, which means that the Sun appears to stand still after reaching its extreme position.
- **\*\*Equinox**—[the following definition is taken from Arthur Mee's Children's Encyclopedia, and has been edited slightly. Be sure to read the explanation in A Child's Geography first!] — March 22 and September 22 are known as the Equinoxes, because the length of day and night is then exactly equal all over the world.

- o **Climate**—Climate is how the atmosphere outside your window “behaves” over long periods of time. Climate is how we come to expect our seasons, year in and year out, to behave.
- o **Weather**—Weather is what is outside your window—the conditions happening in the troposphere. And the sun drives it all. To make weather, three ingredients are required: water, air and heat.
- o **Convection**—Convection is the action of warm, less dense air rising and colder, denser air sinking. Convection creates “wind.” The word “wind” actually means to “wind its way.” And air generally winds its way around our globe in large circles called convection cells. Hot air rises above the Equator, and cold air sweeps in from the Poles to take its place.
- o **Vapor**—Steam is another form of water—water turned into a gas or vapor.
- o **Evaporation**—The process of the water turning into gas or vapor is called evaporation.
- o **Condensation**—As the air moves higher up into the atmosphere, the air cools down since temperatures are cooler higher up. Now, in the cool air, the water vapor condenses into water droplets.

» **Genesis 1:14—**

And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years.

» **Genesis 8:22—**

- o While the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease.

» **Ecclesiastes 1:7—\*\* (regarding the water cycle)—**

- o All the rivers run into the sea; yet the sea is not full; unto the place from whence the rivers come, thither they return again.

» **Zechariah 10:1—\*\* (regarding rain)—**

- o Ask ye of the LORD rain in the time of the latter rain; so the LORD shall make bright clouds, and give them showers of rain, to every one grass in the field.

» **Daniel 2:21—**

- o And he changeth the times and the seasons: he removeth kings, and setteth up kings: he giveth wisdom unto the wise, and knowledge to them that know understanding.

» **Psalm 19:6—**

- o His going forth is from the end of the heaven, and his circuit unto the ends of it: and there is nothing hid from the heat thereof.

» **Jeremiah 10:13—**

- o When he uttereth his voice, there is a multitude of waters in the heavens, and he causeth the vapours to ascend from the ends of the earth; he maketh lightnings with rain, and bringeth forth the wind out of his treasures.

» **Wonder of Water—**

- o Did you know that the water that you and I drink, that runs out of your tap — all the water in the Pacific, Atlantic, Indian, Southern and Arctic Ocean — is the EXACT same water that God created on Day 2 of Creation? All the water that has ever been on Earth, at any time in history, is the very same

water that has been here since God made it at the beginning of time! In the clouds overhead may be a water droplet that Jonah and the great fish swam in! In your next glass of water may be one of the same droplets of water that Moses commanded to gush forth from the rock! For all the water there is now, is all the water there ever was!

» **Job 37:11**—[See the Appendix for the whole of Job 37 and 38: older children may like to copy more than just the following two verses.]

- Also by watering he wearieth the thick cloud: he scattereth his bright cloud.

» **Job 37:13**—

- He causeth it to come, whether for correction, or for his land, or for mercy.

» **Psalm 68:4**—

- Sing unto God, sing praises to his name: extol him that rideth upon the heavens by his name JAH, and rejoice before him.

» **Psalm 104:3**—

- Who layeth the beams of his chambers in the waters: who maketh the clouds his chariot: who walketh upon the wings of the wind.

» **The Sunlight is Sweet ~ Ecclesiastes 11:7**

*Truly the light is sweet,  
And a pleasant thing it is  
For the eyes to behold the Sun.*

## Chapter 7: Getting to the Core of the Matter

» **Definitions:**

- **Seismic waves**—The sudden release of energy from an earthquake sends out different kinds of shaking movements throughout the earth. Geographers refer to these movements as “seismic waves.” (The word seismic comes from the Greek word for “shaking.”)
- **P wave**—One kind of wave is called a P wave (Primary, or Pressure waves). The P waves are simply sound waves that travel through the Earth. The fast moving seismic P waves move up and down, and can travel through both liquids and solids.
- **S wave**—S waves (Secondary, or Shear waves) move back and forth, in a sideways motion. S waves from earthquakes can only travel through solid material. If an S wave bumps into a liquid inside of the Earth, it either bounces back, or turns into a P wave.
- **Seismograph**—A seismograph is a wave detector.
- **Volcano**—A volcano is much like a mountain-sized chimney where material from the inside of the Earth spews out.

- **Crust**—The earth's crust includes all of the world's land surfaces and the ocean floor. The Earth's thin crust under the continents is made up mostly of a rock called granite. But the Earth's even thinner crust under the ocean is composed of a dense, heavy rock called basalt.
- **Mantle**—The mantle is thought to be much thicker than the Earth's crust. It is composed of various elements such as silicon, oxygen, iron, and magnesium, and is a place of change. Beneath the upper, solid layer is a part of the mantle that flows like a liquid even though it is a solid. The mantle is said to have "plastic behavior."
- **Lithosphere**—The upper, solid layer of the mantle and the Earth's crust are together called the lithosphere. "Litho" comes from the Greek word "rocky," so lithosphere means the rocky part of our earth—both the Earth's solid crust and the upper rigid portion of the mantle.
- **Asthenosphere**—"Astheno" comes from the Greek word meaning "without strength," so the asthenosphere is the part of the mantle that is weak, mushy, toothpaste-like "rock."
- **Core**—The Earth's core is believed to be divided into the outer and inner core. The Earth's outer core is thought to be in a liquid, fluid state, made mostly of nickel and iron. The inner core of Earth is a solid ball of iron inside the ball of our Earth.
- **Ground water; Water table**—The water that falls from the sky, filters down through our soil until it reaches a layer of rock it can't flow through. This is called ground water, and forms the water table.

» **Genesis 1:2—**

- And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.

» **Psalm 34:8—**

- O taste and see that the LORD is good: blessed is the man that trusteth in him.

» **Psalm 18:2—**

- The LORD is my rock, and my fortress, and my deliverer; my God, my strength, in whom I will trust; my buckler, and the horn of my salvation, and my high tower.

» **Psalm 62:2—**

- He only is my rock and my salvation; he is my defense; I shall not be greatly moved.

## Chapter 8: Singing, Dancing and Praising God

» **Definitions:**

- **Divergent boundary**—"Divergent boundaries" are where two of the plates on the Earth's crust separate or move apart. (Divergent means to go in different directions.)
- **Magma**—Magma is the name of the liquid rock in the Earth's mantle. As magma oozes up between two diverging plates, it cools in the cold ocean water, and solidifies into rock. This creates new crust on the ocean floor.

- **Convergent boundary**—A “convergent boundary” is where the plates of the Earth’s crust smash into each other or slide under each other. Convergent means to bend together.
- **Subduction**—If a heavier oceanic crust collides with the lighter continental plate, the oceanic crust will jerkily slip under the continental crust. This process is called “subduction.”
- **Transform boundary**—When one of the Earth’s plates slides and grinds past another plate, geographers call this a “transform boundary.”
- **Plate tectonics**—The movement of plates is called plate tectonics. “Plate” refers to slabs or rafts of the Earth’s crust, and “tectonics” comes from the Greek word “to build.” The idea of plate tectonics is to explain how the Earth was built.

» **Psalm 147:15—**

- He sendeth forth his commandment upon earth: his word runneth very swiftly.

» **Matthew 8:27—**

- But the men marvelled, saying, What manner of man is this, that even the winds and the sea obey him!

» **Genesis 1:9-10—**

- And God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear: and it was so.
- And God called the dry land Earth; and the gathering together of the waters called he Seas: and God saw that it was good.

» **Genesis 7:11—**

- In the six hundredth year of Noah’s life, in the second month, the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were opened.

» **Psalm 104:8—**

- They go up by the mountains; they go down by the valleys unto the place which thou hast founded for them.

» **Psalm 95:1, 4-5—** [See the Appendix for the whole of Psalm 95: older children may like to copy more than just the following verses.]

»

- O come, let us sing unto the LORD: let us make a joyful noise to the rock of our salvation.
- In his hand are the deep places of the earth: the strength of the hills is his also.
- The sea is his, and he made it: and his hands formed the dry land.

» **Psalm 96:1—**

- O sing unto the LORD a new song: sing unto the LORD, all the earth.

## Chapter 9: Stresses, Faults and Explosions

### » Definitions:

- **Fault**—Faults are weak spots of the Earth's crust, where one part of the crust has moved against another part. The crack at a fault usually extends no more than about 10 miles deep into the core of the Earth.
- **Normal fault**—Geographers call any fault or crack on Earth “normal” if along the crack, one section of rock slides downward and away from another block of rock.
- **Reverse fault**—Reverse faults are the cracks formed where one block of rock slides under another block, or one block of rock is being pushed up over another.
- **Strike-slip fault**—Strike-slip faults are the cracks between two plates that are sliding past each other.
- **Shield volcano**—Shield volcanoes may be rather quiet, but they are Earth's largest volcanoes with their long gentle slopes, from the many lava flows that ooze out over great distances. This kind of volcano looks like a massive, upturned warrior's shield. (For example: Mauna Loa, and Kilauea, both in Hawaii.)
- **Composite volcano**—These explosive volcanoes produce steep layers of ash and lava. “Composite” means to be made up of parts. That perfectly describes composite volcanoes since they are made up of the two parts of lava and ash. (For example: Mt. St. Helens, in Washington, USA; and Mt. Pinatubo, in the Philippines.)
- **Cinder cone volcano**—Cinder cone volcanoes are the simplest type of volcano. Gas charged lava erupts violently into the air and then breaks into smaller fragments. These fragments of lava become hard or solidify. The chunks then fall down as dark volcanic rock around the vent or chimney of the volcano. (For example: Paricutin, in Mexico.)
- **Geothermal energy**—People can use the heat from magma to create energy. This energy is called “geothermal energy”—“geo” means earth and “thermal” means heat — so geothermal energy is the earth's heat.
- **Tsunami**—A gigantic wave, the result of an ocean floor earthquake, is called a tsunami.

### » Psalm 104:32—

- He looketh on the earth, and it trembleth: he toucheth the hills, and they smoke.

### » Matthew 24:6-8—

- And ye shall hear of wars and rumours of wars: see that ye be not troubled: for all these things must come to pass, but the end is not yet.
- For nation shall rise against nation, and kingdom against kingdom: and there shall be famines, and pestilences, and earthquakes, in diverse places.
- All these are the beginning of sorrows.

### » **Acts 16: 25-32—**

- o And at midnight Paul and Silas prayed, and sang praises unto God: and the prisoners heard them.
- o And suddenly there was a great earthquake, so that the foundations of the prison were shaken: and immediately all the doors were opened, and every one's bands were loosed.
- o And the keeper of the prison awaking out of his sleep, and seeing the prison doors open, he drew out his sword, and would have killed himself, supposing that the prisoners had been fled.
- o But Paul cried with a loud voice, saying, Do thyself no harm: for we are all here.
- o Then he called for a light, and sprang in, and came trembling, and fell down before Paul and Silas,
- o And brought them out, and said, Sirs, what must I do to be saved?
- o And they said, Believe on the Lord Jesus Christ, and thou shalt be saved, and thy house.
- o And they spake unto him the word of the Lord, and to all that were in his house.

## Chapter 10: God's Great Signs and Imaginary Lines

### » **Definitions:**

- o **Map**—Maps are pictures of journeys, drawings of part of our home of Earth, from a birds-eye view.
- o **Cartographer**—Mapmakers are called cartographers. “Cartos” comes from the Greek word that means “leaf of paper.” And the root word for “grapher” means “to write” in Greek.
- o **Parallels of latitude**—Ptolemy called the imaginary lines that ran east-west on maps the “parallels of latitude.” “Latitude” refers to an angle of distance, formed between the equator and a position on Earth’s surface, telling you how far north or south you are of the equator. And “parallel” means that the distance between two lines remains the same.

### » **Major parallels of latitude:**

- o **Equator**—The Equator is the zero degree of latitude, since it is the ring of latitude that divides the Earth exactly in half, between the North and South Pole. And the Equator is where God's sign in the sky, the sun, shines most directly on Earth most of the time.
- o **Arctic Circle**—The ring of latitude called the Arctic Circle is at nearly 66 degrees North of the Equator.
- o **Antarctic Circle**—The Antarctic Circle is at nearly 66 degrees South of the Equator. The Arctic and Antarctic Circles are two of Earth's important rings since they represent the most northern and southern locations where you could sit outside the whole day waiting for the sun to rise...and it never would.
- o **Tropic of Cancer**—The ring of latitude at 23 degrees North of the Equator is the most northerly location that you could see the sun directly overhead. At noon on June 21<sup>st</sup> the sun is directly over this ring of latitude. We call this ring of latitude the Tropic of Cancer.

- **Tropic of Capricorn**—The ring of latitude at nearly 23 degrees south of the Equator is the most southerly location that the sun may be seen directly overhead. On December 21<sup>st</sup>, at noon, you would see the sun directly overhead, if you were standing anywhere along this ring of latitude. So this ring is called the Tropic of Capricorn.

» **Joshua 18:8—**

- And the men arose, and went away: and Joshua charged them that went to describe the land, saying, Go and walk through the land, and describe it, and come again to me, that I may here cast lots for you before the LORD in Shiloh.

» **Joshua 18:8 (New International Version)—**

- As the men started on their way to map out the land, Joshua instructed them, “Go and make a survey of the land and write a description of it. Then return to me, and I will cast lots for you here at Shiloh in the presence of the LORD.”

» **Genesis 1:14—**

- And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years.

***Sea Fever***

*I must go down to the sea again  
To the lonely sea and sky  
And all I ask is a tall ship  
And a star to steer her by.*

***By John Masefield (1978-1967)***

» **\*\* Poem by Helen Hunt Jackson (1830-1885)**

- [Online at <http://rpo.library.utoronto.ca/poem/1089.html>]—

***God's Light-houses***

*When night falls on the earth, the sea  
From east to west lies twinkling bright  
With shining beams from beacons high  
Which flash afar a friendly light.*

*The sailor's eyes, like eyes in prayer,  
Turn unto them for guiding ray:  
If storms obscure their radiance,  
The great ships helpless grope their way.*

*When night falls on the earth, the sky  
Looks like a wide, a boundless main.  
Who knows what voyagers sail there?  
Who names the ports they seek and gain?*

*Are not the stars like beacons set  
To guide the argosies that go  
From universe to universe,  
Our little world above, below?—*

*On their great errands solemn bent,  
In their vast journeys unaware  
Of our small planet's name or place  
Revolving in the lower air.*

*O thought too vast! O thought too glad!  
An awe most rapturous it stirs.  
From world to world God's beacons shine:  
God means to save his mariners!*

## Chapter 11: God's Great Signs and Imaginary Lines

### » Definitions:

- **Meridians of longitude**—Drawing lines or meridians of longitude that run from the North Pole down to the South Pole allow geographers to find their east-west position in the world. These imaginary meridians of longitude that run from Pole to Pole along the surface of the Earth divide the globe into 360 equal slices.
  - **Prime meridian**—Geographers refer to the first line of longitude as the prime meridian, since “prime” means first in Latin. And just like travelers needed a starting point of latitude, the equator, they also needed a starting point of longitude to say, “I am 50 degrees East or West of the prime meridian.”
  - **Eastern and Western hemispheres**—Greenwich, England, has the first line of longitude running through it, dividing the world into half. On one side of the Prime Meridian lies the Eastern hemisphere, and on the other side lies the Western hemisphere.
  - **Meridian**—The word “meridian” comes from the Latin word meaning “noon,” the time when the sun is directly overhead of a certain place.
- **Psalm 103:12—**  
As far as the east is from the west, so far hath he removed our transgressions from us.

### » I Never Saw a Moor

- o Some places are not mapped, nor do they have a position of latitude or longitude—but they are very real and certain places.

*I never saw a moor.  
I never saw the sea;  
Yet know I how the heather looks,  
And what a wave must be.*

*I never spoke with God,  
Nor visited in heaven;  
Yet certain am I of the spot  
As if the chart were given.*

**~Emily Dickinson**

## Bags are Packed Again!

### » Job 26:7

- o He stretcheth out the north over the empty place, and hangeth the earth upon nothing.

### » Psalm 65:5-6

- o By terrible things in righteousness wilt thou answer us, O God of our salvation; who art the confidence of all the ends of the earth, and of them that are afar off upon the sea: Which by his strength setteth fast the mountains; being girded with power

### » Proverbs 30:4

- o Who hath ascended up into heaven, or descended? Who hath gathered the wind in his fists? Who hath bound the waters in a garment? Who hath established all the ends of the earth? What is his name, and what is his son's name, if thou canst tell?

### » Nehemiah 9:6

- o Thou, even thou, art LORD alone; thou hast made heaven, the heaven of heavens, with all their host, the earth, and all things that are therein, the seas, and all that is therein, and thou preservest them all; and the host of heaven worshippeth thee.

### » Psalm 77:14

- o Thou art the God that doest wonders: thou hast declared thy strength among the people.

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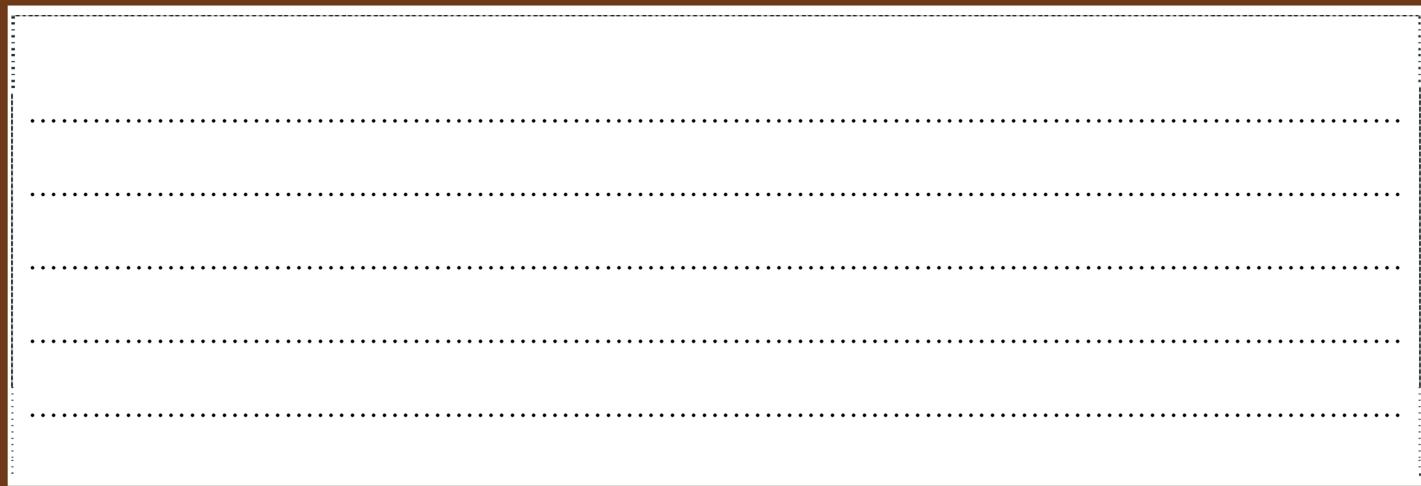
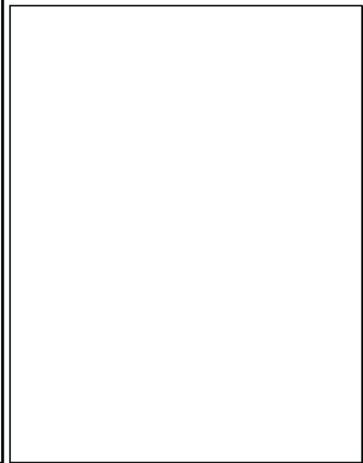
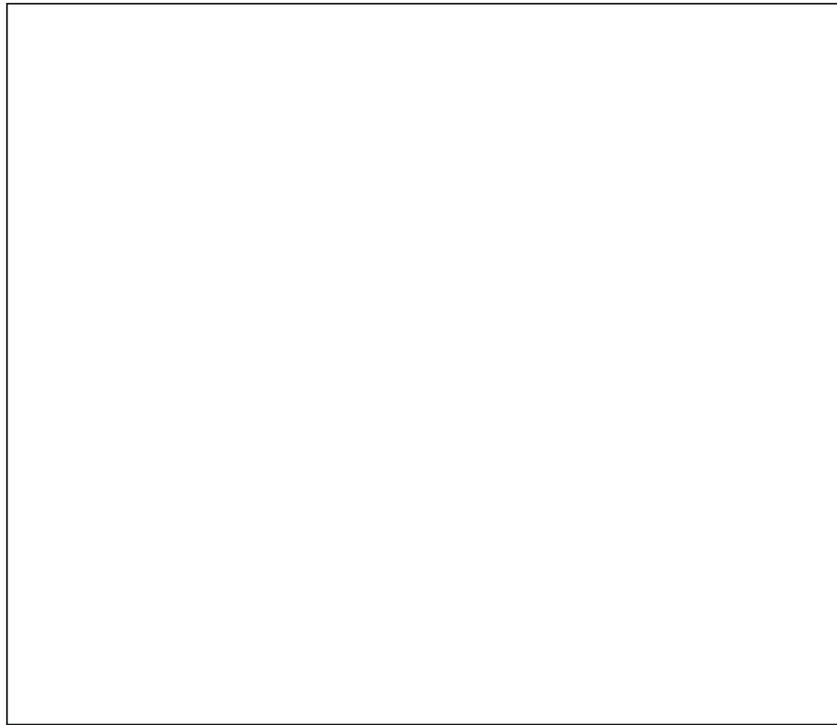
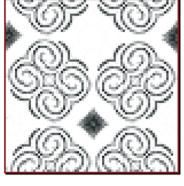
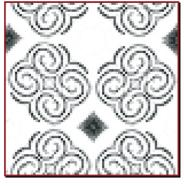
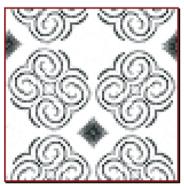
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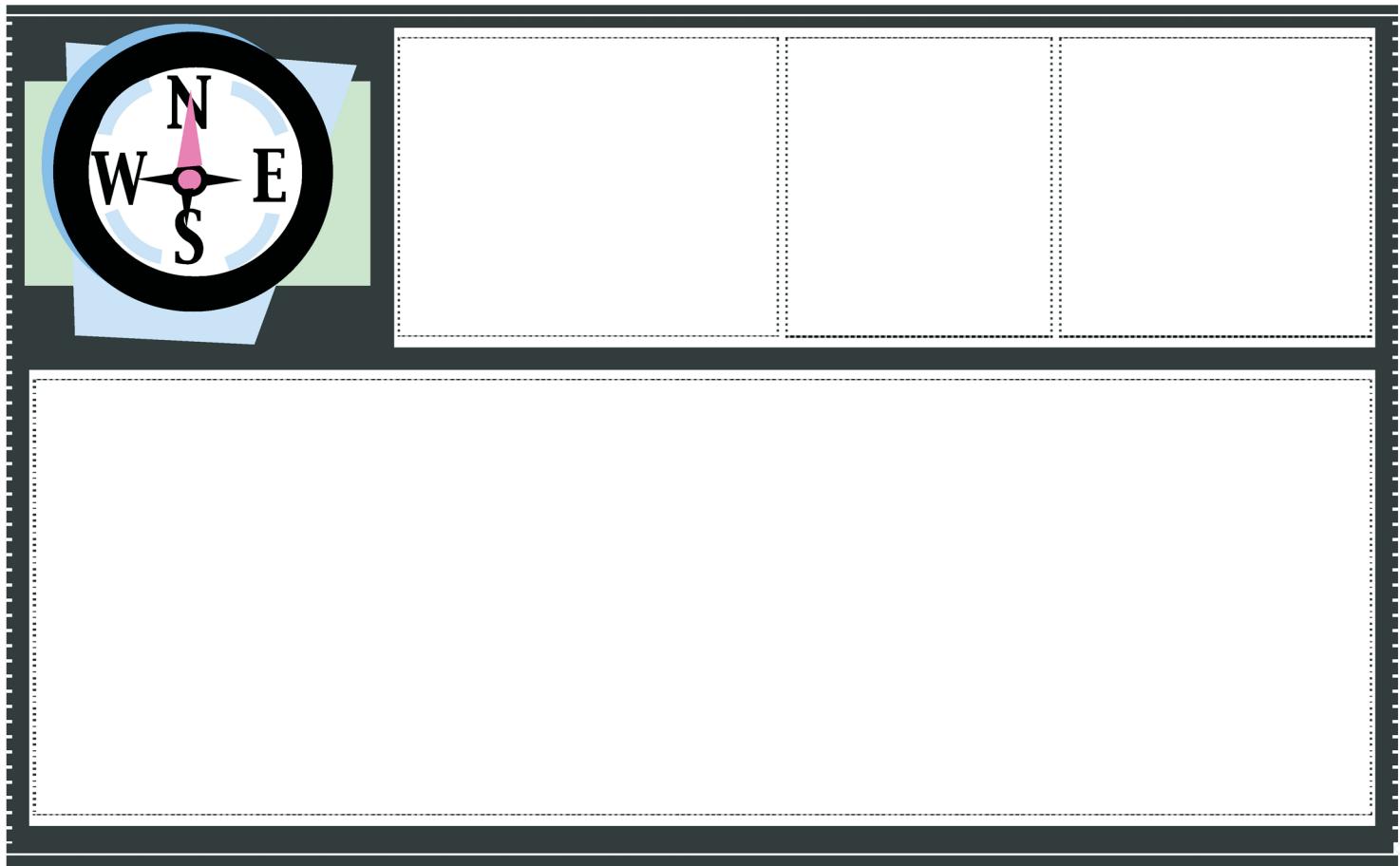
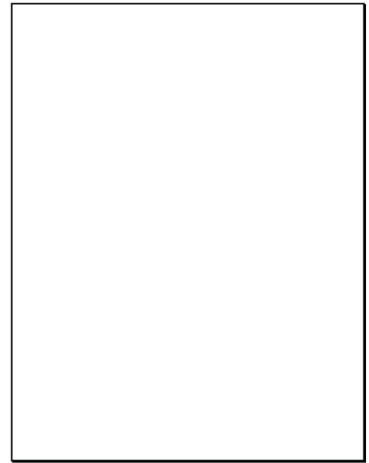
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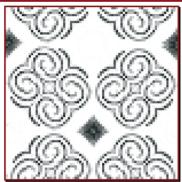
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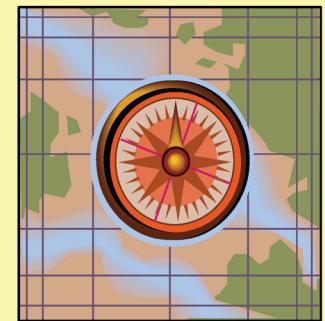


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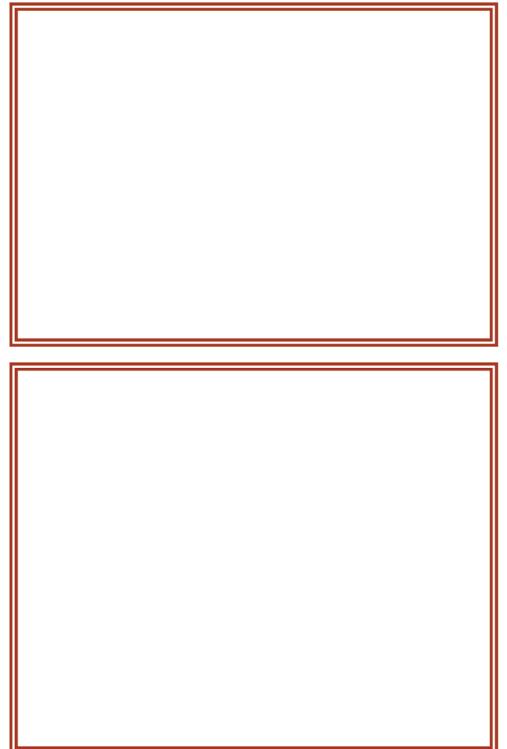
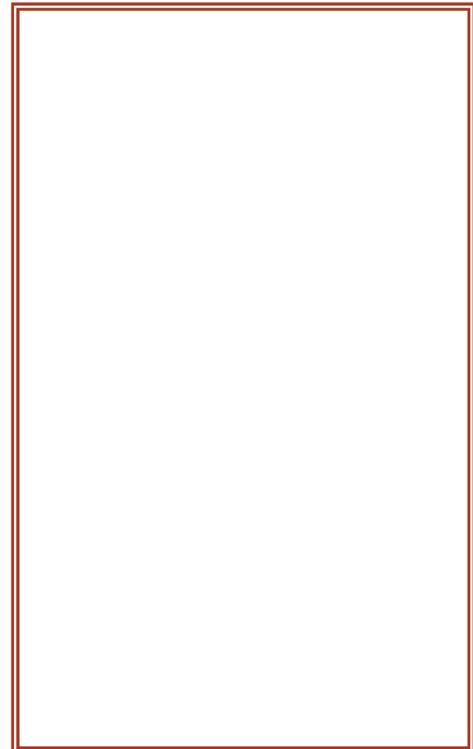
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## » Chapter One Review

1. *What is the shape of our home?*
2. *How many people live in this home?*
3. *What do we call people who write about Earth?*
4. *Why is Earth referred to as a “sphere”?*
5. *Tell me about how big and massive our Earth is.*
6. *How did our home of Earth come into being?*
7. *How do you picture what our home looks like? Can you describe it?*

## » Answers

1. Home is like a big, round ball, a sphere slowly, constantly, turning so every twelve hours it soaks in warm sunshine and then sleeps the next 12 hours in darkness.
2. Our home of earth is inhabited by more than 6 billion people, speaking several thousand languages--- along with lions and parrots and beluga whales and polar bears and pythons, and a staggering plethora of other animals!
3. People who write about the earth are called geographers as the word “**geography**” comes from the Greek language and simply means, “*to write about the earth.*”
4. Geographers (like you and me) refer to earth as a “*sphere*” because in Latin “**sphere**” means “*ball.*”
5. The surface area, how much area our earth takes up, is 196, 951,000 square miles (316,894,000 km.)! The mass of Earth is a whopping 6.6 billion trillion tons (6 trillion trillion kilograms)!
6. The Bible says that our world was not created through natural processes but directly by God Himself: “...[The] worlds were prepared by the word of God, so that what is seen was not made out of things which are visible” (Heb. 11:3).
7. An American Astronaut named Edgar Mitchell described Earth from space as “**a sparkling blue and white jewel, a light, delicate sky-blue sphere laced with** slowly swirling veils of white, rising gradually like a small pearl in a thick sea of **black mystery. It takes more than a moment to fully realize this is Earth ... Home.**” Another American Astronaut described Earth like “**a Christmas tree ornament hanging in the blackness of space. As we got farther and farther away it diminished in size. Finally it shrank to the size of a marble, the most beautiful marble you can imagine. That beautiful, warm, living object looked so fragile. Seeing Earth from space makes a man appreciate the creation of God and the love of God.**”

**» Chapter Two Review**

1. *What does the word “atmosphere” mean?*
2. *What is our atmosphere made of?*
3. *What gas did God create in the atmosphere that we need to breathe to live?*
4. *Why did He not create more oxygen?*
5. *What is the layer of atmosphere called that we live and walk around in everyday on Earth?*
6. *What does “tropos” mean?*
7. *What occurs in the troposphere?*
8. *What happens to the temperature as you travel up through the troposphere?*
9. *What does stratosphere mean?*
10. *Do you remember how far from Earth the stratosphere extends?*
11. *What is the temperature like in the stratosphere?*
12. *What does the word “ozone” mean?*
13. *Why did God create an ozone layer in the stratosphere?*
14. *Why does some ultraviolet radiation need to reach Earth?*
15. *What can you tell us about good ozone and bad ozone?*
16. *What else might you discover floating in the stratosphere?*
17. *What layer of the atmosphere lies above the stratosphere?*
18. *What can you share about the mesosphere?*

**» Answers**

1. “**Atmos**” comes from the Greek language and means “vapor.” That is what our clouds and air are made of, water vapor. “**Sphere**” comes from the Latin language, meaning “ball.”
2. Our atmosphere is composed of 78% nitrogen, 21% oxygen and trace amounts of other gases.
3. God created oxygen in our atmosphere so that human beings might be able to live and breathe on this planet.
4. God did not create more oxygen in our atmosphere because if there were even an increase of only 1 percent more of oxygen—to 22%—there would be a 70 percent increase in the likelihood of forest fires flaming across the planet!
5. The layer that first blankets Earth is called the “**troposphere**,” the layer we actually walk around in every day here on Earth.
6. “**Tropos**” stems from the Greek word meaning “turning” or “mixing.”
7. In the troposphere layer of the atmosphere that all of our storms and rain clouds and lightning occur.
8. The further you walk through the troposphere, the colder the temperatures become!
9. Stratosphere means a spreading out (**stratus** means spreading out in Latin) around our ball.

10. The stratosphere is the second layer wrapped around earth and it extends 30 miles (50 km) above the ground of our home, Earth.
11. The temperature would have risen from -63 F (-52C) in the troposphere to a balmy, much warmer 27F (-3C) up here in the stratosphere!
12. Ozone comes from the Greek word “ozein” which means “to smell.”
13. God created the ozone layer up in the stratosphere to catch some ultraviolet rays from the sun, but still allow some ultraviolet rays to reach earth.
14. First, some of those ultraviolet rays are needed to reach our home to keep Earth’s temperature warm enough for us—and plants and animals. Secondly, some of those ultraviolet rays from the sun are needed to encourage the working of vitamin D in our bodies.
15. Ozone is “good” high up in the stratosphere because it protects us, and all of Earth, from harmful ultraviolet radiation from the sun. Ozone that is found lower, down here in the troposphere where we walk around, is “bad ozone.” That bad ozone reacts powerfully on you and me, making us sick to our stomach, causing us to cough or making it hard for us to breathe (which is an ailment called asthma).
16. Also in the stratosphere, you might notice debris floating around from volcanoes that exploded down on Earth years and years ago.
17. Above the stratosphere, lies the **mesosphere**.
18. In the mesosphere, shooting stars or meteors, pebble-size fragments floating around in space, glow with the heat of friction as they collide with gases in the mesosphere. Whizzing by at 30 miles (48 km) per second towards Earth, these “falling stars” usually burn up before they reach our home of Earth way below. Also, there is not enough oxygen to breathe up here in the mesosphere. The mesosphere, which begins just above the stratosphere and extends to 53 miles (85 km) high, has temperatures that again fall as low as -135 F (-93 C)!

### » Chapter Three Review

1. *What lies above the mesosphere?*
2. *What does thermosphere mean and how far does it extend above Earth?*
3. *What would it feel like to walk through the thermosphere—and why?*
4. *What else would be happening to us up in the thermosphere because the ozone layer is below us in the stratosphere?*
5. *Why did God create the ionosphere?*
6. *What happens when particles from the sun collide with the ionosphere?*
7. *Why do we call aurora’s “love lights”? Describe an aurora.*
8. *What do ions in the ionosphere reflect?*
9. *Can you describe how radio waves travel?*
10. *What would happen if God had not created the ionosphere?*
11. *Why can you hear radio stations from further away at night?*

## » Answers

1. Above the mesosphere lies part of the Earth's atmosphere called the **thermosphere**, a place that is sizzling hot—but is NOT!
2. “**Therme**” means “**heat**” in the Greek language. The **thermosphere** extends to 370 miles (600 km.) above our home of earth.
3. To walk through the thermosphere would be a strange experience: molecules floating around in the thermosphere are like only a few light bulbs in an enormous, empty amphitheater. Those molecules are very, VERY hot, but there simply aren't enough of them to keep your bare skin warm!
4. As it is the ozone layer that protects people on our home of Earth from harmful ultraviolet radiation from the sun, and the ozone layer lies below the thermosphere, down in the stratosphere, we would be experiencing a severe dose of ultraviolet radiation up in the thermosphere!
5. God created the ionosphere to shield the Earth from the deadly, searing hot particles that fling out into space from the surface of the sun at speeds over a million kilometers per hour!
6. When particles from the sun smash into the ionosphere, the collision creates the most glorious glowing lights—like fireworks way up in the ionosphere!
7. An **aurora**, which is bands or streamers of different colored light seen in the night sky, especially near the polar regions of Earth. Auroras are a result of the ionosphere shielding Earth from deadly sun particles. This shielding of earth could be considered to be like fireworks up in the ionosphere. If these dangerous sun particles reached our home, we could not live on this planet. We can consider auroras to be God's love lights to all of us who live on Earth, a sign of His protection to us on earth. The next time you see a breathtaking aurora, red and green lights fluttering like a shimmering curtain in the night sky, remember how much God loves all of us on Earth!
8. The ionosphere has layers of particles, called ions, which reflect radio signals.
9. Radio waves bump into the ion layers in the ionosphere, and return to Earth, much like you bounce a rubber ball.
10. If there were no ionosphere, the radio waves would leave radio stations and just drift off into space. Also, sun particles, or ions, would come charging towards our home, and our Earth would be defenseless.
11. When the radio station in my hometown sent out radio waves, the radio waves bump into the ion layers in the ionosphere, and return to Earth, much like you bounce a rubber ball. The waves bounce again up to the ionosphere and return to earth. Those radio waves keep bouncing and bumping, bouncing and bumping, from earth to the ionosphere—all the way to the radio!

## » Chapter Four Review

1. *What does the word “continent” mean?*
2. *What does the name “Europe” mean?*
3. *What is the story of Europa from Greek mythology?*
4. *Can you share anything else you discovered about Europe?*
5. *What does “Asia” mean?*
6. *What does the name “Africa” mean?*
7. *What does the name “Australia” mean?*
8. *Describe the picture that you have in your mind when you think of Europe, Asia, Africa and Australia?*
9. *What makes night and day for us on Earth?*
10. *How fast is the Earth spinning?*
11. *What would happen if God had not spun our world so perfectly?*

## » Answers

1. The word “**continent**” comes from the Latin word “**continens**” which means “continuous mass of land.”
2. The name of the continent Europe comes from the Greek words “**Eurys**” (**broad**) and “**Ops**” (**face**).
3. In Greek mythology, **Europa** was a beautiful Phoenician princess. One day, so the Greeks say, while Europa was gathering flowers by the sea, a white bull lay down in front of her. Europa carefully slid onto its back. Then, like a flash of lightning, the bull charged off, plunging into the sea. Greek myth claims that the bull carried wide-eyed Europa off to the continent we now call Europe.
4. Europe really is the continent splashing about in the water! Europe’s land juts and zigzags back and forth by the sea. The continent of Europe may be small, but its coastline, the land that meets the water, is longer than other continents that are THREE times bigger than Europe!
5. The word “**Asia**” is actually thought to have derived from the ancient Assyrian word “**asu**,” meaning that Asia is the “land of the sunrise.”
6. It is possible that “**Africa**” comes from the Latin word “**Aprica**,” meaning “basking in the sun.”
7. The word “**Australia**” comes from the Latin word “**auster**” which means “southern wind.”
8. Let the children give their own answers.
9. For 12 hours, one half of the sphere of Earth is facing the sun (while slowly rotating)... then by that time that half has rotated away from the sun into darkness and night... while the other half of sphere of Earth stretches and warms in the sun!
10. The Earth is spinning around at 1,000 miles (1,600 km.) per hour!

11. If God had made the Earth to spin slower, those on the side of the Earth facing the sun would become blistering hot, while those on the side of Earth facing away from the sun would be chattering their teeth in the biting cold. If God spun our Earth any faster, then you'd really have to hold on to your hat, because all of us would experience fierce, violent winds that would make life very, very difficult!

### » Chapter Five Review

1. *Can you tell us how much water there is in the Earth's ocean?*
2. *What makes our Earth different than any other place in the Universe?*
3. *Can you name each of the 5 names of our globe's one ocean?*
4. *Can you remember something interesting about each of the oceans?*
5. *What are "currents"?*
6. *Can you explain what "gyres" are?*
7. *What is the difference between surface currents and deep currents?*
8. *What can you explain about deep ocean currents?*
9. *What is gravity?*
10. *How does the moon's gravity affect the Earth's oceans?*
11. *What is high tide?*
12. *What is low tide?*
13. *What creates tides?*
14. *How often do tides occur?*

### » Answers

1. God truly did establish our Earth upon the waters—326 million trillion gallons (1,260,000,000,000,000,000 liters) of water!
2. The absolutely **only** place in the whole Universe that God made water was here on Earth!
3. The "**Pacific Ocean**," the "**Atlantic Ocean**," the "**Indian Ocean**," the "**Arctic Ocean**," and the "**Southern Ocean**."
4. The Pacific Ocean is the biggest and deepest part of the world's ocean. When it is said that the Pacific Ocean is big that means 60 million square miles (156 million sq. km.) big! It would take 15 United States of Americas to fill up the Pacific Ocean! When it said that the Pacific Ocean is deep that means that in some places (like at the Mariana Trench) it is 6 miles (9.6 km) down to the very bottom! Only half as big as the tremendous Pacific, the Atlantic Ocean is the world's most traveled ocean. Thus it is the Atlantic Ocean that has thousands of lighthouses dotting its shorelines, directing travelers safely through

## A Child's Geography

the waters towards home. The temperate waters of the Indian Ocean are the only waters in the whole wide world that twice every year change the direction of their current, or the way the water flows! The icy Arctic Ocean in the north is the smallest ocean of the world's waters. It also is the most mysterious ocean as one third of it remains ice that never melts. The frigid Southern Ocean around the Antarctica has the most blustery, strongest average winds found anywhere on the whole Earth. So navigating the waters of the Southern Ocean means to ride monstrous waves!

5. Currents are much like racing rivers. These "river" ocean currents flow in two ways: either near the surface of the ocean, or deep in the dark black of the oceans.
6. A **gyre** is a large, nearly circular, system of wind-driven currents on the ocean's surface. Ocean gyres in the Northern Hemisphere spin the same way as a clock spins, clockwise. (Remember that the Northern Hemisphere is that part of the world that lies north of Earth's invisible middle line, the equator.) Ocean gyres in the Southern Hemisphere spin in the opposite direction, counterclockwise.
7. Wind mainly drives surface ocean currents, and they are much like streams of warm water floating on top of the much colder, deeper ocean currents.
8. Deep ocean currents, running invisibly along the floor of the ocean, make up the longest river in the world. This deep invisible current weaves its way *all* around our globe, much like the longest and slowest conveyor belt you can imagine. The deep ocean current conveyor belt begins in the North Atlantic where the water is frigidly cold. Because the water in the North Atlantic is so icy cold, it is heavier, and sinks. Slinking its way southward, right down to the South Pole, these deep currents then flow northward into the Indian and Pacific Oceans. These deep ocean currents creep so slowly that it may take hundreds of years for water from the North Atlantic to make its way to the Pacific Ocean. When having finally arrived in the Pacific Ocean, the current warms. When the water warms, it rises up closer to the surface and journeys back to the Atlantic to begin the cycle again.
9. **Gravity** is a force that causes one mass to be attracted to another mass. The bigger the object is, the more gravitational force it has to draw things unto itself.
10. Even though the moon is 384,404 km. (239,000 miles) away from us, it draws the oceans to itself.
11. High tides occur on the ocean waters closest and furthest away from the moon.
12. The oceans then on the sides of Earth in between the sides furthest and closest to the moon have a drop in water level, creating "**low tide**."
13. The powerful pull of the moon's invisible strings of gravity stretches Earth's oceans out, pulling its water towards the moon, a bit like a pulled rubber elastic.
14. Since the Earth spins entirely around once every 24 hours, there is a cycle of two high tides about every 24 hours: once when a location on the ocean is the closest to the moon, and once when it is the furthest away. Also, then, there must be two low tides every 24 hours, when that ocean location is in the two "in between" places.

**» Chapter Six Review**

1. *What angle is the axis of Earth tilted on?*
2. *What direction does Earth's axis point?*
3. *When is Earth closest and furthest away from the sun?*
4. *Can you describe the position of the Earth at December Solstice? At March Equinox? At June Solstice? At September Equinox?*
5. *What effects climate?*
6. *How does the curve of the Earth and where you live on Earth affect how you experience climate?*
7. *What is the equator?*
8. *What ingredients are needed to make weather?*
9. *What does the sun's heat cause air to do?*
10. *What does air do when it cools?*
11. *What is convection?*
12. *What creates wind?*
13. *What is a convection cell?*
14. *Can you describe how a wind cell behaves?*
15. *What are the names of the three cells that circulate in each hemisphere?*
16. *Can you describe how a boiling teakettle is like our sun over the Earth's waters?*
17. *What is a water vapor?*
18. *Can you describe the process of evaporation?*
19. *How are clouds formed?*

**» Answers**

1. As Earth spins, it is tipped on a 23.5 degree angle.
2. The Earth's axis is tipped towards the North Star, Polaris.
3. The Earth is closest to the sun, a point called **perihelion**, around the third of January. Earth is furthest away from the sun in its orbit, at a point called **aphelion**, around the third of July.
4. This When the Earth is tipped such that the Southern Hemisphere is receiving more direct sunlight from the sun while the entire Northern Hemisphere is tipped furthest away from the sun; this is called the **December Solstice**. When both the Northern and Southern Hemispheres receive nearly the same amount of sunlight and is called the **March Equinox**. (This is spring for the Northern Hemisphere, autumn for the Southern Hemisphere). When the Northern Hemisphere has its maximum tilt towards the sun (summer), and the Southern Hemisphere has its maximum tilt away from the sun (winter), in this position in its revolution around the sun, is referred to as the **June Solstice**. When the earth further revolves around the sun to the point that again both the Northern (autumn) and Southern (spring) Hemispheres are receiving equivalent amounts of direct light from the sun, this is known as the **September Equinox**.

5. What directly impacts climate is the distance one lives from the Equator, and how directly the sun's heat rays hit a location that causes the atmosphere to behave as it does.
6. Since the Earth is a sphere, it is curved. The **equator** heats up more than any other area on Earth. The sun's hot rays hit the Earth's equator nearly directly each and every day of Earth's 365-day, yearly revolution around the sun. The sun's rays hit the Earth less directly the further you travel north or south of the equator, so these places on Earth are less warm. It is the distance you live from the Equator, and how directly the sun's heat rays hit where you live that causes the atmosphere to behave as it does.
7. The **equator** is like an imaginary "belt" that wraps around the middle of Earth.
8. To make weather, three ingredients are required: water, air and heat.
9. The sun heats up the air to create convection, which creates wind. (To explain further: The sun heats up the air and, since warm air is lighter than cool air, the warm air rises. Cool air, being heavier, rushes in to fill the space left by the warm air. This circular flow of air is called **convection**. Convection creates wind.)
10. Cool air, being heavier, rushes in to fill the space left by the warm air.
11. This circular flow of air is called **convection**. Convection is the action of warm, less dense air rising and colder, denser air sinking.
12. Convection creates "**wind**." The word "wind" actually means to "wind its way."
13. **A convection cell** is the circulation of air that includes both upward and downward motion. Air generally winds its way around our globe in large circles called **convection cells**.
14. Hot air rises above the Equator, and cold air sweeps in from the Poles to take its place. These clouds rise because of the intense heat from the sun hitting the "belt line" of Earth. Like a circular chase around and around, the air rotates in our troposphere, making wind circles or convection cells.
15. Both the Northern and Southern Hemispheres have 3 separate cells of circulating winds: The **Hadley cell** of wind circles around Earth's belt at the equator. The **Ferrel cell** is the middle cell in each hemisphere. And circling at the chilly North and South Poles are a **Polar cell**.
16. As the heat of the crackling woodstove would change the water in the kettle into steam or water vapor, so the sun heats up the waters of the ocean. The heat of the sun draws some of these waters up into vapor.
17. Steam is actually just another form of water, water turned into a gas or **vapor**.
18. The sun heats up the waters of the ocean. The heat of the sun draws some of these waters up into vapor. The process of the water turning into gas or vapor is called evaporation.
19. In the cool air, the water vapor condenses into water droplets. These condensed water vapors form clouds.

**» Chapter Seven Review**

1. *What kind of energy does an earthquake make?*
2. *What does the word “**seismic**” mean?*
3. *What are the 2 different kinds of seismic waves that earthquakes create?*
4. *What is the difference between these two kinds of waves?*
5. *Can you show the motion of the 2 waves with your hands?*
6. *What happens when an S wave bumps into liquid in the earth’s interior?*
7. *What have geographers learned from earthquakes?*
8. *What help are volcanoes to providing clues to the Earth’s interior?*
9. *What is Earth’s crust made out of, and how thick is it?*
10. *What is the layer under the Earth’s crust?*
11. *How thick is the mantle and what is it made of?*
12. *What else can you remember about the mantle?*
13. *What is the Earth’s core made of and what is its state?*
14. *Do you remember how thick the outer core is? What does the outer core create?*
15. *Can you explain why God may have created this electromagnetic field in the Earth’s outer core?*
16. *How far have you traveled from your home to the inner core of the Earth?*
17. *What is the difference between the inner core and the outer core of Earth?*
18. *Why is the inner core not a liquid?*

**» Answers**

1. The sudden release of energy from an earthquake sends out different kinds of shaking movements throughout the planet. Geographers refer to these movements as “seismic waves.”
2. The word seismic comes from the Greek word for “shaking.”
3. Earthquakes create two different types of seismic waves. One kind of wave is called a P wave (Primary, or Pressure waves): The P waves are simply sound waves that travel through the Earth. The other kind of wave created by an earthquake is called an S wave (Secondary, or Shear waves).
4. S waves move back and forth, in a sideways motion, like a snake. P waves move just like your slinky toy slinks up and down. S waves cannot travel through liquid. S waves from earthquakes can only travel through solid material. P waves, sound waves, can travel through both liquids and solids.
5. Ask children to show motions of P waves and S waves with their hands.
6. If an S wave bumps into a liquid inside of the Earth, it either bounces back, or turns into the slinky-like P wave.

## A Child's Geography

7. Geographers study the records of seismic waves of thousands and thousands of earthquakes. How these seismic waves behave give hints to geographers if the inside of our Earth is solid or liquid.
8. Volcanoes spew out rocks from 60-95 miles (100-150 km.) deep inside the interior of Earth, giving clues to what composes the inner layers of Earth.
9. The earth's crust includes all of the world's land surfaces and the ocean floor. The crust is only 3 miles (5 km.) under the oceans and up to 45 miles (70 km.) thick under some continental mountain ranges.
10. Underneath the Earth's thin crust is the mantle.
11. The mantle is thought to be much thicker than the Earth's crust, about 1, 800 miles (2,900 km.) thick. The mantle is composed of various elements such as silicon, oxygen, iron and magnesium.
12. The upper solid layer of the mantle and the Earth's crust are together called the ***lithosphere***. "Litho" comes from the Greek word "rocky," so lithosphere refers to the rockiness of both the Earth's solid crust and the upper rigid portion of the mantle. The mantle is also composed of a region to as the "***asthenosphere***." "Astheno" comes from the Greek word meaning "without strength," so the asthenosphere is the part of the mantle that is a weak, mushy, toothpaste-like "rock."
13. The Earth's outer core is thought to be mostly nickel and iron. The nickel of the outer core's ocean is rather runny—and scorching hot.
14. The Earth's outer core is thought to be about 1,366 miles (2,200 km.) thick. The liquid outer core of the Earth rolls like water in a pan on a hot stove. The churning of the liquid iron-nickel in the outer core causes charges to move around, which creates a giant electromagnetic field.
15. Whenever a compass is used, and the magnetic needle points towards north, one sees the magnetic field of the Earth's outer core in action. Think of all the lost people who have found their way home across oceans and mountains because God created the iron-nickel of Earth's outer core.
16. The very center of the Earth is about 6,370 km (3,960 miles) from your front door.
17. The ***inner core*** of Earth is a solid ball of iron inside the ball of our Earth, while the Earth's ***outer core*** is thought to be in a liquid, fluid state.
18. The inner core, while thought to be even HOTTER than the very surface of the sun—about 5,200K (or 9,000F), is thought to be solid iron and nickel because of the intense pressure it is under.

**» Chapter Eight Review**

1. Who was the first to write of the puzzle-piece continents and what brought him to this realization?
2. What are the different sections of the Earth's cracked crust called and how might you describe them?
3. What are these plates composed of?
4. What do they ride on?
5. What can you tell me about plate boundaries?
6. What can you describe about diverging plates?
7. What can you describe about converging plates?
8. How do "The Sea Floor Spread" and "The Continental Bend" dance together on the Earth's crust?
9. What rides on top of Earth's plates?
10. What happens at the boundaries of plates?
11. What is a transform boundary?
12. A convergent boundary?
13. A divergent boundary?
14. What is subduction?

**» Answers**

1. A long time ago, in 1858, there was a geographer named Antonio Snider-Pellegrini who believed the truth that God created the world. Antonio Snider-Pellegrini read these words in the first chapter of the Bible, "**And God said, let the waters under** the heaven be gathered together into one place, and let the dry land appear: and it was so. And God called the dry land Earth; and the gathering together of the waters called he Seas: and God saw that it was good" (Gen. 1:9-10). When Antonio read these words, he pictured in his mind all the dry land as one mass with all of the ocean surrounding this one landmass.
2. Geographers have come to believe that the Earth's crust is made up of cracked up sections called "plates." These plates, part of the Earth's crust, are like giant rafts of solid rock riding on the Earth's mantle.
3. Some plates are composed of only oceanic crust. Some plates are composed mainly only of continental crust. Some plates, however, are composed of both oceanic crust and continental crust.
4. The plates of the Earth's cracked crust are only riding on the Earth's mantle.
5. Plate boundaries are sometimes not so obvious. Plates may end in the middle of the ocean, not near land at all. In some parts of our Earth, like near the many islands of Indonesia, it is impossible to even tell where exactly the plate boundaries are because there are too many small pieces involved!

6. When two plates perform "**The Sea Floor Spread**," diverging and separating, new crust is actually created on Earth.
7. Where the plates of the Earth's crust do "**The Continetal Bend**," smashing into each other or sliding under each other, geographers call this a "**convergent boundary**." Along convergent boundaries, Earth's old crust converges and bends, either upwards or downwards.
8. As the Earth's old crust performs "**The Continental Bend**" at convergent boundaries, plates bending up or sliding under each other, this makes room on the Earth's surface for the creation of new crust. New crust is being formed on the Earth's surface where plates are diverging and separating as they do "**The Sea Floor Spread**" at divergent boundaries. This is the interesting dance of The Continental Bend and Sea Floor Spread on the Earth's Crust.
9. Both the Earth's continents and oceans, which together make up all of Earth's crust, ride on these moving, dancing plates.
10. At the boundary of two plates, depending how the plates are moving past or beside each other, mountains, earthquakes or volcanoes may result.
11. When one of the Earth's plates slides and grinds past another plate, geographers call this a "**transform boundary**."
12. Where the plates of the Earth's crust do "**The Continetal Bend**," smashing into each other or sliding under each other, geographers call this a "**convergent boundary**." Convergent means to bend together. So along convergent boundaries, Earth's old crust converges and bends, either upwards or downwards.
13. When two of the plates on the Earth's crust separate or move apart, geographers refer to as "**divergent boundaries**."
14. When a *heavier* oceanic crust collides with the *lighter* continental plate, the oceanic crust will jerkily slip *under* the continental crust. This process is called "**subduction**."

### » Chapter Nine Review

1. *What is a fault and how many different types of faults does Earth have?*
2. *Describe a "**normal**" fault.*
3. *What happens at a "**reverse**" fault?*
4. *Where do normal and reverse faults occur?*
5. *Can you describe a "**strike-slip**" fault?*
6. *What did you discover about one strike-slip fault, the San Andreas Fault?*
7. *What kind of magma does a shield volcano erupt?*
8. *What does a shield volcano look like and what would it be like to visit one?*
9. *Can you describe a composite volcano and what kind of magma it erupts?*

10. What else have you discovered about volcanoes?
11. What makes cinder cone volcanoes different from shield or composite volcanoes?
12. Tell us what you discovered about the Paricutin volcano.
13. What do you picture for each the shield, composite and cinder-cone volcanoes?
14. Where do most volcanoes happen?

#### » Answers

1. **Faults** are weak spots of the Earth's crust, where one part of the crust has moved against another part. Then the crust snaps and breaks apart. The Earth has three different kinds of faults.
2. A “**normal fault**” occurs at divergent plate boundaries, where two plates are separating. Geographers call any fault or crack on Earth “**normal**” if along the crack, one section of rock slides **downward** and **away** from another block of rock.
3. When forces in the Earth's crust push against each other, the Earth breaks in a way called a “**reverse fault**” (or **thrust fault**). **Reverse faults** are actually the cracks formed where one block of rock *slides under* another block, or one block of rock is being *pushed up over* another. Reverse faults occur at convergent plate boundaries.
4. A **normal fault** happens during the tugging apart at a divergent plate boundary, and a **reverse fault** happens during the pushing together at a convergent plate boundary.
5. Earth's **strike-slip faults** are the cracks between two plates at a transform boundary that are sliding past each other. Pressure then builds between the two locked plates, and the plates eventually snap as they pass each other at a *strike-slip fault*.
6. The San Andreas Fault is a strike-slip fault, in California, U.S.A. It is the main boundary between the Pacific plate and North American plate. This fault slices 15 to 20 km. (9 to 12 miles) deep into the Earth, about 1,300 km. (600 miles) long, and, in places, stretches meters wide! If you stood over the San Andreas Fault, which can be as wide as 25 feet (7.6 m.), where the movement and stress between the plates have shattered and crushed rock, you could bend over and break apart the rocks with your bare hands!
7. Shield volcanoes slowly ooze out lava instead of suddenly exploding.
8. Shield volcanoes may be rather quiet, but they are Earth's largest volcanoes with their long gentle, slopes, the result of the many lava-flows that ooze out over great distances. Shield volcanoes look like massive, upturned warrior's shield. (Think of these volcanoes as quiet giants crying lava flows and clinging to their huge shields.)
9. “**Composite**” means to be made up of parts. That perfectly describes composite volcanoes since they are made up of the two parts of lava and ash, like layers of cake and frosting on a very tall cake! The magma that erupts from a **composite** volcano is not thin and runny but cooler, thick and sticky, like toothpaste.
10. Six out of every ten volcanoes is a composite volcano. Mt. Pinatubo in the Philippines erupted so much ash during its 1991 explosion that you would need a box 2.5 miles (10 km.) long, high and wide to hold all the ash!

11. Cinder cone volcanoes are the simplest type of volcano. Gas-charged lava erupts violently into the air and then breaks into smaller fragments. These fragments of lava solidify. The chunks then fall down as dark volcanic rock around the vent of the volcano. These cinder cone volcanoes are shaped like an oval-cone and rise only about 1,000 feet.
12. A cinder cone volcano in Mexico called Paricutin rose up 2 1/2 meters in just one day, right under the very feet of a farmer named Pulido! The next day, the cone in Pulido's cornfield had grown to 30 feet high. And the cone was violently hurling out lava! When Pulido went to bed that night, the cone had grown another 120 feet and brightly glowing pieces of lava were shooting 1,000 feet into the darkness! That was the beginning of the 424 meter high cinder cone volcano that grew up in Pulido's cornfield and spewed out lava for the next nine years, covering 25 square kilometers of land!
13. Shield volcanoes are quiet giants crying lava flows and clinging to their huge shields. Composite volcanoes are dangerously explosive Goliaths who just want to have their cake and eat it too. Cinder cone volcanoes are quick growing, feisty little fellows hurling hot rocks of lava into the air.
14. Volcanoes do not rise up randomly across our Earth, but most volcanoes, 6 out of every 10, occur at the boundaries between Earth's plates, the same place where earthquakes may also shake us up.

### » Chapter Ten Review

1. *What does latitude mean?*
2. *What does it measure?*
3. *What does parallel mean?*
4. *How would you find your position of latitude?*
5. *What is the equator?*
6. *What degree of latitude do we call it?*
7. *Can you explain how you might cut up your apple into "degrees of latitude?"*
8. *How far apart are each degree of latitude when marked on a map?*
9. *What are Earth's five important rings of latitude?*
10. *Can you explain why each is deemed important?*

### » Answers

1. “**Latitude**” refers to an angle of distance telling you how far *north* or *south* you have traveled.
2. Latitude is measured from the equator to your position on Earth.
3. “**Parallel**” means that the distance between two lines remains the same.

4. To figure out where in the world's latitude you were at, you would look up into the twinkling night sky to locate a star, like the North Star. Then, by using a tool called a **sextant**, you could figure out the angle formed between your sighting of the North Star and the horizon. Perhaps you measure an angle of 40 degrees between the horizon and the North Star. That angle is the same as the angle formed at the center of the Earth. It is this angle that is your position of latitude.
5. Ptolemy thought the **equator** should be the obvious "start" line of latitude, since it is the exact midpoint between the North and South Pole and the sun appears almost directly overhead year round.
6. The equator is the zero (0) degree line of latitude.
7. Cut your apple exactly in half; that would be the equator, the parallel of latitude named zero degrees. One half of your apple you could call the northern hemisphere of Earth. The other half of your apple you could call the southern hemisphere, of Earth. Take your northern hemisphere apple half into hand and look at the stem. That stem at the top of your apple half is like the North Pole, the point we call 90 degrees North latitude. We say the North Pole is at 90 degrees north because the North Pole lies at a 90 degree *angle* to the equator. If you now drew lines on your apple on the *angle*, then cut the apple into slices *parallel* to the equator, cutting from the *angle*, those slices would be just like the parallels of latitude!
8. On maps, geographers draw each degree of the imaginary parallels of latitude sixty-nine miles from the next degree of latitude.
9. The five important rings of latitude are the **Arctic Circle**, the **Antarctic Circle**, the **Tropic of Cancer**, the **Tropic of Capricorn**, and the **Equator**.
10. The **Arctic Circle** is noteworthy because every place north of this line of latitude, 66 degrees 33'39" north of the equator, has at least one day a year where the sun never sets in a 24 hour period, and a day where the sun never rises during a full 24 hour period. On the Arctic Circle these events occur exactly once per year, at the June and December solstices. The Antarctic Circle is important because every place south of this degree of latitude 66 degrees 33' 39" south of the equator experiences a period of twenty-four hours' continuous daylight at least once per year, and a period of twenty-four hours' continuous night time at least once per year. On the Antarctic Circle these events occur exactly once per year, at the December and June solstices respectively. The **Tropic of Cancer** is the ring of latitude at nearly 23 degrees north of the Equator and is the most northerly location that you could see the sun directly overhead. At noon on June 21<sup>st</sup> the sun is directly over this ring of latitude. The **Tropic of Capricorn** is the ring of latitude at nearly 23 degrees *south* of the equator, this is the most *southerly* location that sun may be seen directly overhead. On December 21<sup>st</sup>, at noon, you would see the sun directly overhead, if you were standing anywhere along this ring of latitude.

## » Chapter Eleven Review

1. *What is longitude?*
2. *What does it measure?*
3. *What way do the lines of longitude run?*
4. *How are meridians of longitude different than lines of latitude?*
5. *What does parallel mean?*
6. *Share everything you remember about meridians of longitude.*
7. *Can you sing our longitude song again?*
8. *What is the first line of latitude?*
9. *What is the first line of longitude called?*
10. *Where did geographers decide to draw the imaginary line of the Prime Meridian?*
11. *What does the Prime Meridian divide the world into?*
12. *How many degrees does the world turn in 24 hours?*
13. *How many degrees does the world turn in one hour?*
14. *What has God put in the sky to help us determine how the world is turning?*
15. *What could you use to tell you where the sun is in the sky in another place?*
16. *Can you explain how you as sea captain could find your position of longitude?*
17. *What happened if you were a traveler with a lying clock?*
18. *How did a lying clock affect how you would calculate your position of longitude?*
19. *Tell me as much as you can remember about how the solution to the problem of longitude was found!*
20. *Do you remember any of the bad ideas that were not very good solutions?*

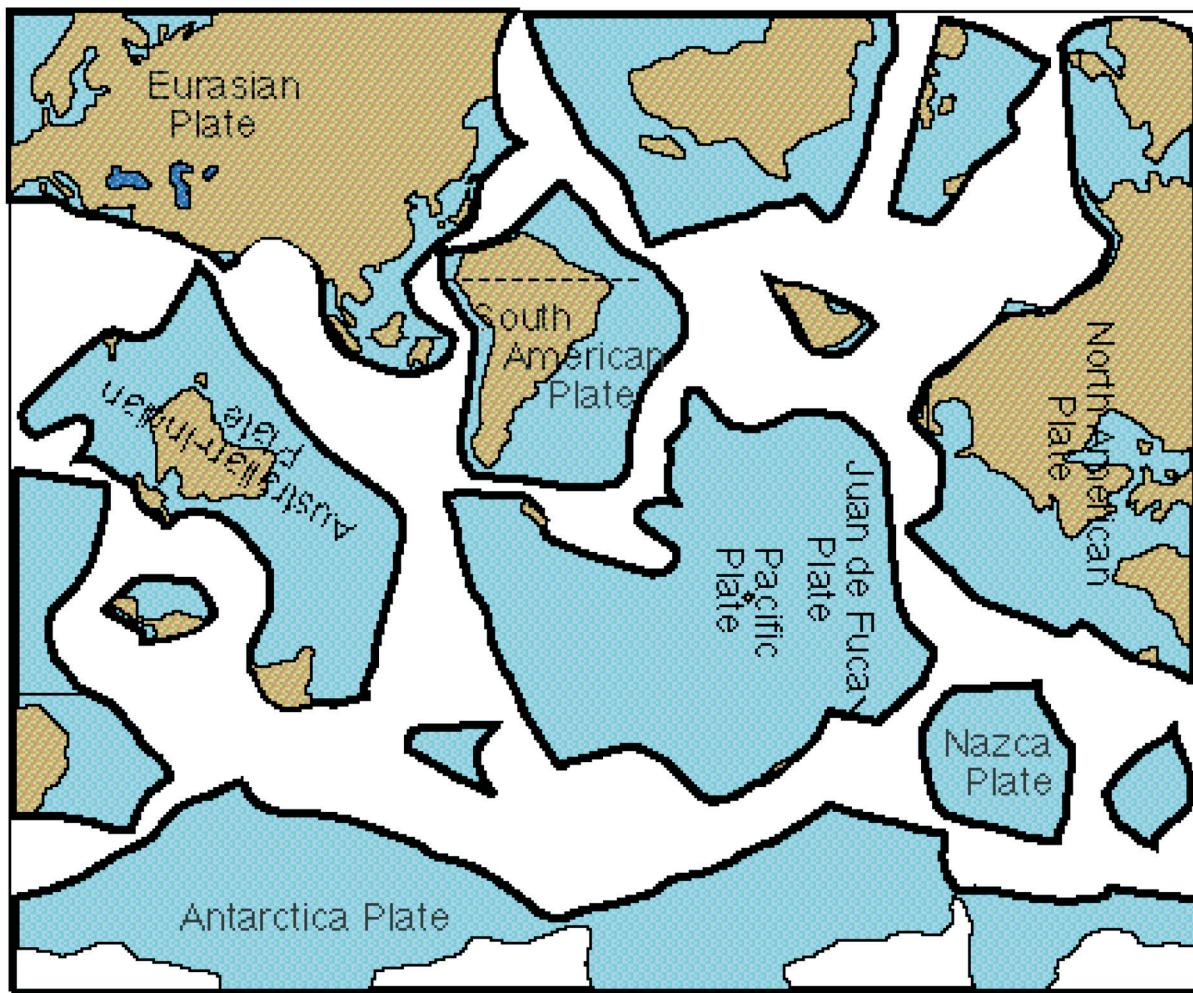
## » Answers

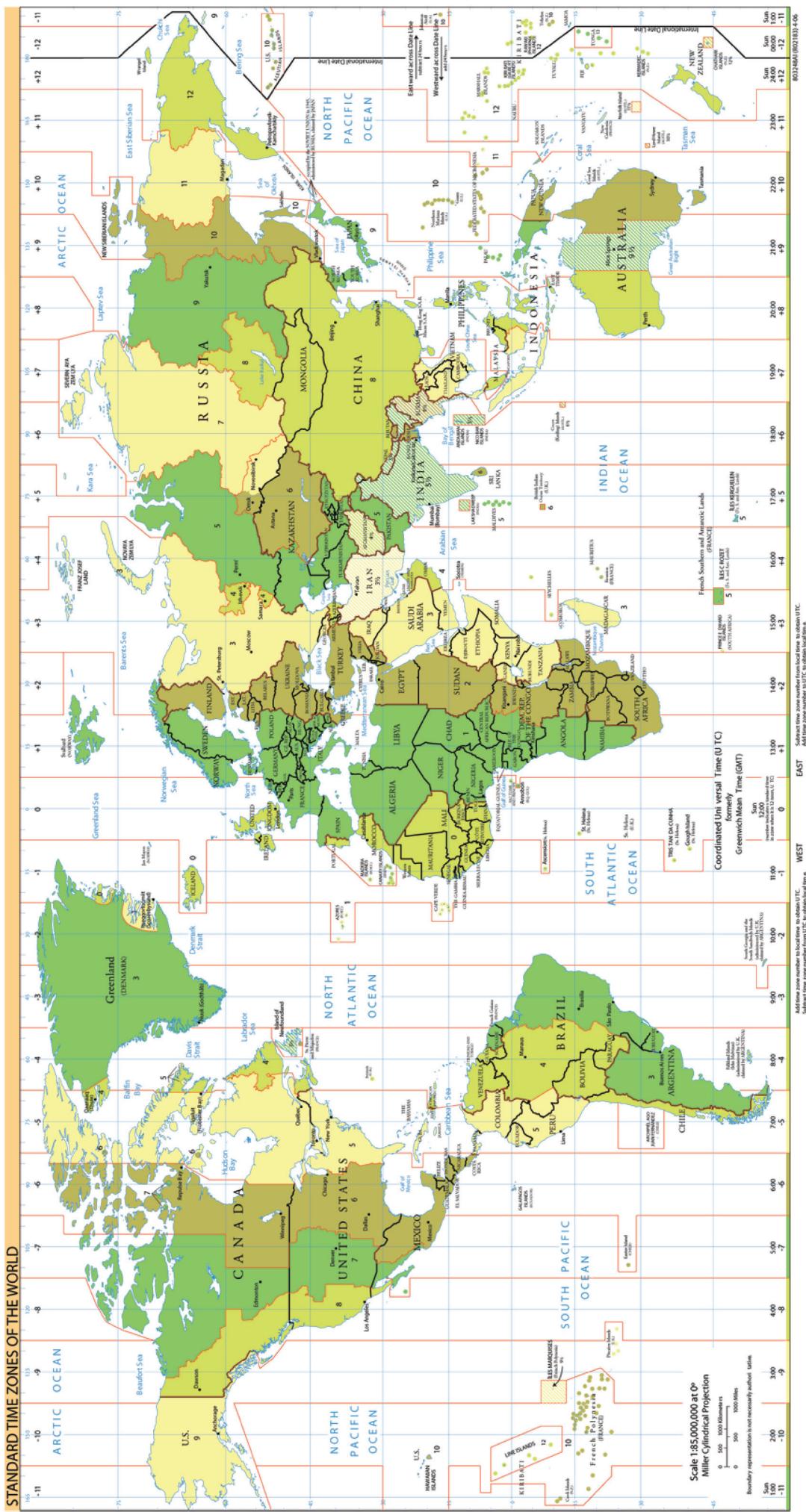
1. **Longitude** refers to an angle of distance telling you how far round *east* or how far round *west* you have traveled on our home of Earth.
2. Meridians of longitude run from the North Pole to the South Pole and measure how far east or west you are of the Prime Meridian.
3. The imaginary meridians of longitude that run from Pole to Pole along the surface of the Earth divide the globe into 360 equal slices.
4. Unlike the lines of latitude, the distances between the **meridians of longitude** are *not* parallel. The distance between each of the meridians of longitude is the widest at the middle section of Earth, the equator.
5. “**Parallel**” means that the distance between two lines remains the same.
6. At the equator, there are about 69 miles between each of the meridians of longitude. As you approach the poles, however, the distance between meridians decreases. The meridians of longitude actually meet or intersect at the North and South Pole.

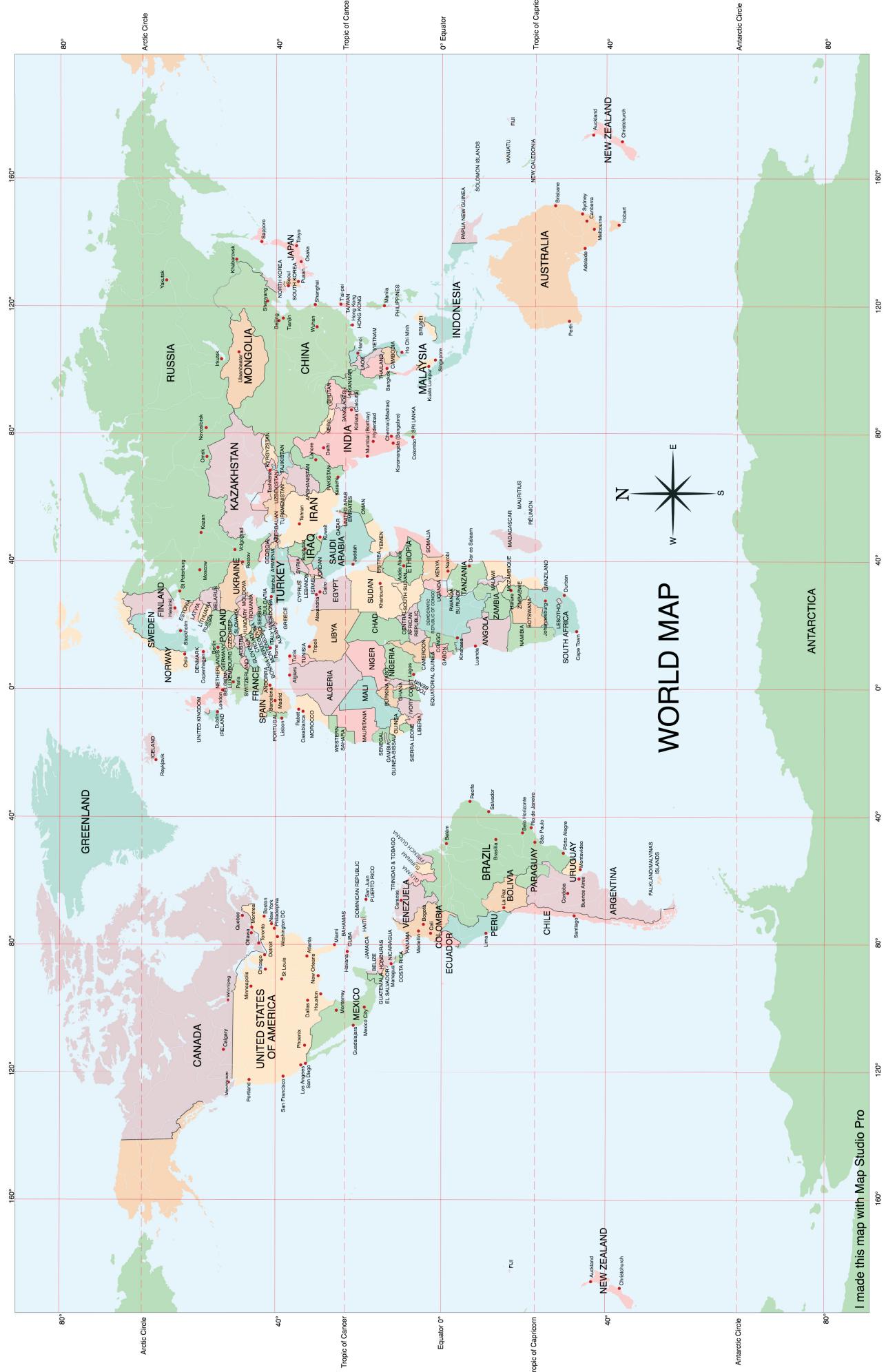
7. "It's a LONG, LONG way from pole to pole, pole to pole, pole to pole.
8. It's a LONG, LONG way from pole to pole, so we call these longitudes!"
9. The first line of latitude is the equator.
10. Geographers refer to this first line of longitude as the **prime meridian**, since "prime" means *first* in Latin.
11. Greenwich, England has the honor of having the first line of longitude run through it.
12. On one side of the **Prime Meridian** lies the **Eastern hemisphere**, and on the other side lies the **Western hemisphere**, thus dividing the world into half.
13. The Earth spins an entire 360 degrees every 24 hours.
14. The Earth turns 15 degrees every hour.
15. The only way we even know we are turning is by looking up at God's big sign in the sky, the sun.
16. You could use a watch!
17. As the ship's captain, a clock—actually 2 clocks—would be critical in determining your position of longitude out there on the endless sea of rolling blue. Every day while you tossed the ocean's waves, you would reset one of your clocks to noon. Then you would observe the time of the second clock. The second clock would be set to where is the sun is in the sky over Greenwich, England. For example, let's say that second clock read 2 o'clock in the afternoon. The difference from the ship's time, 12 o'clock noon, and the time at Greenwich, 2 o'clock, is a difference of 2 hours. Remember that the sun appears to travel through 15 degrees of a turn every hour. We have traveled exactly  $2 \times 15$  degrees, or 30 degrees, from the Prime Meridian at Greenwich.
18. A lying clock, chiming the wrong time, is deadly business for a sea captain resulting in the miscalculation of the position of longitude.
19. Miscalculating a position of latitude may result in one becoming lost, or worse, dangerously drifting into a rocky shore!
20. A carpenter's son, John Harrison, had an idea. In 1761, John Harrison produced a masterpiece clock, just five inches across and weighed only 3.1 pounds (1.4 kg). When this clock rocked and rolled away at sea for over ninety long days, it had lost only a mere five seconds.
21. Scientists thought a clock that would always keep correct time would never be invented. So they thought of other ideas: like anchoring ships every seven miles across the whole distance of the ocean. These ships would fire off cannons to announce to nearby ships the exact time. There were even crazier ideas. Ideas like a strange potion that would make a wounded dog, aboard a ship, howl every day when it was noon in Greenwich.

## Plate Tectonic Puzzle

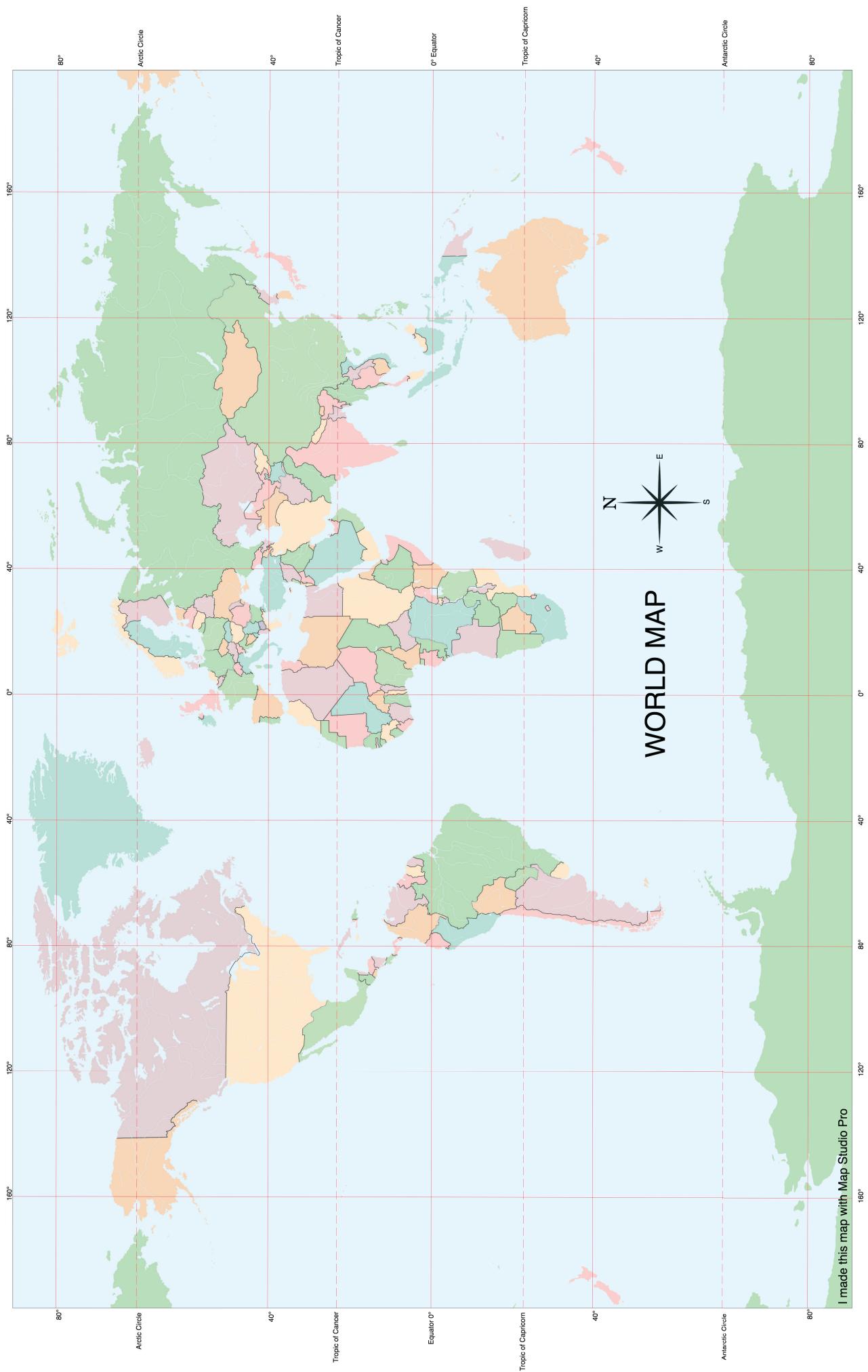
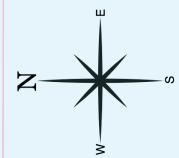
You can copy and cut out this puzzle. Glue it together on the front of your oversized postcard piece of cardstock! You've just puzzled all the plates of the world together!



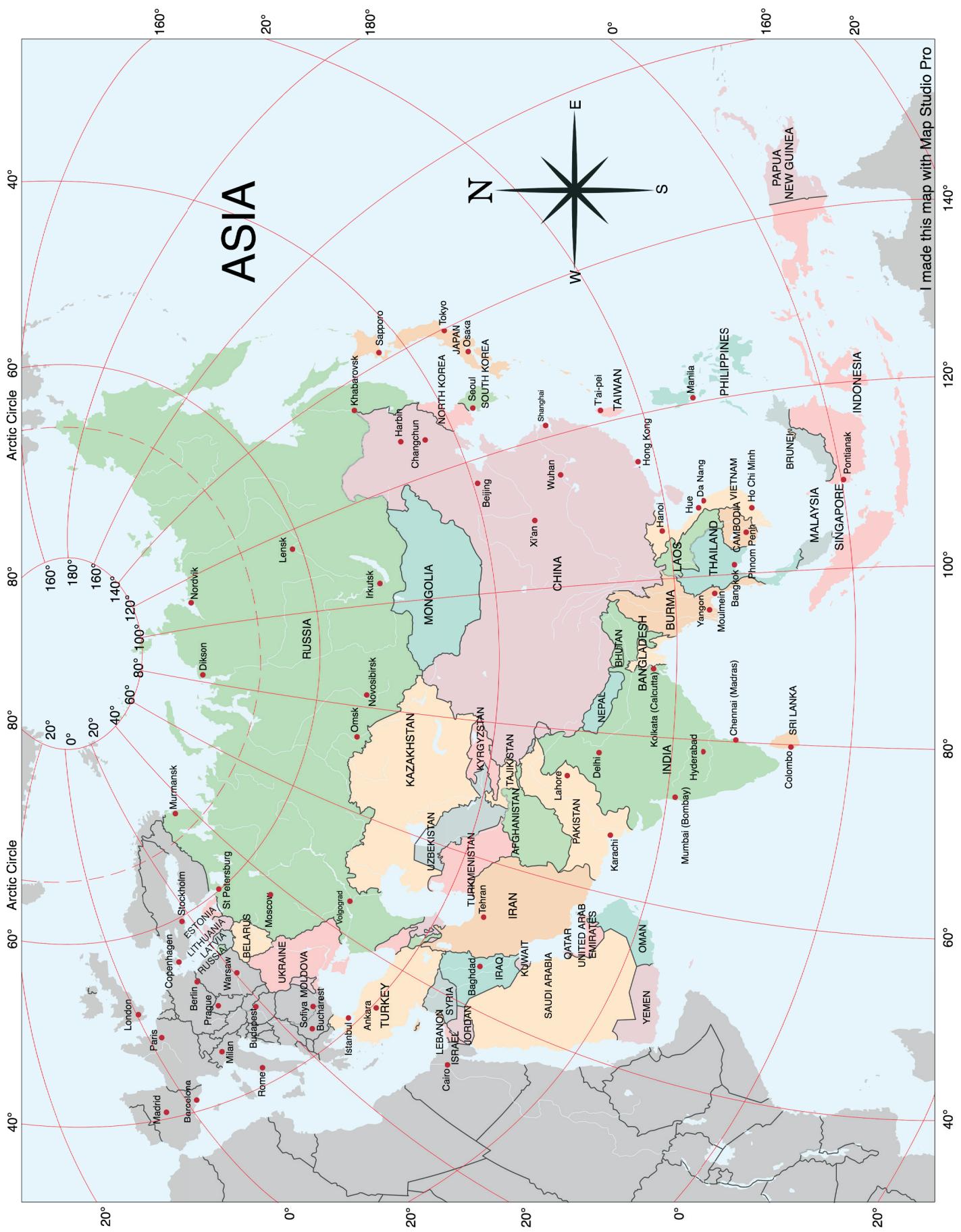


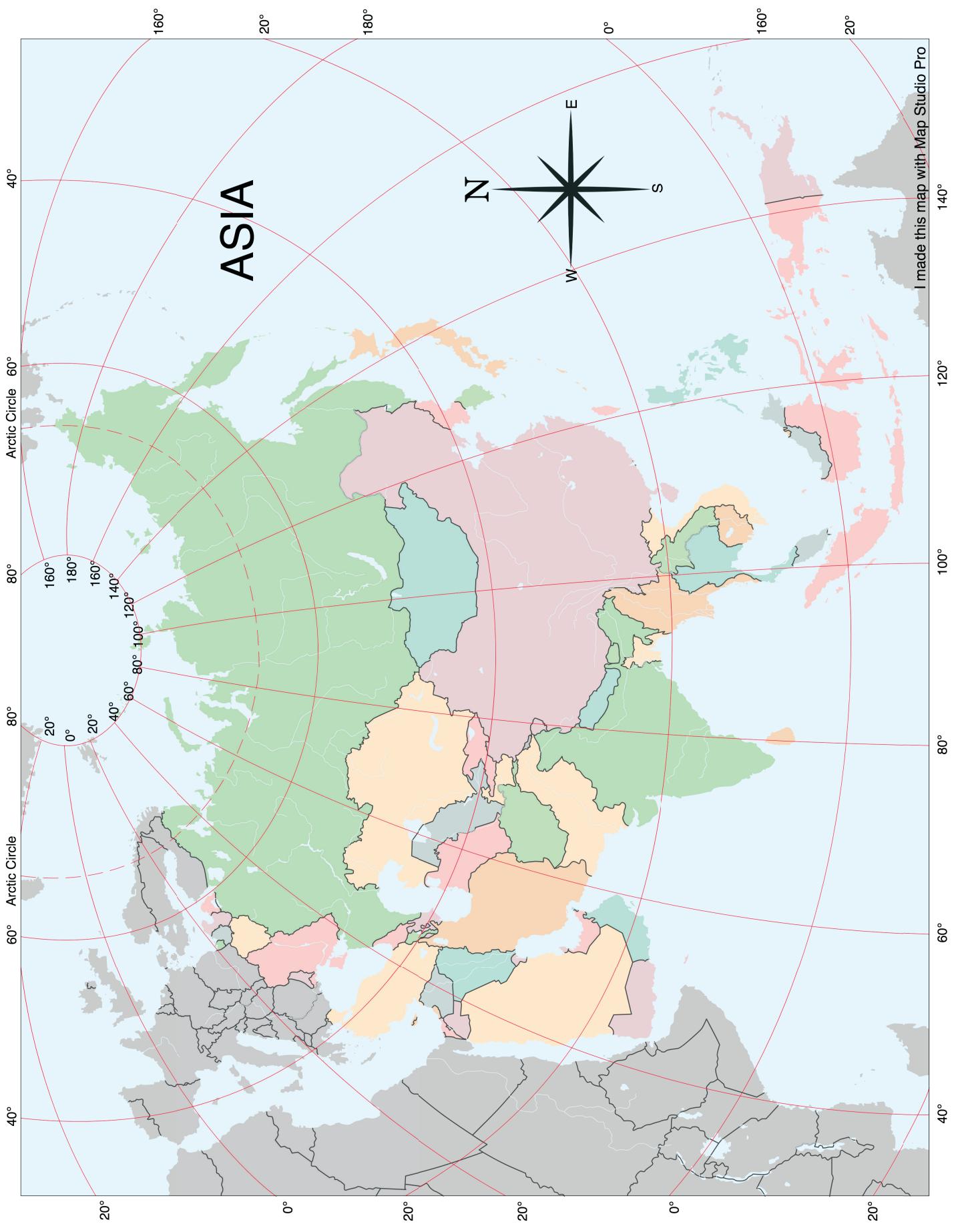


# WORLD MAP

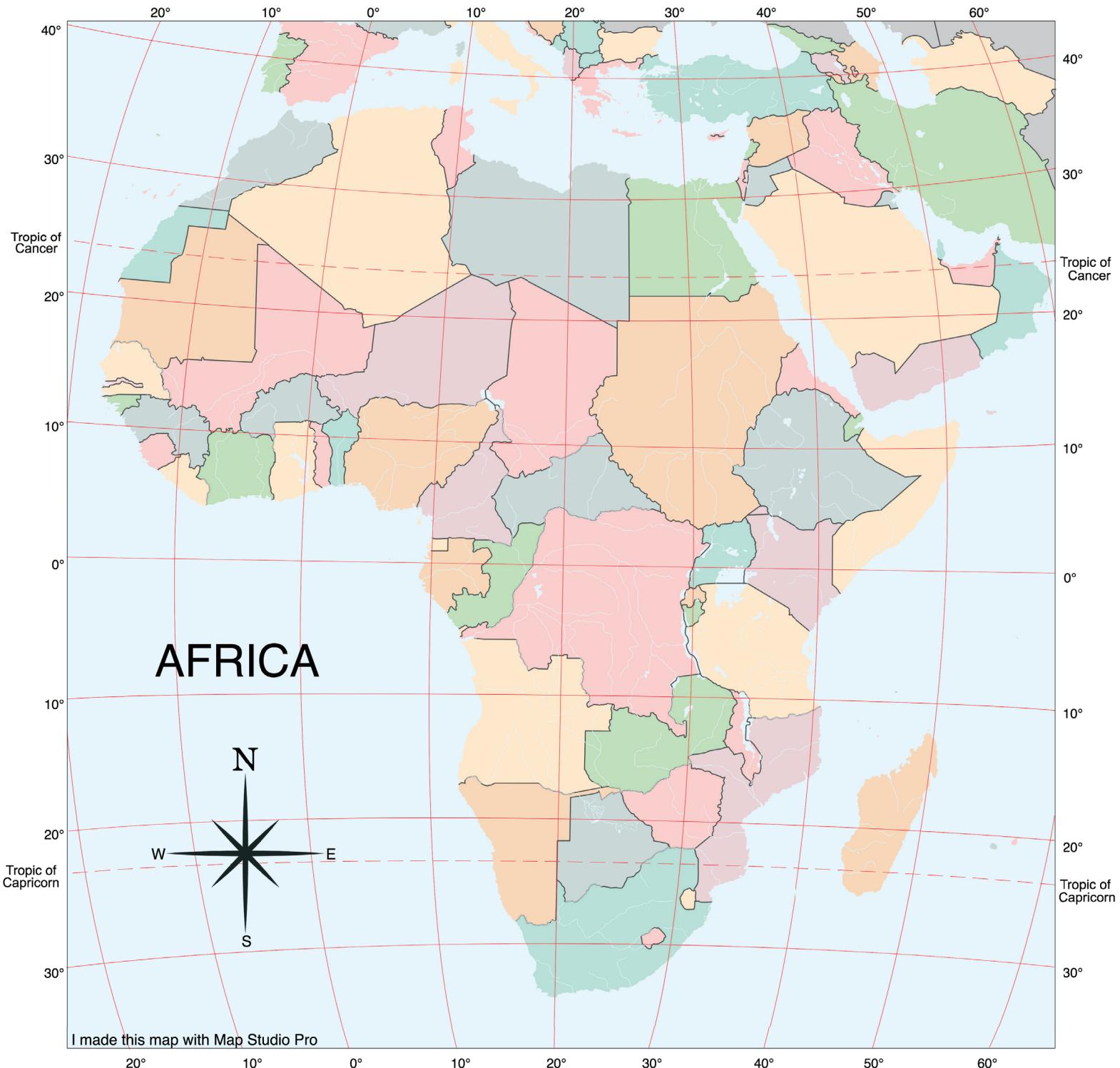


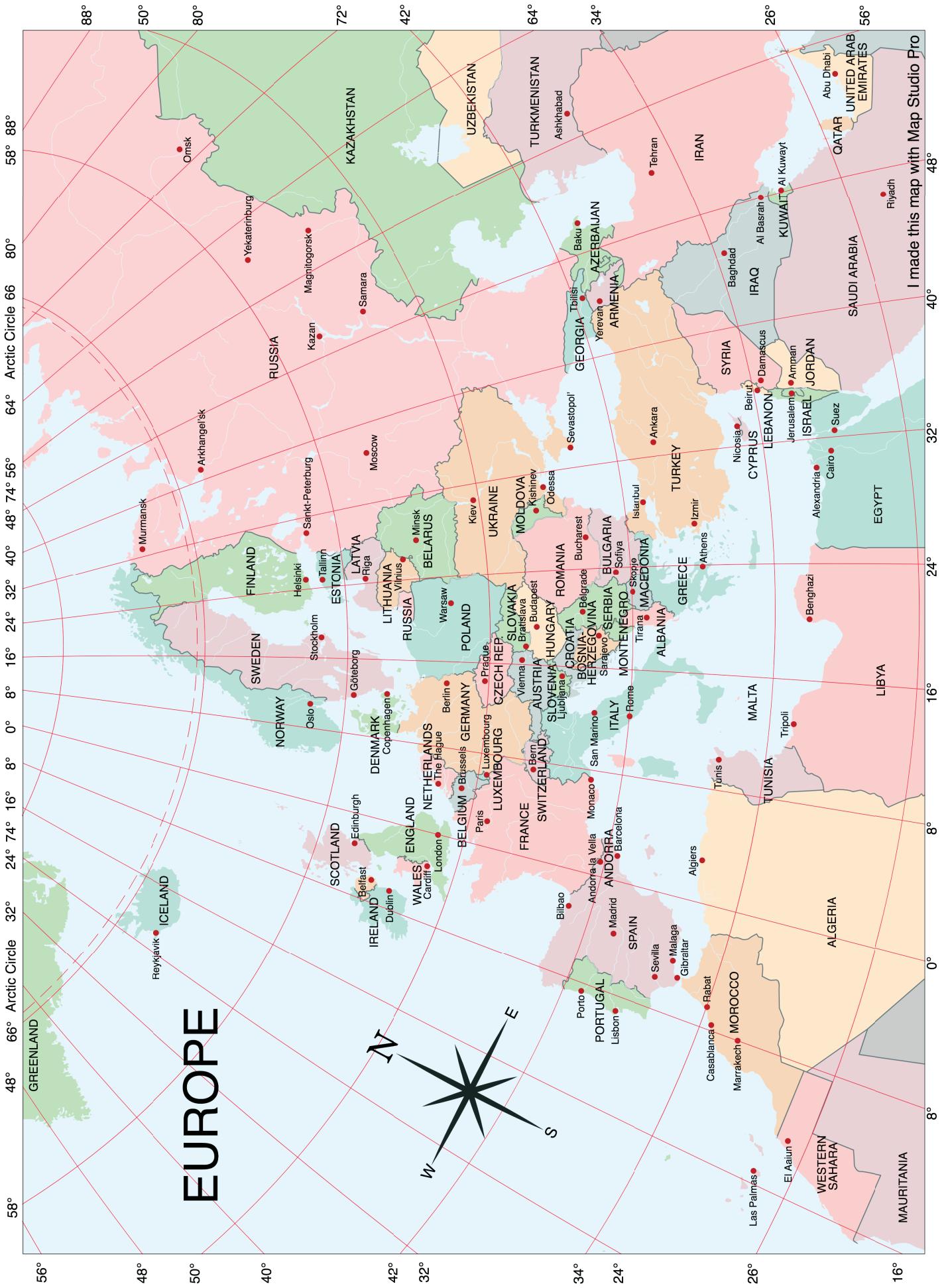
I made this map with Map Studio Pro

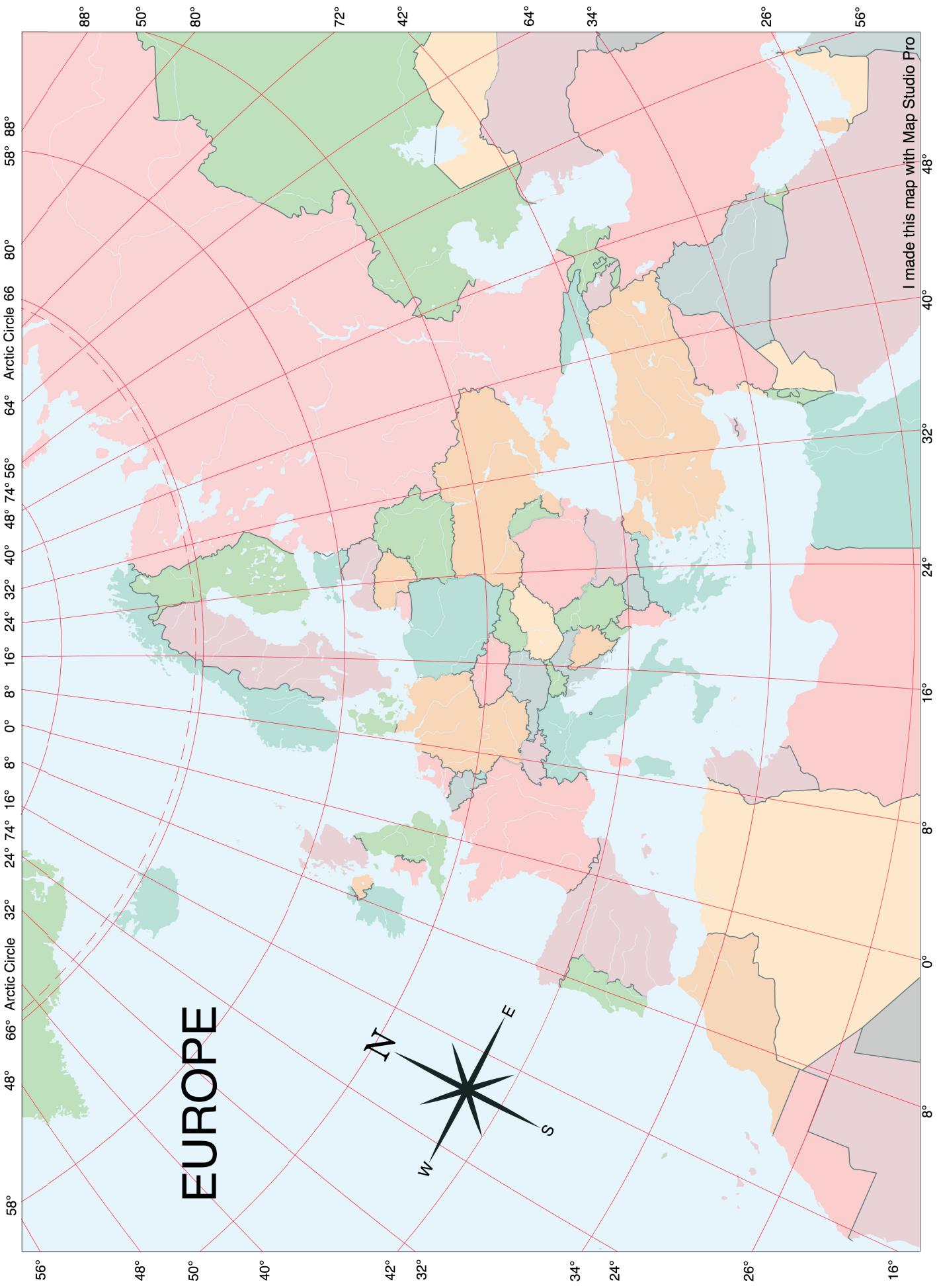


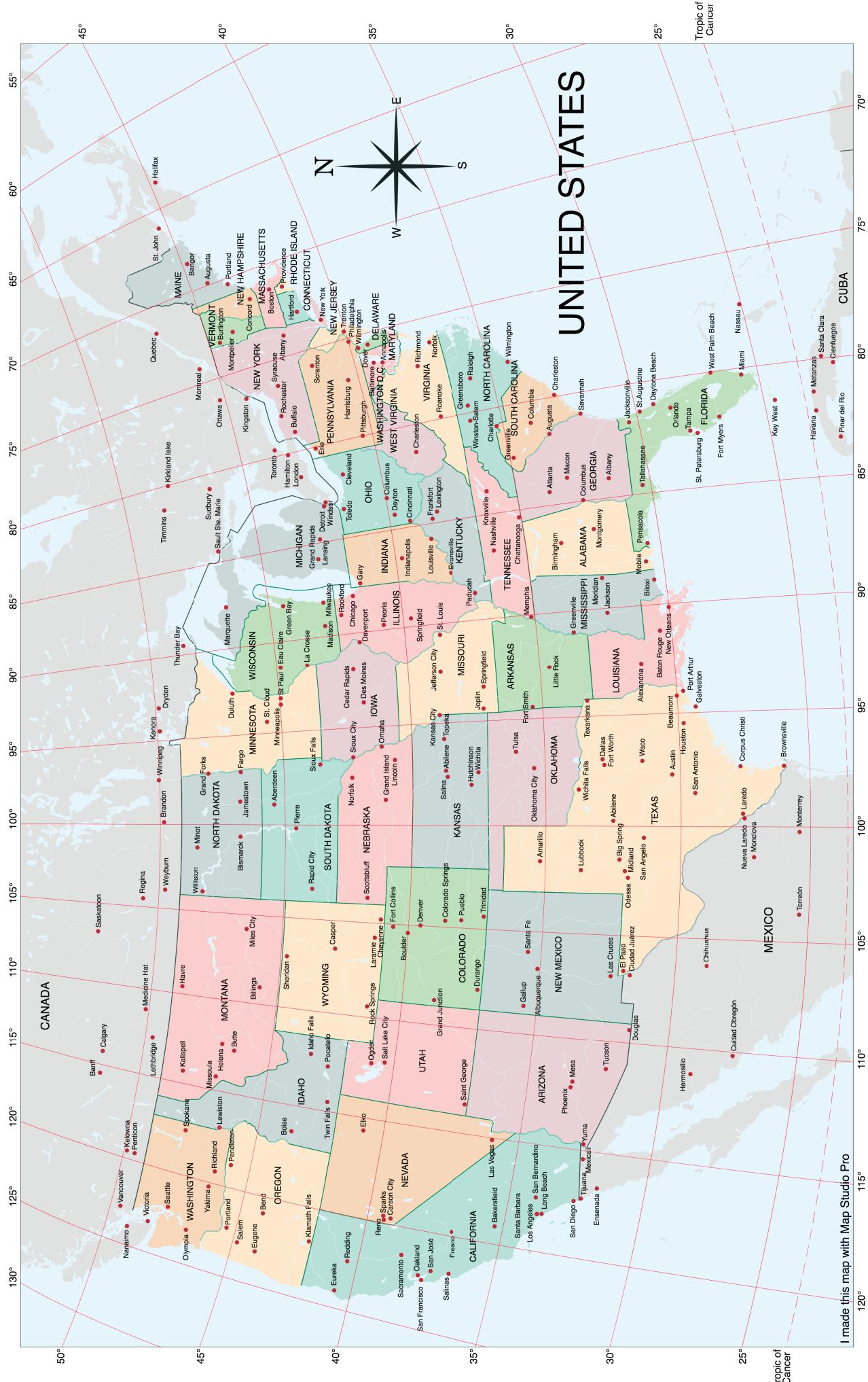




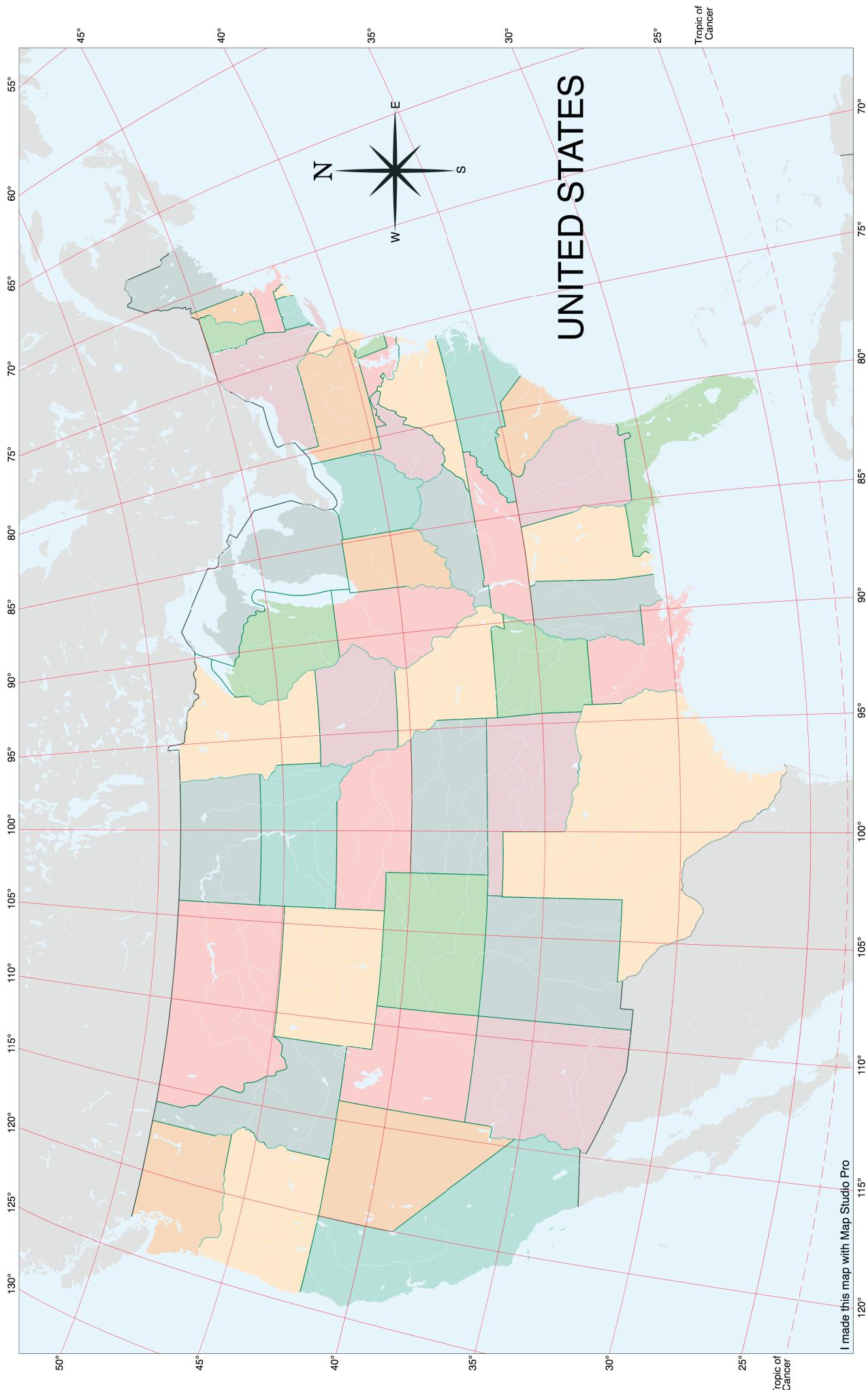








I made this map with Map Studio Pro



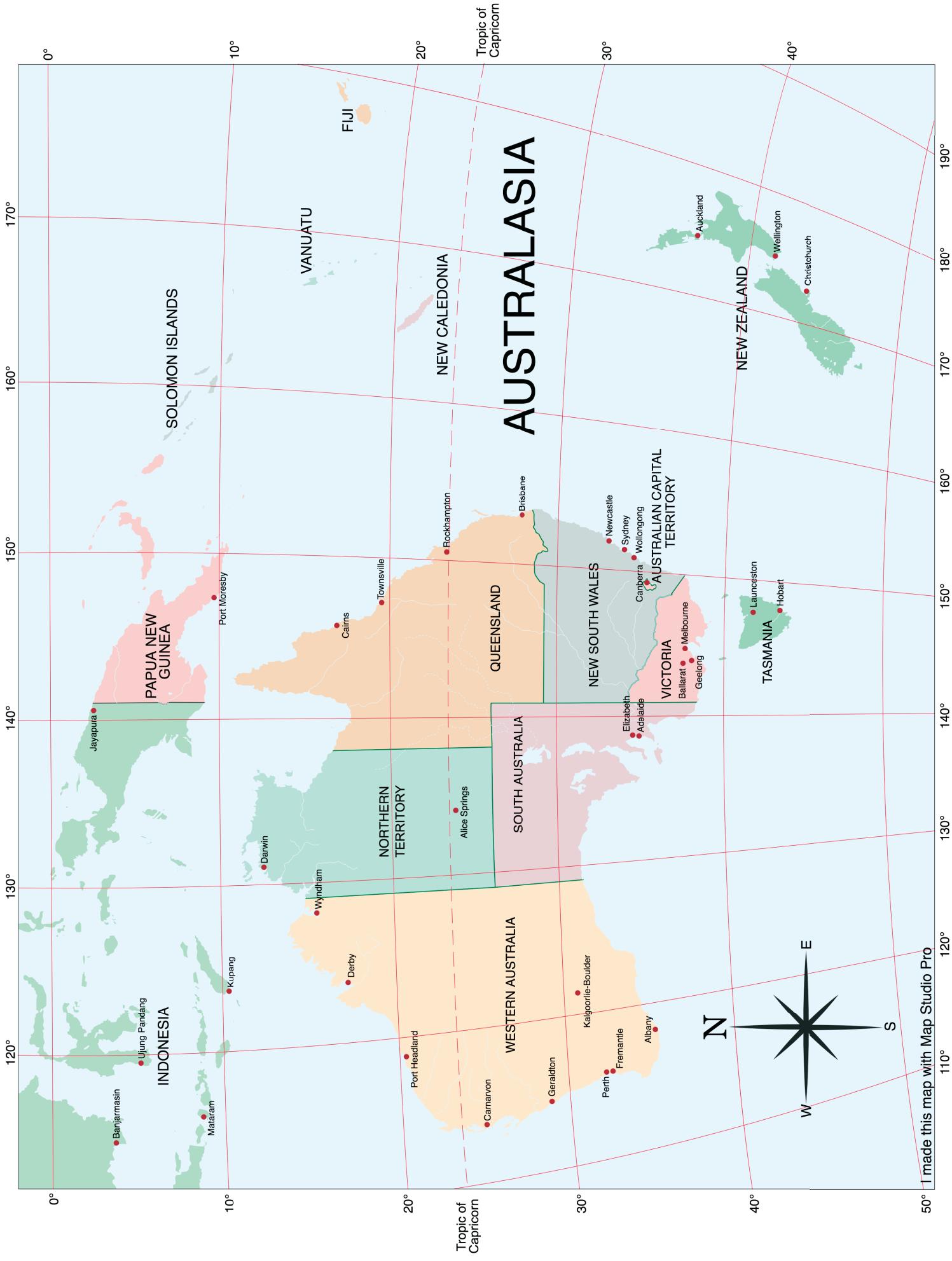
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AMERICA

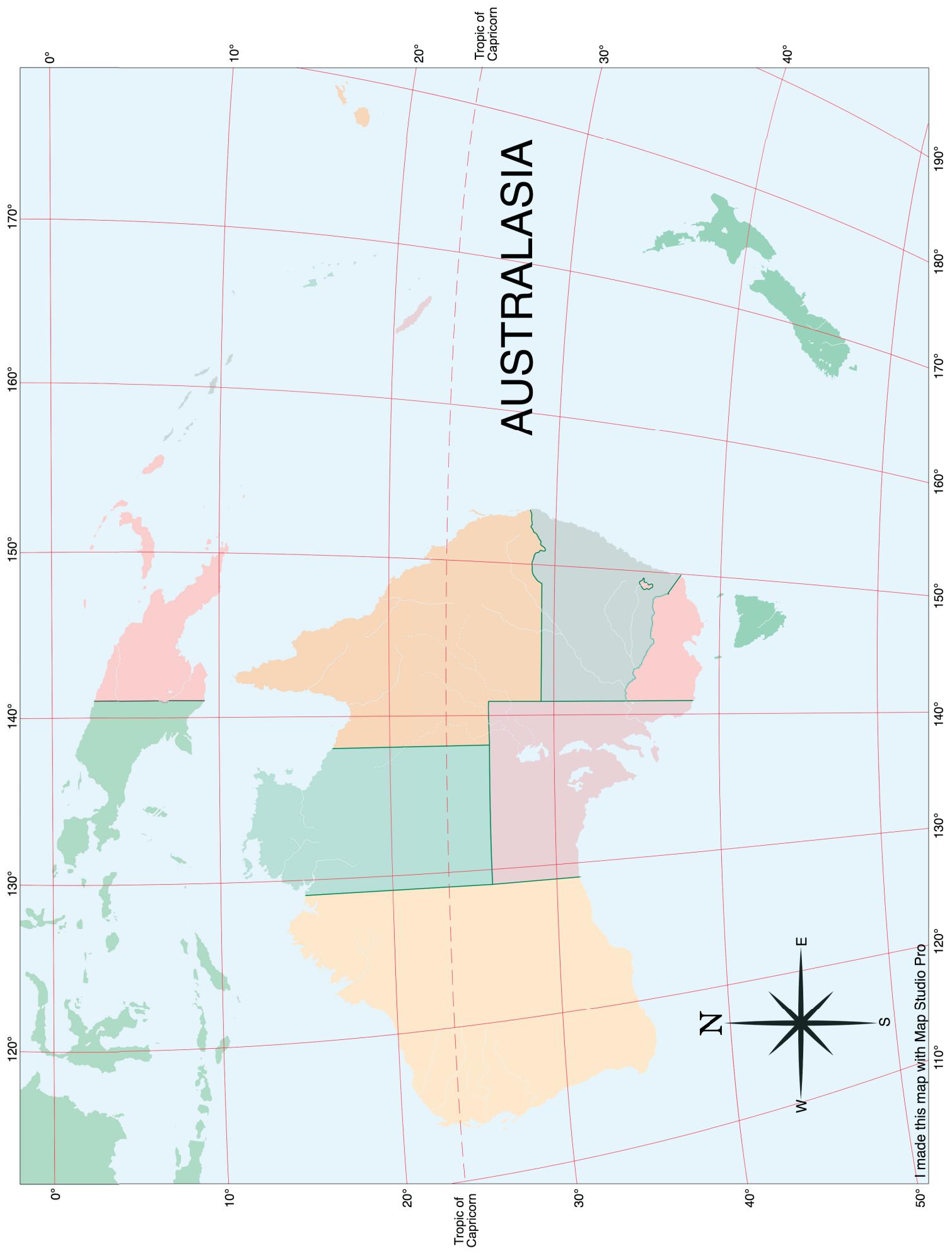












# About the Author

## A CHILD'S GEOGRAPHY: EXPLORE HIS EARTH

**Ann Voskamp** has been lost all of her life. Which is a good reason to write about geography. She was a lost young teen when God graciously found her. She was lost behind long hair and glasses, wandering the library stacks, when her future husband found her. And her children now usually find her curled up on the couch, calling them to come get lost in a good book with her.

As a high school student, she proposed that Mr. Hammond's World Geography class sponsor a child through World Vision, a sponsorship which Mr. Hammond's class then annually honoured. As her fascination with geography and God's glorious globe continues decades later, so too does Ann's support of Compassion International, the whole of the royalties of *A Child's Geography* donated to their work around the world.

With a background in Education and Child Psychology from York University and the University of Waterloo, Ann's educational pursuits have focused on elementary education, her passions on the Maker of heavens and earth. This project marries both.

She and her best-friend husband raise corn, six kids, and soybeans, as full-time farmers in Ontario, Canada. She writes of their life at [www.aholyexperience.com](http://www.aholyexperience.com).

**Publisher's Note:** Ann Voskamp is also the best-selling author of *One Thousand Gifts: A Dare to Live Fully Right Where You Are*, which you can find on Amazon or your local bookstore.

