

TEACHER GUIDE

4th–6th Grade

Includes Quizzes
& Tests

Science



Answer Keys

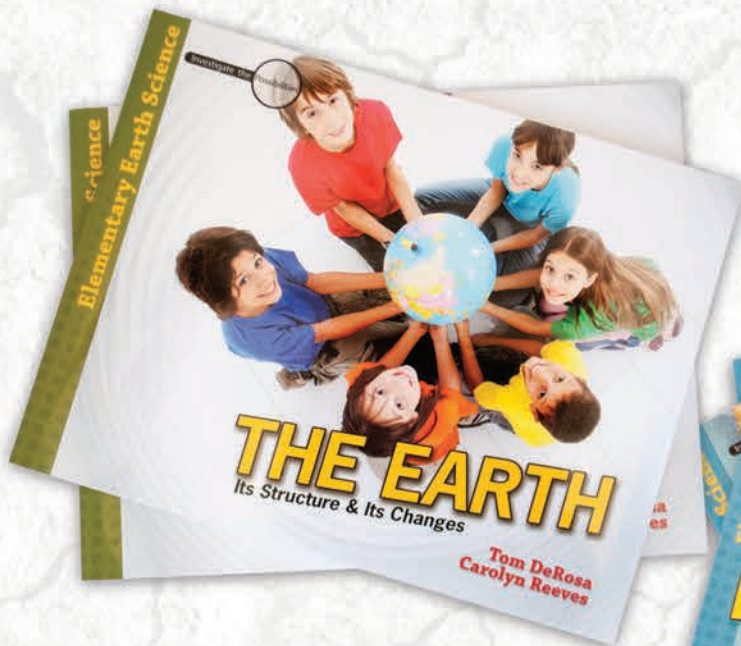


Weekly Lesson Schedule



Quizzes & Tests

SCIENCE STARTERS: ELEMENTARY PHYSICAL & EARTH SCIENCE





Science Starters: Elementary Physical & Earth Science



Master Books®
Curriculum

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Using This Teacher Guide

Features: The suggested weekly schedule enclosed has easy-to-manage lessons that guide the reading, worksheets, and all assessments. The pages of this guide are perforated and three-hole punched so materials are easy to tear out, hand out, grade, and store. Teachers are encouraged to adjust the schedule and materials needed in order to best work within their unique educational program.

Lesson Scheduling: Students are instructed to read the pages in their book and then complete the corresponding section provided by the teacher. Assessments that may include worksheets, activities, quizzes, and tests are given at regular intervals with space to record each grade. Space is provided on the weekly schedule for assignment dates, and flexibility in scheduling is encouraged. Teachers may adapt the scheduled days per each unique student situation. As the student completes each assignment, this can be marked with an “X” in the box.



Approximately 30 to 45 minutes per lesson, two to three days a week



Includes answer keys for quizzes and tests.



Quizzes and tests are included to help reinforce learning and provide assessment opportunities.



Designed for grades 4 to 6 in a one-year course

Course Objectives: Students completing this course will

- ✓ Learn how to determine the speed and motion of favorite toys
- ✓ Create a catapult and experience the mechanics of pulleys
- ✓ Examine natural occurrences such as mountains, volcanoes, rocks, minerals, crystals, water, and dirt
- ✓ Discover why friction creates heat
- ✓ Use household items such as hard boiled eggs, oranges, measuring cups, maps, clay and markers to see these scientific truths will come to life.
- ✓ Learn how to determine the speed and motion of favorite toys, create a catapult and experience the mechanics of pulleys, set up a floating pencil race, and discover why friction creates heat.

Course Description

The *Investigate the Possibilities* curriculum has been developed with the following learning progression:

Engage - Students make a note of what they know or have experienced about the topic.

Investigate - Students will follow the instructions and make observations of what happens.

Explain - Students will begin to understand the science behind what they observed in the investigation.

Apply - Here, the understanding of the investigation is related to other situations and ideas.

Expand - Each investigation also includes a few “Dig Deeper” projects to further understanding.

Assess- Students explain what they have learned.

Elementary physical science and earth science comes alive through this activities-driven science course that ignites a sense of curiosity about the wonderful world God has made. Concepts are introduced in an engaging way by highlighting the science behind kids at play, like roller-skating, skateboarding, and even running. By guiding students through these easy-to-understand investigations, they learn to observe and relate what they have personally observed in detail. The learning progression helps students engage, investigate, explain, apply, expand, and assess the scientific principles, and is filled with helpful images, diagrams, and inexpensive activities. Students discover why caves and sinkholes form, what is in the soil we walk on every day, how warning signs are present prior to volcanic eruptions, what tests can be used to identify rocks, and more. This comprehensive series makes the study of God’s creation both enjoyable and educational!

Calculating a Final Grade

Calculate the Average of the student's Activities & Observations grades.

Divide the average by 3 _____

Calculate the Average of the student's Questions & Quizzes grades.

Divide the average by 3 _____

Calculate the Average of the student's Projects, Contest & Dig Deeper grades.

Divide the average by 3 _____

Add up the numbers for the Final Grade: _____

Suggested Optional Science Lab

There are a variety of companies that offer science labs that complement our courses. These items are only suggestions, not requirements, and they are not included in the daily schedule. We have tried to find materials that are free of evolutionary teaching, but please review any materials prior to presentation. The following items are available from www.HomeTrainingTools.com.

RM-GEOBAG Geology Field Trip in a Bag

RM-ROCKMIN Rocks & Minerals of the U.S. Basic Set

First Semester Suggested Daily Schedule

Date	Day	Assignment	Due Date	✓	Grade
First Semester-First Quarter — <i>Forces & Motion</i>					
Week 1	Day 1				
	Day 2	Investigation #1: Wind-up Walking Toys Read Pages 4-7 • <i>Forces & Motion</i> (FM) Complete Page S4 • Student Journal (SJ)			
	Day 3				
	Day 4	Investigation #1: Wind-up Walking Toys Read Pages 8-9 • (FM) • Complete Page S5 • (SJ)			
	Day 5				
Week 2	Day 6				
	Day 7	Investigation #2: Which Way Did It Go? Read Pages 10-11 • (FM) • Complete Page S6 • (SJ)			
	Day 8				
	Day 9	Investigation #2: Which Way Did It Go? Read Pages 12-13 • (FM) • Complete Page S7 • (SJ)			
	Day 10				
Week 3	Day 11				
	Day 12	Investigation #3: Investigating Friction Read Pages 14-15 • (FM) • Complete Page S8 • (SJ)			
	Day 13				
	Day 14	Investigation #3: Investigating Friction Read Pages 16-17 • (FM) • Complete Page S9 • (SJ)			
	Day 15				
Week 4	Day 16				
	Day 17	Investigation #4: Friction — Does It Rub You... Read Pages 18-19 • (FM) • Complete Page S10 • (SJ)			
	Day 18				
	Day 19	Investigation #4: Friction — Does It Rub You... Read Pages 20-21 • (FM) • Complete Page S11 • (SJ)			
	Day 20				
Week 5	Day 21	Forces & Motion Investigations 1-4 Quiz 1 Level 1 Page 17 • Level 2 Page 29 • Lesson Plan (LP)			
	Day 22				
	Day 23	Investigation #5: That's Heavy, Dude Read Pages 22-23 • (FM) • Complete Page S12 • (SJ)			
	Day 24				
	Day 25	Investigation #5: That's Heavy, Dude Read Pages 24-25 • (FM) • Complete Page S13 • (SJ)			

Date	Day	Assignment	Due Date	✓	Grade
Week 6	Day 26	Investigation #6: Floating Pencil Race Read Pages 26-27 • (FM) • Complete Page S14 • (SJ)			
	Day 27				
	Day 28	Investigation #6: Floating Pencil Race Read Pages 28-29 • (FM) • Complete Page S15 • (SJ)			
	Day 29				
	Day 30	Investigation #7: What Floats Your Boat? Read Pages 30-31 • (FM) • Complete Page S16 • (SJ)			
Week 7	Day 31	Investigation #7: What Floats Your Boat? Read Pages 32-33 • (FM) • Complete Page S17 • (SJ)			
	Day 32				
	Day 33	Investigation #8: Giving Airplanes a Lift Read Pages 34-35 • (FM) • Complete Page S18 • (SJ)			
	Day 34				
	Day 35	Investigation #8: Giving Airplanes a Lift Read Pages 36-37 • (FM) • Complete Page S19 • (SJ)			
Week 8	Day 36				
	Day 37	Forces & Motion Investigations 5-8 Quiz 2 Level 1 Page 19 • Level 2 Page 31 • (LP)			
	Day 38				
	Day 39	Investigation #9: Crash Test Dummies Read Pages 38-39 • (FM) • Complete Page S20 • (SJ)			
	Day 40				
Week 9	Day 41	Investigation #9: Crash Test Dummies Read Pages 40-41 • (FM) • Complete Page S21 • (SJ)			
	Day 42				
	Day 43	Investigation #10: Cars and Ramps Read Pages 42-43 • (FM) • Complete Page S22 • (SJ)			
	Day 44				
	Day 45	Investigation #10: Cars and Ramps Read Pages 44-45 • (FM) • Complete Page S23 • (SJ)			
First Semester-Second Quarter — <i>Forces & Motion</i>					
Week 1	Day 46	Investigation #11: The Mighty Conquering Catapults Read Pages 46-47 • (FM) • Complete Page S24 • (SJ)			
	Day 47				
	Day 48	Investigation #11: The Mighty Conquering Catapults Read Pages 48-49 • (FM) • Complete Page S25 • (SJ)			
	Day 49				
	Day 50	Investigation #11: The Mighty Conquering Catapults — Isaac Newton • Read Pages 50-51 • (FM)			

Quizzes and Test

for Use with

Forces & Motion

Testing:

This series is appropriate for elementary students from 3rd to 6th grades. Because of this, we have included quizzes and tests in two different levels, which you can choose from based on your child's abilities and understanding of the concepts in the course.

Level 1: suggested for younger ages or those who struggle with application of the concepts beyond just definitions and basic concepts

Level 2: suggested for older ages or those who can both grasp the scientific concepts and apply them consistently

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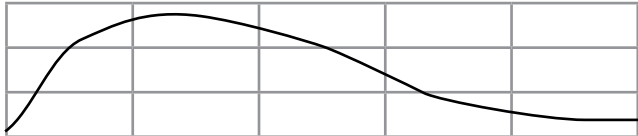


Choose answers from these terms.

All the terms may not be used and some may be used more than once:

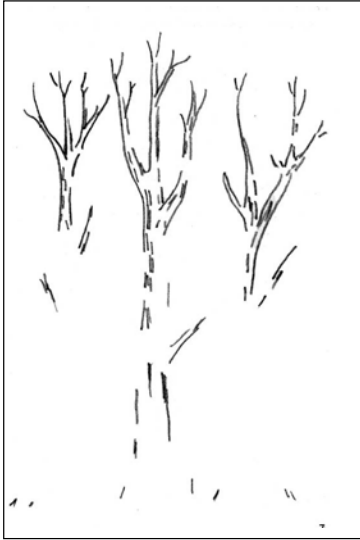
centimeters	engineer	frame of reference	friction	heat
increase	inertia	no	north	reduce
rolling friction	scientist	second	sliding friction	south
streamlined	time	yes		

Fill in the Blank: Each question is worth 5 points.

1. In order to find something's speed, you need to divide the distance by the _____.
2. Does this graph of a runner's speed show that the runner kept on going faster and faster? _____

3. Suppose a bug's speed is 2 cm/s. This means it can travel 2 _____ per _____.
4. In order to tell how something is moving, you need a _____.
5. A flat boat is moving north at 10 miles per hour. A walking toy on the boat is moving south at 5 miles per hour. Would someone watching the walking toy from the bank of the river see it moving north or south?
6. Is Darwin's idea that all living things evolved from a one-celled organism represented by a forest of trees?
7. What force causes your tennis shoes to wear out?
8. What force helps you to walk without falling down?
9. Friction always produces what form of energy?
10. Ball bearings and roller bearings are used to _____ friction.
11. Is it possible for the same set of facts to be interpreted in more than one way?
12. Many birds have a special shape that lets them fly smoothly through the air with little friction. What is this shape called?
13. Does a force have to be applied to an object to cause it to start moving?
14. Does a force have to be applied to a moving object to cause it to stop moving?
15. Which force is greater if other conditions are the same—rolling friction or sliding friction?
16. Someone who builds rockets and tries to make them faster, cheaper, and safer is called a rocket _____.

Creative Interpretation: Each image is worth 10 points.

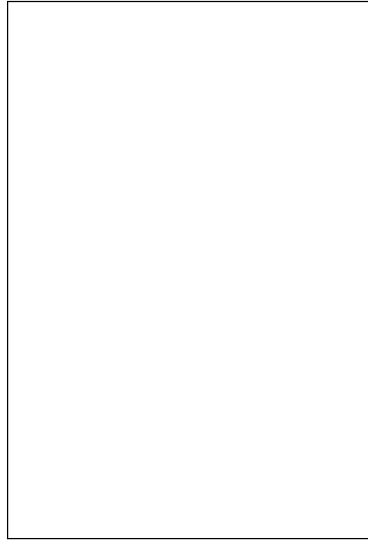
17. Sometimes we have one set of limited facts and can come to different conclusions. Examine the following image and what “remains” of a painting. Then draw two possible reconstructions.




Remains of the original painting



Possible reconstruction #1



Possible reconstruction #2

	<i>Forces & Motion</i>	Quiz 2	Scope:	Total score:	Name
	Concepts & Comprehension	Level 1	Chapters 5–8	____ of 100	

Choose answers from these terms.

All the terms may not be used and some may be used more than once:

air	Bernoulli	buoyant	density	engineer
falls	friction	gravity	inertia	lift
mass	mountaintop	no	resistance	same
sea level	scientist	volume	yes	

Fill in the Blank: Each blank is worth 5 points.

- All matter has a tendency to keep moving once it is in motion. This property is called _____.
- Does air have weight?
- Is air pressure greater at sea level or on a mountaintop?
- Will a balloon get larger if the air pressure inside the balloon remains the same, but the air pressure outside becomes less?
- Is there gravity on the moon?
- A feather would fall as fast as a hammer on the moon, because there is no _____ around the moon.
- What is the unbalanced force pulling down on a falling object?
- Does air's resistance push up on a falling object?
- Does air fill the space inside an "empty" cup?
- Does friction push on a moving object opposite to the way the object is moving?
- Archimedes used a method known as water displacement to measure what?
- Archimedes discovered that there is a _____ force on objects floating in water that is equal to the weight of the water the object displaces.
- Would a solid block of iron displace the same amount of water as a boat made from an equal block of iron?
- If you know the volume and the weight of an object, you can calculate what?
- What is the name of the force that pushes upward on an airplane wing?

16. Are the forces on a floating ship balanced if the buoyant force is equal to the weight of the ship?

17. A hammer and a feather fall at the _____ speed on the moon because there is no _____ around the moon. Thus, there is no air _____ on the feather as it _____.

Quizzes and Test

for Use with

Earth

Testing:

This series is appropriate for both upper elementary and junior high students. Because of this, we have included quizzes and tests in two different levels which you can choose from based on your child's abilities and understanding of the concepts in the course.

Level 1: suggested for younger ages or those who struggle with application of the concepts beyond just definitions and basic concepts

Level 2: suggested for older ages or those who can both grasp the scientific concepts and apply them consistently

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Fill in the Blank Questions: (4 points each)

Choose answers from these terms.

All the terms may not be used and some may be used more than once:

building materials	circle of lava	coal	color
concave-type	convection-type	crust	earthquake zone
earthquakes	elastic rebound theory	engineering	ethanol
five	gas	general position sector	global positioning system
Greenwich (or Prime) Meridian	height	helium	Himalayan Mountains
less	hydrogen	iron and nickel	latitudinal line(s)
Mount Rushmore	longitudinal line(s)	magma	mineral deposits
on or near the equator	New Madrid Fault	nickel and iron	oil
Ring of Fire	ores	oxygen	Pangaea
subduction	San Andreas Fault	seafloor spreading	steel
twenty-four (24)	surface	tsunamis	twelve
weight	under land	under ocean	water

1. The International Date Line is a _____.
2. What is the name of the starting longitudinal line that is designated as 0°? _____
3. Which lines go from the North Pole to the South Pole? _____
4. Which lines circle the earth and are parallel to the equator? _____
5. What part of the earth doesn't have four seasons? _____
6. Into how many times zones is the earth divided? _____
7. What do the letters "GPS" mean when referring to a GPS device?
8. In which layer of the earth are solid rocks found that are not extremely hot? _____
9. Most scientists believe the core of the earth is made of what elements? _____
10. Is the earth's crust thicker under the continents or under the oceans? _____
11. Some geologists believe there are _____ currents in parts of the earth's mantle and core.
12. What are three natural resources found in the earth's crust?
 - a. _____
 - b. _____
 - c. _____
13. Is the Mid-Atlantic Ridge a region of subduction or seafloor spreading? _____
14. _____ occur frequently along or near the San Andreas Fault in western California.

15. The _____ are thought to have formed when two crustal plates collided into each other, but neither plate slid under the other one.
16. _____ may have been the original land mass that broke apart and formed today's continents.
17. According to the _____, rocks break loose from a position of tension — and suddenly surge forward.
18. An earthquake begins as locked-up sections of rocks break free, creating more or less tension on the rocks? _____
19. Crustal plate movement is occurring along the fault line known as the _____ as the Pacific Plate is slowly moving past the North American Plate.
20. One of the main earthquake belts in the earth is known as the “_____.”

Short Answer: Each question is worth 5 points.

21. What can a GPS device in an automobile do?
22. Where are earthquakes most prone to occur?
23. What is happening where the Pacific Plate and the North American Plate meet along the coast of California?
24. The three main states of matter are solid, liquid, and gas. What is meant by a plastic state?

Bonus Question: (worth 5 points)

25. Sometimes buildings fall in during an earthquake. What are two things that play a big role in how well a building can withstand an earthquake?



Fill in the Blank Questions: (6 points each)

Choose answers from these terms.

All the terms may not be used and some may be used more than once:

Badlands (South Dakota)	crevices	every day	every three months
extrusive	faults	Galapagos	glaciers
Grand Canyon	Great Prairie	Hawaii	intrusive
lava	lava flows	Mount Rushmore	nine
no	once a week	Richter scale	seismograph
sonar	Surtsey	three	tornadoes
volcanic eruptions	volcanoes	water	wind
yearly	yes		

1. The strength of an earthquake is reported as a number from 0 to 10, known as the _____.
2. What is the name of the instrument that is used to study and identify earthquakes?

3. How often do earthquakes occur throughout the world?
4. Which earthquake is more powerful — one that measures 3 on the Richter scale or one that measures 9 on the Richter scale? _____
5. When magma reaches the surface of the earth, it is called _____.
6. Were there warning signs that Mount St. Helens was about to erupt before May 18, 1980? _____
7. _____, like earthquakes, tend to be found where large crustal plates meet. Sometimes they are found in areas known as “hot spots.”
8. Are volcanic eruptions always violent and explosive?
9. Give an example of a place in the United States where miles of flat, level layers of strata can be seen.

10. Name at least three ways in which sedimentary layers can be laid down in nature.
 - a.
 - b.
 - c.
11. Which of the following processes is most likely to produce flat level layers of sediment — glaciers, wind, water, or volcanic eruptions? _____
12. What do we call breaks and cracks in large rock formations when rock on one side of the crack has slipped and moved? _____
13. _____ rocks form when magma reaches the surface of the earth and hardens there.

14. _____ rocks are rocks that cool and harden from hot magma below the surface of the earth.
15. Are dikes and sills intrusive or extrusive rocks? _____

Short Answer: Each question is worth 5 points.

16. What are some ways the government of a country could reduce the deaths and damage caused by an earthquake?
17. Where are the two main earthquake belts in the earth?

Bonus Question: (worth 5 points)

18. This island first appeared in 1963. _____.

Quiz and Test Answers

for Use with

Science Starters: Elementary Physical & Earth Science

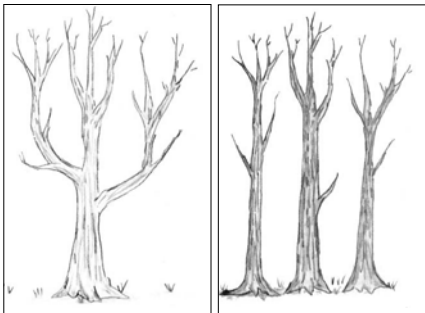
Forces & Motion

Quiz Answer Keys

Level 1 & 2

Quiz 1 Level 1, chapters 1-4

1. time
2. no
3. centimeters – second
4. frame of reference
5. north
6. no
7. friction
8. friction
9. heat
10. reduce
11. yes
12. streamlined
13. yes
14. yes
15. sliding friction
16. engineer
- 17.



Possible reconstruction #1 Possible reconstruction #2

Quiz 2 Level 1, chapters 5-8

1. inertia
2. yes
3. sea level
4. yes
5. yes
6. air
7. gravity
8. yes
9. yes
10. yes
11. volume
12. buoyant

13. no
14. density
15. lift
16. yes
17. same, air, resistance, falls

Quiz 3 Level 1, chapters 9-14

1. inertia
2. no
3. no
4. no
5. force
6. gravity
7. friction
8. no
9. torsion
10. Newton
11. no
12. yes
13. gravity
14. no
15. space
16. reaction
17. matter, moving, speed, friction

Quiz 4 Level 1, chapters 15-20

1. lower
2. yes
3. no
4. faster
5. moveable
6. yes
7. yes
8. big
9. wheel
10. no

Quiz 1 Level 2, chapters 1-4

1. c
2. a
3. c
4. c
5. a
6. c
7. b

8. a
9. a
10. c
11. c
12. b
13. b
14. b
15. b
16. c
17. b
18. b
19. a
20. c

Quiz 2 Level 2, chapters 5-8

1. c
2. a
3. c
4. a
5. a
6. a
7. a
8. b
9. b
10. a
11. c
12. c
13. b
14. c
15. a
16. b
17. b
18. b
19. a
20. a

Quiz 3 Level 2, chapters 9-14

1. c
2. c
3. b
4. b
5. a
6. a
7. b
8. b

9. b
10. a
11. c
12. a
13. c
14. b
15. a
16. b
17. c
18. c
19. b
20. a
21. a
22. a
23. b
24. c
25. a

Quiz 4 Level 2, chapters 15-20

1. a
2. b
3. a
4. a
5. a
6. a
7. c
8. a
9. b
10. a
11. b
12. b
13. a
14. b
15. b
16. a
17. b
18. a
19. a
20. a
21. c
22. a
23. b
24. b
25. b

Forces & Motion

Test Answer Key

Level 1 & 2

Test 1 Level 1

1. time
2. frame of reference
3. friction
4. friction
5. heat
6. reduce
7. yes
8. yes
9. inertia

10. yes
11. yes
12. air
13. gravity
14. engineer
15. buoyant
16. density
17. lift
18. Bernoulli
19. inertia
20. no
21. force
22. gravity
23. no
24. gravity
25. space
26. yes
27. no
28. faster
29. moveable
30. no

31. Answers will vary. Should mention at least four of the following points for full credit:
 - There are upward and downward forces acting on the pencil as it falls.
 - The pencil's weight (from the earth's gravity) is a force that pulls down on the pencil.

- There is some friction between the pencil and the air, which pushes up on the pencil.
 - The upward force on the pencil is increased by connecting a parachute-like device to the pencil. The parachute produces more air resistance.
 - More than one force was acting on the pencil as it was falling.
 - The weight of the pencil (gravitational force) was pulling down while the air resistance/friction was pushing up.
32. Answers will vary. Should mention at least four of the following points for full credit:
- The thing that determines whether or not the ship will float is the weight of the water it displaces.
 - If the weight of the displaced water is equal to the weight of the ship, the ship will float.
 - If the weight of the displaced water is less than the weight of the ship, the ship will sink.
 - The upward force the water exerts on floating or sunken boats is called buoyant force.
 - Recall that when two forces oppose each other, they are said to be balanced when they cancel each other out. There are balanced forces acting on a floating ship.
 - The weight of the ship (from the earth's gravitational force) pulls down.
 - At the same time, the buoyant force on the ship pushes up. Therefore, the two forces cancel each other out, and the forces acting on the boat are balanced.

Test 1 Level 2

1. c
2. c
3. c
4. a
5. a

6. c
7. c
8. b
9. a
10. a
11. a
12. c
13. a
14. a
15. a
16. a
17. b
18. a
19. c
20. b
21. b
22. c
23. c
24. b
25. a
26. b
27. b
28. a
29. c
30. c
31. a
32. c
33. a
34. a
35. a
36. b
37. b
38. c
39. b
40. a
41. a
42. a
43. a
44. c
45. a
46. b
47. a
48. a
49. b
50. b

Bonus question: c

The Earth

Quiz Answer Keys

Level 1 & 2

Quiz One, Level 1 Chapters 1-4

1. longitudinal line
2. the Greenwich Meridian or the Prime Meridian
3. longitudinal lines
4. latitudinal lines
5. the part of the earth on or near the equator
6. 24
7. it stands for Global Positioning System.
8. crust
9. iron and nickel
10. under land
11. convection-type
12. Any of the following: In addition to rocks and soil, the crust also contains water, coal, oil, gas, ores, and mineral deposits.
13. seafloor spreading
14. earthquakes
15. Himalayan Mountains
16. Pangaea
17. elastic rebound theory
18. less
19. San Andreas Fault
20. Ring of Fire
21. Global Positioning Systems can tell you where you are on the earth. They are usually able to show you how to get to a specific address.
22. Earthquakes tend to occur along the boundary of crustal plates or along other fault lines, especially where one plate in the earth's crust is pushing against another plate or where two plates are sliding past each other.

23. The two plates are sliding and grinding past each other as the Pacific Plate moves northward at the rate of about 5 centimeters (just over an inch and a half) per year.
24. Something in-between a solid and a liquid; often depends on the amount of pressure and temperature on the material.
25. The engineering design and the materials used in buildings

Quiz Two, Level 1 Chapters 5-8

1. Richter scale
2. seismograph
3. every day
4. one that measures 9 on the Richter scale
5. lava
6. yes
7. volcanoes
8. no
9. Grand Canyon, Badlands of South Dakota, other places
10. Any of these: water, wind, glaciers, and volcanic eruptions
11. water
12. faults
13. extrusive rocks
14. intrusive
15. intrusive
16. They could enforce building codes for houses, schools, and other buildings that reduce the chances of the buildings falling in during an earthquake. Even if everyone could not afford to do this, the government could be sure that certain buildings, such as schools and hospitals, were built according to safe building codes.
17. One belt follows the coastline around the Pacific Ocean and is known as the "Ring of Fire." The other belt is next to the Mediterranean Sea and extends to southern Asia.

18. Surtsey

Quiz Three, Level 1 Chapters 9-12

1. no
2. steep
3. gradual
4. topographic
5. no
6. small
7. yes
8. minerals
9. quartz, mica, and feldspar.
10. silicate
11. feldspars, micas, olivines, pyroxenes, amphiboles, quartz, clay minerals, and calcite (calcium carbonate)
12. calcium carbonate
13. limestone
14. sedimentary
15. heat and pressure
16. plants and animals that live in the ocean (or once lived there)
17. the surface of the ocean (sea level)
18. Granite is made up of several minerals that have been cemented together into a rock. A mineral is a pure substance.
19. Crystals have flat faces and a definite shape and rocks don't. Crystals are pure substances and rocks are a mixture of minerals (crystals).
20. color test, streak test, luster, crystal form, cleavage test, hardness test (Mohs's scale of hardness), density test, test for magnetic properties, fluorescent glow under ultraviolet light, radioactivity, formation of bubbles when exposed to weak acid, flame test, and others

Quiz Four, Level 1 Chapters 13-16

1. sedimentary, igneous, and metamorphic
2. metamorphic
3. intrusive igneous
4. sandstone, limestone, shale, conglomerate, and others
5. igneous
6. sedimentation
7. deposition
8. large/heavy
9. Delta

10. glaciers

11. on hills/bare ground

12. oxbow lake

13. physical weathering

14. expands

15. sharp and jagged

16. topsoil

17. sedimentation

18. iron oxide

19. limestone

20. Erosion is a broad term that includes the processes that move soil, sediment, and other materials on the earth from one place to another.

Quiz Five, Level 1 Chapters 17-20

1. water table
2. dry
3. pores
4. porosity
5. aquifer
6. deep below
7. saturated
8. runoff
9. stalactites; stalagmites
10. hot
11. drought
12. glaciers
13. valley/continental
14. humus
15. no
16. The porosity of the soil. If there is a layer of soil that is not porous, such as clay, then water cannot get past that layer (unless there are cracks in the clay layer). As long as the soil is porous (or cracked), it can seep farther down.
17. Even though water can't seep past a layer of hard rock, if the rock is cracked, water can travel through the cracks and cause a wearing down of the rocks.
18. When water combines with carbon dioxide, a weak acid known as carbonic acid forms. Carbonic acid reacts chemically with limestone rocks, causing the limestone to come apart.
19. In some places around the world, streams and shallow wells are dangerously polluted with disease-causing organisms, but are the only available source of drinking water. Water from clean wells would greatly improve the health of people in these areas.