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SGO Pre-Assessment – Grade 6 – Earth Science ANSWER KEY

Modified True/False 2 pts @ (20)

Indicate whether the statement is true or false. You must write out the entire word (true or false). If false, change the identified word or phrase in the blank to make the statement true.

FALSE 1. An *inference* is an activity performed to prove or disprove a hypothesis. *experiment*

TRUE 2. <u>Conduction</u> is the transfer of heat by direct contact of atoms and molecules.

TRUE 3. Buoyancy states that less dense objects will *float* in more dense fluids.

FALSE 4. Water can exist in three *substances*, depending on the pressure and temperature. *phases or forms*

FALSE 5. Weather events tend to happen when two air masses that are <u>alike</u> interact. <u>different</u>

TRUE 6. Latitude lines are imaginary horizontal lines on a map that are north and south of the equator.

TRUE 7. Superposition means that the bottom layer of a rock formation is the <u>oldest</u>.

FALSE 8. The outermost layer of Earth's surface is called the *mantle*. *crust*

TRUE 9. An example of <u>mechanical</u> weathering is when a large rock falls down a slope and breaks into small pieces.

FALSE 10. Gravitational force on the Moon is *more than* gravitational force on Earth. *less than*

Multiple Choice 1 pt @ (31)

Identify the choice that best completes the statement or answers the question. Write the letter of the correct answer in the space provided.

Use the following information to answer the following questions 1 and 2. Elena notices that when her math teacher gives exams on colored paper, the students all seem to get better grades.

D 1. Which of the following would be a good **hypothesis** for the observation Elena made?

a. Colored paper makes students smart. b. Students like colored paper better.

c. White paper makes students work harder. d. Giving math tests on colored paper improves students' scores.

Elena's math teacher helped test her hypothesis by giving their next math test to half the class on colored paper and half the class on white paper. The half of the class that took the test on colored paper scored a total of 1500 points on the test. The half of the class that took the test on white paper scored a total of 1750 points.

What ty	pe of data did Elena co	llect?		
<u>D</u>	2. a. Qualitative	b. Chemical	c. Hypothetical	d. Quantitative
<u>C</u>	3. What is the height o a. 1.9 cm	f a 1.9-meter tall person b. 19 cm	in centimeters? c. 190 cm	d. 1900 cm
<u>B</u> and boi	4. On the Fahrenheit so l on the Celsius scale?	cale, water freezes at 32°	F and boils at 212°F. At	what temperature does water freeze
	a. Water freezes at 100°	°C and boils at 0°C.	b. Water freeze	s at 0°C and boils at 100°C.
	c. Water freezes at 37°C	C and boils at 98.6°C.	d. Water freeze	s at 20°C and boils at 37°C.
<u>D</u>	5. All matter consists of	of tiny particles known as	:	
	a. elements.	b. compounds.	c. molecules.	d. atoms.

 \underline{A} 6. The atoms in solids:

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	a. vibrate in place. c. vibrate and move f	reely about.	b. move freely ab d. vibrate and mo	out. ve freely about, but n	ot at the same time.
<u>C</u>	7. Conduction, conve a. created.	ection, and radiation are b. destroyed.	all examples of ways c. transferred.	in which heat is: d. reused.	
<u>B</u>	8. Most of Earth's w a. geysers.	ater in the solid form is t b. glaciers.	found as: c. snow.	d. groundwate	er.
<u>D</u>	9. Water moves from a. the precipitation cy	n place to place on Earth vcle. b. the monso	through: on cycle. c. the wea	ather cycle.	d. the water cycle.
<u>A</u>	10. Relative humidita. the amount of wateb. the amount of watec. the amount of wated. the dew point.	y measures how much w er vapor it could contain er vapor it could contain er vapor it could contain	vater vapor an air mas at a certain temperatu at any temperature. if the volume were do	s contains relative to ire. ecreased.	:
<u>B</u>	11. The long-term re a. weather.	cord of temperature, pre- b. climate.	cipitation, and wind f c. meteorology.	for a region is: d. biome.	
Use the	e topographic map shov	vn on the right to answer	questions $12 \& 13$.		60
<u>B</u> 12.	a. 0 ft b. 15	ft c. 30 ft	d. 60 ft	igure?	60 15
<u><i>C</i></u> 13. the top	What is the relief betw pographic map shown in	veen the lowest elevation n the figure?	and the highest elev	ation on	30
	a. 15 ft b. 30	ft c. 45 ft	d. 60 ft		
D 14	Fossils are most often	formed from which part	s of a dead organism	2	Contour = 15 feet
<u> </u>	a. The entire body	b. Soft parts	c. The org	ganism's skin	d. Hard parts
<u>B</u> 15.	Relative dating uses a. the exact age of an c. the color of an object	various clues to figure ou object. ect.	ut: b. the order of evo d. the behaviors o	ents over time. f an organism.	
<u>B</u> 16.	In the geologic time so a. years and months.	cale, major periods of tin b. eras and p	ne are divided into: eriods. c. centu	ries and periods.	d. eras and decades.
<u>A</u> 17. a. Pan	Millions of years ago, gaea. b. Li	the continents were once thospheric Plate. c. (e a great landmass tha Glossopteris. d.	at has been named: Supercontinent.	

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Referen	nce the figure to answe	r questions	18 & 19				A B C D
<u>A</u> figure i	18. The lithosphere in s the lithosphere?	ncludes the	crust and the u	pper mantl	e. Which laye	r in the	
	a. A b. B		c. C	d. D			
<u>D</u> is the in	19. The inner core is nner core?	made most	ly of iron and i	s solid. Wh	ich layer in th	e figure	
	a. A b. B		c. C	d. D			
<u>C</u>	20. The idea that con a. sea-floor spreading	tinents mov	ve slowly on Ea b. subduction.	arth's surfa c	ce is known as . continental d	s: rift.	d. convection cells.
<u>A</u> origina	21. Following an eart l quake.	hquake, sm	nall tremors kno	own as	_ can occur, la	asting for hours	s to days after the
	a. aftershocks	b. foresh	locks	c. seismic	: shocks	d. Richter sho	ocks
<u>B</u> earthqu	22. The is the lo	b opicor	Earth's surface	directly ab	ove the area w	where rock brea	ks in the crust in an
	a. locus	D. epicei	Itel	c. lault	u. seisi	ine wave	
<u>D</u>	23. Classifying rocksa. their age.	as igneous b. their p	, sedimentary, particle size.	or metamor c. their ha	rphic is based ardness.	on differences d. how they at	in: re formed.
<u>D</u>	24. Agents of chemic a. acid rain.	al weatheri b. oxyge	ing include all on in the atmosp	of the follo phere.	wing EXCEPT c. moss	Г: s and lichens.	d. wind.
<u>A</u>	25. Of the following a. wind.	resources, t b. bioma	that which has t ass.	the LOWE c. coal.	ST impact on t d. petro	the environmen pleum.	nt when used is:
<u>A</u>	26. A change to the e a. pollution.	nvironmen b. evolut	t that is harmfu tion.	ll to human c. conserv	s and other liv vation.	ving things is ca d. the four sea	alled: asons.
<u>B</u>	27. The force of grava. small and they far ac. large and they are f	ity betweer part. ar apart.	n two objects w b. large d. sma	rill be great e and they a ll and they	est if their mas are close toget are close toge	sses are: her. ther.	
<u>D</u>	28. The length of a pla. mass.	anet's year b. perioc	is defined by i do f rotation.	its: c	. density.	d. period of re	evolution.
<u>C</u>	29. Which of the follo a. Distance of Earth fi c. Tilt of Earth on its a	owing is mo om the Sur axis	ost responsible 1	for the sea b. Speed d. Sunspo	sons of the yea of Earth in its ot cycle	ar? orbit	

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Reference the figure to answer questions 30 & 31

<u>**A**</u> 30. Based on the figure, at which position would a **full moon** be seen from an observer on Earth?

a. Position A c. Position D b. Position E d. Position B

 \underline{C} 31. Based on the figure, at which position would the moon NOT be visible from an observer on Earth?

a. Position A	b. Position E
c. Position D	d. Position C



Short Answer *Answer each question in the space provided. Write legibly and in complete sentences taking care to use proper sentence structure. Address each aspect of the question in your answer.*

1. EXPLAIN how you could change the mass or volume of a gas in order to decrease its density. 3 pts @ (3) <u>Knowing that density equals mass over volume, you can see the relationship between all three factors. If you heat</u> the gas, it will make the volume increase (become larger) and keep the same mass, which decreases the density.

Code	If the student
3	states or writes the formula for density and how the components influence each other; correctly indi-
	cates how heat will affect the volume of the gas but not the mass, and how density will stay the same.
2	states how the three components influence each other, but does not mention the formula; correctly indi-
	cates how heat will affect the volume of the gas but without mention of mass, and how density will stay
	the same.
1	states that the gas should be heated, but does not complete the thought/explanation with the mention or
	reference of how this affects volume, mass or density.
0	makes no attempt or is wholly incorrect in his/her response

2. STATE and briefly DESCRIBE the five characteristics used to distinguish one biome from another. 4 pts @ (4) Biomes differ in latitude (distance from the equator), weather (the condition of the atmosphere as it is affected by wind, water, temperature, and atmospheric pressure), relative humidity (the measure of how much water vapor an air mass contains relative to how much it can contain), amount of sunlight (affects the temperature experienced in a given biome), and topography (land forms and surface configuration).

Code	If the student
4	demonstrates a clear understanding of the task by correctly listing all five characteristics defining a bi-
	ome with a description/explanation of each as provided in the exemplar response; may include exam-
	ples of a given biome but this does not answer the question.
3	demonstrates a partial understanding of the task by correctly listing no less than 4 characteristics defin-
	ing a biome with a description/explanation of each of the four as provided in the exemplar response;
	may include examples of a given biome but this does not answer the question.
2	demonstrates a basic but somewhat incomplete understanding of the task by listing no less than 3 char-
	acteristics defining a biome with a description/explanation of each as provided in the exemplar re-
	sponse; may include examples of a given biome but this does not answer the question.
1	demonstrates a mostly incomplete understanding of the task by listing no less than 2 characteristics de-
	fining a biome with a description/explanation of each as provided in the exemplar response; may in-
	clude examples of a given biome(s) but this does not answer the question.
0	makes no attempt OR only gives examples and descriptions of a given biome(s), OR offers less than 2
	characteristics defining a biome with or without a description/explanation of each as provided in the

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exemplar response; OR is wholly wrong and provides an answer that does not respond to the prompt. Essay 6 pts (a) (6)

1. **DRAW** a picture to illustrate the water cycle. **TRACE** the path of water from the ocean to groundwater and back to the ocean. **LABEL** all parts as completely as possible, including the four main processes in the water cycle and the source of energy for the water cycle.

A complete diagram should show the sun, the ocean, groundwater and surface water flow, and the four main processes of the water cycle: condensation, precipitation, evaporation and transpiration.

Drawing and tracing of path:

Code	If the student
3	demonstrates a clear understanding of the task by correctly providing a comprehensive illustration of
	the flow of water through the water cycle with arrows representing the cyclic path of events; fully re-
	flecting the physical environment and four main processes as provided in the exemplar response.
2	demonstrates a mostly clear understanding of the task by correctly providing a comprehensive illustra-
	tion of the flow of water through the water cycle with arrows representing the cyclic path of events;
	reflecting no less than 3 of the 4 components of the physical environment and no less than three of the
	four main processes as provided in the exemplar response.
1	demonstrates a basic understanding of the task by providing an illustration of the flow of water through
	the water cycle with some arrows representing the cyclic path of events; reflecting only 2 or less of the
	4 components of the physical environment and less than two of the four main processes as provided in
	the exemplar response.
0	makes no attempt OR provides an illegible drawing OR provides an illustration that does not respond to
	the prompt.



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Labeling:

Code	If the student
3	demonstrates a clear understanding of the task by correctly providing a comprehensively labeled illus-
	tration of the physical environment and four main processes as indicated including the flow of water
	through the water cycle as shown in the exemplar illustration; labels are clear and concise; labels are
	legible and on/near the items indicated without need for clarification.
2	demonstrates a partial understanding of the task by correctly providing a comprehensively labeled illus-
	tration of no less than two aspects of the physical environment and no less than three of the main pro-
	cesses as indicated including the flow of water through the water cycle as shown in the exemplar illus-
	tration; labels are clear and concise; labels are mostly legible and on/near the items indicated without
	need for clarification.
1	demonstrates a minimal understanding of the task by providing a labeled illustration of no less than 1
	aspect of the physical environment and no less than two of the main processes as indicated including
	the flow of water through the water cycle as shown in the exemplar illustration; labels are somewhat
	unclear; labels are somewhat legible and need clarification as to the aspects of the illustration that they
	reference.
0	makes no attempt OR provides an illegible drawing with illegible labels OR provides an illustration
	(labeled or unlabeled) that does not respond to the prompt.

Raw Benchmark Points	Score Ranges	Proficiency Points	# of Students
0-31.5	0-49%	1	
32 - 41	50-64%	2	
41.5 - 44	65-69%	3	
44.5 - 50.5	70-79%	4	
51 - 57	80-89%	5	
57.5 - 64	90-100%	6	