

Study Guide: Final Assessment of Learning Grade 7

FOCUS QUESTION	ANSWER	EXAMPLE/EXPLANATION
1. What is a biotic factor?	Living part of an organism's habitat	Animal, plant, bacteria, fungus
2. What is an abiotic factor?	Non-living part of an organism's habitat	Air, water, soil, temperature, sunlight
3. What is a carnivore?	Consumer that eats only animals	Eagle, lion, shark
4. What is a herbivore?	Consumer that eats only plants	Giraffe, rabbit, cow
5. What is an omnivore?	Consumer that eats both plants and animals	Crows, bears, humans
6. What is the difference between sexual and asexual reproduction?	Sexual: involves combining of egg and sperm for fertilization Asexual: involves dividing into two for continuation of species, usually one-celled organisms like the paramecium or amoeba	Sexual: all vertebrates Asexual: amoeba, paramecium
7. What is an ecosystem?	All the living and non-living things that make up a particular area or community	Grassland, desert, seashore, forest
8. What are four roles organisms play in an ecosystem?	Decomposer, producer, primary consumer, secondary consumer	Decomposer: mushrooms, bacteria Producer: all plants Primary Consumer: rabbit Secondary consumer: wolf
9. What is competition?	Struggle between organisms to survive as they attempt to use the same limited resources	Different species of birds competing for food source (insects)
10. What is population?	All the members of one species in an area of a specific size	All the daisies in a 5 m x 6 m area of land
11. What is an energy pyramid?	Diagram showing amount of energy that moves from one feeding level to another in a food web	<p>Generalised Energy Pyramid</p> <p>Four trophic levels are shown The relative biomass is shown for each level An ecological efficiency of 10% is assumed for each level</p> <p>Second Order Carnivores 1 unit First Order Carnivores 10 units Filter Feeders 100 units Algae 1000 units Phytoplankton 1000 units</p>

12. How much energy do living things receive at each level?	1 kcal (third level) 10 kcal (second level) 100 kcal (first level) 1000 kcal (producers)	Only 10 percent of the energy at one level of a food web is transferred to next level. Other 90 percent is used for organism's life processes or lost as heat in environment									
13. What is the relationship between the size of a population and its energy level?	The higher the energy level, the fewer the number of organisms	Organisms at higher level do not require less energy than those at lower; since so much energy is lost at each level, amt. of energy available at producer level limits the number of consumers; usually fewest organisms at highest level									
14. What is an allele?	Different forms of a gene	Different alleles for a gene for height would be tall (T) and short (t)									
15. What is the difference between a dominant allele and a recessive allele?	Dominant allele is one whose trait always shows up in organism when allele is present; recessive allele is masked or hidden when a dominant allele is present	Tt = tall because dominant allele (T) is present (t) is the recessive allele and is hidden									
16. What is a genotype?	All the possible allele combinations for an organism	Eye color genotypes include BB (brown), Bb (brown) and bb (blue)									
17. What is a phenotype?	All the physical descriptions for an organism's trait	Phenotypes for eye color include brown, blue, green, hazel									
18. What is a Punnett Square used for?	Chart that shows all the possible combinations of alleles that can result from a genetic cross	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: center;">G</td> <td style="text-align: center;">g</td> </tr> <tr> <td style="text-align: center;">G</td> <td style="text-align: center;">GG</td> <td style="text-align: center;">Gg</td> </tr> <tr> <td style="text-align: center;">g</td> <td style="text-align: center;">Gg</td> <td style="text-align: center;">gg</td> </tr> </table>		G	g	G	GG	Gg	g	Gg	gg
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19. How many alleles do living things have for each of its traits?	Each living thing inherits two alleles from its parents—one from the egg and one from the sperm	For eyes, a father might have brown (B) and the mother might have blue (b); an offspring would receive both alleles (Bb)									
20. What is weathering?	The chemical and physical processes that break down rock at earth's surface	Heat, cold, water, ice									
21. What is erosion?	Process by which water, ice, wind, or gravity moves weathered rock and soil	Water washes over a beach, carrying the sand away and creating erosion									

22. What is the difference between mechanical and chemical weathering?	<p>Mechanical: rock is physically broken into smaller pieces</p> <p>Chemical: rock is broken down by chemical changes</p>	<p>Mechanical includes freezing/thawing, pressure release, plant growth, actions of animals, and abrasion. Chemical includes water, oxygen, carbon dioxide, living organisms, and acid rain</p>
23. What are the three types of boundaries?	Divergent, convergent, transform	Divergent -two plates move apart; convergent -two plates move together; transform - one plate moves past another
24. What is the end result of the three types of boundaries?	<p>Divergent: rift valley and sea-floor spreading; volcanoes</p> <p>Convergent: denser plate moves to bottom; subduction; mountains; volcanoes</p> <p>Transform: earthquakes</p>	
25. What is the Mid-Atlantic Ridge?	Undersea mountain chain where new ocean floor is produced; caused by divergent boundaries	
26. What is a physical change?	A change in a substance that does not change its identity	Sugar and water mixed is simply sugar water; not a new substance
27. What is a chemical change?	A change in which one or more substances combine or break apart to form new substances	Iron combines with oxygen in air to form rust, a new substance
28. What is a melting point?	Temperature at which a solid turns to a liquid	Ice's melting point is 0 degrees C. or 32 degrees F.
29. What is a freezing point?	Temperature at which a liquid turns to a solid	Water's freezing point is 0 degrees C. or 32 degrees F.
30. Are melting and freezing points physical or chemical changes?	Melting, freezing, and boiling are all physical changes .	They are physical changes because although the molecules have changed in structure (solid, liquid, or gas) , the substance itself has not changed. Water vapor (steam) is still water, which is still ice.
31. What happens to the motion of particles during a phase change?	During a phase change, the molecules neither speed up (melting, boiling) nor slow down (freezing)	When water is heated, the molecules begin to move and spread out; when water is cooled, the molecules begin to slow down and come together; however at the boiling and/or melting points all energy added goes to breaking molecule attractions.
32. What is the relationship between the motion of molecules in a substance and temperature?	The higher the temperature, the faster the motion of molecules; the lower the temperature, the slower the motion of molecules	

33. What is vaporization?	Change of state from a liquid to a gas	Boiling is when the phase change occurs throughout the liquid. Different from evaporation which is only <u>surface vaporization</u> .
34. What are the four states of matter?	Solid, liquid, gas, plasma	Solid: book Liquid: Water Gas: Oxygen Plasma: free electrons and atoms; found in stars
35. What is density?	The amount of mass found in a specific volume of matter	$\text{Mass} \div \text{Volume} = \text{Density}$ g/cc or g/cm ³
36. How do you determine the density of an object?	Find its mass, determine its volume and then divide mass by volume	Mass = 10 g Volume = 5 cc Density = 2 g/ cm ³ Anything above 1/g/cm ³ will sink; anything below will float
37. What is the law of conservation of mass?	Principle that total amount of matter is neither created nor destroyed during any physical or chemical change	Lavoisier was the scientist who determined this. Example: a burning candle may seem to disappear; however, the wax melts (physical change) and the wick burns (chemical change), but no mass was lost or gained
38. What happens to a gas as it is heated in relation to volume and mass? Density?	As a gas is heated, the volume increases and the mass stays the same; when the temperature of a gas decreases, the volume decreases and the mass remains the same.	Charles's Law : an example is a hot air balloon. Heat causes the air inside to expand, causing a volume increase; air inside is less dense than air outside and the balloon then rises