

Extra Credit Opportunity Worth *up to 20* points!



Your extra credit challenge is to create handwritten flash cards to help you study for the upcoming semester exam. You will earn 1 point for every 3 correctly formatted flash cards; 20 points for completing all 60!

Flash cards can be made out of notebook paper or blank paper of any color as long as I can see the writing clearly, or index cards- use what you have! A good size is about 4X6- a piece of notebook paper cut into 4 pieces is fine, too. To receive credit, flash cards must be turned in on exam day before you begin your test.

Correctly formatted flash cards:

- 1. Are HANDWRITTEN by the student.** No credit for anything else. Why handwritten? Writing helps commit information to memory. The time you'll use to make the flash cards is also valuable time spent *studying!*
- 2. Display the term, question, or diagram on one side, and explanation on the back.**
- 3. Copy the information as it is written below; no abbreviations.**

SIDE 1	SIDE 2
graduated cylinder	instrument used to measure volume by determining how much water the object displaces
balance	instrument used to measure mass
How is density calculated?	use a balance to measure the object's mass and a graduated cylinder to measure its volume, then divide mass by volume.
How was Earth's early atmosphere different from our modern one?	Used to be mostly carbon dioxide and had no oxygen; now mostly nitrogen (78%) and has oxygen (21%) with carbon dioxide as just one of many trace gases (1% total)
Where did earth's atmospheric oxygen originate from?	photosynthesis by cyanobacteria (blue-green algae)
The atmosphere of Venus is mostly this.	Carbon dioxide
The atmosphere of Mars is mostly this.	Carbon dioxide
Which of the following can alter Earth's atmosphere? volcanic eruptions, human activities, biologic activity, man-made chemicals, meteorite impacts	ALL of these can: volcanoes and meteorites cause large amounts of dust and gases; human activities like burning fossil fuels release carbon dioxide; plants produce oxygen and reduce carbon dioxide levels, CFCs destroy ozone
weather	day to day changes in atmospheric conditions

SIDE 1	SIDE 2
climate	typical weather patterns for a location over many years
Why are latitudes near the equator warmer than those near the poles?	The sun's energy strikes lower latitudes more directly, so they get more sunlight per unit area of land.
What conditions are necessary for a cloud to form?	air at or near the dew point, and condensation nuclei such as dust or sea salt. Rising air cools as it goes higher.
Coriolis effect	caused by rotation of the Earth; influences global wind patterns; objects are deflected to the right in the northern hemisphere and to the left in the southern hemisphere.
barometer	instrument used to measure air pressure
psychrometer	instrument used to measure relative humidity
cumulonimbus cloud	name of a thunderstorm-type cloud
heat capacity of water versus land	water has a higher heat capacity than land, so it takes more energy to change the temperature of water- sand on the beach is hot but the water stays cool, even though both are receiving the same amount of energy from the sun; causes land and sea breezes
symbol for a cold front, with arrows pointing in the direction it's moving (south); cold air arrives to the area behind it	
symbol for a warm front, with arrows pointing in the direction it's moving (north); warm air moves into an area behind this symbol on the map	
windward	side of a mountain facing ocean; receives more precipitation
leeward	side of a mountain that is drier; faces away from the ocean
summer	Season that occurs when the hemisphere is tilted toward the sun. For the northern hemisphere, summer is from June 21 to September 21, even though the Earth is farthest from the sun.
What causes Earth to have seasons?	Earth's axis is tilted 23.5 degrees, so as it rotates around the sun one half is angled toward the sun and experiencing summer while the other hemisphere is tilted away and experiencing winter.
What is Earth's only natural satellite called?	the moon
Describe the location of Earth in our solar system.	Earth is the 3rd planet from the sun, an inner planet between Venus and Mars- just the right distance to be the ONLY planet with liquid water.

SIDE 1	SIDE 2
Differentiate between the solar nebula theory and the big bang theory.	Solar nebula theory explains the formation of our solar system. Big bang theory explains the formation of the universe.
lunar eclipse	moon is blocked from our view by Earth's shadow (Earth comes between the moon and the sun)
solar eclipse	sun is blocked from our view by the moon (moon lines up directly between the sun and the Earth)
moon phases	caused by revolution of the moon around the Earth
tides	daily, periodic rise and fall of water level caused by the gravitational pull of the moon and sun
How long does it take for Earth to rotate once on its axis?	24 hours (causes day and night)
Apollo 11	first manned landing on the moon
Hubble	telescope in orbit around the Earth; it orbits outside of our atmosphere, so weather doesn't block the view- greatly improves our understanding of the universe
asteroids	rocks orbiting the sun between Jupiter and Mars
fusion	the process of the sun that converts hydrogen to helium and emits energy
light year	measures DISTANCE- how far light travels in one year
Types of galaxies	spiral, irregular, and elliptical. Earth is part of one solar system within the Milky Way, which is a spiral galaxy. Stars are distributed in clusters in space.
How do stars form?	From the condensation of gases and dust in interstellar nebulae
stellar evolution	Stages of a star's "life cycle." All start as a nebula; other stages depend on size of star. Our sun is an average star and will eventually become a red giant, then white dwarf. More massive stars may explode as supernovas and end as black holes or neutron stars.
mineral	solid, inorganic,
properties of minerals used for I.D.	to identify a mineral we use color (least reliable), streak (powder left behind on a streak plate), hardness (Moh's scale), luster (pearly, dull, glassy, etc), density
fool's gold	pyrite
sulfur	yellow mineral recognized by its rotten egg smell

SIDE 1	SIDE 2
What qualities make a mineral also a gemstone?	rare, pretty, and hard
Which mineral can be used to make glass?	quartz
igneous rocks	formed when molten rock (magma or lava) cools; rate of cooling determines size of crystals- fast cooling, tiny crystals; slow cooling, larger crystals
extrusive igneous rocks	formed on the surface (external)- smaller crystals or none due to fast cooling. Examples: obsidian, pumice, scoria, basalt
intrusive igneous rocks	formed below the surface (magma)- larger crystals possible due to slower cooling. Examples: granite,
sedimentary rocks	formed from compaction or cementation of weathered materials (sediment)
metamorphic rocks	formed from heat and pressure changing any rock type into a new rock type
foliated metamorphic rock	minerals become arranged in bands, like stripes
Composition and texture	these two properties help us determine how a rock was formed so we can classify it
rock cycle	Illustrates how rocks change from one type to another over time by melting, cooling, weathering, compacting, cementing. All rocks can melt, weather into sediments, and go through metamorphosis.
fossil fuels	coal, petroleum (oil), natural gas; nonrenewable resources because they take such a long time to form
reduce, reuse, recycle	three ways we can conserve natural resources.
renewable alternative energies	solar, hydroelectric, geothermal
combustion	burning; combustion of fossil fuels, wood, and other fuel sources leads to air pollution and sometimes acid rain
Virginia's natural resources- examples	coal, granite, limestone for concrete, crushed stone (quartzite)
Which metal has become commonly recycled?	aluminum (a metal obtained from a rock called bauxite)
caves of Virginia's Valley and Ridge province	formed due to weathering and erosion of the large amounts of limestone present in this region of Virginia