

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Regents Review

The Physical Setting: Earth Science

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# Regents Review: 80 Things to Know

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- Earth Science Reference Tables: Equations and Specific Heats of Common Materials
- The same substance always has the same density [unless temperature and/or pressure change]
- As temperature increases the density will decrease
- As pressure increases density will increase
- Water expands when it freezes
- Earth Science Reference Tables: Generalized Bedrock Geology of New York State
- The altitude of Polaris equals your latitude
- Latitude lines measure north and south of the equator and are drawn horizontally
- Longitude lines measure east and west of the Prime Meridian and are drawn vertically
- Time is based on observations of the Sun and longitude ( $15^\circ$  of longitude = 1 hour)
- The closer isolines are together the steeper the slope or gradient
- Earth Science Reference Tables: Characteristic of Stars and Solar System Data
- The earth rotates one time from west to east in 24 hours
- The earth revolves one time in 365.25 days
- All celestial objects APPEAR to move from the east to the west
- The moon has phases because of the angle at which we view its surface
- Foucault's Pendulum and Coriolis Effect are evidence that supports Earth rotating
- Summer solstice - 6/21; Winter solstice - 12/21; Vernal Equinox - 3/21; Autumnal Equinox - 9/23
- Earth is closer to the Sun when the northern hemisphere has winter
- The seasons are caused by the  $23.5^\circ$  tilt of Earth's axis
- The closer a planet is to the sun, the faster it orbits
- Heliocentric (sun centered) vs. Geocentric (earth centered)
- Black absorbs heat and white reflects heat
- Convection causes hot air to rise and cold air to sink (due to density differences)
- Energy moves from source (high) to sink (low)
- Secret formula to build a cloud (R.E.C.C.) - Air **r**ises, **e**xpands, **c**ools, **c**ondenses
- Mountain barriers cause air on the windward side to undergo R.E.C.C.
- Earth Science Reference Tables: Properties of the Atmosphere and Planetary Winds
- Air pressure, temperature and moisture content decreases with altitude
- Wind is due to air pressure differences and wind blows from high to low pressure
- Wind is named for the direction it is coming from (not towards)
- Earth Science Reference Tables: Temperature, Pressure, and Key to Weather Map Symbols
- High pressures wind patterns are outward and clockwise
- Low pressures wind patterns are inward and counterclockwise
- Earth Science Reference Tables: Dewpoint and Relative Humidity
- The closer the air temperature is to the dew point temperature, the greater chance of precipitation
- Weather moves towards the northeast due to the Southwesterly Winds
- Know permeability, capillarity porosity, and infiltration

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# Regents Review: 80 Things to Know

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- Water is Stubborn... it is the hardest thing to heat up and cool down because of its high specific heat
- Earth Science Reference Tables: Surface Ocean Currents
- Water bodies moderate temperature making coastal regions have smaller temperature ranges
- Earth Science Reference Tables: Selected Properties of Earth's Atmosphere
- As temperature increases, air pressure decreases
- Hot air rises because it is less dense and cold air sinks because it is more dense
- Earth Science Reference Tables: Inferred Properties of Earth's Interior
- Hotter magma rises because it is less dense and colder magma sinks because it is more dense
- Frost action works best where temps fluctuate above & below freezing
- Chemical weathering works best in warm and wet climates
- Earth Science Reference Tables: Plate Tectonics
- Continental Drift Evidence: mesosaurus fossils on opposite shorelines and puzzle fit of continents
- Earth Science Reference Tables: Generalized Landscape Regions of New York State
- Gravity is behind all erosion
- Running water is the number one agent of erosion
- Earth Science Reference Tables: Relationship of Transported Particle Size to Water Velocity
- Stream velocity depends on slope and discharge (amount of water in the stream)
- Velocity is fastest on the outside of a meandering stream
- Heavy, dense and round particles settle out first in quite water
- Vertical sorting is when the biggest sediments on the bottom and get smaller towards the top
- Glacial sediments are unsorted, scratched and create U-shaped valleys
- Stream deposits are sorted, round, smooth and create V-shaped valleys
- Sedimentary rocks (strata) are deposited in flat horizontal layers and can contain fossils
- Metamorphic rocks exhibit banding and distorted structures
- Mineral properties depend on internal arrangement of atoms
- The basic mineral structure is a silicon-oxygen tetrahedron
- Mid-ocean ridges (divergent plate boundaries) create new continental crust
- Trenches (convergent plate boundaries) destroyed crust for recycling
- Earth Science Reference Tables: Earthquake P-Wave and S-Wave Travel Time
- P-waves - primary - fastest - first - go through through solid, liquid and gas
- S-waves - secondary - slower - shear - shake - go through solids only
- Need three (3) seismometer stations to locate an epicenter
- Superposition is when the bottom layer of undisturbed rock layers is the oldest
- Intrusions and faults are younger than the rock they crosscut
- Unconformity is a buried erosional surface
- Earth Science Reference Tables: Radioactive Decay Data
- Uranium-238 is used to date old rocks (billions of years)
- Carbon-14 dates is used to date recent remains (within 57,000 years) of former living things
- Convection currents in the mantle move the plates
- Convection current flow due to density differences
- The longer the cool the bigger the jewel (crystal size)
- Earth Science Reference Tables: Geologic History of New York State