**IDX G9 GEOGRAPHY H STUDY GUIDE ISSUE 1**

**By Ethan Swee**

—**Geography:** science that studies the relationships between natural systems, geographic areas, society, & cultural activities, as well as the interdependence of them over space

—**Location:** absolute or relative position on the Earth

—**Absolute location:** coordinates w/ latitude & longitude

—**Relative location:** in relation to another object/place/whatever

—**Region:** uniform physical or human characteristics

—**HEI (Human-Environment Interactions):** interactions between humans and the Earth

—**Movement:** communication, migration, & diffusion across Earth’s surface

—**Place:** Human and physical characteristics of a location

—**Spatial analysis:** synthesizing topics from different fields (geo as a whole depends on this)

—**Physical geography:** spatial analysis of physical elements, processes, and systems

—**Scientific method:** simple, organized steps leading towards concrete, objective conclusions

—observation -> hypothesis & predictions -> experiment & measurement, peer review & publishing of paper (if experiment supports hypo — reject hypothesis if proved wrong)

—must be able to survive repeated testing

—**System:** set of ordered, interrelated components and their attributes

—**Open system:** inputs + outputs flowing in and out

—**Closed system:** self-contained

—**Feedback loops:** outputs returning to points in a system, influencing its operation

—**Negative feedback:** discourages change (open loop)

—**Positive feedback:** encourages change (closed loop)

—**Equilibrium:** systems maintaining structure & character over time

—**Steady-state equilibrium:** fluctuates around a stable average

—**Dynamic equilibrium:** changing trend

—**Threshold:** point where a system cannot maintain its character and so moves to a new operational level

—**Model:** simplified, idealized representation of part of the real world

—**Abiotic spheres:** nonliving

—**Atmosphere:** this gaseous veil surrounding Earth

—**Hydrosphere:** all forms of water on the Earth’s surface

—**Cryosphere:** portion of the hydrosphere that’s frozen

—**Lithosphere:** Earth’s crust & a portion of the upper mantle right below it

—**Biotic spheres:** living

—**Biosphere (or ecosphere):** area in which physical & chemical factors form the context of life

—overlaps with other spheres

—extends from seafloor to 8km into the atmosphere

—**Geodesy:** science that determines Earth’s shape and size through surveys & calculations

—**Geoid:** shape of the Earth

—**Latitude:** angular distance north or south of the equator

—**Parallel:** line connecting all points along the same latitude

—Zones:

—Arctic: 66.5-90°N/S

—Subarctic: 55-66.5°N/S

—Midlatitude: 35-55°N/S

—Subtropical: 23.5-35°N/S

—Equatorial and tropical: 23.5-0°N/S

—**Longitude:** angular distance east or west of a point on Earth’s surface

—**Meridian:** line connecting all points along the same longitude

—**Prime Meridian:** 0° — passes through Greenwich

—**Great circle:** any circle of Earth’s circumference which passes through the Earth

—each meridian is half of one of these

—**Small circle:** also circles, but don’t pass through the center of the Earth

—**GMT (Greenwich Mean Time):** standard mean time. Used to be the official standard.

—**UTC (Coordinated Universal Time):** another standard mean time

—Happens to be the same as GMT

—Based on average time calcs from atomic clocks worldwide

—Now the official standard

—**IDL (International Date Line):** 180° from Greenwich

—Marks place where each day begins

—East to west: add a day

—West to east: subtract a day

—**Daylight saving time:** time is set ahead one hour in the spring and back one hour in autumn

—**Map:** generalized view of an area from above

—**Cartography:** science of mapmaking

—**Scale:** relates size of the unit to the size of the same unit on the ground

—Fraction: 1:100, 1/100

—larger the denominator, smaller the scale (& vice versa)

—Written: 1 cm = 1 m

—Graphic: |---1---2---3|m

—scales with map and so is always right

—**Map Projection:** translation of Earth to a flat surface

—*always* has distortion . . . distance, direction, area, shape, proximity

—may be:

—**Equal area (equivalence):** preserves area

—**True shapes (conformality):** preserves shape

—both of these distort one while preserving the other

—types:

—**Cylindrical:** Mercator; preserves shape but distorts area

—Normal (east-west), transverse (north-south), oblique (sideways)

—used for navigation as rhumb lines are straight

—**Planar (gnomonic, azimuthal):** shows great circle routes as straight lines. Lots of distortion for both shape and area

—**Conic:** Albers; preserves area

—**Oval:** Robinson; distorts everything but at a minimal level

—**Standard line:** Line where there’s zero distortion

—**GPS (global positioning system):** lets you get your absolute location

—at least four satellites: three for location and one for time

—gives latitude, longitude, elevation, time for some reason

—basically does a bunch of stuff involving location

—**Remote sensing:** getting information about distant objects without having physical contact

—**Photogrammetry:** getting measurements from photographs

—**Passive remote sensing:** records wavelengths present naturally

—**Active remote sensing:** emits its own waves and records the ones sent back

—rays sent back known as backscatter

—LiDAR for terrain

—**GIS (geographic information system):** computer-based tool for gathering, manipulating, and analyzing geographic information

—layers arranged in planes depending on different kinds of data (satellite imagery, transportation, vegetation, water bodies, etc)