Geology 12 Unit 2 – Earth: Core to Surface Day 3 – Plate Motion

Name:	

Date: _____

Block: _____

The theory of plate tectonics states: ___

the outer rigid layer of the earth (the lithosphere) is broken into pieces called tectonic plates and that these plates move independently above the flowing plastic-like portion of the mantle (Asthenosphere).

Two Types of Crust (Plates):

Continental Crust: is thicker and like its name consists of the continents

Continental crust has an overall composition similar

to the igneous rock granite, which is a solid, silica-rich crystalline rock typically consisting of a mixture of pink (feldspar), milky white (feldspar), clear (quartz), and black (biotite) minerals

Oceanic Crust: is thinner and normally underlies the world's oceans

Oceanic crust is primarily composed of the igneous rock gabbro, which is a solid, iron and magnesium-rich crystalline rock consisting of a mixture of black and dark gray minerals (pyroxene and feldspar)

Movement of Plates:

The interaction of these tectonic plates is at the root of many geologic events and features. By understanding the structure of the plates we understand how they interact. The interaction of these plates is controlled by the relative motion of two plates (moving together, apart, or sliding past) as well as the composition (density) of the crustal portion of the plate (continental or ocean crust) Density of Plates: An important property of geological plates is their density (mass/volume).

the relative density of two plates can control how they interact at a boundary and the types of geological features found along the border between the two plates ex: a more dense plate may subduct under a less dense plate

Plate Boundaries: ____

Tectonic plates can interact in three different ways they can come together (compresion), they can pull apart (tension), or they can slide by each other (shear)

Different types of plate boundaries:





Divergent Plate Boundary:

a linear feature that exists between two tectonic plates that are

moving away from each other. Divergent boundaries within continents initially produce rifts, which eventually become rift valleys. Most active divergent plate boundaries occur between oceanic plates and exist as mid-oceanic ridges

Transform Plate Boundary: ____

a fault along a plate boundary where the motion is predominantly horizontal. It ends abruptly where it connects to another plate boundary



erican Pla Narca Place

Japan Trench (b) Pacific Place Himalayas **Tibetan Plateau** (c) dan-Australian Plate Eurasian Plan

Convergent Plate Boundary:

two or more lithospheric plates collide. One plate eventually slides beneath the other, a process known as subduction. The subduction zone can be defined by a plane where many eqs occur

lead to volcanism, earthquakes, orogenesis (mountain building)



Continental-continental convergence

