

## **Geog 1 Study Guide for Lithosphere Reading, Landform Diagrams to copy 11/24/08**

Landform diagrams due Dec. 1: The book diagrams to neatly copy are listed below: do not spend time coloring the background. Carefully copy the lines showing the shapes, use some color, and label clearly. Read the section first, so you know what you are drawing.

Dec. 1-3 Rock diagrams in class. Quiz on Dec. 3 or 8- Learn everything below, and review - it will be hard.

Dec. 8-10 Finish and review; Dec. 15-17 Final exams. Students must have 95% of possible points (415 so far, i.e., "solid A") to not take final, because study of the lithosphere is an essential part of the class. Each class session I'll go over part of this, so bring your books, and work through all these pages on your own.

**Plate Tectonics; Internal processes (uplift, folding, faulting, volcanoes)** Explanations are throughout the book. Reread pp. 10-13, on pp. 28-41, along earth history timelines, note globes (blue ovals) showing continental drift.

Cenozoic – Rifting and Volcanism p. 35, 36-37 Mountain-building, 39-40 Ice Age.

Composition of earth crust p. 55, diagram showing plumes of mantle (also p. 59)

p. 57 Seismic Activity (read), & **draw** P-wave (compression & stretching) and S-wave (up & down)

p. 58 The crust – Oceanic Crust describes divergent boundaries.

Read pp. 106-109.

142-143 Faults and Earthquakes (+151)

144 San Andreas Fault – strike-slip; transverse/transform

148-9 E. African Rift Valley, photo at Red Sea

154 Folding. **Draw** symmetrical fold.

155 Convergence: **Draw** 2 diagrams at bottom.

156 Rifting, **Draw** rifting diagram – Divergence

Mountains to read about – Rockies, Andes, Alps, Atlas, Sierra Madre, Himalayas

Review locations and photos of all mountains on your list.

Read p. 172 Volcanoes,

173 Pahoehoe, A'A, stratovolcano, caldera formation

176 Crater Lake

177 Mt. St. Helens

178 Kilauea

180 Nevado del Ruiz – Armero, Colombia mudslide

185 What good things come from volcanoes?

187 Kilimanjaro

190 Mt. Fuji

191 Mt. Pinatubo

195 Intrusive batholith – Sierra Nevada, quarrying of granite

197 Devil's Tower (also like Devil's Postpile National Monument near Mammoth, CA) – columns of hexagonal and pentagonal joints;

189 – Yosemite – El Capitan, Half Dome;

199 – Sugar Loaf, Rio de Janeiro; Castle Rock, Edinburgh, Scotland (near where Harry Potter was written)

202 – Yellowstone

209 – Advantages and disadvantages of geothermal energy

480-481 Review

In this last section, review Major Features of North and South America, Eurasia and Africa.

**Rivers – Fluvial Landforms** First review your previous Landform coloring exercise (the “Glossary” one), that we did during the hydrosphere section.

213 - Erosion and Deposition section -Draw lower right 3 photos, with captions.

214 – Really read.

215 – **Copy/draw** floodplain diagram, braided channels, 2 delta types.

226 – Dams and Drainage – What are advantages and disadvantages of dams?

**Karst** Read 252-253, Look at photos 254-259.

**Draw** stalactites, stalagmites, Tower Karst. Also photo p. 487 -Guilin Karst, China

**Deserts** Review p. 284, Reread Weathering and Erosion, review mesa, butte.

**Draw** Barchan dune 285; Read how dunes form.

See photos of dunes pp. 284-5, 289, 291, 292-3, 295, 296, 297.

Example of inselberg – Australia’s Ayers Rock (Uluru) – p. 300, photo p. 491.

**Glaciers** Read 261-265, including how glaciers move. Note 262 cirque; Skim 266.

**Draw** diagram 265 – Glacial erosion found in California’s Sierra Nevada (e.g., Yosemite)

271 Greenland Ice Sheet (Read.) What would happen if it melted completely?

278-279 Antarctic Ice Sheet (Read.) How much of Earth’s fresh water does it hold? How thick?

279 Ice core analysis

**Coasts** – Review coastal landforms and features in our previous exercise, e.g. fjords, estuary, cape (point, promontory, headland), reefs, atoll, etc.

Photos of common local landforms p. 59 marine terrace, 418 wave-cut cliff, + others.

Reefs 392-3 How coral reefs form. **Draw** 3 simple diagrams for formation of an atoll.

Note: our local reefs are made from basalt, extrusive igneous rock that was lava solidified on ocean floor, and then uplifted. (See basalt in rocks section.)

Read 427, Tides and Waves 428, diagram of tides p. 51.

Note wavelength, wave height, swell.

What do waves transfer across the sea surfaces, water or energy?

Beaches: Normal vs. Storm Profiles, low-energy swell vs. higher-energy waves, tsunamis.

What do low-energy waves build? Which process is that called?

What do high-energy waves do at beaches?

**Other photos and sections to read and think about, besides rocks and minerals overview:**

103- “Swelling soils” – high clay content

Human uses of lithosphere materials: 372-373 Gold mine in Brazil

375 Fossil fuels

376-377 Metals and Nonmetallic minerals, Chemicals

**For the Landform Drawings, look on the syllabus list and draw simple shapes of the remaining ones, to be sure you know what they look like.**