**Human Impact on the Lithosphere - Guided Notes**

1. The lithosphere is important because it provides \_\_\_\_\_\_\_\_\_\_\_\_\_ on which to live and necessary \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ required for survival like \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Three ways humans impact the lithosphere:

(1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for energy resources.

(2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. Money crops such as \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ .

b. Food crops such as \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ \_.

(3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_ - cutting down trees and clearing land to build homes.

3. Over the last few hundred years, our land use has changed from a largely \_\_\_\_\_\_\_\_\_\_\_ to more \_\_\_\_\_\_\_\_\_\_\_\_ based and from there to more \_\_\_\_\_\_\_\_\_\_\_\_\_ based.

4. **Human Impact**: In the past, soil eroded more \_\_\_\_\_\_\_\_\_\_\_\_\_ than is does today because the land was covered by more \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Human activities like \_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and \_\_\_\_\_\_\_\_\_\_\_\_ that remove vegetation have greatly \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the rate at which erosion occurs.

5. **Deforestation**: Space is needed for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and timber is used for home construction, which results in more \_\_\_\_\_\_\_\_\_\_\_ \_ and rainforests being destroyed. Removing plants \_\_\_\_\_\_\_\_\_\_\_\_\_ the rate of erosion because the plant \_\_\_\_\_\_\_\_\_\_\_\_\_ no longer secure the soil in place.

6. **Agriculture**: We lose tons of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_each year through agriculture. Topsoil is the \_\_\_\_\_\_\_ , outermost layer of soil, usually the top \_\_\_\_\_\_\_\_ inches. Topsoil has the highest amount of \_\_\_\_\_\_\_\_\_\_\_ matter and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and is where plants get most of their nutrients.

7. Traditional \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_ techniques, like plowing, remove \_\_\_\_\_\_\_\_\_\_\_\_ and require replanting each year. The US loses almost \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of topsoil per acre per year.

8. **Sustainable Agriculture:** Preserving fertile \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is needed to feed the world’s growing population. Four ways to preserve topsoil include: windbreaks, terracing hillsides, contour plowing, and crop rotation.

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are located along crop field borders or within the \_\_\_\_\_\_\_\_\_\_\_\_\_. How do windbreaks help reduces topsoil erosion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the building of wide, flat \_\_\_\_\_\_\_\_\_\_\_\_\_ of terraces on mountainsides and hillsides. The terraces look like big \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. How does hillside terracing prevent topsoil erosion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

11. Farmers use a technique called \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ in agricultural areas that are on a slope. Instead of plowing \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_, they plow \_\_\_\_\_\_\_\_\_\_ the slope. How does contour plowing reduce topsoil erosion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

12. **\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is the practice of growing a series of different types of \_\_\_\_\_\_\_\_\_\_ in the same area in back to back seasons. Crop rotation can also improve \_\_\_\_\_\_\_\_ \_ fertility by alternating \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ plants.

13. \_\_\_\_\_\_\_\_\_\_\_ constantly change in response to natural forces, like the \_\_\_\_\_\_\_\_\_\_\_\_\_. Storms combines with waves erode beaches at \_\_\_\_\_\_\_\_\_\_\_ rates.

14. **Artificial Stabilization - Shorelines**: Construction along the shorelines increase the rate of erosion beyond the already high rate of erosion experienced along shorelines due to the ocean. Structures can be built to \_\_\_\_\_\_\_\_\_\_\_\_ a coast from erosion or to prevent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of sand along the beach. The structures include the following:

15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are barriers built at right angles to the \_\_\_\_\_\_\_\_\_\_\_\_ to trap \_\_\_\_\_\_\_\_\_\_\_ that is moving parallel to the shore.

How do groins reduce erosion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_.

16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are built parallel to the shoreline off the coast to limit the force of oncoming waves. These structures also protect boats from large, breaking \_\_\_\_\_\_\_\_\_\_\_\_\_.

17. are structures designed to prevent impact of tides and waves on ,

and built directly along the shoreline. They were also built along the coast to prevent and replace shoreline.

18. \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ projects add large amounts of sand to the \_\_\_\_\_\_\_\_\_\_\_\_\_ to stabilize \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without building protective features.

19. There are three main disadvantages to beach nourishment:

1. \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_ - waves will eventually erode the replacement sand as well.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - costs a lot of money to transport sand to the beach from offshore areas.

3. \_\_\_\_\_\_\_\_\_\_\_ \_ effects on marine life. Dredging sand replaces natural, course sand with softer, muddier sand that increases the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the water and can kill offshore coral reefs.

20. **Artificial Stabilization- Mountainsides:** along mountainsides can decrease the stability of the land, allowing for a greater rate of . Mass movements (ex: ) are more probable.

21. Slope Revetment: (slope revetment) draped over a steep slope keeps loosened rocks from .

22. Retaining Walls: Human activities or natural processes can remove some soil from the base of a , making the remaining upper part of the slope less stable and more prone to mass movement. Of a retaining wall can support the upper part of a .

23. Slope Vegetation: while harvesting trees, leave enough to anchor the slope and protect the from excessive due to .