***APES Webquest***

***Should We Dig It?***

**Introduction**  
Extracting rocks and minerals has an impact on the environment and everything that lives in it. But the implications aren’t always obvious. In this exercise, you will investigate whether the environmental impact of extracting an Earth material outweighs the benefits derived from the material.

**Task**Research and choose an Earth material that is found in your state, such as coal or stone. A company is going to start surface mining for the material in your town. Your family's first reaction is “Not in my backyard!” Is that fair? In order to use the resource, mines are necessary. Investigate the extraction process and its effects on the town and the natural environment. Write a list of pros and cons about the mine. Decide whether a surface mine would be a good idea for your town.

**Resources and Process**

1. You should make your list of pros and cons as comprehensive as you can. You need information on how this resource is dug up, processed, and transported and how these activities will affect the environment. You also need to know the value of the resource and the value of what might be destroyed by surface mining.

* What is the material used for? Is it important to you, to your community, or to a larger group of people? What are the economic benefits?
* How is it removed and processed? Will mining require new roads or buildings? Will it affect traffic and noise levels? Are there waste byproducts?
* What effects do these processes have on the atmosphere, water supply, and soil? On humans and other organisms?
* Are any of these effects negative? If so, can they be minimized or eliminated?
* Will mining go on indefinitely? What happens to the land when the mining ends?

2. For information on Earth resources in your state, check these sites.

* State Minerals Statistics and Information:  
  [**http://minerals.er.usgs.gov/minerals/pubs/state/**](http://minerals.er.usgs.gov/minerals/pubs/state/)
* Commodity Statistics and Information:  
  [**http://minerals.er.usgs.gov/minerals/pubs/commodity/aggregates/**](http://minerals.er.usgs.gov/minerals/pubs/commodity/aggregates/)

3.For information on effects of mining on the environment, check these sites:

* South Florida Mineral Resources:  
  [**http://sflwww.er.usgs.gov/publications/reports/rali/mineral.html**](http://sflwww.er.usgs.gov/publications/reports/rali/mineral.html)
* AIRNow on air pollution:  
  [**http://www.epa.gov/airnow/**](http://www.epa.gov/airnow/)

4. For information on how to minimize or eliminate negative effects of mining, check these sites.

* Mining and Quarrying:[**http://www.environment-agency.gov.uk/netregs/sectors/677302/?version=1&lang=\_e**](http://www.environment-agency.gov.uk/netregs/sectors/677302/?version=1〈=_e)
* Office of Surface Mining:  
  [**http://www.osmre.gov/**](http://www.osmre.gov/)
* Restoration of Wetland-Riparian Ecosystems at the Abandoned Snake River Gravel Mine:  
  [**http://www.nature.nps.gov/water/snakeriverpit.cfm**](http://www.nature.nps.gov/water/snakeriverpit.cfm)

**Learning Advice**

* Did you use information from multiple sources?
* Did you cross-check the information that you found?
* Did you compare information from different sources?

**Conclusion**  
Does the environmental impact of surface mining in your town outweigh the benefits derived from the products? Defend your answer.

**Rubric for WebQuest**  
Should We Dig It?

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|  | **Poor (1 pt.)** | **Fair (2 pts.)** | **Good (3 pts.)** | **Exemplary (4 pts.)** |
| **Content** | * Does not address pros and cons of mining.Shows very little or no research done. | * Addresses only pros or cons of mining.Shows minimal research done. No synthesis of information from more than one source. | * Addresses both pros and cons of mining.Synthesis of information from more than one source. | * Extensive list of pros and cons of mining.Outstanding synthesis of information from several sources. |
| **Writing** | * Numerous errors in spelling and/or sentence structure make the assignment almost impossible to read. | * Many errors in spelling and/or sentence structure. | * Few errors in spelling and/or sentence structure. | * Almost no errors in spelling and/or sentence structure. |
| **Task** | * Offers no support for opinion about mining. | * Offers some support for opinion about mining. | * Uses most information gathered to support opinion about mining. | * Extensively uses information gathered to support opinion about mining. |