Internet Exercise

Introduction
The World Wide Web is an incredible source of information about nearly any subject, and geology is no exception. This exercise, which will be worth 20 points, takes time. Do NOT put it off until the last minute! The final may contain some questions from this exercise, including some questions about differences in the scenery between different parts of Arizona.

Arizona Geology Virtual Tourist
Why does scenery vary from place to place?

Introduction
Arizona is known around the world for its spectacular scenery. Why is Arizona so beautiful and visually interesting? And why do different parts of Arizona look so different? The area around the Grand Canyon looks nothing like the beautiful Sonoran Desert region of southern Arizona. What is going on?

Objectives
? Learn how to observe landscapes, including recognizing similarities and differences between adjacent areas,
? Explore how and why the scenery varies so markedly from place to place,
? Begin to understand scenery in terms of the underlying natural processes.

Materials
? Any Personal Computer that is connected to the Internet via either a network connection or modem
? Internet Explorer or Netscape Navigator (older browsers, such as those for America-On-Line, may not display the images properly)
? Loose-leaf sheets of paper or a notebook

Procedure
— First of all, glance at the end of this handout to see what is actually due?

This exercise is done using scenic color photographs that you will access via the World Wide Web. In addition to the photos, the site uses shaded relief maps of Arizona, which show the location of different features, such as mountain ranges, valleys, and canyons, as well as how the elevation (height above sea level) varies across Arizona. If you work in teams, each of you should hand in your own version of the assignment (not an exact or nearly exact copy!!).

Note? All the observations will probably take several hours, just on the computer, so allot enough time and don’t wait until the last minute.

Getting Started
? Go to Dr. Stephen Reynolds’ (ASU Geological Sciences Department) home page http://geology.asu.edu—reynolds/home.htm. Click on the Arizona Geology Virtual Tourist link, which takes you to a page providing an overview and links to the rest of the site.
Click on the link to the *Arizona Geology Virtual Tourist Links* page. This page is your main access point into the rest of the web site. It has links to:
- shaded relief map of Arizona,
- shaded relief maps of different regions of Arizona,
- shaded relief map of the western U.S.,
- explanation of a shaded relief map,
- simplified topographic map of Arizona, and
- introduction to how to observe landscapes

To see as much of each map and photograph as possible, you may want to hide your directory buttons and toolbar (for Netscape, see the *Options* menu). Then, to go back or forward, you would right-click (Windows), hold the mouse button down (Mac), or use the *Go* menu. Keyboard shortcuts to go back, such as Alt — left arrow (Windows) or “command” (Mac), are also available.

**Part 1 — Shaded Relief Map of Arizona**

From the Links page, go to the Shaded Relief Map of Arizona.

Observe this map, noting which regions of the state look similar and which ones look different.

Enter your observations in your notebook before continuing. A simplified sketch map you draw in your notebook may be an easy way to show the different regions you have identified.

***COMPLETE THE ABOVE SECTION BEFORE CONTINUING***

**Thinking About the Big Picture**

Make observations and pose questions about the possible significance or cause behind each observation. Examples might include:

- Why does northern Arizona look so different on the map than southern Arizona?
- Does southern Arizona all look the same, and why?
- Propose as many alternative explanations as you can for one or more of your questions.

**PART II — Regions of Arizona**

**Navigating the Regions**

On the shaded relief map of Arizona, you can click your mouse button when the cursor is over northern, northwestern, central, or southern Arizona, and you will bring up another, more detailed map for that part of the state.

Move your cursor across the more detailed, regional map. Anywhere the cursor changes to a little hand, you may bring up a color photograph of this area by clicking your mouse button. Before you click, the status bar at the bottom of your browser shows the name of the photograph that will be displayed for that area. This will help you keep track of whether you have already seen this photograph. If you try to go to a photograph and get any kind of a “not found” error message, simply go back to the map and try a different photograph (location).

To return from a color photograph to the map, click the back button on your browser. If you want to return to the map of all of Arizona, click the back button while viewing one of the detailed maps, or follow the links below the regional maps, or start again at my home page.
Exploring Northern Arizona

? Begin with the detailed map of northern Arizona and examine the scenery by viewing some photos. Look at each photo carefully, making as many observations as seems appropriate, given the time available for the entire project. List your descriptions in your notebook.

? As you examine successive photos, determine what is similar and what is different between this photo and any previous ones for this region. Determine whether you have seen enough photos to characterize the entire Northern Arizona region.

? When you decide you have seen enough photos for the region, write your general description for the region, noting which aspects seem consistent and which ones are more variable.

**COMPLETE YOUR DESCRIPTION OF NORTHERN ARIZONA BEFORE CONTINUING**

The Other Regions

? Repeat this process for the other three regions (southern, central, and northwestern Arizona), and summarize general characteristics of each region.

**COMPLETE YOUR DESCRIPTION OF ALL THREE OTHER REGIONS BEFORE CONTINUING**

Comparing the Regions

? Identify similarities and differences between the regions, and pose questions about what you see.

? Propose alternative explanations to explain the differences. Sketches in your notebook may help you visualize alternatives.

? For each explanation, list any predictions or possible tests you could make that would support or not support that explanation.

? What additional information would you like to have in order to support or not support a possible explanation?

What is Due

For this part of the assignment, you will need to:
1. Make observations of scenery in different parts of the state (as described above),
2. Generalize your observations to a short bullet list, under the heading “Regional Observations”, summarizing the main characteristics of each region (northern, northwestern, central, and southern Arizona),
3. Identify similarities and differences between the regions, and construct a bullet list, under the heading “Similarities and Differences”, outlining some of these,
4. Under the heading “Possible Explanations”, list at least one possible explanation to explain the differences you identified. The thought process counts much more than any “right” answer so don’t be shy!