6TH GRADE – GEOLOGY CENTERS ACTIVITY

INFORMATION ORGANIZER AND INSTRUCTIONS

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| Center # | Instructions |
| 1 | ***Vocabulary Foldable / Vocabulary Connections***   1. Familiarize yourself with the vocabulary cards. 2. Study the words. 3. List the words on the foldable under “vocabulary”. 4. Discuss with your partners what you think each word means and record your group’s definition in the next column for each word. You can also use a graphic to help define some of your words. (A textbook is provided to help you with a word if it is too hard to define on your own; however, DO NOT copy the definition from the book.) 5. Play with the cards by grouping words together.  * Put cards in groups of two or three. * Each group of cards must have a connection. * You should be able to describe this connection to your group and to the teacher. |
|  | Required Materials for Center 1:   * Vocabulary Foldable Template (one column for words, other column for definition) * Index cards with vocabulary (tectonic plates, crust, volcano, superposition, lithosphere, rock cycle, geologic timeline, isostasy, Pangaea, fossil, biosphere, continental drift, earthquake) * Goals and Objectives (Goal 3 and Goal 5 for 6th grade, Goal 3 for 7th grade, Goal 3 and Goal 5 for 8th grade) |
| 2 | ***Volcano Video on NOVA***  Open Internet Explorer. Enter the following web address:  <http://www.teachersdomain.org/asset/ess05_vid_hawaii/>  Answer the questions along with the video.   1. How are the volcanoes on the Hawaiian Islands different from other volcanoes? 2. What is magma called when it erupts on the Earth’s surface? 3. What is considered the best explanation for the origin of the magma that forms the Hawaiian Islands (and explains why all the other volcanoes in the Hawaiian Island chain are now extinct or dormant)? 4. Mauna Loa and Kilauea are the main volcanoes on the big island of Hawaii. Which is the largest? Which is the oldest? 5. Loihi is the youngest of the Hawaiian volcanoes, although it is not yet an island. Where is it located? |
|  | Required Materials for Center 2:   * Computer and Internet Access * Question sheet for video |
| 3 | ***Exploring Soil Samples***   1. Observe each soil sample. 2. Record the properties of each soil sample in the chart. Use descriptive words or diagrams. 3. Properties include: color, feel, moisture, texture, living things, non-living things. 4. <http://www.ncpublicschools.org/curriculum/science/units/middle/> |
|  | Required Materials for Center 3:   * Chart to record soil properties. * Three containers soil of different types (recommend potting soil, clay, sand), goggles, aprons, Styrofoam plates, eyedropper, cup water, magnifying glass, tweezers |
| 4 | ***Rocks and Minerals Testing Kit***   1. Read pages 4-6 in the Rocks and Minerals delta reader booklet with your group. 2. Discuss with your group the six mineral properties mentioned in the reader to make sure that you understand each property. 3. Follow the instructions to complete the “Rock or Mineral?” activity, starting with Step 1. 4. Record your answers on your own handout. 5. Safety note: Wear gloves, apron and goggles when using hydrochloric acid to test effervescence. |
|  | Required Materials for Center 4:   * Rocks and Minerals Testing Kit from Fisher Scientific / NeoSci (all materials included) * Handout of Activity 1 from Rocks and Minerals Testing Kit * Rocks and Minerals Delta Science Reader * Goggles, Aprons, Gloves * Plates / trays / paper for placing rock and mineral samples |
| 5 | ***Earth Processes Kit***   1. Read pages 7-10 of the Earth Processes Delta Science Reader. Answer the following questions with your group on a blank sheet of paper. 2. What are the three types of plate boundaries? 3. What geological processes occur at each type of plate boundary? 4. What causes earthquakes and how are they measured? 5. Where and how do volcanoes form? 6. Using Activity sheet 10A follow the instructions to plot locations of earthquakes and volcanoes on the map provided. 7. Answer the questions on Activity sheet 10A when you finish plotting all the earthquakes and volcanoes. 8. Optional activity: Visit Discovery Channel online and watch one of the following two videos and discuss what you viewed with your group. 9. “The Ring of Fire: Understanding Volcanoes” (1:08) 10. “Ring of Fire: Raging Planet” (1:38) |
|  | Required Materials for Center 5:   * Earth Processes Delta Science Kit * Earth Processes Delta Science Readers * Red and blue crayon, red and blue pencils * Activity Sheet 10A, 10B and 10C * Textbook |
| 6 | ***Cartoon Interpretations***   1. Choose one cartoon. (Sources for cartoons vary. Choose cartoons depicting environmental situations.) 2. Analyze each cartoon in regards to one or all of the following concepts:  * Population growth / overpopulation * Human impact on land * Urbanization * Availability of natural resources  1. Fill in the information on the “Cubing Prewriting Activity” organizer. 2. Roll a cube to indicate which box to complete first. After a box is completed, roll the cube again to direct which box to complete next. 3. When your graphic organizer is complete, turn over the paper and write an essay summarizing how the cartoon you chose depicts one or all of the concepts listed above. |
|  | Required Materials for Center 6:   * One or more cartoons * “Cubing Prewriting Activity” Organizer Template (Source: “Reading and Writing In the Science Classroom” handbook provided with Glencoe ancillary materials, p. 67). * Cube (Source: <http://historytech.wordpress.com/2008/05/15/tip-of-the-week-cubing/> ) |
| 7 | ***Common Assessment***  Competency Goal 3: Geology   1. Collaborate to read and answer each question. Circle the answer. 2. Highlight any words that you do not understand. 3. Look up those words in the dictionary and write their definition on your test paper. |
|  | Required Materials for Center 7:   * Common Assessment on Competency Goal 3 (Geology) * Textbook and dictionary * Pencils and highlighters |
| 8 | ***Exploring SMART Exchange***   1. Open Internet Explorer. 2. Enter the following web address: <http://exchange.smarttech.com/#tab=0> 3. Click on “Standards Correlated Lessons” on the top menu. 4. Under Standards select North Carolina Standard Course of Study then select Grade 6 and Science – click View. 5. Notice the blue “View Resources” link beside those objectives for which prepared SMART lessons are available for your use. 6. Scroll down to find Goal 3 (Geology). 7. Explore various SMART lessons and make note of several you may wish to come back to at a later time. |
|  | Required Materials for Center 8:   * Computer / Internet Access * Notebook / SMART board Access * Jump drive / Email Access |
| 9 | ***Formative Assessment Probe***   1. Choose one assessment probe to read and complete. 2. Discuss your response with your group before writing. 3. Use the blank paper for brainstorming. |
|  | Required Materials for Center 9:   * Copies of Assessment Probes (Source: Keeley P., Eberle F., Dorsey C. Uncovering Student Ideas in Science: 25 Formative Assessment Probes. 2005. NSTA Press. Vol. 1 and Vol. 3.) * Blank paper * Pencils |
| 10 | ***Earth Processes Kit***   1. Follow the instructions on Activity sheet 11 to complete the “balancing act”. Answer the questions as you proceed through the activity. 2. When finished with the activity, clean up your station. 3. In your textbook, read pages 114-115. Discuss with your group how the reading relates to the activity you just completed. 4. On the back of Activity sheet 11, illustrate with a drawing or diagram your understanding of the word *isostasy.* |
|  | Required Materials for Center 10:   * Earth Processes Delta Science Kit * Activity Sheet 11 * Textbook * Wooden blocks (one small and one large) * Container for water, pitcher with water * Paper towels |