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| Exploring Virginia’s Regions | |
| **Target Audience** –Virginia Studies Time required – 30 minutes | |
| **Activity:** In this map-based investigation students will explore specific places in the various regions of Virginia as they interpret topographic maps. | |
| **Standards** | **Students will understand that**  There are an infinite number of geographic regions.  The physical environment influences human activity.  The modification of the environment may generate positive and negative consequences.  Measurements can be precise but not accurate. |
| **Learning Outcomes**   * Identify physical characteristics of Virginia’s physical regions * Interpret topographic maps and describe the terrain. * Estimate and calculate differences in elevation. * Identify examples of human interaction with the environment and predict consequences of those changes. | |
| **Map URL:** <http://arcg.is/1hhwSB6> or  <http://kempsodc.maps.arcgis.com/home/webmap/viewer.html?webmap=d9b5b684ae02499d902de9c7ad936f3e> | |
| **Observe**: What criteria were used to establish Virginia’s physical regions?? | |
| 🡪 The map first opens with the legend visible. Remember to use the shift and draw a box technique to zoom into specific areas of the map.  ? How many regions does the map depict? Name the regions in west to east order?  ? Which of the regions has a non-contiguous area?  ? Which would be more useful in describing the borders of the regions: latitude or longitude? Why?  ? What physical attribute was used to form these regions?  🡪 Click Modify Map and then click the Contents button. Uncheck the individual regions, e.g., Coastal Plain etc.  🡪 Check (turn on) the physical regions layer. Check the Map Notes Layer.  🡪 Click on each of the square markers on the map.  ? What can you learn about the regions from the images? | |
| **Describe:** How do water resources differ among the regions? | |
| *Regions differ based on the criteria used.*  🡪 Check the World Hydro Reference Overlay layer. Make sure the only other layer turned on is Virginia Borders.  ? How many water (hydro) regions are within Virginia?  ? Do the hydro regions conform to state borders? Why or why not?  ? What physical attribute was used to form these regions?  ? Describe how the hydro regions differ from the physical regions. (Turn on layers as needed.)  ? Why might that be?  ? Where do the rivers originate? In which direction do most of the rivers flow? | |
| **Compare:** How are the regions alike and different? | |
| ? Which region has the largest land area? The smallest?  ? How does the Valley and Ridge region differ from the Blue Ridge Mountain region?  ? Is more land east or west of the fall line? Why might that be? | |
| **Analyze:** How does topography influence what occurs in a place? | |
| *Topographic maps show great detail about an area. Red stands for urbanized areas. Purple indicates maps that have been photo revised from aerial photography. Individual buildings are symbolized on the maps. You will use bookmarks to zoom into specific area specific sites.*  🡪 Turn off all layers except Map Notes and Physical Regions.  🡪 Click Bookmarks at the upper right of the map window. Select Burke’s Garden.  ? How did the view of the area change?  ? Describe the site (local characteristics) of Burke’s Garden.  ? Does the image from the pushpin agree with your description? Why or why not?  ? If you were traveling by car, what would be the easiest way to get to Burke’s Garden. Change the Basemap to Streets to determine the accuracy of your answer.  🡪 Change the Basemap to Imagery. Which map provides more detail—topographic or imagery? What criteria did you use to make your decision?  Change the Basemap to USA Topo Maps. Go to Bookmarks, select Pocohantas, Virginia.  *Contour lines show elevation and have key lines labeled with distance above sea level in feet. A elevation number with BM next to it indicates the elevation of the verified Base Marker. The closer the contour lines, the steeper the terrain.*  ? What is the average elevation of Pocahontas, Virginia?  ? In what region is Pocahontas located?  🡪 Use the pushpin to learn more about the town of Pocahontas.  ? How many people live here? What was the major economic activity of the town? Which estimate is likely to be more accurate?  🡪 Click the blue square pushpin in the southwestern portion of the Piedmont region.  ? Is the activity pictured here unique to this region? In which other regions might it occur?  🡪 Click the bookmark for Smith Mountain Lake. How was Smith Mountain Lake formed? In which direction is the lake?  ? Are the mountains in this area steep? Find the radio tower. Why is it located there?  ? Do you think many people live in this area? What Basemap would assist you in checking your prediction?  ? What are some possible consequences of the creation of Smith Mountain Lake?  🡪 Change the Basemap back to USA Topo Map. Click the Bookmark for the Blue Ridge Parkway. Pan through the Blue Ridge Mountain Region.  ? How far apart are the contour lines here? How does elevation differ on the eastern and western sides of the Blue Ridge Parkway? What evidence do you have to support your conclusion?  🡪 Select the Bookmark for James River in Richmond.  ? What evidence do you see of human modification of the environment?  ? What is the highest elevation shown in this segment of the map? How far apart are the contour lines here?  ? Use the measure tool to measure the width of the James at the Huguenot Memorial Bridge. What unit of measurement did you use?  ? Click the bookmark for the James River Bridge. Pan to the upstream area near to Mulberry Island.  ? How does the James River differ here? Are there really buildings in the water?  ? Based on the information in the map what is a shoal? Should river barge captains avoid them? Why or why not?  🡪 Use the measure tool to measure the width of the James River at the James River Bridge. Compare your measurements with a classmate.  ? Why might the measurements differ? For the class’s results, compile an average, median, mode for the measurements.  🡪Measure the width of the James between Newport News from Newport News Point to the Water Tanks just east of the Base Marker in Suffolk. Compare your measurements with a classmate. Why might they differ? For the class’s results, compile an average, median, mode for the measurements  🡪 Measure the width of the James between Newport News Point to the Tidal Flats in Isle of Wight. Compare your measurements with a classmate. Why might they differ? For the class’s results, compile an average, median, and mode. | |
| **Reflect:** How does the physical geography of a place influence what happens there? | |
| Write three conclusions based on what you learned about the human and physical characteristics of Virginia’s regions.  How does the basemap influence your analysis of a place?  *Explore More*  What evidence of human interaction is included in the Human Interaction Bookmark? Can you find another place on the map that shows human interaction? | |