| | |
|---|---|
| **Title** | Module 01 - Map Skills: Key to the World |
| **Subject:** | Social Studies |
| **Grade Level:** | Fifth Grade |
| **Author(s):** | Valerie Mullins vlmullin@access.k12.wv.us |
| **Big Idea:** | Map Skills |

**Next Generation Content Standards and Objectives**

| NxG ID | NxG Objectives |
|---|---|
| **SS.5.G.4** | measure distances in latitude and longitude using a scale on a variety of maps and globes, and transfer the concept of cardinal and intermediate directions to describe the relative location of countries by hemisphere and proximity to the equator. |
| **SS.5.G.8** | read and interpret information from photographs, maps, globes, graphs, models and computer programs. |

**21st Century Learning Skills & Technology Tools:**

| | |
|---|---|
| **Information and Communication** | 21C.O5-8.1.LS3 Student presents thoughts, ideas, and conceptual understanding efficiently, accurately and in a compelling manner and enhances the oral and written presentation through the use of technology. |
| **Thinking and Reasoning Skills** | |
| **Personal and Workplace Skills** | |

**Focus (or Guiding) Questions:**

**Focus (or Guiding) Questions:**
What are the cardinal directions?
What are the intermediate directions?
Which directions do the lines of longitude run?
Which directions do the lines of latitude run?
Can you find the equator on a globe?
On a globe, where is the prime meridian located?
What is a hemisphere?

**Know:**
Identify and use a compass rose to find cardinal directions and Intermediate directions.
Definition of a hemisphere.
Location and names of hemispheres on a globe or map.
Determine distances using a scale.
Apply scale distances to a map or globe.

**Do:**
Interpret and draw conclusions using maps, graphs, charts, etc.
Measure distances using lines of latitude and longitude.
Read, interpret, and measure distances using a scale.
Locate countries in relationship to equator.
Locate countries in relationship to hemispheres.
Identify direction using cardinal and intermediate directions.
Locate and identify hemispheres on a map, globe, etc.
Determine distances using a scale.

**Introduction:**

Prior to activity go to **Classroom Map Template** use the key to help you design your basic classroom setup. Use copy/paste for ease of use. Provide something interesting for a treasure.

Pass out map; explain that they have to follow the map to find the treasure. Allow students time to study the map, and then allow them to hunt for treasure! You may want to make three or four different maps depending on the number of kids and provide different treasures.

In partners, have students think/pair/share strategies they used to find the treasures. Discuss the students' strategies as a group.

| | |
|---|---|
| **Academic Vocabulary:** | Research has shown that the least effective strategy for teaching vocabulary is having students look up words and write the definitions. For quality, research-based strategies for teaching content vocabulary, see the Teach 21 Strategy Bank at http://wvde.state.wv.us/strategybank/vocabulary.html.<br><br>intermediate directions<br>cardinal directions<br>compass rose<br>equator<br>prime meridian<br>latitude<br>longitude<br>hemisphere<br>scale<br>key |
| **Manage the Process:** | *Materials:* 2 oranges, Sharpie marker,<br><br>*Differentiated Instruction*: Group students based on ability level, such as lower level with two middle level students and one higher level student.<br><br>***Stage 1: Parts of a Map***<br>See PowerPoint **Parts of a Map**. Discuss each element and the purpose of the element with students. Pay specific attention to scale, as it is a difficult concept for students to understand in terms of making their own, you may omit this part from the map making activity if deemed necessary.<br><br>Introduce the Map Making Activity. Review the **Rubric** and **Checklist** for the assignment. Students can work in pairs to share ideas. Have students share their maps on the overhead/Elmo. Discuss similarities and differences between maps.<br><br>As an extension activity, have students to create a map of the school incorporating the elements of a map.<br><br>JASON http://www.jason.org/digital_library/10407.aspx Review *Parts of a Map* on the JASON website independently as a class. Would be helpful as a reference during the map making activity. Site also reads text to students in a natural conversational tone to help differentiate instruction for students with reading difficulties.<br><br>*Cyber Squad and the Eye of Rom* http://pbskids.org/cyberchase/games/inverseoperations Use the cardinal directions to help find the pieces of the Eye of Rom in the maze. Be careful! You have to know the opposite directions to make it back out. This activity reinforces the concept of cardinal directions and presents it in an interesting format.<br><br>*Blank Compass Rose*: http://www.enchantedlearning.com/label/geography.shtml<br>Use this worksheet to check for understanding regarding the cardinal and intermediate directions or use as a group review on the ELMO/overhead.<br><br>***Stage 2: Latitude and Longitude***<br>Show the following online overview to students, *Latitude and Longitude*.<br>http://www.youtube.com/watch?v=swKBi6hHHMA This video discusses latitude, longitude, and locations of prime meridian and equator. It also explains how to find coordinates. It is a YouTube video, so it needs to be downloaded at a different location other than a school network.<br><br>Activity: *Crack the Code*<br>http://www.nationalgeographic.com/xpeditions/activities/01/crackcode.html – In this online activity, students are challenged to solve a crime using a code written in latitude and longitude. This self-checking activity provides additional practice with latitude and longitude.<br><br>*Latitude/Longitude Self-Checking Activity*: Provides online guided practice for latitude and longitude as well as equator and prime meridian reinforcement. http://olc.spsd.sk.ca/DE/k9mod/Mapskill/mod3fl5.swf<br><br>*Mapping Lab*- free registration |

http://www.jason.org/gated/digital_library/pages/DigitalLibraryResourceView.aspx?rpid=10497

This site provides an exciting map activity where students develop their own treasure map, including map parts, determine scale, latitude and longitude. I would incorporate this activity after learning latitude and longitude.

*Latitude and Longitude Game*: http://www.purposegames.com/game/longitude-and-latitude-quiz
Additional online longitude and latitude activity to reinforce the concept, the activity is self-checking.

*Kids Geo Latitude and Longitude*: http://www.kidsgeo.com/geography-games/latitude-longitude-map-game.php
Help Hannah find the right location based on latitude and longitude.

***Stage 3: Hemispheres***
You will need two oranges. Prior to the lesson, make a dotted line around the middle of both oranges with a permanent marker and refer to the lines as the equator or prime meridian to provide a visual cue and reinforcement. Introduce the concept of hemisphere. Write the word on the board. Have students to define what "sphere" means. Write that on the board, as well. Cut the orange in half, tell the students you have one hemisphere of an orange, elicit a clear definition that a hemisphere is a "half of a sphere" and that "hemi" means "half". Explain that the Earth is divided into four hemispheres. Show one orange in the North/South Hemisphere position. Tell students to visualize that the orange represents the Earth. Explain that the orange is divided on the Equator and elicit the names of the hemisphere. Hold the second orange where the dotted line represents the prime meridian. Have students to identify the eastern and western hemispheres. Emphasize the use of cardinal directions for hemispheres.

Use computer and ELMO to show the *Online Hemisphere Model* http://www.worldatlas.com/aatlas/hemispheres.htm http://www.worldatlas.com/aatlas/hemispheres.htm. Model the locations of the equator and prime meridian on the model and emphasize the importance of the compass rose in determining the hemispheres and relate the hemispheres to the compass rose.

Have students to complete the *Hemisphere Foldable Activity* provided on the Teach 21 website http://wveis.k12.wv.us/Teach21/public/cso/popup_voc.cfm?cos_xid=1965 locate the link at the bottom of the page, activity templates, pictures, and directions are included.

*Label the Continents*: Students separate the map into hemispheres, and then label the continents.
http://www.enchantedlearning.com/geography/label/labelcontinents.shtml
In pairs, students will refer to the map and write directional clues that use the compass rose, equator, prime meridian and equator as reference points. Trade clues with another group and see if they can locate the continents based on your clues.

*Blank Map Template* http://www.nationalgeographic.com/resources/ngo/education/xpeditions/atlas/ Use for latitude and longitude and country location by hemisphere and equator/prime meridian proximity, it is good for a visual.

***Stage 4: Using a Scale to Measure Distance:***
To assess the prior knowledge of your students, have students to brainstorm ideas where they have seen or would use scale to reduce or enlarge something in their daily lives. Write these ideas on the board.

*Map Adventures* http://egsc.usgs.gov/isb/pubs/teachers-packets/mapadventures/malessn7.html The lesson plan at *Map Adventures* provides a colorful visual and simple explanation for the need for scale and how scale is related to the map and actual distance. Model using a ruler and show students how to use the ruler to assist with finding distance using a scale. Depending on the scale, students will use inches or centimeters. Emphasize careful reading of the scale units to ensure correctness.

*Additional Map Scale Activity* - Map Scale Lesson Plan http://illuminations.nctm.org/LessonDetail.aspx?ID=L516
This lesson plan details activities to teach using a scale to measure distances.

Cardinal/Intermediate Directions Game- Have students stand up with arms outstretched towards the wall. Call out cardinal and intermediate directions. Have students to move their arms like they are a weathervane, with right arm pointing in the correct direction. May use tape to create a compass rose on the floor for quick reference for students. Reinforces skill in a kinesthetic manner.

**Attachments:**

**Class Map Template**
**Map Skill PowerPoint**
**Map Checklist**
**Map Rubric**

**Electronic Resources:**

| Acquisition of Background Knowledge | Suggestion for Utilization of Resource Cited |
|---|---|
| Latitude and Longitude http://www.youtube.com/watch?v=swKBi6hHHMA | Latitude and Longitude: This video discusses latitude, longitude, and locations of prime meridian and equator. It also explains how to find coordinates. |
| Enchanted Learning http://www.enchantedlearning.com/label/geography.shtml | Enchanted Learning: Label Me worksheet for a compass rose. |
| World Atlas http://www.worldatlas.com/aatlas/hemispheres.htm | Online Hemisphere Models: This site shows a visual on how the hemispheres are divided. |
| NCTM Website http://illuminations.nctm.org/LessonDetail.aspx?ID=L516 | Map Scale Lesson Plan: This lesson plan details activities to teach using a scale to measure distances. |
| Map Adventures http://egsc.usgs.gov/isb/pubs/teachers-packets/mapadventures/malessn7.html | Map Adventures – This site provides an overhead map of a park and explains the concept of scale. Can be printed or used online |

| Expansion of Knowledge | Suggestion for Utilization of Resource Cited |
|---|---|
| National Geographic: Crack the Code http://www.nationalgeographic.com/xpeditions/activities/01/crackcode.html | Crack the Code: Self-Checking activity where students can practice using latitude and longitude to crack the code. Click on “scrap of paper” hyperlink to get the coordinates. |
| Latitude and Longitude http://olc.spsd.sk.ca/DE/k9mod/Mapskill/mod3fl5.swf | Latitude/Longitude Self-Checking Activity: Provides Guided Practice for Latitude and Longitude as well as equator and prime meridian reinforcement. |
| JASON http://www.jason.org/digital_library/10407.aspx | JASON: Site to reinforce map parts, including latitude and longitude. It also reads the text in a |

| | |
|---|---|
| | conversational tone to students! |
| JASON: Mapping Lab http://www.jason.org/gated/digital_library/pages/DigitalLibraryResourceView.aspx?rpid=10497 | Mapping Lab, free registration. Provides exciting map activity, where students develop their own treasure map, including map parts, determine scale, latitude and longitude. Would use after learning latitude and longitude. |
| West Virginia Department of Education http://wveis.k12.wv.us/Teach21/public/cso/popup_voc.cfm?cos_xid=1965 | Hemisphere Foldable: Teach21 provides the hemisphere template and directions for the activity. |
| Enchanted Learning http://www.enchantedlearning.com/geography/label/labelcontinents.shtml | Label the Continents: Students separate the map into hemispheres, and then label the continents. |
| National Geographic http://www.nationalgeographic.com/resources/ngo/education/xpeditions/atlas/ | Blank Map Template: Use for latitude and longitude and country location by hemisphere and equator/prime meridian proximity. |
| Latitude and Longitude Game http://www.purposegames.com/game/longitude-and-latitude-quiz | Latitude and Longitude Game: Online longitude and latitude activity – self-checking. |
| Kid's Geo: Latitude and Longitude http://www.kidsgeo.com/geography-games/latitude-longitude-map-game.php | Kids Geo Latitude and Longitude: Help Hannah find the right location. |
| PBS Kids: Cyber Squad and the Eye of Rom http://pbskids.org/cyberchase/games/inverseoperations/ | Cyber Squad and the Eye of Rom – Use the cardinal directions to help find the pieces of the Eye of Rom in the maze. Be careful! You have |

| | | |
|---|---|---|
| | | to know the opposite directions to make it back out. |
| **Products, Investigations, and/or Assessments:** | Community Map - Have students to create a map of their community using important map features such as: compass rose, key/legend, title. Students can use Paint, Microsoft Word Shape Art, or different media such as paints, crayons, markers, collage, found items, etc.<br>School Map: Have students to create a school map using features of maps.<br>Hemisphere Foldable as assessment.<br>Assess locating continents in reference to equator, prime meridian, etc. by having students write directions using these points as reference. | |
| **Student Reflection:** | How are map skills useful to you in your daily life? Why is it important to be able to read a map? | |
| **Teacher Reflection:** | As a result of this lesson, students should develop a deeper and more comprehensive understanding of map skills that will enable them to read a variety of maps as well as to interpret various graphic representations of maps. | |
| **Key Word Search Fields** | intermediate directions, cardinal directions, compass rose, equator, prime meridian, latitude, longitude, hemisphere, scale, key | |