

STEM Lesson – Social Studies and Science (taught separately or in conjunction with each other)

Introduction to Orienteering and the Orienteering Map

Essential Question: How do you identify types of map features?

Objective: Students will be able to interpret map symbols to identify terrain features.

Standards:

SS.6.G.1.5:

Use scale, cardinal and intermediate directions, and estimation of distances between places on current and ancient maps of the world.

SS.6.G.1.Su.e:

Understand how to use maps and other geographic representations, tools and technology to report information.

Materials:

- Laptop – day 1
- Projector – day 1
- Student handouts – day 2
- Ruler and colored pencils – day 2
- Handout: **Hillsborough River – Nature’s Classroom, Station #108**
- Handout: **Map Skills – Nature’s Classroom**

Set-up / Prep Time: 10 to 15 minutes

Lesson Duration: Two class periods (this lesson can be taught on its own or in conjunction with Lesson 6, Climate Found in Florida Science Fusion, Holt McDougal, pages 274 to 287).

Procedure:

1. To engage the students, project the website: (review before lesson)
<http://www.hillsborough.wateratlas.usf.edu/resourceprogram.aspx?aid=28&stationid=108>
The title of this website is “Hillsborough River – Nature’s Classroom, Station #108.”
2. Use provided handout “**Hillsborough River – Nature’s Classroom #108**”
3. **STEP 1** -View Map – Students will write inferences about what is observed, 3 - 5 minutes.
4. **STEP 2** - Move cursor over the “N” (North) and click. Students will write inferences on what is observed, 3-5 minutes (STEP 2).
5. **STEP 3** - Click aerials. Students will compare/contrast Step 1 to Step 3. (3 - 5 minutes)
6. **STEP 4** - Students will compare/contrast this STEP 2 to STEP 4. (3 - 5 minutes)
7. **STEP 5** - Click on Photos. Students will write a short 1-3 sentence summary on where these photos would be found in STEPS 1 - 4. (3 - 5 minutes)
8. Review answers (15 to 20 minutes). Use Round Robin/Rally Robin strategies or your own. **End Day 1.**
9. **Day 2.** Introduce map skills – see handouts labeled “**Map Skills – Nature’s Classroom.**” Review both pages. Review terms on second page. Students will complete directions 1 – 4 in handout. Assistance will be needed throughout but especially in orienting the compass rose. (25 – 30minutes)
10. Students will answer questions 1 - 7 on second page. (10 minutes)
11. Review answers 1 - 6. Use Rally Coach or your own strategy. (10 minutes)

Name _____ Date _____ Period _____

Hillsborough River – Nature’s Classroom, Station # 108

STEP 1 - Write inferences on your observations: (View of Map)

STEP 2 - Write inferences on your observations: (letter N)

STEP 3 – Compare and contrast Step 1 to Step 3: (aerials)

STEP 4 – Compare and contrast Step 2 to Step 4.

STEP 5 – Justify where you would find the location(s) observed in the photos.

Name _____ Period _____ Date _____

MAP SKILLS – NATURE’S CLASSROOM

Plotting Coordinates



Directions: Read both sheets before starting.

Materials: Ruler and colored pencils.

1. Starting at the top left hand corner on the y axis and working towards the bottom left hand corner, label every centimeter with a corresponding letter starting with the letter A (at the first centimeter).
2. Starting at the bottom left hand corner on the x axis and working towards the bottom right hand corner label every centimeter with a corresponding number starting with the number 1 (at the first centimeter).
3. Draw a **compass rose** on the right side of this picture.
4. Draw a **map key** on the left side of this picture. Use colored pencils. (at least three features)

Name _____ Period _____ Date _____

MAP SKILLS continued – NATURE’S CLASSROOM

The numbers and letters along the bottom and up the side of the map, form the letter-number grid that can help you locate places. The place where two traced lines would cross is called a **grid location**. Each letter / number combination, forming a square of space on the map, is called a **coordinate**. A coordinate can be used to locate a place on the map. Another important symbol on a map is a compass rose. A compass rose shows where the **cardinal directions** (north, south, east and west) are on the map. It sometimes shows where the **intermediate directions** (northeast, southeast, southwest and northwest) are. The meanings of other symbols on the map can be found in the **map key**. A map key may show manufacturing, farming, forestry, fishing, rivers, streams, and lakes.

Directions: Use the map that you just made to answer the following questions. When answering coordinate problems letters go first and numbers go second.

1. What feature is found at coordinate E5? _____
2. What feature is found at coordinate D11? _____
3. What feature is found at coordinate D5? _____
4. What are the coordinates for Nature’s Classroom Park label? _____
5. What are the coordinates for the Pavillions label? _____
6. What are the coordinates for the Boardwalk label? _____
7. If you were standing beside the welcome center, plot the quickest route to get to the Boardwalk (A4). Use coordinates and cardinal directions.
