

The Windy Pirate

Global Winds Lesson Plan by Pirates

Argh!!!!

Goal: The students will create a lesson plan that shows their understanding of the movement of air. This includes –

- location and causes of global wind patterns
- effects of global wind patterns on ocean movement and environment
- effect of the Coriolis Effect on ocean and wind movement
- how the wind patterns affect the voyage of sail driven vessels

Role: Students are acting as pirate instructors of global wind patterns.

Audience: The target audience is student pirates.

Situation: You are provided information about global wind patterns, as well as the Coriolis Effect. With this, you are to teach the up and coming pirates how to maneuver their wind driven ships on the oceans. You should be able to explain which areas are favorable for ships, explain which are not favorable, and explain why for each one. You, as instructors, should also “teach” how the Coriolis Effect affects ocean and wind movement. Your students should also learn how the global wind patterns affect weather in the areas, as well as how the patterns affect ship’s journey.

Product: Your teaching team must present an entire lesson plan. The lesson plan will include a sponge/attention grabber, lesson, classwork, and homework. Because you are pirates, some sort of map activity is expected. Your information should be accurate, and your student pirates should be involved with the lesson.

Standards: A rubric is attached.

GRASPS

The Windy Pirate

Tiers

Students may be grouped accordingly after evaluating a pre-assessment. You may use different names for the groups, such as colors – Red Tier (Tier 1), Blue Tier (Tier 2), and Green Tier (Tier 3). Groups may comprise of 2-4 students.

Tier 1 – Scored 0 - 64% on the pre-assessment

Tier 2 – Scored 65 - 89% on the pre-assessment

Tier 3 – Scored 90% or higher on the pre-assessment

Tier 1 – Students will be provided with a list of required concepts and terms expected. Students will use a template of the lesson plan to organize their data. Lesson plan will be rewritten in ink or typed using a word processor program. Once completed, products include the lesson plan and a visual aid. Visual should demonstrate the movement and applications of global winds. Students may choose to use poster boards or construction paper. Lesson plan will be videotaped.

Tier 2 – Students will be provided with a list of required concepts and terms expected. Lesson plan will be rewritten in ink or typed using a word processor program. Once completed, products include the lesson plan and a visual aid. Visual should demonstrate the movement and applications of global winds. Students may choose to use PowerPoint, poster boards or construction paper. Lesson plan will be videotaped.

Tier 3 – Students must research the movement and applications of global winds. Using a graphic organizer, students will create a lesson plan. Lesson plan will be rewritten in ink or typed using a word processor program. Once completed, products include the lesson plan and a visual aid. Visual should demonstrate the movement and applications of global winds. Students are to compile their information into a lesson plan that will be videotaped.

Other Internet websites that could be integrated are

- Voki – an avatar “presents” the information. There are time limits to the presentation. (www.voki.com)
- Glogster – an online poster maker (www.glogster.com)

As an extension for all students, the information from the forecasts could be added into a class blog for sharing with others. This is a great opportunity for students to collaborate with students across the nation, as well as community members or scientists.

Name _____ Class _____ Date _____

The Windy Pirate

Argh!!! The year is 1573, and exploration of the “New World” has taken off. Even pirates are excited – more loot and adventure!!!

The newest crop of pirates seem confused about the whole global winds concept, so you and your first mate are teaching classes about the windy issue. Your lesson should have the following parts

- Sponge/ attention grabber
- Information about global wind systems, including maps
- Classwork
- Assessment
- Homework

The topics you should cover in your lesson are

- Locations of global wind patterns –

- Causes of global wind patterns –

- How the wind patterns affect ocean movement –

- Effects of the Coriolis Effect –

- Effects of the wind patterns on atmospheric conditions (rain, storms, etc.) –

- Effects of the wind patterns on the environment (land and ocean) –

- Effects on wind driven boats and their crew –

Be creative, and think about the resources you have to use to instruct the young pirates.

Good luck!!

Brainstorming/Idea Graphic Organizer

Sponge/ attention Grabber	
Information (lecture)	
Classwork	
Assessment (Informal or formal)	
Homework	

Lesson Plan : The Windy Pirate

Student Name: _____

Class _____

Date _____

CATEGORY	4	3	2	1
Lesson Plan	All components of a lesson plan are apparent - sponge, lesson, classwork, assessment, and homework. Demonstrates several integrations of real life contexts. High order thought is evident.	Most components of a lesson plan are apparent - sponge, lesson, classwork, assessment, and homework. Demonstrates some integration of real life contexts. Some high order thought is evident.	Some components of a lesson plan are apparent - sponge, lesson, classwork, assessment, and homework. Demonstrates a few integrations of real life contexts. Little high order thought is evident.	Very few to no components of a lesson plan are apparent - sponge, lesson, classwork, assessment, and homework. Demonstrates no integrations of real life contexts. No high order thought is evident.
Quality of Information	Information clearly relates to the main topic. It includes several supporting details and/or examples. Information is accurate.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples. Information is accurate.	Information clearly relates to the main topic. No details and/or examples are given. Information is mostly accurate.	Information has little or nothing to do with the main topic. Information is not accurate.
Diagrams & Illustrations	Diagrams and illustrations are neat, accurate and add to the pirate's teaching of the topic.	Diagrams and illustrations are accurate and add to the pirate's teaching of the topic.	Diagrams and illustrations are neat and accurate and sometimes add to the pirate's teaching of the topic.	Diagrams and illustrations are not accurate OR do not add to the pirate's teaching of the topic.
Student Engagement	All student pirates are engaged in the lesson. Wayward pirates are redirected.	Most student pirates are engaged in the lesson. Wayward pirates are redirected.	Some student pirates are engaged in the lesson. A few wayward pirates are redirected.	Very few to no student pirates are engaged in the lesson. Mayhem looms.

Points earned _____ out of 16

Grade _____



Correlated Literature (with Lexiles) (Audio capable)

(All literature can be found on the Galileo website unless otherwise noted.)

Vasquez, T. (2009). THE INTERTROPICAL CONVERGENCE ZONE. (cover story). *Weatherwise*, 62(6), 24. (Audio capable)

Brusso, C. (2012). "A World Without Wind." *Ask!*. Mar 2011: 6-10. *SIRS Discoverer*. Web.

Common Core

L6-8WHST2: Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

d. Use precise language and domain-specific vocabulary to inform about or explain the topic.

e. Establish and maintain a formal style and objective tone.

f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

L6-8RST1: Cite specific textual evidence to support analysis of science and technical texts.

L6-8RH2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.

Georgia Performance Standards

S6CS5. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

a. Observe and explain how parts are related to other parts in systems such as weather systems, solar systems, and ocean systems including how the output from one part of a system (in the form of material, energy, or information) can become the input to other parts. (For example: El Nino's effect on weather)

b. Identify several different models (such as physical replicas, pictures, and analogies) that could be used to represent the same thing, and evaluate their usefulness, taking into account such things as the model's purpose and complexity.

S6E3. Students will recognize the significant role of water in earth processes.

a. Explain that a large portion of the Earth's surface is water, consisting of oceans, rivers, lakes, underground water, and ice.

S6E4. Students will understand how the distribution of land and oceans affects climate and weather.

a. Demonstrate that land and water absorb and lose heat at different rates and explain the resulting effects on weather patterns.

b. Relate unequal heating of land and water surfaces to form large global wind systems and weather events such as tornados and thunderstorms.

c. Relate how moisture evaporating from the oceans affects the weather patterns and weather events such as hurricanes.