

INSPIRE GK12 Lesson Plan



windsLesson Title	Winds
Length of Lesson	50 minutes
Created By	Claire Babineaux
Subject	General Science
Grade Level	8th
State Standards	4.c
DOK Level	DOK 2
DOK Application	Identify Patterns, Categorize, Interpret
National Standards	D
Graduate Research Element	Although winds do not directly tie in to the graduate fellow's research, but the concept of the Coriolis effect is important in describing the currents associated with coastal processes.

Student Learning Goal:

The learning goal for the students in this lesson is to understand what wind is, what the components of wind is, the difference between local and global winds, and wind belts. The main focus of this lesson will be the defining terms and logics of wind.

State Standards:

4. Describe the Earth's System in terms of its position to objects in the universe, structure and composition, climate, and renewable and nonrenewable resources.

- c. Examine weather forecasting and describe how meteorologists use atmospheric features and technology to predict the weather. (DOK 2)
 - Temperature, precipitation, wind (speed/direction), dew point, relative humidity, and barometric pressure
 - How the thermal energy transferred to the air results in vertical and horizontal movement of air masses, Coriolis Effect
 - Global wind patterns (e.g., trade winds, westerlies, jet streams)
 - Satellites and computer modeling

National Standards:

D: Structure of the Earth System: Global patterns of atmospheric movement influence local weather.

Materials Needed (supplies, hand-outs, resources):

PowerPoint lesson, discussion questions for guided practice, Air gun for demo

Lesson Performance Task/Assessment:

The task/assessment for the students will be a PowerPoint lesson about winds, a guided discussion on winds that are associated with the weather (storms), and how we can measure them.



Lesson Relevance to Performance Task and Students:

Being in the Southeastern United States in Central Mississippi, the students have experienced many storms and storm related winds. It is important that while learning about the atmosphere, that they learn about weather factors and how these factors affect daily lives of people in the area in which they live.

Anticipatory Set/Capture Interest:

In order to catch the interest of the students, the teacher can show video clips of winds or they can do a short demo on wind using an air gun.

Guided Practice:

Following the PowerPoint lecture on Winds, components of winds, types and wind belts, the teacher can then proceed to lead the students in a discussion of winds. The following are some questions to consider:

1. In your own words, describe wind.
2. What causes wind?
3. What storms are winds associated with?
4. Can you see wind?
5. Can we measure wind?

Independent Practice:

For independent practice, the students will develop questions about wind to ask their fellow students during the classroom discussion for closure. The students should use the notes they took during the PowerPoint lesson and their book to help develop their questions.

Remediation and/or Enrichment:

Remediation: Individual IEP will be followed. Additionally, the teacher may have the students work together in pairs.

Enrichment: The teacher may have the students build a weather vane or an anemometer for a lesson extension.

Check(s) for Understanding:

In order to check for a thorough understanding of the concepts presented in this lesson, the following questions can be considered:

1. What is wind?
2. How do local and global winds differ?
3. Where is the major wind belts located?
4. What is the Coriolis Effect?
5. How does the Coriolis Effect affect air travel?



Closure:

The closure for this lesson can be a teacher led discussion on how winds apply to the graduate student's research and how winds can and are being studied further at Mississippi State University.

Possible Alternate Subject Integrations:

History: Winds have been documented for many years and that data can be found in history books, almanacs, and on government websites.

Teacher Notes:

The teacher should understand the data being presented enough to understand how to answer questions fielded by the students. For example, one of the more difficult questions asked is, "How does the Coriolis Effect affect air travel?". The answer to that question would be: if the earth did not rotate, the wind pattern would be straight south rather than to the right, therefore, air travel would be "shorter". But because we have the Coriolis Effect, an airplane leaving New York coming to GTR airport would be displaced to the right. In order to compensate for the Coriolis Effect, the same plane must go east over the Atlantic Ocean to then head West to GTR airport.