

Geographic Information Systems (GIS) & Global Positioning Systems (GPS)

Media Type: Microsoft® PowerPoint® Presentation

Duration: 36 slides

Goal: To provide students with accurate information about geographic information systems (GIS) and Global positioning systems.

Description: This production includes detailed information about the principles defined by the use of Geographic Information Systems (GIS) and Global Positioning Systems (GPS).

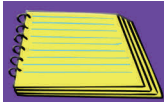
Objectives:

1. To analyze the principles of Geographic Information Systems (GIS).
2. To evaluate the principles of Global Positioning Systems (GPS).

Horizontal Alignment

Core-Subject Area	Foundation Concept	Basic Understanding
Language Arts	<i>Application of Writing Skills</i>	<ul style="list-style-type: none"> • Composition mechanics • Descriptive, informative, creative and persuasive writing • Organizing logical arguments • Brainstorming • Utilizing reference materials • Vocabulary enhancement
	<i>Analysis of Text & Information</i>	<ul style="list-style-type: none"> • Critical thinking • Creative thinking • Expression of thoughts and ideas • Communication skills • Developing listening and comprehension skills • Literary interpretation • Creating visual representations
	<i>Technology Applications in Literature</i>	<ul style="list-style-type: none"> • Utilizing document processing software • Utilizing presentation processing software • Internet-based research

Geographic Information Systems (GIS) & Global Positioning Systems (GPS)



Lesson Plan

Student and Teacher Notes are available to print in outline format. You can access these documents under the "Printable Resources" section. If student licenses have been purchased, an interactive version of the Student Notes is available in the "Interactive Activities" section. If printing the full PowerPoint® is desired, you may download the file and print the handouts as needed.

Class 1: Begin class by distributing the *Geographic Information Systems (GIS) & Global Positioning Systems (GPS) Vocabulary Handout* for students to use as a reference material. Show slides 1 to 13 of the *Geographic Information Systems (GIS) & Global Positioning Systems (GPS) - Principles of Geographic Information Systems (GIS)* segment. Introduce the *Data Capture Project* and allow the remainder of the class for students to work.



Slides
1-13

Class 2: Remind students to continue using the *Vocabulary Handout* while viewing the presentation. Show slides 14 to 17 of the *Geographic Information Systems (GIS) & Global Positioning Systems (GPS) - Principles of Geographic Information Systems (GIS)* segment. Students should complete the corresponding *Assessment*. Distribute the *GIS Notecards Activity* and allow the remainder of the class for students to work.



Slides
14-17

Class 3: Lead the class discussion so students can share their findings for the *Data Capture Project*. Introduce the *GPS & Site Development Project* and instruct students to be prepared to present at the conclusion of Class 6.

Class 4: Remind students to use the *Vocabulary Handout* as a reference. Show slides 18 to 24 of the *Geographic Information Systems (GIS) & Global Positioning Systems (GPS) - Principles of Global Positioning Systems (GIS)* segment. Distribute the *Land, Sea & Air Activity* and have students begin working on it.



Slides
18-24

Class 5: Remind students to use the *Vocabulary Handout* as references. Show slides 25 to 36 of the *Geographic Information Systems (GIS) & Global Positioning Systems (GPS) - Principles of Global Positioning Systems (GIS)* segment. Students should complete the corresponding *Assessment*. Students should continue working on the *Land, Sea & Air Activity*.



Slides
25-36

Class 6: Distribute the *Geographic Information Systems (GIS) & Global Positioning Systems (GPS) Final Assessment* and instruct students to complete it. *Students should present their GPS & Site Development Projects* to the class. Lead a class discussion once all presentations have been given.



Lesson Links

Different Types of Maps

- <http://www.mapofus.org/maptypes>

Types of Land Surveys

- <http://terminuslandsurveying.com/types-of-land-surveys.htm>



Career & Technical Student Organizations

FFA

- Environmental and Natural Resources



Career Connections

Using the *Career Connections Activity*, allow students to explore the various careers associated with this lesson. See the *Activity* for more details. *If student licenses have been purchased:* Students will select the interviews to watch based on your directions. *If only a teacher license is purchased:* Show students all the career interviews and instruct them to only complete the interview form for the required number of interviews.

- iCEV50896, Brian Borum, Licensed Professional Surveyor, Quad Knopf

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Lab Activities

GIS Notecards

Directions:

Students should create a set of notecards to outline the components of GIS systems. They should create at least eight total cards with definitions, examples and illustrations. Instruct students to use online sources ending in .edu, .gov and .org.

Land, Sea & Air

Directions:

After an introduction to the use of GPS with land, sea and air, students should select one of the three and conduct further research. They should then write a one page paper with specific details about how GPS is used within the industry they chose and what impact it has on costs, efficiency and safety.



Projects

Data Capture

Directions:

After an introduction to both digital and physical forms of data capture, students should conduct further research. Also, if available, provide GPS and GIS systems for students to practice locating positions and interpreting images. They should then create a chart comparing both. Instruct students to use online sources ending in .edu, .gov and .org.

GPS & Site Development

Directions:

Students should conduct further research into the use of GPS by site developers. Using their research, they should create a 10 to 15 slide presentation to explain their findings.