Teaching with Maps

LESSON PLAN GUIDE FROM THE GIS RESEARCH & MAP COLLECTION, BALL STATE UNIVERSITY LIBRARIES
Australia New Zealand

Australia was first settled by Aboriginal peoples from the north between 50,000 and 70,000 years ago. It is the largest landmass in the Pacific Ocean. New Zealand is about 995 mi. (1,600km) to the southeast. Thousands of smaller islands are dotted through the Pacific, including Fiji, Tonga, and the Solomon Islands.

The first south-to-north crossing of Australia was by the Burke and Wills expedition in 1860. They traveled 1,740 mi. (2,800km) to within 3 mi. (5km) of the Gulf of Carpentaria. All but one of the 19 explorers died.

The first Aboriginal settlers arrived in the Kakadu region about 40,000 years ago. Kakadu became a national park in 1972 and has 1,000 Aboriginal rock paintings.

The first flying doctor service began in 1928 when a De Havilland DH 50 flew to Julia Creek. Today the Royal Flying Doctor Service of Australia has 33 aircraft serving isolated areas.

Moreton Island

The first man to fly a glider was Florence Taylor, who flew her husband’s homemade glider along Narrabeen Beach in 1909.

Cane toads were first brought to Australia from Hawaii in 1935 to eat cane beetles. Just 102 toads were released near Cairns. Today there are more than two billion.

In 1969 the first TV images of men on the Moon were broadcast around the world. Many of the images of the Apollo 11 mission were transmitted from the Honeysuckle Creek tracking station near Canberra.

The first full-length feature film to be made was The Story of the Kelly Gang, which premiered at the Athenaeum Hall, Melbourne, in 1906.

The last known Tasmanian tiger, called Benjamin, died in Hobart Zoo in 1936.

The first settlement in Australia for free people, rather than convicts and soldiers, was Perth. It was founded by British settlers in 1829 as the capital of the Swan River Colony.

The handful of people who live in the remote township of Eucla live in their own time zone, 45 minutes ahead of Western Australia and 45 minutes behind South Australia.

The first camel in Australia was called Harry. He traveled from Tenerife, in the Canary Islands, to Port Adelaide in 1846.

The first woman to pilot a glider was Florence Taylor, who flew her husband’s homemade glider along Narrabeen Beach in 1909.

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Why are maps important in teaching?

The 2006 National Geographic-Roper Survey of Geographic Literacy delivered some bad news about the basic geographic skills of young Americans. “Young Americans” aged 18 to 24 from the United States were tested on geographic knowledge. Respondents answered about half of all survey questions correctly.

- 63% of the students could not find Iraq on a map of the Middle East.
- 75% could not find Iran or Israel on a map of the Middle East.
- Nine in ten could not find Afghanistan on a map of Asia.
- Half of the young Americans could not find the state of New York on a map.
- In spite of months of media coverage of Hurricane Katrina, 33% could not find Louisiana on a map of the United States.
Students learn about the elements of maps using interesting examples: Every map should include a title, a legend or key, a scale, and a directional indicator. Use this map of Narnia from the GRMC as an example. *(Narnia, GRMC, Ball State University Libraries).*
After teaching students to recognize the basic elements of maps and map reading, ask students to create a map of their bedroom at home—using a title, directional indicator or compass rose, scale, and a legend or key. Students could also create a treasure map with an “X” marking the buried treasure.
Hottest, Coldest, Highest Deepest is a book describing the geographical extremes of the world—longest river, driest spot on earth, highest mountain. Teachers could read the book to the class as students find the locations in an atlas and mark the spots on a world map. Learning to transfer a location on one map to another similar map is an important map reading skill.

(Hottest, Coldest, Highest, Deepest, Educational Resources Collections, Ball State University Libraries).
Teachers could use this satellite map of the world to show students how to transfer points on one map to another map. Students could be asked to identify specific cities, deserts, and rainforests numbered on this copy of the map by searching for the locations on another world map or in an atlas. This map is available at http://cardinals scholar.bsu.edu/ handle/123456789/193985 (Earth at Night map, GRMC, Ball State University Libraries).
Students enjoy playing *The Oregon Trail* simulation game in the classroom. Using a map of the trail from the GRMC, students can learn to follow along with the game and search for landmarks and other sites on the map.

(*The Oregon Trail* game, Educational Resources Collections; *The Oregon Trail* map, GRMC, Ball State University Libraries).
Use a map of Springfield from *The Simpson’s* television show to teach students how to use a map to follow directions.

*(Guide to Springfield USA, GRMC, Ball State University Libraries).*
States Of Amazement

http://cardinalscholar.bsu.edu/handle/123456789/194491
Teach U.S. geography searching for heroes on this GRMC map. Various heroes (from superheroes to firemen to service dogs to Mom and Dad) are located all over this map of the United States. Make a list of the heroes and ask students to identify the states in which they are located. This lesson teaches students the fifty states and the qualities of a hero. This map is available at http://cardinalscholar.bsu.edu/handle/123456789/193984
Using Maps for Classroom Games

Use a map as the foundation for a board game. Groups of students can move a game piece through Africa by answering trivia or map questions correctly.

Print off the *Africa Trek* game created by the GRMC and simply draw a path that crosses through every country in Africa—starting in Egypt and ending in Madagascar. As students play the game, they will be learning the countries of the continent.

This game is available at [http://cardinals scholar. bsu. edu/handle/123456789/193983](http://cardinals scholar. bsu. edu/handle/123456789/193983)

A large copy of the map can be printed using the large-format plotter in the GRMC.
Cartography: Creating Custom Maps

After teaching the history of a state, country, or continent, teachers could ask individual students or groups to create a map documenting some of the events studied.

This is a portion of a map of Indiana history from the GRMC created by a sixth-grade class from Liberty, Indiana. A similar map could be created today using computer clip art images and software. Other maps of native birds and wildlife, U.S. folklore, famous European landmarks, or other topics could also be created to serve as a culminating final project.

(Indiana, GRMC, Ball State University Libraries).
This map of Canada, showing famous people and Canadian inventions, was created by the GRMC as an example of a final project map and is available at http://cardinalscholar.bsu.edu/handle/123456789/193986 as “Canada map.”
As a final project, students could create an imaginary country—the ImagiNation—and publish a report including...

- Location of the country on a world map
- Maps of natural resources, population, climate, topography, wildlife, parks, transportation
  - History of the nation
  - Government organization
  - Flag and national emblem
  - Educational system
  - Culture: Music, sports, holidays, languages, art
The Art of Cartography: Hand-Drawn Maps
Maps are an excellent resource for teaching history. The GRMC has a collection of both historic and historical maps that can be used for teaching about world, regional, and United States history. This map shows battles of the Civil War, and the GRMC also includes World War-, Korean War-, and Vietnam-era maps that can be used to help students visualize history.

(Battles of the Civil War map, GRMC, Ball State University Libraries).
The State of the World on Monday, January 1st, 1000 A.D. is a map in the GRMC that includes information about what was happening in all parts of the world on that date. The map shows the peoples living around the world, the nations and city names, the religions followed in different regions, the sites of walls, pyramids, and other structures and their purposes, and technological activity—including the use of iron and copper casting. The map even shows the staple carbohydrate foods eaten in the year 1000 A.D. This map, along with the Atlas of the Year 1000 from the Atlas Collection, could be used to recognize concurrent world activities when studying specific peoples, or students could create a similar world map for a different time in history.
Native American Studies

Lifeways at the Moment of European Contact c. AD 1515
- Arctic hunter-gatherers
- Sub-Arctic hunter-gatherers
- NW coast marine economy
- Plains hunter-gatherers
- Farming people of the plains
- Animal husbandry people with extensive farming
- Pueblo with intensive farming
- Seacoast foragers
- Hunters with limited farming
- Farmers with small-scale settlements
- Orchard-growing irrigator hunters
- Tidewater farmers
- Fishers and shellfish gatherers

PACIFIC OCEAN

ATLANTIC OCEAN

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Mapping the Underground Railroad

Working in groups or individually, ask students to study a physical map of the eastern part of the United States during the time of slavery. Analyzing elevation and terrain on the map, ask students to create a map of a route that a runaway slave could travel from a destination in the south to a safe haven in the north. Discuss the routes chosen by the students as a group. Then study a map of the actual Underground Railroad system available from the GRMC.

(Freedom’s Tracks: A Map of the Underground Railroad, GRMC, Ball State University Libraries).
Incorporate these stories from the Educational Resources Collections:
The *Titanic Reference Map* in the GRMC shows transatlantic passenger steamship routes, the *Titanic* disaster site, the wreckage search site, other shipwreck sites, iceberg occurrence areas/graph, major ocean currents, and locations of *Titanic* memorials. The map also includes deck plans, a cutaway view of the *Titanic*, a comparative size diagram, and portraits with biographical sketches of selected passengers. This map offers a wealth of resources for teachers of numerous subjects.
A TRUE STORY!
PIG ON THE TITANIC

Heroin of the Titanic
The Beloved Maid of the White Star Line

Gary Crew • Pictures by Bruce Whatley

Sinking of the Titanic
Eyewitness Accounts
A Map of One Day in History

Lost at Pearl Harbor were the lives of 2,409 sailors, 1,199 Marines, 318 soldiers, and at least 86 civilians. The Japanese lost fewer than 100 airmen and 29 planes. The U.S. suffered severe damage to 18 ships, including 7 out of 8 battleships. Of 394 aircraft, 188 were destroyed and 199 damaged.

With coordinated attacks in the Philippines, Singapore, Hong Kong, Malaya, and Guam and Wake Island, the Japanese began to assert control of the skies and seas across a quarter of the Earth’s surface. In the next six months, they would extend their control from the borders of India to the central Pacific, from Alaskan waters to the northern shores of Australia—until checked in the carrier battles of the Coral Sea and Midway.

As casually figures of the Pearl Harbor raid mounted on the news tickers in New York Times Square and reports were issued over the radio, Americans were in turn stunned, disbeliefing, and angry. The raid, launched without a declaration of war, united a divided America. Four days later, Germany and Italy, honoring the Tripartite Pact signed in 1936 with Japan, declared war on the U.S. Now, American industrial might and political resolve were fully committed to the Allied cause.

Maryland

Aircraft carrier of Oklahoma, Maryland was protected. She was not hit by the bombs in the forecastle and a second in the bow, but she was never threatened by serious flooding. She was able to return to the mainland for repairs.

Louisiana

Damaged

Lines lost 3,700

Torpedoes 9

Bombs 1

A torpedo passed under the old monitor. Cotton and exploded against the light cruiser. The concussion opened the doors of the gun, which sank as quickly as some old sailors say the god of light.
Teachers beginning the study of the United States’ entry into World War II could introduce the topic using novels about Pearl Harbor. *A Boy at War* (available from the Educational Resources Collections) tells the story of a young boy in Pearl Harbor on the day of the attack. *A Boy No More* follows the same boy to California and deals with Japanese-American internment camps. These novels could be used with the map of Pearl Harbor from the GRMC. Students could follow the story using the map showing the locations of battleships and other sites on December 7, 1941.
Many of the maps in the GRMC are excellent resources for genealogical research. Historical maps of England, Wales, and Ireland feature family coats of arms, and a map of Scotland features family names and tartans along the border. During a social studies lesson on these countries, ask students to design a modern day coat of arms for their family name. Display the finished artwork on a bulletin board in the classroom.

(Historical Map of England and Wales; Clans Map of Scotland; Irish Family Names Map; GRMC, Ball State University Libraries).
Sanborn® Fire Insurance Maps of Muncie, Indiana, provide an excellent classroom resource for teaching United States history. (Teachers can access copies of the maps from the University Libraries’ Digital Media Repository at http://libx.bsu.edu/). The Sanborn® Collection includes maps of the city from 1883, 1887, 1889, 1892, 1896, 1902, and 1911. The maps can be used to identify the growth and evolution of industries and structures over time.

Contact the GRMC for information about digital access to maps of other Indiana cities.
Teachers can learn more about Sanborn® Fire Insurance Maps from an online tutorial about the maps created by the GRMC, *Maps and Cartography: Using Sanborn Fire Insurance Maps*. This tutorial explains the colors of the buildings and symbols used on the maps and is located in Cardinal Scholar:

http://cardinalscholar.bsu.edu/handle/123456789/193970

A lesson plan guide to using Sanborn maps for history is also available from Cardinal Scholar:  http://cardinalscholar.bsu.edu/handle/123456789/194021
1954
Muncie:
Using the map of South America from the GRMC, *Amazonia: A World Resource at Risk*, students individually or in groups create a picture book telling the “story” of the Amazon rainforest using information and graphics provided on the map. A copy of the sample storybook is available as “Alphabet book” at [http://cardinalscholar.bsu.edu/handle/123456789/193988](http://cardinalscholar.bsu.edu/handle/123456789/193988) *(Amazonia: A World Resource at Risk map, GRMC, Ball State University Libraries).*
Geography of Africa

Students work in pairs or individually using the National Geographic map of Africa to answer questions on the Africa Map Search worksheet: (As students look for answers on the map, they will become more familiar with the countries of Africa).

- What country is bordered by Tanzania, Mozambique, and Zambia?
- List all of the countries that border Niger:
- What cape is located off the coast near the border between Namibia and Angola?
- What country has three capitals?
- What cities in Sudan are located on the Red Sea?

The Africa Map Search is available at http://cardinalscholar.bsu.edu/handle/123456789/193989

(Africa, GRMC, Ball State University Libraries)
Geography of the Paranormal

Geography teachers can add interest to teaching map skills by using unique reference materials. *Atlas of the Mysterious in North America* is an atlas that features information and maps about sacred places, earthworks and mounds, stone works, haunted places, and mysterious creatures in North America.

Students could use this atlas and similar resources to create their own “paranormal” map of a place. For example, students could create a map of allegedly haunted places in their home state using a blank outline map from the GRMC. The student shown is creating a haunted map of Indiana called “Eerie, Indiana,” available in Cardinal Scholar:

*(Atlas of the Mysterious in North America, Reference Collection, Ball State University Libraries).*
This map of Indiana shows the hometowns of authors from the state.

Students could create a similar map of the United States showing the hometowns of authors or the actual settings of novels read by the class over the semester or year. This map could also be recreated using the hometowns of prominent people from the state in other fields, such as government, sports, or industry.

*(Literary Map of Indiana, GRMC, Ball State University Libraries).*
This map, *American Folklore, Legends, and Literature*, created by the GRMC is an updated version of a 1936 map in the Collection. The map features popular children’s books, regional legends, and famous Americans. The map is available on the GRMC Cardinal Scholar page at http://cardinalscholar.bsu.edu/handle/123456789/193992. Teachers could create a similar lesson, mapping the settings of the books read over the school year.
Laura's Travels

1879 - Routes traveled by the Charles Ingalls Family.

1894 - Route traveled by Almanzo and Laura Wilder and their daughter, Rose.
Imaginary Places...

This map featuring the travels of the character Sherlock Holmes and the map of Winnie the Pooh’s “Hundred Aker Wood” are from *The Atlas of Fantasy*. This atlas features maps of numerous imaginary settings from historic and popular literature and is available in the Atlas Collection.
This map from the GRMC was created by the National Geographic Society in conjunction with the World Cup Soccer competition in 2006. The map includes a description of the history of the game around the world. Participating countries are shown along with the percentage of players per inhabitants of each country. The rules of the game are described, as well as legendary players. Soccer revenues are shown, and past winners are displayed.

Students could create a “World Cup Soccer World Atlas” with entries for each country showing the participating nations’ population, Gross Domestic Product, World Cup appearances and championships, professional leagues, coaches, and prominent players.

(Soccer Unites the World, GRMC, Ball State University Libraries).
The Geography of the Olympics

Students can use a world atlas to locate the sites of the Olympic Games on a world map. More advanced students can analyze the locations and dates of the Games to answer follow-up map questions:

- Why were there no Olympics held in 1916, 1940, and 1944?
- Name the continents that have hosted the Summer Olympics only, the Winter Olympics only, and both Summer and Winter Games:
- Name the continents that have never hosted any Olympic Games:
- List three reasons that may explain why these continents have never hosted any Olympic Games:
- Look at the pattern of dots on your world map. In what hemisphere have most of the Olympics been held—Northern or Southern? Explain possible reasons.

*The Geography of the Olympics worksheet is available at [http://cardinalscholar.bsu.edu/handle/123456789/193993](http://cardinalscholar.bsu.edu/handle/123456789/193993)*
This Web page allows you to create maps:


Save the map as a JPEG in order to customize it in PowerPoint or PhotoShop.
Introduce students to the study of United States history or geography by displaying this map of current NFL teams. Ask students to take turns naming a city shown on the map. Then discuss with the class the team’s nicknames and how those names can sometimes reveal that city’s history. This discussion stimulates interest in the study of United States history and geography:

- Green Bay Packers (meat packing industry)
- Minnesota Vikings (Scandinavian history of the region)
- New Orleans Saints (French Acadian influence in Louisiana)
- Tampa Bay Buccaneers (Spanish pirates in the region)
- San Francisco 49ers (gold rush)

Discuss how the names fit original cities like the Baltimore Colts (Maryland horse racing). Sometimes the names can be combined with NBA teams like the Bears and Bulls of Chicago (Chicago market). Again account for movement—Los Angeles Lakers (originally from Minnesota) and the Utah Jazz (originally in New Orleans). Which cities have NFL and NBA teams? What does that reveal about those cities?
Black Diamonds: Negro League Baseball Teams, 1920-1949

Akron Blue Sox
Atlantic Black Crackers
Atlantic City Bacharach Giants
Baltimore Black Sox, Elite Giants
Birmingham Black Barons
Brooklyn Eagles, Royal Giants
Chattanooga Black Lookouts
Chicago American Giants, Columbus Giants, Giants
Cincinnati Clowns, Cuban Stars, Tigers, Ethopian Buckeyes
Cleveland Bears, Hackbreads, Browns, Buckeyes, Cubs, Elite Giants, Hornets, Red Sox, Stars, Tote Stars, Tigers
Columbus Blue Balls, Buckeyes, Elite Giants, Redbirds, Elites
Dayton Marcos
Detroit Elite, Stars, Wolves
Harrisburg Giants
Homestead Grays (Pittsburgh)
Indianapolis ABC’s, American Giants, Athletics, Clowns, Crawfords, Cuban Stars
Jacksonville Red Caps
Kansas City Monarchs
Kansville Giants
Louisville Red Caps, White Sox
Memphis Red Sox
Milwaukee Bears
Monroe Monarchs
Montgomery Grey Sox
Northville Elite Giants, Elites
New Orleans Crescent Stars, Stars
New York Bacharach Giants, Black Yankees, Cuban Stars, Cubans, Harlem Stars, Bambros, Lincoln Giants
Newark Brownies, Dodgers, Eagles, Stars
Philadelphia Hilldale Dodgers, Hilldodges, Stars
Pittsburgh Crawfords, Kytanaces
St. Louis Giants, Stars
Terre Haute Crawfords, Tigers
Washington Black Senators, Elite Giants, Homestead Grays, Pilots, Potomaces
Wilmington Potomaces
Maps for Exhibits

http://cms.bsu.edu/Academics/Libraries/CollectionsAndDept/GISandMaps/Exhibits.aspx
The GRMC Blog provides information about new maps, lessons, and other activities:  http://www.bsumaps.blogspot.com
The GIS Research & Map Collection is open Monday through Friday from 8:00 A.M. to 5:00 P.M., but special evening hours can be accommodated for instructional sessions, tours, and classroom visits.

Instructional sessions can be accommodated at the Library or in the classroom.

Maps from the GRMC can be circulated for two weeks or longer. Teachers may borrow maps from the GRMC for long-term use in their classrooms.
For more information about the maps, atlases, and other resources presented in this guide or to schedule a class visit, please contact Melissa Gentry in the GIS Research & Map Collection in Bracken Library, Ball State University, at 765/285-1097. Email: mgentry@bsu.edu
Thanks for visiting the University Libraries.

THE END.