

NORTH DAKOTA

Giant Traveling Map Lesson

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North Dakota ACADEMIC STANDARDS / SUITABLE DISCIPLINES:

G.K_2.2 Describe how the physical environment affects people and how people affect the physical environment.

G.3_5.2 Use geographic tools and technologies to acquire, process, and report information from a spatial perspective.

G.3_5.3 Use maps, satellite images, photographs, and other representations to explain relationships between locations of places, regions, and their environmental characteristics.

G.3_5.4 Explain how North Dakota regions have been influenced by physical and human characteristics.

G.3_5.5 Compare and contrast the three geographical regions of North Dakota.

G.3_5.7 Analyze patterns of human settlement in North Dakota.

G.6_12.1 Describe the physical processes that shape the Earth's surface and how these affect the lives of people who live there.

G.6_12.2 Analyze the movement of people, goods, ideas, technology, etc. throughout the world.

G.6_12.3 Analyze the unifying physical and human characteristics of a region and their formal and informal boundaries.

G.6_12.4 Use geographic tools to locate both the absolute and relative location of places and regions around the world.

G.6_12.5 Analyze how human beings are dependent upon, adapt to, and modify their environment to meet their needs.

ND.6_12.1 Examine the physical and human geography of North Dakota and how it has changed.

ND.6_12.3 Evaluate the major industries and economic activities in North Dakota.

C.6_12.2 Analyze the structures and functions of governments.

C.6_12.4 Investigate the role and responsibilities of citizenship in society.

OBJECTIVES:

Participants will:

- Learn about major cities in North Dakota during three different historical periods
- Practice using grids and cardinal directions to locate cities in the state
- Practice using latitude and longitude lines (if appropriate for grade level)
- Analyze change over time
- Discuss topics such as the census (source of data), distribution of resources in the state, physical features associated with settlements, and implications of changes in population for political representation at various levels of government

RECOMMENDED GRADES: Fourth through adult

TIME NEEDED: 20 to 25 minutes, depending on whether discussion is held as part of the map visit or at a later time

MATERIALS:

- Compass rose
- 15 flat markers
- 15 tall cones
- 15 shorter, flexible cones
- 3 to 4 plastic chains for dividing the state
- List of North Dakota cities by population for 1890/1950/2010

PREPARATION:

- Discuss reasons why people choose to live in different places
- Review historical settlement patterns in North Dakota
- Review North Dakota era info
- Develop predictions by participants about where they think people might live
- Consider push and pull factors in migration

RULES:

- Shoes are not allowed on the map. Please have participants remove shoes before walking on the map.
- Wear socks on the map.
- No writing utensils on the map.
- No sliding on the map.

DIRECTIONS:

Using the list of cities and colored cones, participants will locate the fifteen most populous cities in North Dakota for the years 1890, 1950, and 2010. They will then look for trends based on the east/west axis and north/south axis, waterways adjacent to and within North Dakota, and defensive settlements from the 18th century. Encourage speculation about the factors that contributed to population development among the various regions of the state.

On the map:

1. Provide participants with an overview about exploring the top fifteen populated places in North Dakota in 1890, 1950, and 2010 using U.S. Census data as a source of information.
2. Ask participants about the kinds of jobs they imagine people were doing in North Dakota in 1890. Ask them to predict where people might be living. (If needed, ask the participants to consider where they live and why? What does a location need for people to live there?)
3. Take 15 of the round markers. Pass them out to 15 of the participants (usually just ask them to take one and pass the remainder along).
4. Read the 15 largest cities one at a time, going down the row of participants and asking the participants to place the marker on the dot identifying the town (star in the case of Bismarck).
5. Remind the participants that they can provide assistance to their classmates or colleagues about the location of a city based on cardinal directions or the grid. They should avoid shouting “over there”, “this way”, “left/right”, etc. From the beginning of the lesson, model the use of cardinal directions or the grid. Students may use the compass. Place NSEW labels on the walls or around the map.
6. After the flat, round markers are all on the map, ask the participants to interpret the new information that has been added to the map. Remind them that this is similar to adding a layer to a geographic information systems map.
7. Move on to the 1950 census and ask participants what jobs people were doing then. Ask them to predict where people might be living.
8. Pass out the 15 larger cones. Assign individual participants to place their cones on the 15 cities. For cities in the top 15 list by population in both 1890 and 1950, have participants pick up the flat marker and place it on top of the cone.
9. After the larger cones are all on the map, repeat Item 6 above, asking participants to think about what has changed and why.
10. Repeat process with 2010 census data and smaller or flexible orange cones. Have participants put the orange cone on top of the flat, round marker creating a pyramid, or on top of the large cone if the city was previously in the top 15 only in 1950.
11. Discuss where most of the people live and why. What areas of the state have no large settlements? Why? This is also an opportunity to review the concentration of people in the state in terms of electoral districts.

NOTES:

Review the Major Eras in North Dakota History for contextual information for the time periods highlighted in this lesson.

GUIDING QUESTIONS:

Q. What factors influence where people settle(d)? Which cities are on a train route?

A. Water, safety, transportation routes, physical geography, natural resources, and location of Indian Reservations. Many workers were needed when the original railroad tracks were laid. The railroad is responsible for the population expansion across the state. For more interesting information about the railroad in North Dakota visit this website:

<https://writinforthebrand.com/the-railroad-and-settlement-in-early-north-dakota/>

Q. How many of the fifteen largest cities are located along a river or lake in 1890? 1950? 2010? Which cities are on a river? Why did people want to live near a river in 1890? Why would you want to live near a river today?

A.

| 1890 | 1950 | 2010 |
|------|------|------|
| 13 | 11 | 11 |

Q. How many of the cities were in the various regions? Are they spread evenly or grouped together?

A.

| 1890 | 1950 | 2010 |
|--------------------|--------------------|--------------------|
| Red River Valley-6 | Red River Valley-4 | Red River Valley-5 |
| Drift Prairie-6 | Drift Prairie-7 | Drift Prairie-5 |
| Missouri Plateau-3 | Missouri Plateau-4 | Missouri Plateau-5 |

This map shows the three regions of North Dakota. The Southwest Region is labeled Coteau du Missouri. The Region is better known to us as the Missouri Plateau.

<https://www.nationsonline.org/maps/USA/North-Dakota-topographic-map.jpg>

The Red River Valley is very flat, the Drift Prairie was formed by glacial action and has rolling hills while the Missouri Plateau had no glacial action and is very hilly with beautiful rock formations. https://www.voyagesphotosmanu.com/geography_north_dakota.html

Q. For what reasons did this pattern exist?

A. Transportation opportunities, employment opportunities. For instance, Pembina was a fur trading center.

Q. How did North Dakota compare with the rest of the United States?

A. What percentage of the population in the United States has lived in North Dakota? How has it changed over time?

| | 1890 | 1950 | 2010 |
|---------------|------------|-------------|-------------|
| North Dakota | 190,983 | 619,636 | 674,526 |
| United States | 62,979,766 | 150,697,361 | 308,745,538 |

Q. How many cities in the new top fifteen in 1950 were also in the top fifteen in 1890? What percentage is that?

A. 10, 67%

Q. How many cities in the new top fifteen in 2010 were also in the top fifteen in 1890? In 1950?

A. 1890: 10 of 15; 1950: 12 of 15

Q. Where are most of the large cities in North Dakota located in 2010? Why?

A. Along the eastern border.

Q. Are major cities and suburbs significantly more concentrated than they were in 1950?

A. Depending on which suburbs are counted as being part of major cities, the concentration of population in major cities is similar to what it was in 1950.

Q. Generally speaking, how would you describe the majority of population movement and growth in the North Dakota over the past one hundred years?

A. Increased mechanization of agriculture altered the number of people working on farms. Development of oil, natural gas and agriculture are the biggest industries. For example, North Dakota produces nearly half the nation's total of spring wheat. Manufacturing and technology industries have also increased. Generally, the population of North Dakota has grown. There are five Indian reservations and their populations are increasing. Two of the reservations are partially in South Dakota.

Q. Why? What factors have encouraged people to move and live in cities?

A. Jobs and amenities. The most notable population change was in 2010 when horizontal drilling was developed and the oil and natural gas production drew workers from around the country. Many of these families have remained in North Dakota. The population of some of the western towns nearly doubled.

MODIFICATIONS:

For younger participants, focus on the map key and compass rose. For older participants, invite them to have more autonomy in the lesson and incorporate additional mathematical concepts.

EXTENSIONS:

Consider using the census data in math lessons. How much larger is Fargo today than in 1890? How much larger is Fargo than the 15th largest city? How concentrated is the population in Fargo over time? How did the population of your city change?

Have students locate cities in 1890 that were founded by ethnic groups, for example, Germans from Russia, Norwegian pioneers. Some of these pioneers chose not to build their homes near a river OR the railroad but settled in areas where the landscape was similar to their home countries.

For use with the GeoCivics activities (<https://www.uccs.edu/geocivics/>), invite participants to think about the current configuration of United States Congressional Districts in the state. Ask them to remember the key characteristics of how districts are drawn (equal population and contiguous). Invite them to pretend that their state has just two Congressional Districts; ask two people to pick up one of the chains and divide the state generally in half by population; invite two more people to divide the state into four districts (they may choose to move the original chain, or not). Discuss why some districts would likely be smaller in area than others. If appropriate, determine how to divide the state into state senate districts.

Consider when a giant floor map is a good tool for understanding geographic phenomena and when other tools (paper maps, online maps) might be more appropriate.

NOTE:

Thanks to National Geographic's Giant Traveling Maps team for the inspiration for this lesson, which is based on "People on the Move", a lesson for the North America Giant Map.

RESOURCES:

North Dakota Department of Public Instruction
<https://www.nd.gov/dpi/>

State Historical Society of North Dakota
<https://www.history.nd.gov/>

Railroad and rivers, 1892
<https://tile.loc.gov/image-services/iiif/service:gmd:gmd417:g4171:g4171p:rr002760/full/pct:12.5/0/default.jpg>

Map, 1893, <https://mapgeeks.org/wp-content/uploads/2018/04/1893-Map-of-North-Dakota.jpg>

| | City | 1890 | v | | City | 1950 | v | | City | 2010 | v |
|----|-------------|---------|---|----|-------------|---------|---|----|-------------|---------|---|
| | State | 190,983 | | | State | 619,636 | | | State | 674,526 | |
| 1 | Fargo | 5,664 | | 1 | Fargo | 38,250 | | 1 | Fargo | 105,549 | |
| 2 | Grand Forks | 4,979 | | 2 | Grand Forks | 26,836 | | 2 | Bismarck | 72,112 | |
| 3 | Jamestown | 2,296 | | 3 | Minot | 22,032 | | 3 | Grand Forks | 52,838 | |
| 4 | Bismarck | 2,186 | | 4 | Bismarck | 18,640 | | 4 | Minot | 40,888 | |
| 5 | Grafton | 1,594 | | 5 | Jamestown | 10,697 | | 5 | West Fargo | 25,830 | |
| 6 | Wahpeton | 1,510 | | 6 | Dickinson | 7,469 | | 6 | Mandan | 18,331 | |
| 7 | Mandan | 1,328 | | 7 | Williston | 7,378 | | 7 | Dickinson | 17,787 | |
| 8 | Valley City | 1,089 | | 8 | Mandan | 7,298 | | 8 | Jamestown | 15,427 | |
| 9 | Lisbon | 935 | | 9 | Valley City | 6,851 | | 9 | Williston | 14,716 | |
| 10 | Dickinson | 897 | | 10 | Devils Lake | 6,427 | | 10 | Wahpeton | 7,766 | |
| 11 | Portland | 867 | | 11 | Wahpeton | 5,125 | | 11 | Devils Lake | 7,141 | |
| 12 | Devils Lake | 846 | | 12 | Grafton | 4,901 | | 12 | Valley City | 6,585 | |
| 13 | Casselton | 840 | | 13 | Rugby | 2,907 | | 13 | Grafton | 4,284 | |
| 14 | Tower City | 809 | | N | Harvey | 2,337 | | B | Beulah | 3,121 | |
| 15 | Ellendale | 761 | | 15 | Bottineau | 2,268 | | 15 | Rugby | 2,876 | |

| | City | 2020* | √ |
|----|--------------|----------------|---|
| | State | 779,094 | |
| 1 | Fargo | 125,990 | |
| 2 | Bismarck | 73,622 | |
| 3 | Grand Forks | 59,166 | |
| 4 | Minot | 48,377 | |
| 5 | West Fargo | 38,626 | |
| 6 | Williston | 29,160 | |
| 7 | Dickinson | 25,679 | |
| 8 | Mandan | 24,206 | |
| 9 | Jamestown | 15,849 | |
| 10 | Wahpeton | 8,007 | |
| 11 | Devils Lake | 7,192 | |
| 12 | Valley City | 6,575 | |
| 13 | Watford City | 6,207 | |
| 14 | Minot AFB | 5,017 | |
| 15 | Lincoln | 4,257 | |

*2020 Census data is from Redistricting Data Hub using the State and Place level PL 94-171 datasets.

<https://redistrictingdatahub.org/data/download-data/#state-menu>