

Maps

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Introduction

As display systems become more flexible, and more like video games, users must be wary that maps, however realistic, are merely representations, vulnerable to bias in both what they show and what they ignore.¹

With the introduction of Common Core State Standards (CCSS), Social Studies and Science have become the “forgotten subjects” in school. What I mean by forgotten is that they are no longer tested in the barrage of required assessments that face students in grades 3-12. Thus, the time allotted to the subjects has decreased in my school district. Rather, we are given 30 minute blocks daily to teach the subjects (you can choose 30 minutes of one or the other, a day-to-day rotation, or 15 minutes of each), and we are encouraged to integrate the subjects the best we can into ELA (English/ Language Arts) and Mathematics. With the time challenge, I am developed a third and/or fourth grade unit that is a need in my Social Studies class--- map reading, maps versus globes, and distortion in maps- that can be taught either independently in the Social Studies block or with an ELA unit on text features (book parts such as table of contents, glossary, photographs, captions, and images like tables, maps, and graphs).

While ELA and Math have adopted CCSS and we are adopting Next Generation Science Standards, there has not been an update to Social Studies Delaware State Standards. Therefore, I will be addressing both Social Studies Delaware State Standards (grade 3) and CCSS ELA standards in my unit. The unit will address the following- Delaware’s Geography Standard One that states:

Students will develop a personal geographic framework, or “mental map,” and understand the uses of maps and other geo-graphics [MAPS].²

Further explanation on the standards says that:

Students also need to develop the ability to create, use, and interpret maps, and other geo- graphics crucial to analyzing and solving geographic problems.²

My unit will also address a Reading Informational Text Standard found in CCSS. The following standard will be covered:

Use information gained from illustrations (e.g. maps and photographs) and the words from the text to demonstrate understanding of the text (e.g. where, when, why, and how the key events occur). CCSS.ELA-Literacy.RI.3.7³

Using maps and globes may be difficult for my students, as they only had to identify captions and boldfaced terms in printed text, while using side bars and menu options with electronic print in second grade. Diagrams, maps, tables, and graphs were not covered in the standards or tested. In addition, maps have been nearly eliminated from their daily lives. Their parents rely on GPS to travel, rather than paper maps. The only exposure to maps many of my students admitted to was at theme parks. They used those maps to get around, find attractions, restrooms, etc.

In this unit, Maps, I hope to develop lessons using various texts and graphics, including maps that teachers can use during whatever time they have available. Lessons will be created for a thirty-minute block, but can be easily chunked to smaller time frames if needed. The plans will include ideas for whole-group discussion, small group examination of illustrations, geo-graphics, and text features, and opportunities for independent practice that can be used for both formative and summative assessment.

While a pre-test is provided (Appendix A), I used very informal strategies to gauge my students' understandings and determine their weaknesses to target. Simply asking my students to draw a map of the world was enough for me to see that they had little to no understanding of the geography globally. For example, many students drew just 3 or 4 large masses of land, others labeled the United States as New Castle, and others confused states versus countries. Further questioning and probing determined that my students had very little knowledge of geography outside their own neighborhoods. While most could name our state, they had trouble identifying the state's size, shape, or location within the United States. And so, this unit was created with those students' work samples in mind.

Demographics

My school, Wilmington Manor Elementary School, is in the Colonial School District. In this small school, there is a high population of English Language Learners (ELL). 37.1% of students at Wilmington Manor Elementary School are classified as ELL. Many students are their family's only English speaker. Many parents cannot read my instructions and notes in English, and they are unable to help their students with any work sent home in English. Within my classroom, 36% of students are labeled

Special Education. They are serviced directly in my classroom, by me. 16 other Regular Education students are also in my classroom. With such a diverse group of students, the unit includes activities for all levels of learners. Those working above grade level, on grade level, and below grade level will all have equal opportunities to work towards proficiency in this unit.

As mentioned in the previous section, this unit is designed to be taught in a thirty-minute block over the course of 4-5 days. It can be shortened, if needed, and lessons can be combined for a longer block of instruction. Individual Education Plans (IEPS) for students often require progress monitoring, so in addition to appropriate activities for various reading levels, the pre-test and post-test (Appendix A) are available along with a check-list for skills (Appendix B).

Learning Objectives

- Students will be able to create a mental map of a given area such as their classroom, school building, or neighborhood.
- Students will interpret maps and other graphic aids given the appropriate tools (i.e. map key and compass rose).
- Students will identify the purpose and audience of a map.
- Students will compare and contrast maps and a globe.

Essential Questions

- Why are mental maps useful for everyday life?
- What tools can I use to interpret and gather meaning from a map or globe?
- How do purpose and audience influence maps?
- How are maps and globes similar? How are they different?

Rationale

When preparing to teach this unit, instructors should first understand that not all graphics published portray the correct information or data, even when inserted in a textbook. Like graphic aids such as tables and charts, maps change depending on the mapmaker's purpose and intended audience. As Mark Monmonier stated in *"How to Lie with Maps- second edition:"*

“Like guns and crosses, maps can be good or bad, depending on who's holding them, who they're aimed at, how they're used, and why.”¹

As I prepared this unit, an Ebola scare was facing the nation. This was the perfect example of the misuse of maps that I needed to put my unit idea into perspective. My students who have just a vague idea of current events, but are aware of buzz words, would yell “Ebola!” anytime another student coughed or sneezed. Students would

matter-of-factly state to me that they needed to use hand sanitizer as per their mom's orders since "Ebola is everywhere, and it can kill you." It was as I heard this misinformation over and over, that this unit took shape. I realized that the maps on the news of the Ebola outbreak in Africa were zoomed in to show just the Western Coastal region including Sierra Leone. The remainder of Africa was not shown. My students were seeing nothing but bright red and orange, signaling an outbreak, on the maps on the news. What they did not see was the rest of the humungous continent, the maps of other diseases affecting the continent such as HIV, and the distance between Africa and their homes in New Castle, Delaware.

Similarly, when a patient in Dallas, Texas died of Ebola, my students panicked. Once again, their fear came from the overblown media coverage, their lack of knowing the distance from Delaware to Texas, and them having no idea of population size of the US to put the number of cases versus the US population into perspective.

The Ebola case reminded me of a similar article that I read about the crack scare of 1986.⁴ These case studies bore similarities in the focus of the media and the skewed perspective of the uninformed.

Lack of updated Social Studies curriculum, students' minimal geography knowledge, and current events in the news convinced me to take my unit on Numbers and Social Problems in the maps and graphics direction.

Research Behind the Unit

With current hot topics fueling my unit, my research included the works of Mark Monmonier, an expert on analyzing the work of cartographers, old and new, articles regarding map creation and map distortion, various textbook maps and graphics, and conversations with students.

My familiarity with maps was limited to one name--- the Mercator Projection. Not only was it the one that I learned about in elementary school in the 1980's, but it's the one that remains in my students' current Social Studies book published in the early 2000's. The map projection was created in 1569, and it has been praised, but also discounted a number of times in the past 400+ years. While the map does correctly identify land masses and location, it is antiquated and inappropriate for teaching students the correct size of the continents and the names associated with new and/or evolving countries such as many eastern European nations. I have repeatedly used this map projection over the years at the end of a mapping unit which taught classroom aerial mapping, school mapping and mental maps, and neighborhood mapping and labeling with directions. It was no wonder their understanding of geography was so limited.

In 1998, National Geographic adopted Oswald Winkel's "Winkel Tripel Projection." The map is more accurate in regards to size of the countries, like the Gall-Peter's Projection. On both projections, the continents sizes are not as skewed at the poles. Despite these updated projections, with my students still working with the Mercator Projection, many of them still believed that Antarctica was a long, narrow continent at the South Pole and that Alaska is as far away from Eastern Asia as possible. When presented with a "Fact of the Day" provided on a classroom calendar that stated "Hawaii moves 4 inches closer to Japan every year," my students were perplexed. They wanted to know why Hawaii would not just run into the US. Students were convinced that Hawaii was moving east towards Japan, because to the left (west) the map just ended.

With this confusion, I also realized that students would need exposure to globes. The use of globes allows students to visualize the relationship of North America to Asia that a flat map does not show. Along with a globe, this unit will work with basic mathematical steps to identify scale and actual distance as well.

Unit Activities

To teach my unit on mapping and other graphics, lessons will include whole-group instruction and discussion, small group or partner activities, and independent work. To be a successful teacher and implementer of this unit, back ground information is provided. In addition, a teacher resource's page is provided with texts that supplement the unit.

Before Teaching the Unit

Prior to teaching the unit, I want to gauge student knowledge, familiarity with maps, and their ability to read maps. I have attached a pretest (doubling as a post-test) that I will use. In addition, I also like to have students informally draw a map of the world. *By informally, I mean non-graded and for my planning purposes only.* I have used a similar activity in the past to give me a starting point for teaching maps. In previous years, my third grade students have had difficulty distinguishing towns, countries, and continents, determining geographic location of known places, identifying and correctly placing oceans and other bodies of water, and drawing land masses with relative size in mind.

Activity 1

Purpose: The goal of the first activity is to introduce students to the idea of mental mapping and expose them to vocabulary used in the unit.

Materials: The teacher will need a copy of “There’s a Map on My Lap!” by Tish Rabe. Students should have a pencil, as well as something to record their work on (i.e. an index card, notebook, or white board).

Teaching Strategies: In this activity, there will be a whole-group read aloud, independent writing (short), and an “Ink, Pair, Share,” which is described at detail in the lesson.

Lesson: At the start of this unit, hook students with familiar visualization. Ask students to close their eyes, and take a journey with you. Tell students to picture themselves walking into the school this morning, and ask them to continue walking slowly retracing their steps until they get to your classroom. Once they reach your classroom, they can indicate so by remaining silent and opening their eyes.

Once all students have opened their eyes, congratulate them on their wonderful creation. Students may seem bewildered, until you explain to them that they were “mental mapping.” Write the new term on the board, and take suggestions for a definition. If students struggle to come up with a definition, you can have a volunteer orally retell their steps, and you can draw a map using their descriptions. Thus, they can now see an actual representation of a mental map. You can also reveal to student that mental has to do with the brain. A basic definition may be something such as “a map I created in my head.”

After creating mental maps, read students the Tish Rabe text “There’s a Map on my Lap!” This book is an appropriate read-aloud due to new content and length. Students will, however, enjoy the rhyming format familiar from early elementary stories and the Cat in the Hat character. The book is used to introduce students to vocabulary that will be used over the course of the unit. Terms featured include physical map, compass rose, scale, etc. Throughout the text, pause for comprehension checks and to share pictures with the students.

Sample comprehension questions include:

- Why might the characters have a map in their laps? What could they use it for? (Sample answer: They want to find where they are going.)
- How is the illustration of a map different from the picture of a globe? (Sample answers: The map is flat, and the globe is a sphere. The globe spins. The map is on paper.)
- What makes the world map (Mercator Projection) unique from other maps that you may have seen? (Sample answer: This map is not a rectangle shape. Rather, it shows the Earth as a bunch of connected ovals.)
- Why does the author say a mapmaker would run out of paper if they drew the world in real size? Is that true? (Sample answer: It does seem true. There are

- no pieces of paper as big as entire states, let alone continents. They must be scaled down.)
- Have you ever seen the compass rose tool before? Does anyone know another silly rhyme to help us remember the order of directions? (Sample answer: Yes, compass roses are used in our textbooks. I know Never/North, Eat/East, Soggy/South, Waffles/West.)
 - Suppose you wanted to add a hospital to a map, what symbol might you use? (Sample answers: An ambulance, a capital H, etc.) What could a caged lion represent on a map legend? (Sample answers: A zoo, a veterinarian, etc.)
 - The book shows how colors can help a reader better understand a map. They showed red for hot, blue for cold, and brown for a desert. What color do most maps use for water? Why? (Sample answers: Blue, because water looks blue. Blue, because I've seen it used on maps before.)
 - What similar purpose do hikers, drivers, and firefighters have for map reading? (Sample answer: They are all looking for the best route.)
 - Where else have you used string for measurement and grids? (Sample answer: These tools are also used in math. String can be used to find the perimeter of a shape with rounded edges like a circle or heart. Grids are used on graphs. I think map reading includes both Social Studies and Math!)

After you finish reading the book, students will complete an “Ink, Pair, Share.” In this comprehension check, students will write their response (ink), share their response with a partner (pair), and select pairs will be selected to read their responses (share). This technique holds all students accountable, while allowing those not called on to share with someone; thereby, giving their response value.

Challenge students to finish the following statement either on an index card or a notebook. The statement is “Maps can be useful to me, because...” After allowing 2-3 minutes for an independent, written response. Ask students to share their response with a neighbor. Each student should listen well enough that they could restate their partner's answer if asked to. Once all students have shared, call on 2-3 groups to share their completed statement with the class.

Activity 2

Purpose: In this lesson, students will create classroom maps after first examining and discussing a map of the school. Students will create accurate representations with symbols, a legend or map key, and a title. They should be able to identify multiple uses of their maps, as well as an audience.

Materials: To implement this lesson, teachers need a map of the school or another elementary school. If a map is unavailable, a map can be drawn prior to the lesson.

Students will need scratch paper, a pencil, a ruler, and white poster paper (at least 8 ½ x 11 inches).

Teaching Strategies: The lesson will begin with whole-group examination and discussion of the school map. Following the class activity, students will have time to work with classmates on a rough sketch of the classroom. Students will wrap-up the activity by working independently on a classroom map.

Lesson: With an introduction to maps complete, students will begin to examine maps; both as a class and within small groups. I will first present to them a map of our school---Wilmington Manor Elementary School (found via our administration office). Together we will answer basic questions such as how many classrooms are there, can you use the map to trace the route from the library to the gym, where are the restrooms, etc. I will then pose recurring questions to be used throughout the unit and any examination of further maps: Why do you think this map was created? Who might be the intended audience? Both questions should be posted on the Smart Board so that responses can be recorded. After think time, students should share responses. Possible answers include that our principal drew it, that I drew it, etc. I will share with them that a mapmaker at our district office did, and I will follow-up by asking them why he might have done that. We will discuss all possible purposes and audiences (i.e. for electricians, custodians, substitute teachers, new students, firefighters, volunteers).

After examining a familiar map such as the school, students will use their mental mapping ability, and understanding of maps to draw a map. In this lesson, students will create a map of the classroom. Prior to handing out scratch paper, have students compile a class list of what would need to be drawn, possible representations, etc.

Classroom Map:

- Desks drawn as rectangles or squares
- Computers, televisions, and Smart Boards drawn as rectangles
- Classroom tables drawn in a kidney bean shape and a rectangle shape
- Bookshelves drawn in a rectangle shape
- Teacher desk drawn in a rectangle shape
- Classroom rugs of various shapes and sizes
- Doors drawn with a consistent representation
- Windows drawn as slender squares or rectangles or labeled
- Cubbies (if present) drawn with accurate shape

Allow students 10-15 minutes to complete a practice sketch. This sketch should be drawn with pencil so that students can erase. Have students get up and explore the classroom and list items to include, have students confer with classmates to make sure

that their ideas are inclusive and make sense, and allow time for students to check with you for feedback.

Prior to handing out paper for their final maps, have students help you to create a bulleted list of expectations for a map that shows mastery. Student suggestions may include neatness, items included, etc. Be sure to clarify your expectations as well. Include information such as how many items to include *or can they skip a water fountain*, specifications of a map key/ legend, whether or not to include a scale (I would not at this point), and the inclusion of a compass rose, title, and labels.

As you hand out white paper, rulers, and other supplies to students, circulate the classroom, answering questions, asking students to clarify drawings, and providing friendly reminders.

If you have a wide range of learners in your classroom, providing helpful accommodations or challenges is easy to incorporate. Below level learners or struggling students could benefit from the use of a basic classroom outline to start their sketch. While they would still be required to fill-in the classroom details, the basic outline is there. A small sheet providing vocabulary, illustrations, and a short definition may be useful to them. Students can refer to it while making their maps as a reminder of what an unknown term is. Finally, if you think the task is just too difficult for some students, consider pairing them with a buddy. They can create a partner map of the classroom by designating roles for each student. As for challenging learners who are ready, you can have them add a grid line overlay using tissue paper or saran wrap, challenge them to write 3-5 questions for others about their map, or have the students create their classroom maps on larger poster paper so that theirs can be a model for others.

Creation of the map can typically take two or three, 45 minute class periods. Invite students to share their hard work with the class, other teachers, or the principal as time allows. Scout places to display classroom maps on bulletin boards, within the classroom, or in a school display.

Once maps are created, get students writing by having them write a short, friendly letter to an incoming third grader. Tell the students to explain to the incoming third grader how to read the map and why the map will be useful. Students can personalize their letters by including information such as their favorite spot (marked by a heart on the map) or places that get really cold in the winter (marked by a snowflake).

Activity 3

Purpose: In the third activity, students will compare and contrast maps, as well as a globe. They will do so by identifying map and globe features, their audience, and their purpose.

Materials: In this activity, students will need two maps. The first map should be a map of North America with accurate geographical placement of Hawaii and Alaska. The second map should be of the United States of America. The continental United States should fill the majority of the page, while Hawaii and Alaska should be included as inserts on the bottom left side of the map (in the Pacific Ocean). Free use maps fitting those descriptions can be found on the attached pretest. Substitute maps can be used depending on your desired outcome. Alternative maps include physical maps, temperature maps, population maps, elevation maps, etc. In the second part of the lesson, two different maps of your state will be used. Students will also need a pencil and a Venn diagram graphic organizer to record their information (Appendix D).

Teaching Strategies: In this lesson, the teacher will present a whole-group warm-up reviewing the graphic organizer. Students will independently study maps, and then share out to the class. Both a t-chart and a Venn diagram will be used to record information in this lesson. You can enlarge the size of the Venn diagram or add lines if needed. As a formative assessment, students should complete the last map activity (state map) independently.

Lesson: Before getting to any mapping content, review the use of a Venn diagram with a quick warm-up comparing and contrasting two familiar items such as fruits, classmates, animals, or sports. Remind students what information goes in the three distinct sections of the circles.

Present students with two United States maps. Provide a copy of the maps for each child, as well as displaying it on the Smart Board or Elmo. Ask students to study the maps for 2 minutes without talking to anyone. Following student think time, create a t-chart on the board (2 labeled columns). On one side, write “I Notice,” and on the other side, write “I Wonder.” Challenge students to share thoughts that they noticed while looking at the map. Write down any and all ideas. You can eliminate incorrect statements after examining the maps. After students have shared what they noticed, challenge students to share their wonders (i.e. questions that they still have). These questions should be addressed either during the lesson or after the lesson’s conclusion.

Following the initial examinations of the maps, distribute Venn diagrams to students. Allow them 15-20 minutes to record similarities and differences between the maps. After the work time concludes, record student information on the board.

If discussion has not yet led to higher-order thinking, pose the following questions to get the students thinking about purpose and audience:

- Why might the mapmaker have put Alaska and Hawaii in the wrong spot? (Possible answers include they did not have room to draw the entire continent, they did not want to show Canada, or they were zooming in to show the shapes of the states/ capitals/ cities/ etc.)
- What is a disadvantage of zooming in on the continental United States? (Possible answers include that Alaska and Hawaii are in the wrong spot or that the size of Alaska may be distorted.)
- What is an advantage of zooming in on the continental United States? (Possible answers include that mapmakers can write on the map, cities can be labeled, bodies of water can be included, etc.)
- What is a disadvantage of the North America map? (Possible answers include that it is hard to see smaller states such as Delaware, the boundaries are missing, or that you cannot identify states without the labels.)
- Who might be interested in a map of North America? (Possible answers include someone who plans on traveling in the region and needs accurate locations.)

In the second part of this lesson, present students with two different maps of their state. For example, my students will use an outline map of Delaware showing just the boundaries and colored in green. The second map will be a much more detailed map of Delaware showing cities and towns, as well as roads. Students should work independently, recording in their journals, how the maps are similar and different. They can sketch a Venn diagram if they choose. Students should then answer three questions regarding their maps in their journals. The questions follow:

- Which map is more useful to you? Why?
- Which map would be more useful when traveling from city A (New Castle) to city B (Rehoboth Beach)?
- What could be done to make these maps more useful?

Activity 4

Purpose: Students will look at other examples of maps. They will identify map features, answer basic questions regarding the map, and determine the map's purpose and audience.

Materials: For this lesson, you will need an assortment of other maps and a globe. Example maps may include maps for amusement parks, towns and cities, temperature maps, natural resource maps, population maps, animal habitat maps, maps found in

available textbooks, etc. Students will also need a notebook or the attached recording sheet (Appendix E). You can copy as many charts on the recording sheet as necessary.

Teaching Strategies: At this point, following a brief lesson introduction, students should be able to work independently to examine maps and the globe. This lesson can be completed as independent work, partner work, or small group work.

Lesson: Maps and recording sheets should be distributed to students. Allow them at least 45 minutes to an hour to examine and discuss the maps provided. Students and groups can also swap maps as they finish with the graphic.

As students are working, they should be recording their information on the provided recording sheets. Students will be titling maps; answering basic questions such as *does the map include a legend? Does this map have a scale?* And they will be identifying possible purposes and audiences, and listing the pros and cons.

Work from this Maps culminating activity can be graded, discussed as a class, or displayed.

Conclusion

After implementing the unit on maps, students should be able to examine maps they encounter at school, in their daily lives, or as graphic aids in reading, with a critical lens. Students should be able to identify the purpose and audience of a map by explaining why mapmakers create so many different maps of one location. They should be able to transfer basic map skills to future maps as well.

¹Mark Monmonier, *How to Lie with Maps*, 2nd ed. Chicago: University of Chicago Press, 1991.

²"Delaware Social Studies Standards," accessed January 17, 2015, www.doe.k12.de.us/Page/1960

³"Common Core State Standards," Common Core State Standards Initiative, accessed January 17, 2015, www.corestandards.org

Annotated Bibliography

"Common Core State Standards Initiative." Common Core State Standards Initiative. <http://www.corestandards.org> (accessed January 17, 2015). This website is a vital resource in my day-to-day lesson planning and the creation of this unit. The standards are easily accessible by grade level and strand.

“Delaware Social Studies Standards.” <http://www.doe.k12.de.us/Page/1960> (accessed January 17, 2015). This website is also a resource relied on in the lesson planning and creation of this unit. The standards are easily accessible by grade level, with descriptions provided.

Monmonier, Mark S. *How to Lie with Maps.* 2nd ed. Chicago: University of Chicago Press, 1991. This text is a useful resource for adults. As the teacher, I used this to familiarize myself with types of maps, errors and discrepancies in mapping, and to see examples of lies in mapping which I could present to my students and peers.

Murray, David, and Joel Schwartz. *It Ain't Necessarily So: How Media Make and Unmake the Scientific Picture of Reality.* Lanham, MD: Rowman & Littlefield Publishers, 2001. I used this text to gather background information on graphing, statistics, and understanding how to decipher media headlines. Too often, my students believe the hype in headlines on social media, the news, and sometimes, unreliable websites. I strive to teach them to be educated and skeptical when using sources, examining graphic aids, and reading maps (or relying on Siri for directions).

Rabe, Tish, and Aristides Ruiz. *There's a Map on My Lap!* New York: Random House, 2002. This is a fantastic read-aloud book for students in the upper elementary grades. Modeled like a Dr. Seuss story, the text uses rhymes and silly illustrations to teach children challenging mapping vocabulary and explain difficult concepts.

Robbins, Naomi B. *Creating More Effective Graphs.* Hoboken, N.J.: Wiley-Interscience, 2005. I used this book, in conjunction with coursework in another Delaware Teacher Institute seminar, “Modeling with Mathematics,” to freshen up my skills on graph making, analyzing graphs, and analyzing data. The graphs gave me great examples to view while dissecting other graphical representations.

Tufte, Edward R. *The Visual Display of Quantitative Information.* Cheshire, Conn. (Box 430, Cheshire 06410): Graphics Press, 1983. This text was a natural fit for the seminar that I took. Like Dr. Joel Best, the seminar faculty member, this book highlighted examples of good, accurate informational representations. It also provided examples of confusing, misleading representations.

“Vector Map of the United States” Free Vector Maps. <https://www.freevectormaps.com/united-states/US-EPS-01-0002?ref=atr> (accessed January 17, 2015). I used this website to find copyright free images to include on the pre- and post-test. The image of the United States was chosen purposefully, as it shows Alaska and Hawaii in the middle of the Pacific Ocean.

“Vector Map of North America” Free Vector Maps.

<https://www.freevectormaps.com/world-maps/north-america/WRLD-NA-01-0002> (accessed January 17, 2015). I used this website to find copyright free images to include on the pre- and post-test. The image of North America was chosen to show the entire continent but with little detail.

Student Resources Used in Unit

Maps

A variety of maps are suggested for lesson use, as well as to use in a trade box, during this lesson. A sample school map to show students during Lesson 1 would be valuable. It can illustrate to students classroom locations, hallway connections, boundaries within the school, and it emphasizes the aerial view that students will need to draw a classroom map. In Lessons 2 and 3, students will need different maps of the United States of America. The styles should include a map with labeled states and maps with and without the correct geographical placement of Alaska and Hawaii. A trade box is suggested for the classroom. A trade box is a box with materials relating to the unit. It may house such items as maps, brochures from amusement parks with maps in them, books about geography, etc. Suggested resources for this unit include a physical map of the United States of America, colored and labeled world maps, community maps, etc.

A Globe

In this unit, students are asked to compare and contrast the layout of maps and globes. They need a globe to show the spherical shape. If no globes are available, a sample globe on a Smart Board file would be an acceptable substitute.

Handouts

To successfully complete this unit, students should have a copy of any recording sheets provided, as well as the Venn diagram graphic organizer.

Classroom Supplies

Students should have plain white paper or poster board (at least 8 ½ x 11), pencils, and rulers available in order to create their classroom maps. Crayons are optional. An alternative to copying recording sheets and a graphic organizer is to use erasable white boards.

Appendices

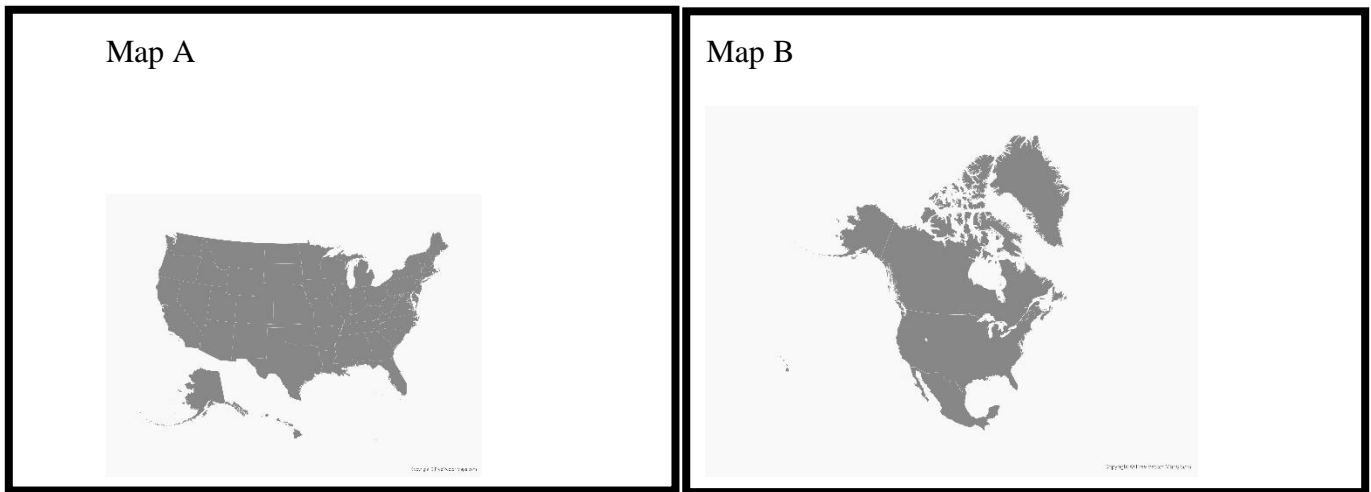
- A. Pre-Test and Post-Test (same form)
- B. Student Skills Checklist
- C. Vocabulary List with Student Friendly Definitions
- D. Venn Diagram
- E. Recording Sheet
- F. Delaware Social Studies Standards

Appendix A

Name: _____ Date: _____

Maps Pre-Test and Post Test

Directions: Use the maps below to answer the related questions.



1. How are Map A and Map B alike? Circle all correct answers.

- a. They both show the United States of America.
- b. They both have states labeled.
- c. Both maps show accurate distance between states and state size.
- d. Both maps show the major cities and capitals of the states.

2. What is inaccurate about Map A?

- a. Not all of the states are pictured.
- b. Alaska and Hawaii are not in the correct location.
- c. Texas is much too small.

3. What are possible uses of the maps? Circle all correct answers.

- a. You can use one or both to find major cities.
- b. You can use one or both to plan a road trip.
- c. You can use one or both to locate states.
- d. You can use one or both to find Canada and Mexico.

- e. You can use one or both to plan a flight cross-country.
4. What could a cartographer do to make Map A more useful to elementary students?

5. If you were planning a trip to Orlando, Florida to visit Disney World, what improvements would make Map B more useful?

Directions: Match the vocabulary term with the correct definition by writing the matching letter on the line.

- | | | |
|-----|---------|--|
| ___ | scale | a. the imaginary line dividing the northern and southern hemispheres |
| ___ | equator | b. a 3-D model of the Earth |
| ___ | map | c. use this tool to find and adjust the distance on a map or globe |
| ___ | globe | d. a flat representation of the Earth |

Appendix C

Vocabulary List with Student Friendly Definitions

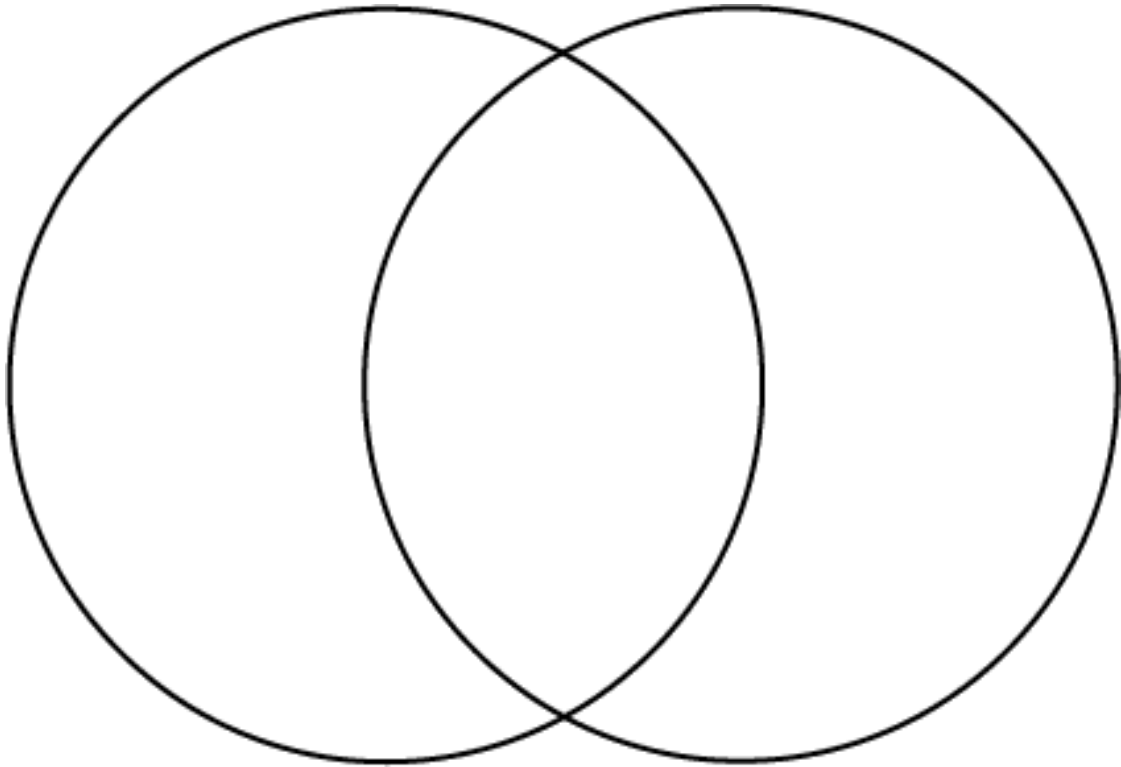
Map	A flat representation of a location
Globe	A 3d representation of the Earth
Equator	The imaginary line that divides the Northern and Southern Hemisphere
Lines of Latitude and Longitude	Grid lines used on maps and globes to divide the Earth into equal parts. They are used to easily determine location.
Scale	A map tool that is used to find the actual distance between two locations.
Compass Rose	A map tool that shows direction on a map or globe. It typically shows North, South, East, and West.
Map Key	A map tool that tells the reader what pictures represent. For example, an airplane may represent an airport.
Compare	To explain how two or more things are similar
Contrast	To explain how two or more things are different
Cartographer	A mapmaker

Appendix D

Name: _____

Date: _____

Comparing and Contrasting Maps



*image can be enlarged if needed

* lines can be added on the inside of the circles if needed

Appendix E

Name: _____

Date: _____

Maps Recording Sheet

Map Number	Map Title	Possible Purpose	Possible Audience	Pros and Cons
				Pros-
				Cons-

*copy as many of this form as needed

Appendix F

Delaware's State Social Studies Standards

Geography Standard One: Students will develop a personal geographic framework, or "mental map," and understand the uses of maps and other geo-graphics [MAPS].

K-3a: Students will understand the nature and uses of maps, globes, and other geo-graphics.

Curriculum Unit Title

Maps

Author

Beth Wagner

KEY LEARNING, ENDURING UNDERSTANDING, ETC.

Many different types of maps and geo-graphics exist. They can help you in many ways, if you are able to read and interpret a map using the given tools.

ESSENTIAL QUESTION(S) for the UNIT

- Why are mental maps useful for everyday life?
- What tools can I use to interpret and gather meaning from a map or globe?
- How do purpose and audience change a maps?
- How are maps and globes similar? How are they different?

CONCEPT A

Mental Maps

CONCEPT B

Comparing and Contrasting Maps

CONCEPT C

ESSENTIAL QUESTIONS A

Can you create a mental map of locations that are familiar to you?

How can you use a mental map visualization to create an actual map?

ESSENTIAL QUESTIONS B

Why do mapmakers create different maps of a region or area?

How can identifying a map's purpose and audience help the reader to determine if the map is appropriate for them?

ESSENTIAL QUESTIONS C

VOCABULARY A

Mental Mapping, Scale, Legend/ Map Key, Compass Rose, Direction, North/ South/ East/ West

VOCABULARY A

Compare, Contrast, Globe, Location

VOCABULARY A

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

Materials: Maps, Globes, Graphic Aids, Recording Sheets

Suggested Student Texts: "There's a Map on My Lap!" by Tish Rabe, elementary atlases