

Where in the World? Map Study Lesson #1

Introduction to Latitude and Longitude

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Grade Level	2nd – 3rd Grade
Subject	Social Studies

Essential Question

Why is understanding maps and globes important? How can longitude and latitude help me know where I live?

Summary

In this lesson, students are introduced to maps and globes as models of the Earth. They will begin this lesson by thinking and sharing with their classmates what they already know about globes and maps. Each student will explore a tiled map of the Hawaiian Islands (or another state or region) to find out how they might find certain areas on the map. Watching a video clip about latitude and longitude, students will work together to draw lines on a globe and learn the principles of latitude and longitude. At the end of the lesson, student pairs will practice identifying places on a gridded map by giving each other coordinate pairs.

Snapshot

Engage

Students participate in a Tell Me Everything activity as they look at a globe or map of the world. Students record their ideas on sticky notes, shared with the class, and added to the ***KNOW*** column of a KWL chart. Student questions may also be recorded on the chart under the ***WHAT*** column.

Explore

Students are given a tiled map of the Hawaiian Islands or a different state or region. This map is labeled with numbers and letters on the outside of each tile. Students work with Elbow Partners to name a location on the map using only the numbers and letters on the outside. Students show and share their findings with the class and add these strategies to the KWL chart.

Explain

The class watches an age-appropriate video clip about the purpose of latitude and longitude lines on maps and globes. While the class is watching the video, latitude and longitudinal lines are drawn on a class globe or map.

Extend

Students play a game of Battleship. Working in pairs, students play using lines of latitude and longitude as well as specific location points to target their partner's battleships.

Evaluate

Students do a follow-up Tell Me Everything activity to write, draw, and label what they have learned about finding locations and the imaginary lines of latitude and longitude on maps. In an additional evaluation, students locate a Hawaiian Island, or another location, on a map by using latitude and longitude, recording the coordinates, and explaining their process.

Standards

Hawaii Content and Performance Standards for Social Studies (Grade 2)

SS.2.7.2: Describe the purpose and features of maps and globes

Hawaii Content and Performance Standards for Social Studies (Grade 2)

SS.3.7.1: Use geographic representations (e.g., maps, globes, graphs, charts, models) to organize and analyze geographic information

Attachments

- Explore-the-Map-Recording-Sheet-Where-in-the-World.docx
- Explore-the-Map-Recording-Sheet-Where-in-the-World.pdf
- Lesson-Slides-Where-in-the-World.pptx
- Maps-Longitude-and-Latitude-Where-in-the-World.docx
- Maps-Longitude-and-Latitude-Where-in-the-World.pdf
- Tiled-and-Untiled-Maps-of-Hawaii-Where-in-the-World.docx
- Tiled-and-Untiled-Maps-of-Hawaii-Where-in-the-World.pdf

Materials

- A classroom globe
- Classroom world or USA map(s)
- Large sticky notes (1 per student)
- Explore the Map Recording Sheet (1 per student; attached)
- Maps—Longitude and Latitude (1 per student; attached)
- Tiled and Untiled Maps of Hawaii (1 per student; attached)
- Other state or regional maps (optional)
- Lesson Slides (attached)
- Chart paper or whiteboard/projector space
- Battleship (physical, online, or homemade copies)
- Orange and crayons/markers (optional; one per student)

30 minutes

Engage

Teacher's Note: KWL Chart Preparation

Before you begin, prepare a KWL chart using modified version of the KWHL Graphic Organizer strategy. This chart should be created or posted in a dedicated, central whiteboard or projector space. It will be used here throughout the lesson. Give the chart three columns:

- K: What I Already **Know**
- W: What I **Want** to Know
- L: What I Have **Learned**

See the chart on slides 6-7 of the attached Lesson Slides for an example layout.

Display **slide 3** from the attached **Lesson Slides** and identify the essential questions:

- Why is understanding maps and globes important?
- How can longitude and latitude help me know where I live?

Display **slide 4** and briefly explain the lesson objectives:

- Describe the purpose and features of maps and globes.
- Make connections between locating specific places on maps, lines, and latitudes.

Display **slide 5** and show students a map or globe. This may include the pictures on the slide, or a globe, wall map, or digital map in your classroom. Give each student a large sticky note and have them write down things they already know about maps or globes.

Display **slide 6**. Introduce the Tell Me Everything strategy. Have students use this strategy to share the contents of their sticky notes with an Elbow Partner.

Teacher's Note: Elbow Partners

Having students first share their ideas with an Elbow Partner gives everyone an audience for their ideas. This helps students later when they share their ideas with the whole class.

Have each pair share with the whole class.

Display **slide 7,** and show students the KWL chart on the slide. Ask pairs to walk up and stick their sticky notes into the ***KNOW*** column of your classroom's KWL chart. Note that students will use and reference this chart throughout the unit.

Teacher's Note: Assessment

The KWL chart helps students begin to think about what they ***know*** about maps and globes, what they ***want to know***, and later, what they have ***learned*** throughout the lesson. If you wish, you may use the ***KNOW*** column as a formative assessment or to activate background knowledge at this point in the lesson.

Display **slide 8**. Have students brainstorm about what they want to learn about the map or globe. Record student questions—or things they wonder about—in the ***WANT*** portion of the chart.

As you proceed in the lesson, use these student-generated questions and topics to guide student research. Add additional questions throughout the lesson.

Explore

Teacher's Note: Map Preparation

To prepare for the below activity, view the attached **Tiled and Untiled Maps of Hawaii**. Print out a copy of the third page per student. This page includes a map of Hawaii with numbers and letters on the outside of the tiles. This map is intended to simulate a larger version of a map that shows longitude and latitude lines. Do **not** introduce the terms ***longitude*** and ***latitude*** in this phase of the lesson.

Decide in advance whether you want to give students specific locations to identify on this map or allow them to choose their own.

Optional: Other Regions

If you prefer, prepare a tiled map of another state or region using the second page of the handout. Be sure the map you prepare includes numbers and letters on the outside of the tiles.

Display **slide 9**. Give each student a copy of the prepared tiled map of Hawaii (or another region). Additionally, hand each student a copy of the attached **Explore the Map Recording Sheet**.

Invite students to explore with their Elbow Partners ways to name locations on the map (either a location you have determined or a location of their choice) using only the numbers and letters on the outside. Have students use their Map Recording Sheets to write down their strategies for finding interesting places. Have students show their maps and share these findings with the class. Additionally, add these strategies to the ***LEARN*** column of the KWL Chart. Have students show and share their findings with the class. Add these strategies to the ***LEARN*** column as well.

Explain

Optional: BrainPOP

Two videos to help explain latitude and longitude are linked below. If you prefer, you can use a video of your own choosing instead—for example, if you have access to BrainPOP videos. Note that you will need to change the links on slide 10 if you do so.

Teacher's Note: Globe Preparation and Materials

The following activity involves the use of a physical globe and something with which to draw lines on that globe. If you don't have something to draw on your globe with or would prefer not to, you can use thin painter's tape to make the lines.

Alternatively, you can give each student an orange and have them draw the lines on the orange with crayons or markers.

Display **slide 10**. Use one or both of the videos linked below and on the slide to explain latitude and longitude.

- Dr. Nagler's Laboratory: Longitude and Latitude
- Andy Jensen's: Latitude and Longitude

As you watch the video(s) with the students, pause at various times and draw the lines on a physical globe as they are described.

Display **slide 11**. Ask students to help label the basic parts of the globe. Instruct them to listen carefully to the videos, read, and write down vocabulary words related to maps and globes:

- Globe
- Map
- Locate
- Equator
- North and South Pole
- Latitude Lines
- Longitude Lines
- Imaginary

Display **slide 12.** Once students are familiar with the relevant vocabulary words, pass out **one map** from the attached **Maps—Longitude and Latitude** to each student. These maps show latitude and longitude lines, and they include the Hawaiian Islands, Oklahoma, and the United States. You can use a map of a different region if preferred.

Show students how to find a location on this new map with the numbers on the top and right side. Have students work with their partners as they test each other on finding interesting or familiar places on the map. Monitor student pairs to ensure that they can explain to each other how they are identifying the places they have selected. Ask guiding questions to support student inquiry.

Display **slide 13**. Revisit the essential questions and check current understanding: *Why is having an understanding of maps and globes important? How can longitude and latitude help me know where I live?*

Display **slide 14**. Close this part of the lesson by revisiting the KWL chart and have students help you add to the ***LEARNED*** column. This is also a good time to check with students about additional questions they may want to add to the chart. The teacher may need to add to the chart after the discussion of the essential questions.

Tech Integration

Using a digital Geoboard on a computer or iPad is another option for practice with coordinate grids. The app and website enable the user to set up the board with tiles. The tiles can be labeled and numbered. This could also be used to play Battleship as detailed in the next phase.

Extend

Teacher's Note: Battleship

In the following activity, play Battleship. You can have students use the physical version of the game, an online version of the game, or even a homemade version of the game. The following video includes directions on how to make your own Battleship game: Homemade Battleship Game. You can also download a free PDFof a printable Battleship game here: How to Play Battleship.

Whatever method you choose, prepare the materials and set them out in your classroom before beginning the following activity.

Display **slide 15**. Have students work in pairs to play Battleship. Instruct them to think about lines of latitude and longitude as well as specific location points to target their partner's battleships.

While students play, visit with groups and ask students: "How is the Battleship game like finding places on the globe or a map?"

After meeting with each group and giving students adequate playing time, have a whole class discussion to help them make connections. You may want to return to the original tiled map from the explore section and have them find additional locations for more practice or give them a map of a new area to find locations.

Evaluate

Display **slide 16.** At the beginning of the lesson, you introduced the Tell me Everything strategy as a formative assessment to guide your teaching and to help students start the KWL chart populating it with what they already knew.

Now, hand each student a copy of the attached **Tell Me Everything** handout. Have them use the same strategy to write, draw, and label what they have learned. This is an open-ended activity useful in determining whether or not the students can make connections between finding locations and the imaginary lines of latitude and longitude on maps. Keep the KWL chart out in the classroom as a resource.

As students work, use the following guidelines to evaluate:

- Listen and monitor Elbow Partner conversations and whole-group discussions throughout the lesson.
- Take anecdotal notes about student participation.
- Determine whether or not students can locate specific points on a map.
- Determine whether or not students use some or all of the introduced vocabulary (latitude, longitude, map, etc.).

If you wish, add an additional evaluation by asking students to locate a Hawaiian Island or other location on a map by using latitude and longitude. Have students record the coordinates for the location and **explain** how they found it.

Teacher's Note: Supporting Learning

This may be a tough concept for second graders, so guiding them during this assessment is appropriate as both learning and assessment strategies.

Optional: Differentiation

In order to differentiate for students needing more of a challenge, have students locate the closest ocean, a city, or an area that is north, south, east, or west of the location. If you wish, you can make a recording sheet for students. Assign students to locate these points either as a class or individually on dry erase boards.

Resources

- AghettoDIY. (2011, March 7). Homemade Battleship game. [Video]. YouTube. https://www.youtube.com/watch?v=GXsZ7b9U9-U
- Jensen, Andy. (2010, January 14). Latitude and longitude. [Video]. YouTube. https://www.youtube.com/watch?v=swKBi6hHHMA
- K20 Center. (n.d.). Elbow Partners. Strategies. https://learn.k20center.ou.edu/strategy/116
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