Road Trip

Fractions Using a Map Scale

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Grade Level	3rd Grade	**Time Frame**	2-3 class period(s)
		Duration	120 minutes

Essential Question

How does using a map scale help me?

Summary

In this introductory unit on using map scales, students will use a map scale to determine the distance between two points on a map.

Snapshot

Engage

Students listen to the book *Mapping Penny's World* by Loreen Leedy and discuss road trips they have taken.

Explore

Students develop a travel plan flyer to reinforce map scale reading/measuring skills.

Explain

Students present their travel flyers to the class and explain how they measured the distance between their cities.

Extend

Students make graphical representations that illustrate the total number of miles the class traveled and compare their distance planned to others and to the total.

Evaluate

Students participate in partner work.

Standards

Oklahoma Academic Standards (Grade 3)

3.2.1A: Identify the state of Oklahoma using relative location, absolute location (latitude and longitude),direction, scale, size,and shape using physical and political maps.
3.2.1B: Interpret thematic maps of Oklahoma with the essential map elements of title, legend, scale, and directional indicators.

Oklahoma Academic Standards for English Language Arts (Grade 3)

3.6.R.2: Students will use graphic features including photos, illustrations, captions, titles, labels, headings, subheadings, italics, sidebars, charts, graphs, and legends to define a text.

Oklahoma Academic Standards for Mathematics (Grade 3)

3.GM.2: Understand measurable attributes of real-world and mathematical objects using various tools.

Attachments

- Are-We-There-Yet-travel-flyer - Spanish.docx
- Are-We-There-Yet-travel-flyer.docx
- Travel-Brochure-Rubric - Spanish.docx
- Travel-Brochure-Rubric.docx

Materials

- Oklahoma maps: enough for students to work in pairs
- Rulers
- Pencils
- Notebook paper11 x 17 white paper, possibly larger, if available
- Markers, colored pencils, or crayons
- Road Trip Guidelines
- *Mapping Penny's World* by Loreen Leedy

Engage

Have students Think-Pair-Share to answer the question, “Have you ever taken a road trip?”

Possible Student Responses

- I went to my grandparents’ house.
- I went to the beach.
- I went to the lake.

Share the book *Mapping Penny’s World* by Loreen Leedy.

As you read it, point out the map skills used by Penny. (For example, look at pages 3 and 4 and discuss the elements that make up a map.)

Using the classroom map, locate the map scale for the class. If a classroom map isn’t available, then a map from Google could be used or one from the students’ Social Studies textbook.

Demonstrate how to use a ruler and a map scale to determine the distance from one point on the map to another.

Distribute Oklahoma maps to pairs of students.

Ask students to locate the map scale. Discuss the unit of measurement used on the map scale.

As a class, have the students find the distance between Oklahoma City and Ponca City. Teacher should walk around the room helping when needed.

Direct students to find the distance between Ponca City and Tulsa. Teacher will walk around the room helping as needed.

Explore

Direct students to find physical or geographical features seen on the map. Record the findings on the board.

Possible Student Responses

“I see lakes and rivers!” or “There are mountains in Oklahoma!”

Tell students they are “Travel Agents” planning the ultimate Oklahoma Road Trip.

Working in partners, have students develop a travel plan for a road trip. Hand out the “Road Trip” guidelines found in the attachments. After discussing the guidelines, allow students ample work time to complete the project. **Measurements will be straight-line measurements: from point A to point B.

Allow students time to further investigate the landforms they ‘discover’ on their road trip.

Ask how do the physical land forms effect the community that surrounds it? •

Possible Student Responses

"The Arkansas River provides jobs in the shipping industry in Northeastern Oklahoma." or "People who live close to forests can hike or hunt in them.

If technology is available, have students use Google Maps to check their mileage calculations. Once students have checked their calculations, discuss the differences that are seen and possibilities for the difference.

Teacher's Note

They measured a straight line from points A to B, and Google Maps will calculate the miles traveled using roads. You can measure straight distances in Google by moving your cursor to the location where you want to a distance measure from, then right-clicking and choosing "measure distance." Next, choose the destination and it will draw a straight line and measure the exact distance between the two points.

Explain

Ask students to present their travel plan flyer to the class and explain how they decided what towns to visit and their measuring techniques.

Possible Answers

"We decided to go to Elk City because that is where my grandpa lives. We measured the distance with a ruler." Or " We decided to go to Slapout, OK because we thought the name was cool. We measured the distance using a piece of paper we drew the map scale on."

Make a class list of the geographic landforms that students mention in their presentations. With their partner, ask students to discuss the list that is made. Compare this list with the first list that was made. Were there any surprises?

Ask students to compare the types of landforms in the different regions of Oklahoma.

Extend

Write on the board the total number of miles each group traveled.

Ask students "What is the best way to display these data? Have students Think-Pair-Share

Possible answers: “bar graph or pictograph.”

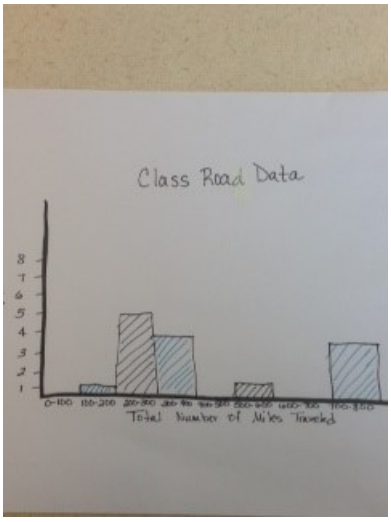
Working in partners, have students create their own graphical representations of the class data. They could make this on grid paper or plain paper.

Direct students to do a Gallery Walk/Carousel to show off the graphical representations.

During the Gallery Walk, have one student stay with their group’s poster. This student will share the graph that was made and explain why the graph that was used was selected.

Teacher's Note

The remaining group members travel to the other groups to gather new ideas, evaluate representations and take notes of their findings. When groups return to their own poster they can revise, edit or make necessary adjustments to their work. During the Gallery Walk, have one student stay with their group’s poster. This student will share the graph that was made and explain why the graph that was used was selected.



Evaluate

Based on your observations and adjustments you make in the lesson, evaluate how the students are measuring.

Possible Student Responses

- “Knowing how to use a map scale might help me decide how far to drive in one day on my vacation.”
- “ I can find out how many miles it is from my town to my cousin’s town.”

Lead a class discussion about everyone observed during the gallery walk.

Model how to determine the cost of the trip if traveling by car. For example if my group traveled 250 miles, how much gas would it take and how much would this cost?

Use the travel plan rubric attachment to assess their work.

Have students respond to the question “ How will knowing how to use a map scale help me in my life?” in a journal or use an Exit Ticket.

Possible Student Responses

- “Knowing how to use a map scale might help me decide how far to drive in one day on my vacation.”
- “ I can find out how many miles it is from my town to my cousin’s town.”
- "If I know how to read a map scale, then I can figure out how many miles I will travel on my vacation."
- "I could use this information to figure out how much gas money I will need. I could also figure out how long it would take to drive."

Resources

- Mapping Penny's World, by Loreen Leedy
- K20 Center. (n.d.). Think-Pair-Share. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5064b49
- K20 Center. (n.d.). Gallery Walk/Carousel. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f505a54d
- K20 Center. (n.d.). Bell Ringers and Exit Tickets. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f505d6f2
- Road Trip travel plan guidelines
- Road Trip brochure rubric
- Google Maps