Where Have We Been?

Exploring the United States with Class Travel Data
Detailed Lesson Plan (Grades 4–6)

Grade Level: 4–6
Time Frame: 2–3 class periods (45–60 minutes each)
Subjects: Social Studies (U.S. Geography), Data & Graphs, Optional Mathematics (Operations, Fractions, Decimals)
Prerequisite: Students completed a take-home “Travel Map” with a parent/guardian, shading each U.S. state they have visited or driven through (no airports only, no flyovers).

I. Big Idea & Rationale
Students often see maps as static pictures. In this project, the class builds a living, interactive map based on their own travel experiences. They collect real data, see it represented visually through colors and graphs, and optionally use it to answer mathematical questions. This makes geography personally meaningful and reinforces data literacy and math skills with authentic numbers.

The digital tool includes:
• A clickable U.S. map where each state’s visit count increases when clicked.
• A “Transform Map” feature that colors each state based on the percentage of students who have visited.
• A draggable State Visit Counts table.
• Mini bar and pie charts (with hover tooltips and enlarged views).
• An optional math question generator that creates word problems and print-ready worksheets based on the class’s data.

II. Learning Objectives

A. Geography & Social Studies
1. Students will locate and identify U.S. states on a map.
2. Students will compare travel patterns in different regions of the United States.
3. Students will connect personal experience (where they have traveled) to geographic concepts (regions, distance, neighboring states).

B. Data & Graphs
4. Students will contribute to a class data set using a digital mapping tool.
5. Students will interpret a frequency table (State Visit Counts) to describe class travel patterns.
6. Students will interpret and compare bar and pie charts based on their class’s data (e.g., which states are most/least visited).

C. Optional Mathematics (Grades 4–6)
7. Students will solve word problems using the four operations with whole numbers based on state visit counts.
8. Students will interpret and express fractions (including simplified fractions) and decimals representing class data.
9. Students will reason about differences, comparisons, and “how many more” or “how many fewer” situations using real data.

III. Standards Connections (Typical Examples)

Note: Adapt to your state/district standards.

Geography / Social Studies
• Uses maps to locate and describe the major features of the United States (states, regions).
• Compares and contrasts characteristics of different regions of the United States.

Mathematics (4–6)
• Operations & Algebraic Thinking: Solves multi-step word problems involving the four operations.
• Number & Operations—Fractions: Interprets fractions as part of a set; compares and simplifies fractions.
• Number & Operations in Base Ten: Reads, writes, and compares decimals to the hundredths place.
• Measurement & Data: Represents and interprets data using bar graphs and line plots (transferable to bar charts and pie charts).

IV. Materials & Technology

Teacher:
• Computer with internet browser (or local copy) and projector/smartboard.
• The Class Travel Map web application with:
  – Clickable U.S. map and "Transform Map" feature.
  – Color key for visit percentages.
  – Draggable State Visit Counts panel.
  – Mini bar and pie charts (hover tooltips + enlarge buttons).
  – Optional math quiz generator and worksheet printer.

Students:
• Individual "Travel Map" homework (completed with families).
• Pencils, colored pencils or crayons.
• Optional: clipboards or notebooks for jotting observations.

Classroom Setup:
• Projector or large display where students can see the interactive map.
• Some open space near the board for students to come up and tap the map.

V. Key Vocabulary

• State – One of the 50 main political divisions of the United States.
• Region – An area of the country with similar characteristics (e.g., Northeast, South, Midwest, West).
• Data – Information collected and recorded, often as numbers.
• Frequency – How often something happens (how many times).
• Table – A chart that shows data in rows and columns.
• Bar Graph – A graph that uses rectangular bars to compare amounts.
• Pie Chart – A circle graph that shows parts of a whole.
• Percentage – A number out of 100 that shows a part of a whole.
• Fraction – A way to show part of a whole or set.
• Decimal – A number that includes a point (.) to show parts of a whole.

VI. Lesson Sequence (2–3 Class Periods)

Day 1 – Building the Class Map & Collecting Data (45–60 minutes)

1. Warm-Up (5–10 minutes)
   • Ask: "Which states have you visited?" "Have you ever driven through another state on

a road trip?”
- Have students briefly turn and talk with a partner about their homework maps.
- Emphasize the rule: It counts only if you visited or drove through the state—not just flying over or changing planes in an airport.

2. Review Homework Maps (5–10 minutes)
- Students take out their completed travel maps.
- In pairs, they compare which states they have in common and which are different.
- Teacher circulates, checking for:
  – Understanding of the “visited or drove through” rule.
  – Correct labeling and shading of states.

3. Introduce the Interactive Class Map (5 minutes)
- Project the Class Travel Map application.
- Briefly explain the main parts:
  – “Map Title” box and title display.
  – “Students” box (total number of students).
  – Clickable U.S. map.
  – Color key (red, orange, yellow, green, blue, purple, gray) showing visit percentages.
  – State Visit Counts panel.
  – Small bar graph and pie chart with hover.
  – Optional Math Quiz section below the map.
- Type in your class size in the “Students” box.

4. Students Record Their Visits on the Class Map (15–20 minutes)
- Explain the procedure:
  – Each student will come to the board with their homework map.
  – They will tap or click each state they visited or drove through.
  – Each click adds 1 to that state’s visit count.
- Teacher tip: To avoid double-counting, you may:
  – Have each student say the state name aloud as they tap it.
  – Pause occasionally to glance at the State Visit Counts panel.
- As students take turns, the class can:
  – Watch the numbers increase on state labels and in the State Visit Counts table.
  – Predict which states will have the most visits (local state, nearby vacation states, etc.).

5. Transform the Map with Percentages (5 minutes)
- Once all students have entered their visits, click “Transform Map.”
- Explain the color coding:
  – Red: 90% or more of the class has visited.
  – Orange: 70% or more.
  – Yellow: 50% or more.
  – Green: 30% or more.
  – Blue: 10% or more.
  – Purple: 1–9%.
  – Gray: 0 students have visited.
- Ask students:
  – “Which states turned red or orange?”
  – “Which states are still gray?”
  – “What do you notice about our travel patterns?”

6. Quick Reflection (5 minutes)
- Ask for student observations:

– “Are there regions where many classmates have traveled?”
– “Are there states that no one in our class has visited?”
• Students jot one sentence or draw a quick sketch in their notebooks about something they learned about U.S. geography today.

Day 2 – Interpreting Graphs & Optional Math (45–60 minutes)

1. Review the Class Map (5 minutes)
• Reopen the Class Travel Map.
• Ask students to recall what the colors meant.
• “What changed since yesterday?” (If you saved or reloaded data, point that out.)

2. Explore the State Visit Counts Panel (5–10 minutes)
• Show the draggable State Visit Counts box.
• Scroll together and identify:
– Which state has the highest number of visits?
– Which states have 0 visits?
– Any surprising states with relatively high or low counts?
• Have students answer a few oral questions, for example:
– “Name a state that more than 10 students have visited.”
– “Name a state that fewer than 3 students have visited.”

3. Analyze the Bar Graph (10 minutes)
• Direct attention to the mini bar graph.
• Have students hover their cursor over bars to see:
– State abbreviation
– Number of visits
– Percentage of the class
• Discussion prompts:
– “Which state has the tallest bar? Why do you think so?”
– “Which three states have the most visits?”
– “Are there any states with the same number of visits?”
• If desired, click “Enlarge” to open the full-size bar graph in a new window.
• Ask students to compare two or three states:
– “How many more visits to State A than State B?”
– “Which state has about half as many visits as State C?”

4. Analyze the Pie Chart (10 minutes)
• Move to the mini pie chart.
• Hover to display state names, visit counts, and percentages.
• Discussion prompts:
– “Which states take up the biggest slices of our class pie?”
– “Are there any tiny slices? What does that tell you?”
– “How does the pie chart feel different from the bar graph?”
• Optionally open the enlarged pie chart window and repeat the hover exploration for clarity.

5. Optional Math Extension Using the Built-In Generator (10–20 minutes)
Note: This section is optional. You may skip it or adjust the time depending on your math block.

• Scroll to the Math Quiz section below the map.
• Choose “mixed” or a specific type of problem (addition, subtraction, multiplication, division, fractions, decimals).
• Choose the number of questions (e.g., 6–10).

• Click “Start / Regenerate Quiz.”
• As a class or individually on devices, students answer:
– “How many more people visited Florida than Georgia?”
– “How many fewer people visited Arizona than California?”
– “How many more people would need to visit Vermont to equal the number of visits to New York?”
– “What fraction of the class has visited Michigan? (Write in simplest form.)”
– “Which decimal best represents the fraction of students who visited North Carolina?”

• Use the score report for immediate feedback.
• To create paper practice:
– Click “Start / Regenerate Quiz” to finalize questions.
– Use “Print Map & Worksheet” to produce a worksheet that includes:
– Space for student name and date.
– The class map (no graphs).
– The generated questions and answer spaces.

6. Whole-Class Reflection (5–10 minutes)
• Ask students to reflect in writing or discussion:
– “Which states do you think many people visit and why?”
– “How did the charts help you understand our data?”
– “What new idea about U.S. geography did you learn?”
• Optional: Have each student set a “travel goal” state they would like to visit someday and explain why in 2–3 sentences.

VII. Differentiation & Support

English Learners (ELL)
• Pre-teach key vocabulary with visuals (state, region, graph, fraction, percentage).
• Allow students to discuss answers with a partner in their home language before sharing in English.
• Provide sentence starters, such as:
– “More students visited ____ than ____.”
– “The state with the most visits is ____.”
– “The fraction of the class that visited ____ is ____.”

Students with Learning Differences
• Provide a printed color key and a simplified map if needed.
• Allow extra time for reading graphs and answering questions.
• Read math problems aloud and highlight important numbers and words.
• Offer the option to answer orally and have an adult scribe, when appropriate.

Advanced Learners / Extensions
• Have students compare this year’s class data to a previous year’s data (if available).
• Ask students to group states by region and calculate:
– “How many total visits to Western states?”
– “What fraction of all visits were to the Northeast?”
• Invite students to design an additional graph type (e.g., a line plot of visits by distance from your home state).

VIII. Assessment

Formative Assessment
• Observation during map entry: Are students using their homework maps correctly and

following the “visited or drove through” rule?
• Oral responses during discussions: Can students identify states, describe patterns, and read information from graphs?
• Quick written exit tickets: One sentence about something they noticed on the map or graph.

Summative or Performance Assessment (Optional)
• Collect printed worksheets from the math extension:
  – Check correctness on operations, fractions, and decimals.
  – Look for correct use of data from the class map.
• Short written reflection:
  – “Describe two things our class travel map shows about where we have been in the U.S.”
  – “Explain how a bar graph or a pie chart helps you understand data.”

IX. Possible Homework & Family Connections

• Before the lesson (already completed):
  – Students work with a parent/guardian to shade states they have visited or driven through and bring the map back to school.
• After the lesson (optional):
  – Students choose one state the class has visited the least and research one interesting fact to share.
  – Students write a short paragraph: “If I could visit any state we have not visited much as a class, I would go to ____, because ____.”

X. Teacher Tips & Management Suggestions

• Consider having students come up in small groups to tap the map to reduce wait time.
• Decide ahead of time whether you will record visits only once per student per state, or allow multiple entries if they mistakenly double-tap; clarify this with the class.
• If technology is limited, the teacher can enter data from student maps while students work on a related task (e.g., region coloring, state flashcards).
• Use the “Map Title” feature to rename the map for different classes (e.g., “Ms. Garcia’s Class Travel Map – 4B”).