

Math Connections: Data Analysis & Statistical Reasoning

Use your classroom's transportation tally data for real-world statistics

These activities use multiple weeks of tally data. Best used after 3–4 weeks of data collection.

Activity 1: Central Tendency

Collect the daily walker counts from the past 4 weeks (20 school days). Students calculate mean, median, and mode.

"Calculate the mean number of daily walkers over the past 4 weeks."

"Find the median. Is it different from the mean? What might cause them to differ?"

"Calculate the range. On what day was walking highest? Lowest? Can you identify factors (weather, events, day of week)?"

MA Framework: 6.SP.A.2 (understand statistical variability), 6.SP.B.4 (display data in plots), 6.SP.B.5 (summarize numerical data sets)

Activity 2: Trend Analysis

Create a line graph showing the weekly active transportation percentage over the past month.

"Is the trend going up, down, or staying flat?"

"If the trend continued for 10 more weeks, what would you predict? Is that prediction reasonable?"

"What events or changes might explain any spikes or dips?"

MA Framework: 8.SP.A.1 (construct scatter plots), 8.SP.A.2 (model with straight lines), 8.F.B.5 (describe functional relationships from graphs)

Activity 3: Scale-Up Modeling

Use your class data to model school-wide impact.

"Our class had $[x]$ active trips this month. If every class in our grade had the same rate, how many total active trips would that be?"

"If every class in the school matched our rate, how many active trips per month? Per year?"

MA Framework: 7.RP.A.2 (proportional relationships), 7.RP.A.3 (use proportional relationships to solve problems), 6.EE.A.2 (write and evaluate expressions)

Challenge: Have students design their own survey question about transportation habits, collect data from another class, and compare the two datasets. What's similar? What's different?