

Is Silver the Most Popular Car Color?

A recent newspaper article stated that silver was the most popular color for cars purchased in America. Test this theory by examining the typical automobile color in the school parking lot.

Conduct a mathematical investigation to determine the typical automobile color in the school parking lot.

Present your results and conclusions mathematically.

MORE ACCESSIBLE VERSION

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A recent newspaper article stated that silver was the most popular color for cars purchased in America. Test this theory by examining the typical automobile color in the school parking lot.

Conduct a mathematical investigation to determine the typical automobile color in the school parking lot.

- Make a chart to record data about automobile colors.
- Go to the parking lot to collect your data.
- Analyze the first 25 cars.
- Make several multiplicative comparison statements between and among the colors.
- Include a representation for the data you collect.
- Find the percent each color represents (out of 100%).
- Draw a conclusion about the typical car color in the parking lot

MORE CHALLENGING VERSION

Is Silver the Most Popular Car Color?

A recent newspaper article stated that silver was the most popular color for cars purchased in America. Test this theory by examining the typical automobile color in the school parking lot and compare the data found with data collected at the local grocery store.

First, conduct a mathematical investigation to determine the typical automobile color in the school parking lot, including what percent of cars is represented by each color. Next, go to the grocery store with an adult and conduct a mathematical investigation to determine the typical automobile color in the parking lot, including what percent of cars is represented by each color.

Analyze the data from both parking lots and draw conclusions about the color of automobiles. How does your data support or refute the newspaper article findings?

Present your results and conclusions mathematically.

Common Core Task Alignments

Mathematical Practices: MP.1 MP.3 MP.4 MP.5 MP.6

Grade 6 Content Standards: 6.RP.A.3c

Planning Sheet

Is Silver the Most Popular Car Color?

Common Core Standards and Evidence

6.RP.A.3c

Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Exemplars Task-Specific Evidence

This task requires students to analyze data in terms of central tendency and variability to reach a conclusion about common cars. Students also need to organize their own data and find what percent of the whole each piece of data represents.

Underlying Mathematical Concepts

- Data collection
- Data analysis
- Percent of a quantity
- Data display
- Comparisons

Possible Problem-Solving Strategies

- Table
- Bar graph
- Circle graph/Pie chart
- Line plot
- Calculate mode and range
- Find percentages

Formal Mathematical Language/Symbolic Representation

- Table
- Bar graph
- Circle graph/Pie chart
- Line plot
- Maximum/Minimum
- Mode
- Total
- Percentage
- Ratio
- Range
- Double
- Half
- Frequency
- Data
- Comparison
- Central tendency
- Number line
- Distribution
- Attribute

Possible Solutions

In looking at solutions, check for accuracy based on data collected by the student and her/his peers. Look for supporting evidence, organization and documentation of all data collected as well as for use of logical reasoning.

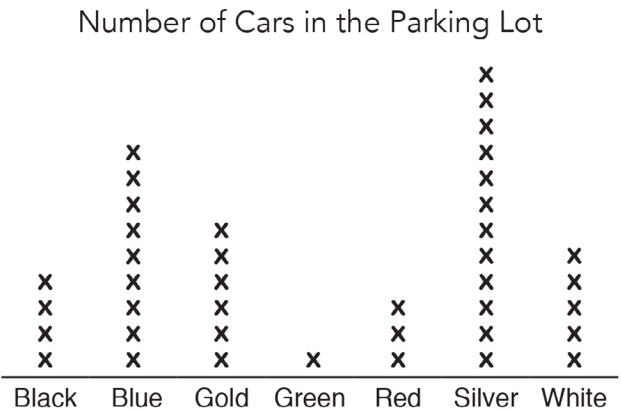
Sample Student Response:

A list of the color for the 40 cars in the school parking lot:

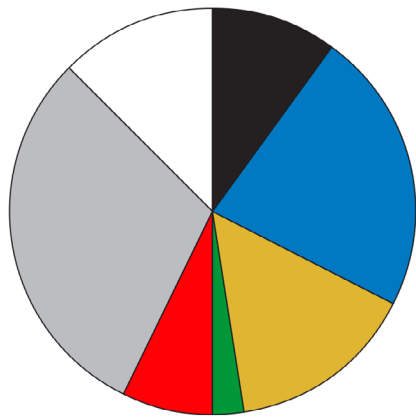
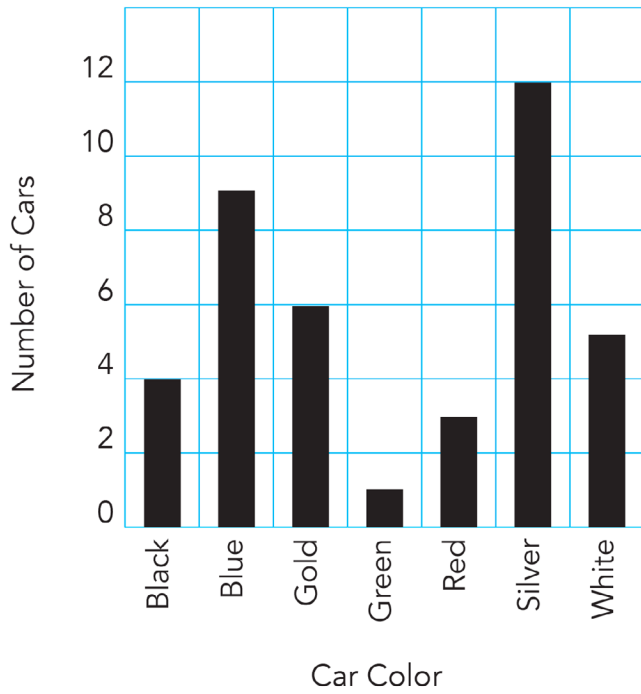
Red, Silver, Gold, Blue, Blue, Black, Silver, White, White, Silver
 Silver, Silver, Gold, Blue, Blue, White, White, Black, Green, Gold
 Silver, Blue, Silver, Blue, Black, White, Silver, Silver, Gold, Blue
 Red, Blue, Silver, Black, Gold, Gold, Red, Blue, Silver, Silver

Color	Number of Cars	Percentage of the Total Number of Cars
Black	4	10%
Blue	9	22.5%
Gold	6	15%
Green	1	2.5%
Red	3	7.5%
Silver	12	30%
White	5	12.5%
Total	40	100%

Key
 x is 1 car

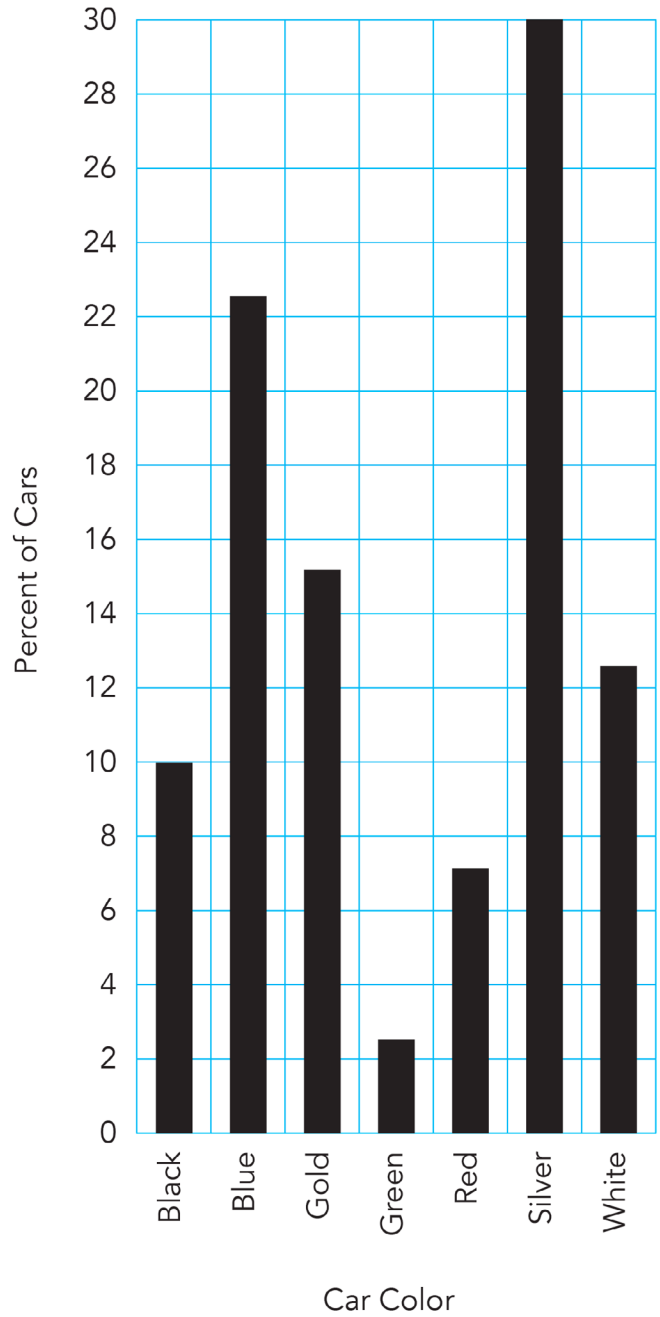


Car Count by Color



Car Color

Percent of Car Color



Possible Connections

Below are some examples of mathematical connections. Your students may discover some that are not on this list.

- Introduce another variable to analyze, such as whether or not cars had bumper stickers, roof racks, dents, or make, model, etc.
- Make multiplicative comparisons between variables such as the number of silver cars in the parking lot is double the number of gold cars.
- The percent of blue cars plus green cars was equal to 25%.
- Means and medians are not appropriate for categorical data.
- Measure aspects of cars that are numerical in nature, such as height, width, cargo space, wheel radius and diameter ...
- Use data collected to make predictions for other collections for cars (larger/smaller).
- Relate to a similar task and state a math link.

Note: These conclusions are based on the sample solution data.