

Study Guide and Intervention

Problem-Solving Investigation: Use a Graph

When solving problems, a **graph** can show a visual representation of the situation and help you make conclusions about the particular set of data.

Example

POPULATION The table below shows the enrollment of Mill

High School students over five years. Estimate the enrollment was for the 2005–2006 school year.

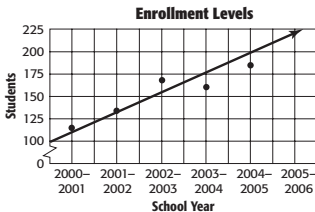
Mill High School Enrollment

00–01	01–02	02–03	03–04	04–05
115	134	168	160	185

Explore You know the enrollment of students for five years. You need to estimate the enrollment for the 2005–2006 school year.

Plan Organize the data in a graph so that you can see a trend in the enrollment levels.

Solve



The graph shows that the enrollment increases over the years. By using the graph you can conclude that Mill High School had about 225 students enrolled for the 2005–2006 school year.

Check Draw a line through as close to as many points as possible. The estimate is close to the line so the answer is reasonable.

Exercises

1. **TEMPERATURE** The chart to the right shows the average December temperatures in Fahrenheit over four years. Predict the average temperature for the next year. **14°**

December Temperatures (F°)

2002	2003	2004	2005
22°	17°	18°	16°

2. **POPULATION** Every five years the population of your neighborhood is recorded. What do you predict the population will be in 2010? **2,550 people**

Neighborhood Population

1995	2000	2005
2,072	2,250	2,376

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Using Graphs to Predict

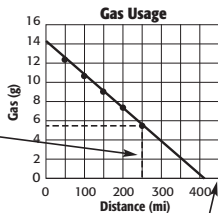
A **line graph** shows trends over time and can be useful for predicting future events. A **scatter plot** displays two sets of data on a graph and can be useful for predictions by showing trends in the data.

Example Use the line graph of the Moralez family car trip shown below to answer the following questions.

1. After 250 miles, how much gas did the Moralez family have left?

Draw a dotted line up from 250 m until it reaches the graph and then find the corresponding gas measure.

They will have about 5.5 g left.



2. How far can the Moralez family travel before they run out of gas?

When they run out of gas, the tank will be at 0 so find where the line reaches 0.

They can travel about 430 miles.

Exercises

Use the scatter plot to answer the questions.

- How many birds were there in 2004?
About 50 birds
- What relationship do you see between the number of birds and year? **Over the years the birds increase.**
- Predict the number of birds there were in the year 2001? **About 27 birds**
- Predict the number of birds there will be in the year 2006? **75 birds**
- In what year do you think the bird population will reach 100? **2009**

