

Study Skills

Reading Line and Circle Graphs

VOCABULARY

graph circle graph
line graph

WHY THE SKILL MATTERS

As you have read, the Chinese empire built many ships in the early 1400s. They built warships and transport ships for the empire's fleet. A fleet is a group of ships under one command. Zheng He sailed in a fleet.

One way to see how large the Chinese fleet was is by using a **graph**. A graph shows information in a way

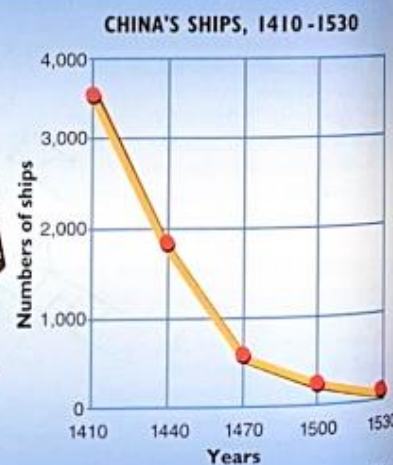
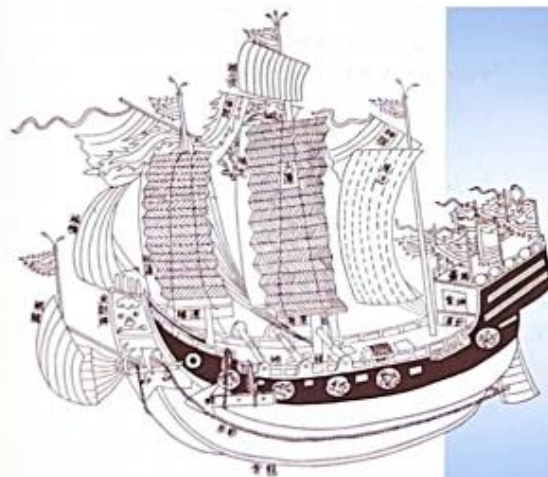
that makes it easy to understand. Graphs are useful for showing patterns, trends, amounts, or how things change over time.

USING LINE GRAPHS

The **line graph** below shows how the size of the Chinese fleet changed during the 1400s through the middle 1500s.

To read this line graph, first read its title. Then read the years shown on the bottom of the graph. The numbers on the left side show the number of ships in the Chinese fleet.

For each year, a dot on the graph stands for the number of ships. The first dot shows that in the year 1410, China had about 3,500 ships. Trace the line of dots to see how the number of ships changed. How many ships were there in China in 1470?



Helping yourself

• **Line graphs** show how information changes over time. Trace the line of dots to see how the information changes.

• **Circle graphs** show how something can be divided into parts. Look at the sizes of the parts of the circle graph to see how they compare.

When you look at a line graph, pay special attention to patterns. In the graph on page 118 you can see that the number of ships decreased over time. When did the empire have the most ships?

USING CIRCLE GRAPHS

A **circle graph** shows something divided into parts. All of the parts together make up the whole. Circle graphs are also called pie graphs. The circle graph on this page shows what kinds of ships China had in the early 1400s.

Looking at the graph, you can get a picture of how many of each type of ship there were in the Chinese fleet. You can see that there were 400 transport ships. Look at each part of the graph. Which kind of ships were the largest group of ships?

TRYING THE SKILL

Take another look at each of the graphs. Then answer the following questions about the Chinese

fleet. The Helping Yourself box on this page can give you hints about how to read circle graphs and line graphs.

Which graph or graphs would you use to find out the size of the fleet in 1410? In 1450? Which graph tells you how many warships were built? Which graph shows how many ships existed over time?

THE CHINESE FLEET, EARLY 1400s



Source: When China Ruled the Seas, by Louise Levathes, 1994

REVIEWING THE SKILL

1. How are line graphs different from circle graphs? How are they the same?
2. When did the greatest drop in the number of Chinese ships happen?
3. Which kind of graph is better for showing how the population of your school changed over several years?
4. Which kind of graph would be better for showing the number of boys and the number of girls in your school?
5. When might it be useful to know how to read line graphs and circle graphs?