

Family Guide to CPM CHAPTER 1

Welcome to Sixth Grade and to the CPM Curriculum This curriculum spirals, giving spatial practice in sixth grade standards throughout the school year. The design of the curriculum recognizes that not all students learn at the same pace. Research-based best practice addresses this reality by giving students the opportunity in classwork, homework to practice, revisit, and eventually master building stronger understanding over the course of time. CPM is intentionally written to be challenging and have students engage in team discussion and productive struggle. CPM's philosophy encourages productive struggle...realizing that with struggle comes learning as well a sense of accomplishment and pride. Mathematics should not frustrate anyone to the point of giving up, but beckon the learner with the challenge of a potential solution to a difficult problem. Students are encouraged to ask questions, make connections, and deepen their conceptual understanding as well as their skill base.

Chapter 1 Main Ideas

Chapter 1 introduces students to the mathematical practices, begins to develop an understanding of how to effectively collaborate with peers and to work on solving challenging problems. The lessons in this chapter are only meant as an *introduction* to the course.

Students are not expected to have proficiency or mastery of these concepts by the end of this chapter.

Section 1.1

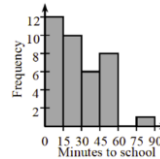
The main purpose of this first section is to introduce big concepts in this year's math such as organizing data and using mathematical reasoning to make predications while working in a team.

Section 1.2

Students will find multiple ways to represent mathematical ideas using words, numbers, symbols, diagrams, and graphs.

Key Words

Histogram-A way of displaying data that is much like a bar graph in that the height of the bars is proportional to the number of elements. The difference is that each bar of a histogram represents the number of data elements in a range of values, such as the number of people who weigh from 100 pounds up to, but not including, 120 pounds. Each range of values should have the same width.



scatter plot-Two related sets of data may have the corresponding values of the sets listed as ordered pairs. If these ordered pairs are graphed in the coordinate plane, then the result is a scatter plot.

Where These Topics Are Revisited

*Representations of data are in chapters 2 & 8

*Perimeter and area relationships are in chapters 5 & 6

*Proportions are in chapter 3

What's Coming Up in the Next Chapter

Students will look at arithmetic strategies and area in chapter 2.

How You Can Help at Home

Encourage your student's thinking by having them use these guiding questions:

"How can I work with my team to figure it out?"

"What questions can I ask about this problem?"

"How can I organize my work?"

"How can I describe my thinking?"

Team Roles

Team work is an integral component to the CPM curriculum. Students will work together frequently to problem solve challenging questions. Each team member will have a specific role.

Resource Manager- Get supplies for your team and make sure that your team cleans up. The teacher may call you over to give you extra information. Call the teacher over for team questions.

Facilitator-Help your team get started by having someone read the task. Make sure that everyone understands what to do. Make sure that everyone understands the team's answer before you move on.

Recorder/Reporter- Help your team decide how to organize its ideas on the poster. Make sure that each member of your team has a job to help make the poster and knows what they should be working on. Remind everyone in your team to record the ideas about the pattern neatly and completely.

Task Manager-Make sure no one talks outside your team. Help keep your team on task and talking about math. Listen for statements and reasons.

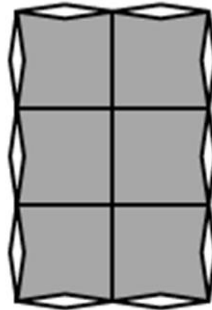
In the Chapter 1 assessment, students will be expected to show their understanding of the following:

6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots

Sample Problem from Chapter 1

Cruz, Sophia, and Savanna are using toothpicks and tiles to describe the attributes of the shapes below. Cruz made a pattern and told the girls the number of tiles he used. Then Sophia and Savanna each tried to be the first to see who could call out how many toothpicks, or units of length, were on the outside. Explore using: [Area Tiles and Toothpicks](#) (CPM).

- a. Cruz made the tile pattern shown below and said, “There are six tiles.” Savanna quickly said, “There are ten toothpicks.” Copy the tile pattern on your paper and show where Savanna counted the 10 toothpicks. Justify your answer with words, numbers, or pictures.



- b. Cruz put down the pattern as shown below, but he ran out of toothpicks. How would you describe this shape using toothpicks and tiles?



- c. Get a set of tiles from your teacher or use the [Area Tiles and Toothpicks](#) (CPM) and work with your team to:
- Make a pattern so that there are four more toothpicks than tiles.
 - Draw your tile pattern on your paper
 - Label the number of toothpicks and tiles on your drawing.

Is there more than one answer?