Contents

Chapter 8: Adding and Subtracting Within 0-100

Chapter 9: Graphs

Chapter 10: Coins

Foreword

Math Mammoth Grade 1 comprises a complete math curriculum for the first grade mathematics studies. The curriculum meets the Common Core standards.

The main areas of study for Math Mammoth Grade 1 are:

1. The concepts of addition and subtraction, strategies for addition and subtraction facts, and addition and subtraction word problems;
2. Developing understanding of place value for two-digit numbers;
3. Developing understanding and some basic strategies for two-digit addition and subtraction.

Additional topics we study are telling time (whole and half hours), geometric shapes, measurement, and counting coins.

This book, the 1-B worktext, covers addition and subtraction facts (chapter 5), shapes and fractions (chapter 6), measurement (chapter 7), adding and subtracting two-digit numbers (chapter 8), graphs (chapter 9), and counting coins (chapter 10). The book 1-A covers addition and subtraction within 0-10, word problems, place value with two-digit numbers, and time.

I heartily recommend that you read the full user guide in the following pages.

I wish you success in teaching math!

Maria Miller, the author

User Guide

Note: You can also find the information that follows online, at **https://www.mathmammoth.com/userguides/** .

The Common Core Standards documentation is available at:
https://www.mathmammoth.com/preview/standards/MM-CCS-Grade1-2026.pdf

Basic principles in using Math Mammoth Complete Curriculum

Math Mammoth is mastery-based, which means it concentrates on a few major topics at a time, in order to study them in depth. The two books (parts A and B) are like a "framework", but you still have a lot of liberty in planning your child's studies. You can even use it in a *spiral* manner, if you prefer. Simply have your student study in 2-3 chapters simultaneously. In first grade, I suggest studying chapters 1-3 in order, but you can be flexible with the other chapters and schedule them earlier or later.

Math Mammoth is not a scripted curriculum. In other words, it is not spelling out in exact detail what the teacher is to do or say. Instead, Math Mammoth gives you, the teacher, various tools for teaching:

- **The two student worktexts** (parts A and B) contain all the lesson material and exercises. They include the explanations of the concepts (the teaching part) in blue boxes. The worktexts also contain some advice for the teacher in the "Introduction" of each chapter.

  The teacher can read the teaching part of each lesson before the lesson, or read and study it together with the student in the lesson, or let the student read and study on his own. If you are a classroom teacher, you can copy the examples from the "blue teaching boxes" to the board and go through them on the board.

- There are hundreds of **videos** matched to the curriculum available at https://www.mathmammoth.com/videos/ . There isn't a video for every lesson, but there are dozens of videos for each grade level. You can simply have the author teach your child or student!

- Don't automatically assign all the exercises. Use your judgment, trying to assign just enough for your student's needs. You can use the skipped exercises later for review. For most students, I recommend to start out by assigning about half of the available exercises. Adjust as necessary.

- Each chapter introduction contains a **list of links to various free online games** and activities. These games can be used to supplement the math lessons, for learning math facts, or just for some fun.

- The student books contain some **mixed review lessons**, and the curriculum also provides you with additional **cumulative review lessons**.

- There is a **chapter test** for each chapter of the curriculum, and a comprehensive end-of-year test.

- The **worksheet maker** allows you to make additional worksheets for most calculation-type topics in the curriculum. This is a single html file. You will need Internet access to be able to use it.

- You can use the free online exercises at https://www.mathmammoth.com/practice/
  This is an expanding section of the site, so check often to see what new topics we are adding to it!

- Some grade levels have **cut-outs** to make fraction manipulatives or geometric solids.

- The answer key is included when you purchase the digital version (the download). If you purchase the printed version, the answer key is available as a separate book.

How to get started

Have ready the first lesson from the student worktext. Go over the first teaching part (within the blue boxes) together with your child. Go through a few of the first exercises together, and then assign some problems for your child to do on their own.

Repeat this if the lesson has other blue teaching boxes. Naturally, you can also use the videos at https://www.mathmammoth.com/videos/

Many students can eventually study the lessons completely on their own — the curriculum becomes self-teaching. However, students definitely vary in how much they need someone to be there to actually teach them.

Pacing the curriculum

Each chapter introduction contains a suggested pacing guide for that chapter. You will see a summary on the right. (This summary does not include the optional lessons, nor time for the optional tests.)

Most lessons are 2 pages long, intended for one day. Some lessons are 3 pages, again intended for one day but you can take two if needed. There are also a few optional lessons, not included in the tables on the right.

It can also be helpful to calculate a general guideline as to how many pages per week the student should cover in order to go through the curriculum in one school year.

Worktext 1-A	
Chapter 0	6 days
Chapter 1	22 days
Chapter 2	19 days
Chapter 3	17 days
Chapter 4	6 days
TOTAL	70 days

Worktext 1-B	
Chapter 5	15 days
Chapter 6	12 days
Chapter 7	7 days
Chapter 8	24 days
Chapter 9	5 days
Chapter 10	9 days
TOTAL	72 days

The table below lists how many pages there are for the student to finish in this particular grade level, and gives you a guideline for how many pages per day to finish, assuming a 170-day (34-week) school year. The page count in the table below *includes* the optional lessons.

Example:

Grade level	School days	Days for tests and reviews	Lesson pages	Days for the student book	Pages to study per day	Pages to study per week
1-A	83	8	149	75	2	10
1-B	87	10	151	77	2	10
Grade 1 total	170	18	300	152	2	10

The table below is for you to fill in. Allow several days for tests and additional review before tests — I suggest at least twice the number of chapters in the curriculum. Then, to get a count of "pages to study per day", **divide the number of lesson pages by the number of days for the student book**. Lastly, multiply this number by 5 to get the approximate page count to cover in a week.

Grade level	Number of school days	Days for tests and reviews	Lesson pages	Days for the student book	Pages to study per day	Pages to study per week
1-A			149			
1-B			151			
Grade 1 total			300			

Now, something important. Whenever the curriculum has lots of similar practice problems (a large set of problems), feel free to **only assign 1/2 or 2/3 of those problems**. If your student gets it with less amount of exercises, then that is perfect! If not, you can always assign the rest of the problems for some other day. In fact, you could even use these unassigned problems the next week or next month for some additional review.

In general, 1st-2nd graders might spend 25-40 minutes a day on math. Third-fourth graders might spend 30-60 minutes a day. Fifth-sixth graders might spend 45-75 minutes a day. If your student finds math enjoyable, they can of course spend more time with it! However, it is not good to drag out the lessons on a regular basis, because that can then affect the student's attitude towards math.

Working space, the usage of additional paper, and mental math

The curriculum generally includes working space directly on the page for students to work out the problems. However, feel free to let your students use extra paper when necessary. They can use it, not only for the "long" algorithms (where you line up numbers to add, subtract, multiply, and divide), but also to draw diagrams and pictures to help organize their thoughts. Some students won't need the additional space (and may resist the thought of extra paper), while some will benefit from it. Use your discretion.

Some exercises don't have any working space, but just an empty line for the answer (e.g. 200 + _____ = 1,000). Typically, I have intended that such exercises be done using *mental math*.

However, there are some students who struggle with mental math (often this is because of not having studied and used it in the past). As always, the teacher has the final say (not me!) as to how to approach the exercises and how to use the curriculum. We do want to prevent extreme frustration (to the point of tears). The goal is always to provide SOME challenge, but not too much, and to let students experience success enough so that they can continue to enjoy learning math.

Students struggling with mental math will probably benefit from studying the basic principles of mental calculations from the earlier levels of Math Mammoth curriculum. To do so, look for lessons that list mental math strategies. They are taught in the chapters about addition, subtraction, place value, multiplication, and division. My article at https://www.mathmammoth.com/lessons/practical_tips_mental_math also gives you a summary of some of those principles.

Using tests

For each chapter, there is a **chapter test**, which can be administered right after studying the chapter. **The tests are optional.** Some families might prefer not to give tests at all. The main reason for the tests is for diagnostic purposes, and for record keeping. These tests are not aligned or matched to any standards.

In the digital version of the curriculum, the tests are provided as PDF files. You can edit them (such as to change the numbers in them) to provide a different test using PDF apps that have editing capabilities. You can even use the annotation tools (such as text boxes) available in most PDF apps. Remember to save the edited file under a different file name, or you will lose the original.

The end-of-year test is best administered as a diagnostic or assessment test, which will tell you how well the student remembers and has mastered the mathematics content of the entire grade level.

Using cumulative reviews and the worksheet maker

The student books contain mixed review lessons which review concepts from earlier chapters. The curriculum also comes with additional cumulative review lessons, which are just like the mixed review lessons in the student books, with a mix of problems covering various topics. These are found in their own folder in the digital version, and in the Tests & Cumulative Reviews book in the print version.

The cumulative reviews are optional; use them as needed. They are named indicating which chapters of the main curriculum the problems in the review come from. For example, "Cumulative Review, Chapter 4" includes problems that cover topics from chapters 1-4.

Both the mixed and cumulative reviews allow you to spot areas that the student has not grasped well or has forgotten. When you find such a topic or concept, you have several options:

1. Check if the worksheet maker lets you make worksheets for that topic.
2. Check for any online games and resources in the Introduction part of the particular chapter in which this topic or concept was taught.
3. If you have the digital version, you could reprint the lesson from the student worktext, and have the student restudy that.
4. Perhaps you only assigned 1/2 or 2/3 of the exercise sets in the student book at first, and can now use the remaining exercises.
5. Check if our online practice area at https://www.mathmammoth.com/practice/ has something for that topic.
6. Khan Academy has free online exercises, articles, and videos for most any math topic imaginable.

Concerning challenging word problems and puzzles

While this is not absolutely necessary, I heartily recommend supplementing Math Mammoth with challenging word problems and puzzles. You could do that once a month, for example, or more often if the student enjoys it.

The goal of challenging story problems and puzzles is to **develop the student's logical and abstract thinking and mental discipline**. I recommend starting these in fourth grade, at the latest. Then, students are able to read the problems on their own and have developed mathematical knowledge in many different areas. Of course I am not discouraging students from doing such in earlier grades, either.

Math Mammoth curriculum contains lots of word problems, and they are usually multi-step problems. Several of the lessons utilize a bar model for solving problems. Even so, the problems I have created are usually tied to a specific concept or concepts. I feel students can benefit from solving problems and puzzles that require them to think "out of the box" or are just different from the ones I have written.

I recommend you use the free Math Stars problem-solving newsletters as one of the main resources for puzzles and challenging problems:

Math Stars Problem Solving Newsletter (grades 1-8)
https://www.homeschoolmath.net/teaching/math-stars.php

I have also compiled a list of other resources for problem solving practice, which you can access at this link:

https://l.mathmammoth.com/challengingproblems

Another idea: you can find puzzles online by searching for "brain puzzles for kids," "logic puzzles for kids" or "brain teasers for kids."

Frequently asked questions and contacting us

If you have more questions, please first check the FAQ at https://www.mathmammoth.com/faq-lightblue

If the FAQ does not cover your question, you can then contact us using the contact form at the Math Mammoth.com website.

Chapter 5: Addition and Subtraction Facts
Introduction

This chapter provides lots of practice for learning and memorizing the basic addition and subtraction facts with numbers from 0 to 10. The Common Core Standards require children in the first grade to demonstrate fluency in addition and subtraction with numbers up to 10, and we aim for that goal here.

Since this chapter is repetitive, consider studying it simultaneously with some other section of the curriculum, such as shapes, measuring, graphs, and/or counting coins. For example, the child could study shapes and this chapter each day, or study the two different chapters on alternate days. (This is not compulsory but just a suggestion to "mix things up" in a somewhat spiral fashion.)

Each of the lessons titled *Addition and Subtraction Facts with...* approaches the fact memorization from the concept of *fact families*, which makes the process logical and structured. For example, we study the fact families where the sum is 7, all in one lesson. This means the different sums that make seven (0 + 7, 1 + 6, 2 + 5, 3 + 4) and their corresponding subtraction facts are practiced together.

Many children may not need all the practice problems provided, so don't assign all of them by default. Use your judgment, and only assign a certain portion, such as half of them, at first. (The rest of them can be used later as a review.) Adjust as necessary.

Alongside the lessons, you can use math games and/or flashcards to reinforce the facts. You will find a list of some games below.

While your child or students do not absolutely have to learn these facts by heart while studying this chapter, it is advisable to learn them fairly well. Mathematics builds upon previously learned concepts and facts, and learning addition and subtraction facts is very important for later study, such as when students learn to add a two-digit number and a single digit number (e.g. 24 + 5, in chapter 8). However, if the child has not memorized these facts before the end of the chapter, don't worry. Go on with the curriculum, but keep practicing the facts with games, worksheets, drills, *etc.*

Besides practicing the facts with the help of fact families, the student will also solve word problems, fill in number patterns, get used to a symbol representing an unknown number, compare number expressions (such as 5 − 2 and 2 + 5), and subtract more than one number at a time.

As a friendly reminder, there are videos matched to the curriculum at https://www.mathmammoth.com/videos. Choose Grade 1.

Good Mathematical Practices

- As we return to addition and subtraction, there are again lots of word problems to solve. Some of them will ask the student to choose or write an equation that matches the problem. This is the beginning stage of *mathematical modeling*: using mathematics to model real-life situations. Writing an equation for a problem is simple at this stage (e.g. 2 + 3 = 5) but it is a separate skill from just solving the problem.

  Essentially, the student will be showing their work for the problem. This will probably take some time to master, so don't worry if this is challenging for your child or student at this point. If so, ask them sometimes to write down the calculation even for word problems where the instruction doesn't explicitly state so.

Math Talks

A friendly reminder... check out our math-inspired real-life photographs that you can use for "math talks" about math in real life. Try to also find objects and scenes around you and your child or students that can be used in this manner.

https://www.mathmammoth.com/MathTalks

Pacing Suggestion for Chapter 5

Please add one day to the pacing for the test if you will use it.

The Lessons in Chapter 5	page	span	suggested pacing	your pacing
Addition and Subtraction Facts with 4 and 5	17	*2 pages*	1 day	
Addition and Subtraction Facts with 6	19	*2 pages*	1 day	
Word Problems and Symbols	21	*2 pages*	1 day	
Addition and Subtraction Facts with 7	23	*2 pages*	1 day	
Addition and Subtraction Facts with 8	25	*2 pages*	1 day	
Review—Facts with 6, 7, and 8	27	*2 pages*	1 day	
Comparisons and Word Problems	29	*2 pages*	1 day	
Addition and Subtraction Facts with 9	31	*2 pages*	1 day	
More Practice	33	*2 pages*	1 day	
Addition and Subtraction Facts with 10	35	*2 pages*	1 day	
Review of Facts with 9 and 10	37	*2 pages*	1 day	
Subtracting More Than One Number	39	*2 pages*	1 day	
Word Problems	41	*2 pages*	1 day	
Chapter 5 Mixed Review	43	*2 pages*	1 day	
Chapter 5 Review	45	*2 pages*	1 day	
Chapter 5 Test (optional)				
TOTALS		*30 pages*	15 days	

Games and Activities

10 Out (or *6 Out, 7 Out, 8 Out, etc.)*

You need: A deck of number cards with numbers 1-10, or regular playing cards without the face cards.

Preparation: Choose a target sum, such as 10. Deal seven cards to each player. Place the rest face down in a pile in the middle of the table.

Game play: On your turn, first take one card from the pile. Then try to find pairs of cards in your hand that add up to 10, and discard any such pairs. Discard the card 10 also if you have it. If you cannot find any such pairs, ask for any one card you want (such as 6) from the player to your right (as in "Go Fish"). That player, if he has it, must give it, and you will then discard the pair that makes 10. Then it is the next player's turn. The player who first discards all the cards from his hand is the winner.

Variations:
* Deal more than seven cards.
* Deal fewer cards if there are a lot of players or the players are very young.
* Allow players to discard *three* cards that add up to 10.
* Instead of ten, players discard cards that add up to 5, 6, 7, 8, or 9.

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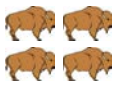
Addition and Subtraction Facts with 4 and 5

Below you see the three different ways to group four buffalos into two groups. From the groupings we can write **three different fact families** where the **sum is 4**.



$4 + 0 = 4$ $\quad$ $4 - 4 = 0$

$0 + 4 = 4$ $\quad$ $4 - 0 = 4$

$1 + 3 = 4$ $\quad$ $4 - 3 = 1$

$3 + 1 = 4$ $\quad$ $4 - 1 = 3$

$2 + 2 = 4$ $\quad$ $4 - 2 = 2$

Similarly, we show below all the different ways to group *five* buffalos into two groups. From the groupings we get the **different fact families** where the **sum is 5**.

Fill in the missing parts.

$5 + 0 = 5$ $\quad$ $5 - 5 = 0$

$\_\_\_\_ + \_\_\_\_ = 5$ $\quad$ $5 - \_\_\_\_ = \_\_\_\_$

$4 + 1 = 5$ $\quad$ $5 - 4 = \_\_\_\_$

$1 + 4 = 5$ $\quad$ $5 - \_\_\_\_ = \_\_\_\_$

$3 + 2 = 5$ $\quad$ $5 - 3 = \_\_\_\_$

$\_\_\_\_ + \_\_\_\_ = 5$ $\quad$ $5 - \_\_\_\_ = \_\_\_\_$

You have probably already memorized all these addition and subtraction facts!

1. Fill in the missing numbers.

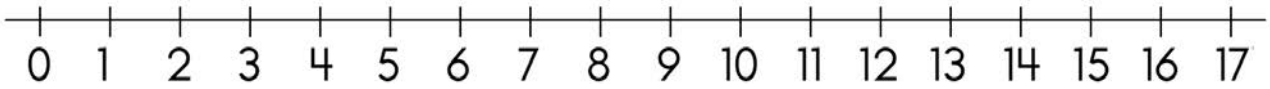
a.	b.	c.	d.
3 + _____ = 4	2 + _____ = 5	5 – 4 = _____	4 – 0 = _____
3 + _____ = 5	1 + _____ = 5	5 – 2 = _____	4 – 3 = _____
2 + _____ = 4	4 + _____ = 5	4 – 1 = _____	5 – 1 = _____

2. Color the square:

- yellow if the answer is 0,
- red if the answer is 1,
- blue if the answer is 2,
- green if the answer is 3,
- purple if the answer is 4,
- orange if the answer is 5.

5 – 4	2 + 3	4 – 4	1 + 2	4 – 2	1 + 3
2 + 2	3 – 2	5 – 0	0 + 0	5 – 2	1 + 1
0 + 2	5 – 1	0 + 1	1 + 4	0 – 0	4 – 1

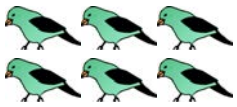
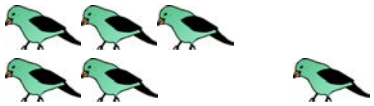
3. Continue the patterns until the boxes are full!



a.	b.	c.
17 – 0 = _____	10 + _____ = 10	5 – 2 = _____
17 – 1 = _____	10 + _____ = 11	6 – 2 = _____
17 – 2 = _____	10 + _____ = 12	7 – 2 = _____
17 – ____ = _____		

Addition and Subtraction Facts with 6

1. Complete the fact families in which the sum is six. At the top, write the three numbers that you are using for the fact family.

6, 0, 6	_____, _____, 6	_____, _____, 6
		
6 + 0 = 6	5 + 1 = 6	4 + 2 = 6
____ + ____ = 6	____ + ____ = 6	____ + ____ = 6
6 – 6 = 0	6 – 5 = ____	6 – 4 = ____
6 – 0 = 6	6 – ____ = ____	6 – ____ = ____

_____, _____, 6

3 + 3 = 6
6 – 3 = ____

2. Write the numbers that add to 6. Memorize these!

0 + _____ = 6 or _____ + 0 = 6

1 + _____ = 6 or _____ + 1 = 6

2 + _____ = 6 or _____ + 2 = 6

3 + _____ = 6

3. Play the “6 Out” card game (see the chapter introduction).

4. Subtract.

a.	**b.**	**c.**	**d.**	**e.**	**f.**
6	6	6	6	6	6
– 5	– 4	– 6	– 2	– 1	– 3
____	____	____	____	____	____

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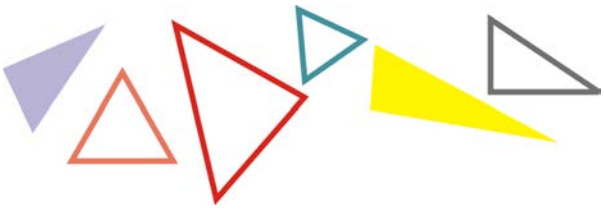
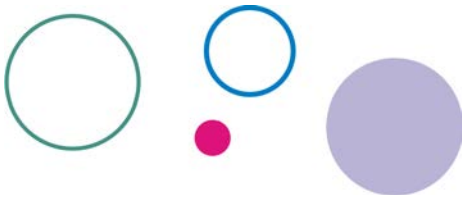
Basic Shapes 1

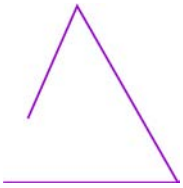
These are **triangles**.
A triangle has three sides
(and three corners).



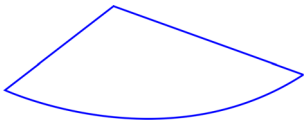
These are **circles**. A circle
doesn't have any corners.



1. Is this a triangle? What do you think?



2. Is this a triangle? Why or why not?

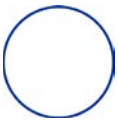


3. Is this a circle? Why or why not?

What makes a shape to be a **triangle**?

- A triangle has three sides.
- The sides are straight,
  not round or curved.
- A triangle is a closed shape.

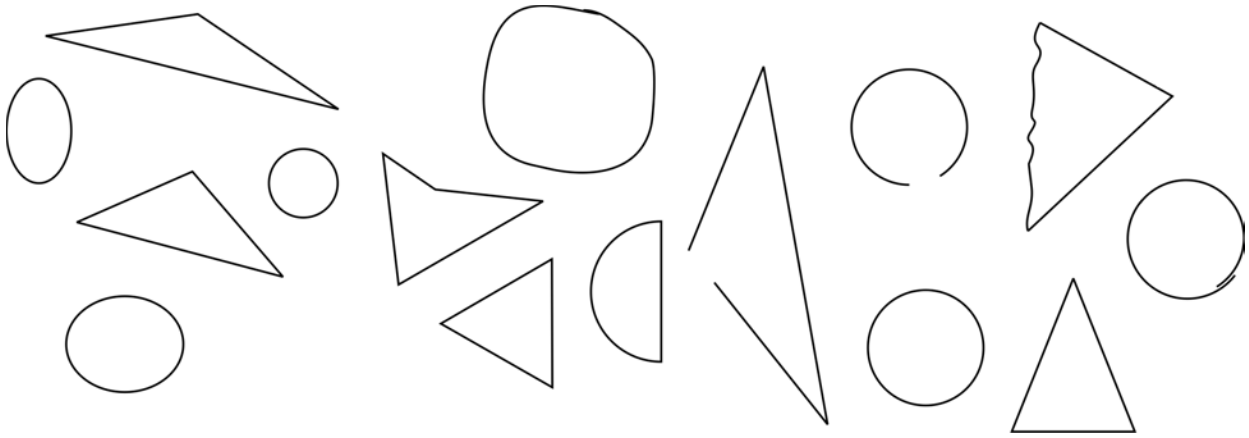
What makes a shape to be a **circle**?



- A circle is perfectly round, with
  the same roundness everywhere!
- A circle is a closed shape.

(Mathematically, a circle is the set of points that are at the same distance from the center point of the circle, and this distance is called the radius of the circle.)

4. Color all the triangles and circles.



5. Sketch (draw) here two different triangles. One way to draw a triangle is to first draw three dots, and then join them with lines.

Triangle 1:	Triangle 2:

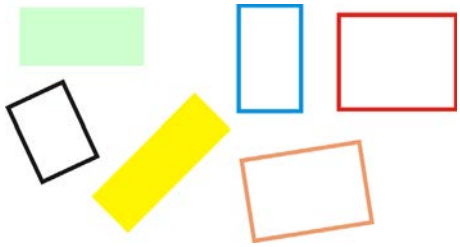
6. Draw here (freehand, sketching) a shape that is *not* a circle, yet it is round.

7. Draw here (freehand, sketching) three shapes that are *not* triangles.

Basic Shapes 2

These are rectangles. A **rectangle** has four straight sides, and is a closed shape.

A rectangle also has four "square" corners. This means that each corner of a rectangle is like a corner of a postcard (or of a book). (The mathematical term is a "right angle".)



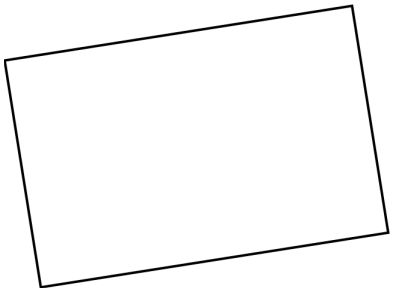
Here, we can exactly fit a corner of a postcard into a corner of this rectangle, so the corner is a "square" corner (a right angle).

The corner of a postcard does not exactly fit into the corner of either shape. The shapes are not rectangles.

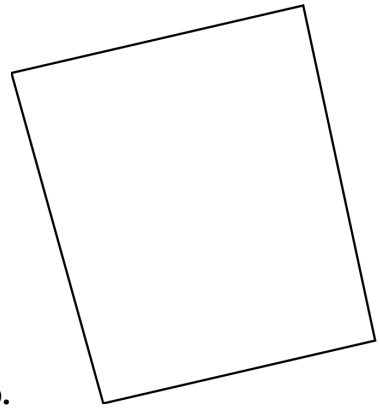
We can mark the corners of a rectangle with little squares, to show that the corners are right angles.

1. Do these shapes have square corners (right angles)? Check with a postcard or a thin book. Mark the corners of the rectangles with little squares.

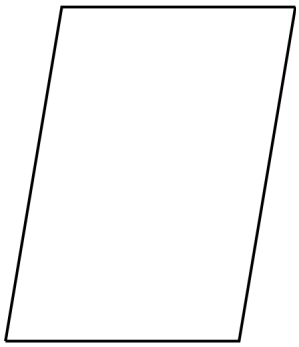
a.



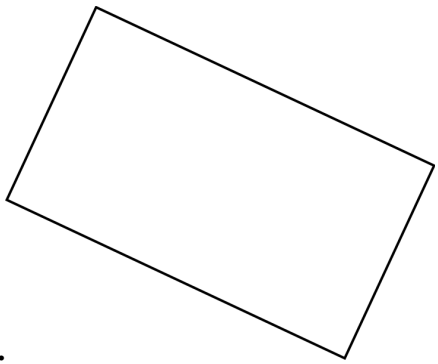
b.

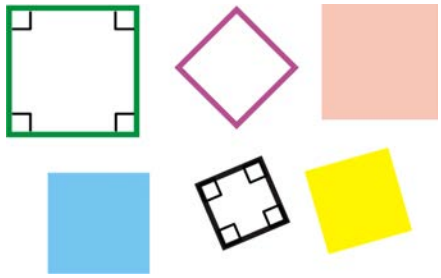


c.

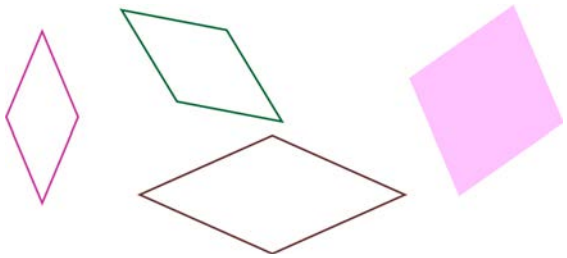


d.



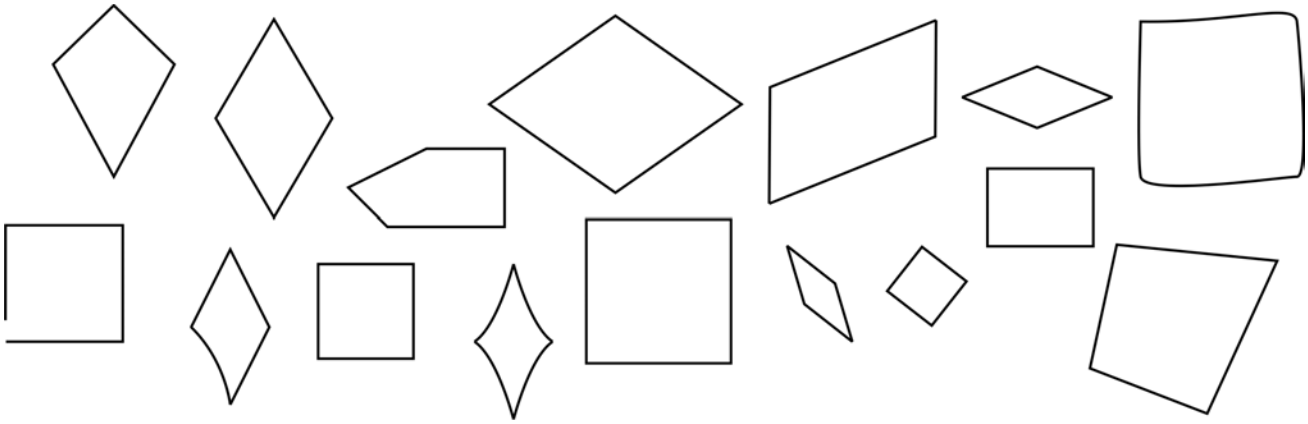


These are **squares**. Like rectangles, squares also have four sides and four "square" corners (right angles). In addition to that, their four sides are the same length.

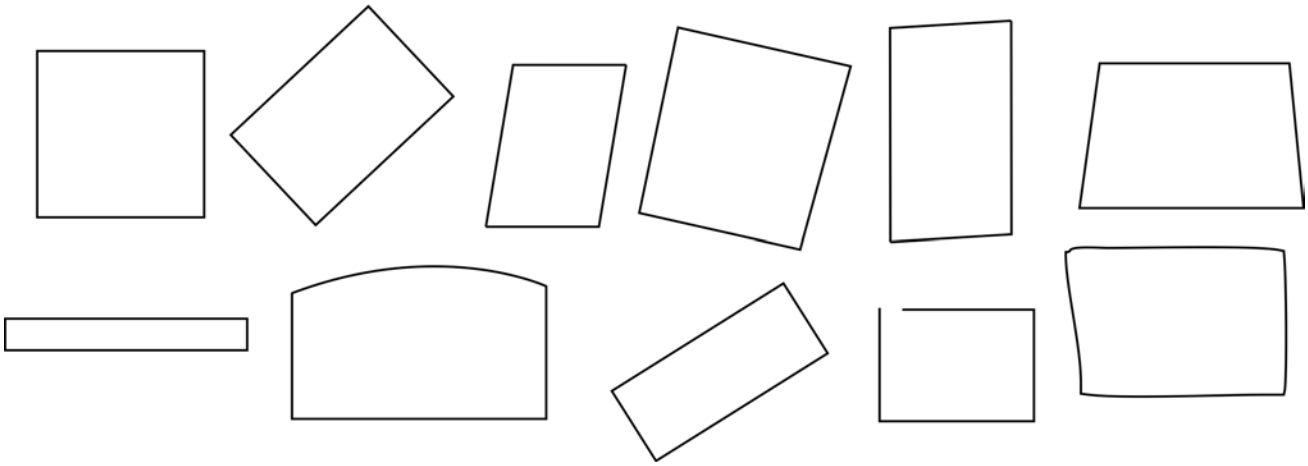


These are **diamond shapes**. The mathematical term is a rhombus (pl. rhombi). They have four sides that are the same length.

2. Find all the squares and diamond shapes, and color them with colors you like. Mark the right angles of the squares with little squares.



3. Find all the rectangles and color them. Mark their corners with little squares.



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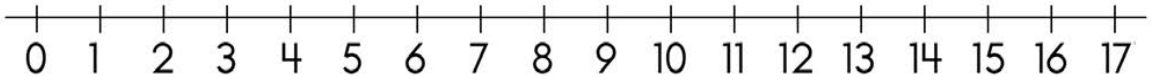
Chapter 6 Mixed Review

1. Find the difference between the numbers. Then write an addition.



a. from 6 to 10 _____ steps 6 + _____ = 10	**b.** from 4 to 7 _____ steps 4 + _____ = 7	**c.** from 6 to 11 _____ steps 6 + _____ = 11

2. Tell the time, using numbers. Include AM or PM.

		
a. People are sleeping. _____ : _____ _____	**b.** Lily is eating lunch. _____ : _____ _____	**c.** Dad goes to the post office. _____ : _____ _____

3. Subtract. Compare the two problems and their results.

a.	**b.**	**c.**
9 – 3 – 3 = _____ 8 – 3 – 3 = _____	7 – 2 – 2 = _____ 7 – 2 – 1 = _____	10 – 6 – 1 = _____ 9 – 6 – 1 = _____

4. Which numbers add up to 8? Find the additions that are wrong.

8 = 5 + 3	8 = 0 + 8	8 = 1 + 7
8 = 2 + 7	8 = 6 + 1	8 = 3 + 6

5. Which equation matches the word problem? Solve.

a. Amelia drew four stars on paper.
Bill drew two more stars than Amelia.
How many did Bill draw?

$2 + \_\_\_\_\_ = 4$

$4 + 2 = \_\_\_\_\_$

$4 - 2 = \_\_\_\_\_$

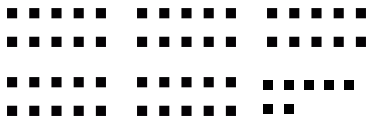
b. Mom baked 10 muffins.
But now there are only six left.
How many were eaten?

$6 + 10 = \_\_\_\_\_$

$\_\_\_\_\_ - 10 = 6$

$10 - \_\_\_\_\_ = 6$

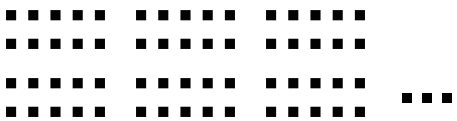
6. Circle each group of ten dots. Then count the groups of ten and the ones left over. Write the number with a numeral. Also, tell *or* write the name of the number.



tens ones

a. _____

_____



tens ones

b. _____

_____

7. Count by ones from 111, filling in the missing numbers.

111				115					

8. Solve.

a. $40 + 30 = \_\_\_\_\_$	**b.** $50 + 30 = \_\_\_\_\_$	**c.** $80 - 20 = \_\_\_\_\_$
$50 + 50 = \_\_\_\_\_$	$60 - 50 = \_\_\_\_\_$	$100 - 40 = \_\_\_\_\_$

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Measuring in Inches

This line is 1 inch long. ⊢——⊣ We also write "1 in." or "1 in" for short.

1. How many inches long are these sticks?

a. _____ inches

b. _____ inches

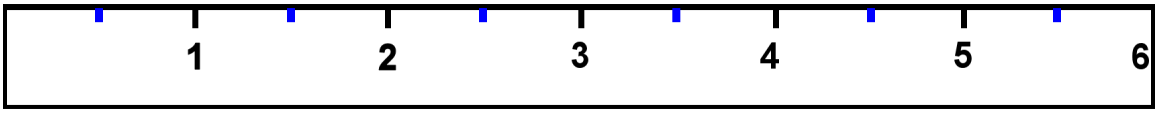
c. _____ in

d. _____ in

2. Now use the ruler. How many inches long are these items?

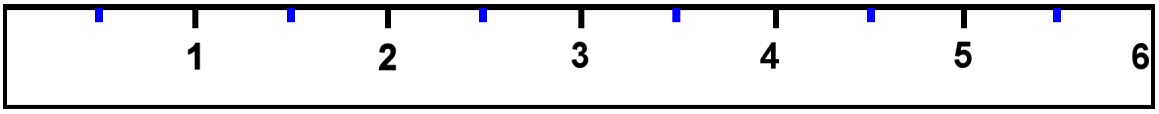
a.  _____ in

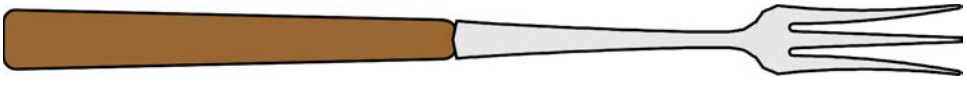
b.  _____ in



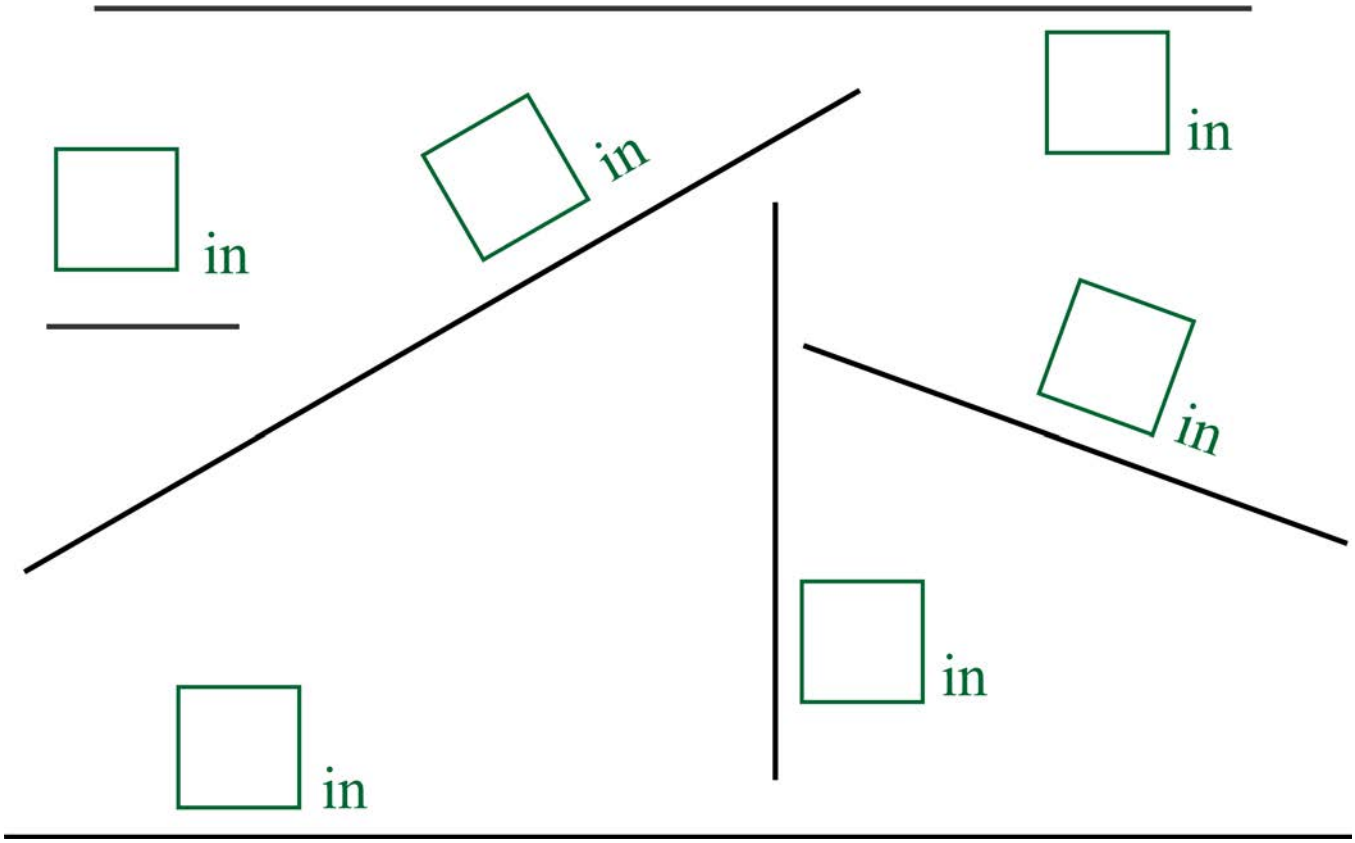
c.  _____ in

d.  _____ in

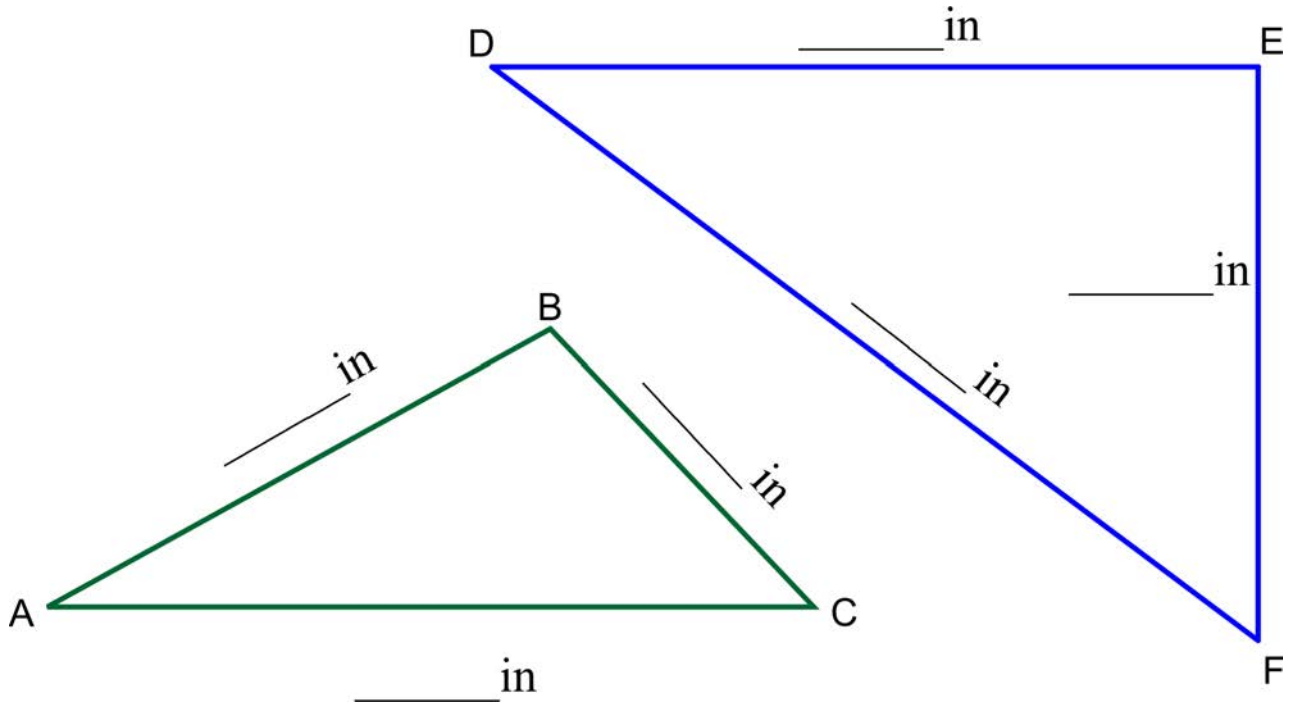


e.  _____ in

3. Measure the lines with a ruler.



4. Measure the sides of the triangles.



5. Use a ruler and draw lines with these lengths:

a. 4 in

b. 2 in

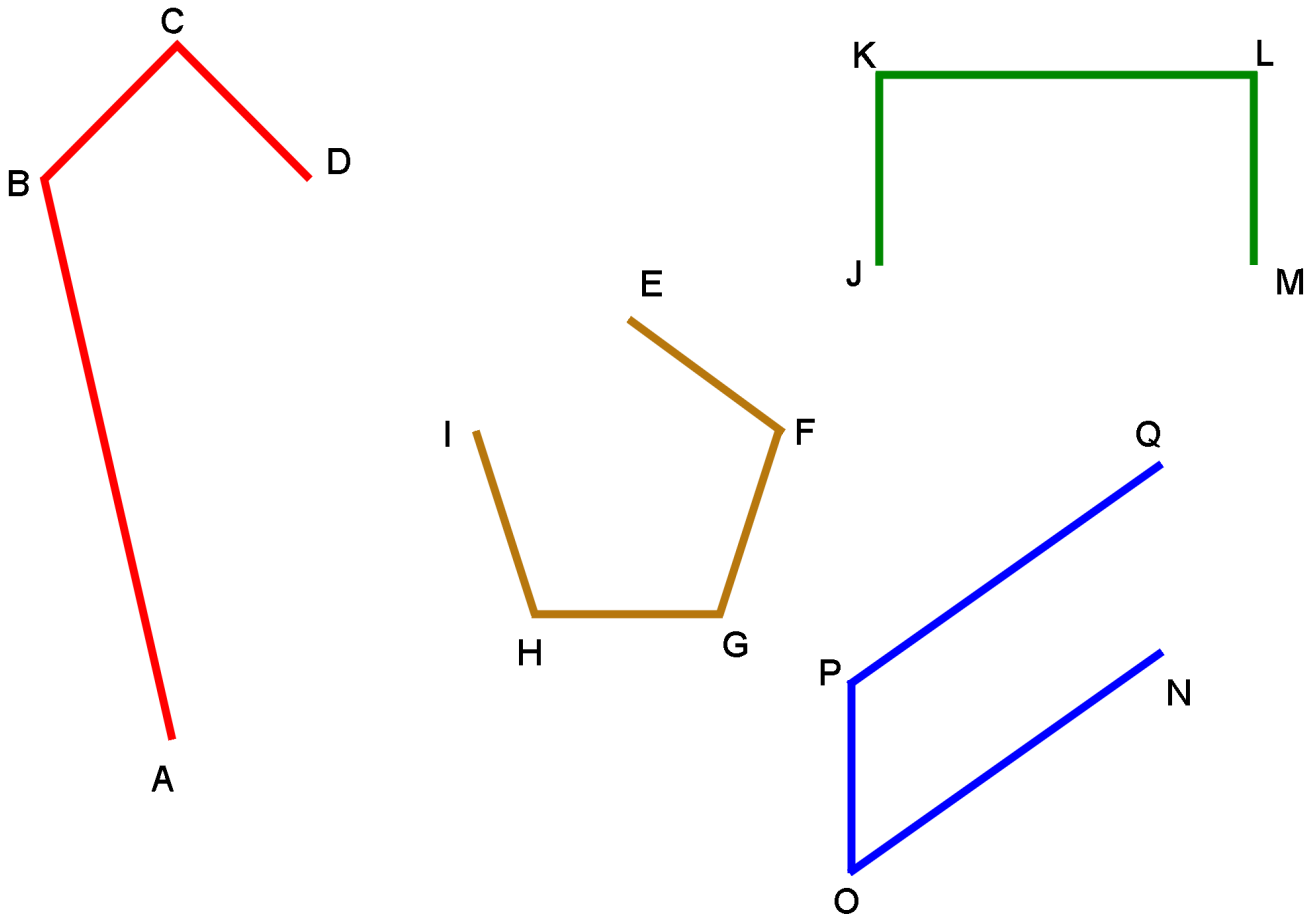
c. 5 in

d. 7 in

e. 1 in

f. 8 in

6. Draw the last side for these figures with a ruler. Then measure all the sides of each figure. Write the measurement next to each side (for example “2 inches” or “2 in”).



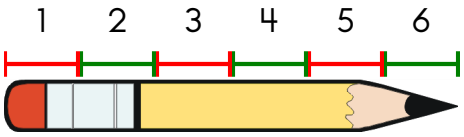
Measuring in Centimeters

You can find out how long things are in *centimeters*.

This line is 1 centimeter long: 

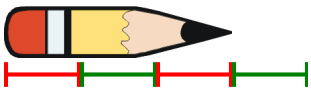
A centimeter is written in its short form as "cm."

This pencil is 6 cm long.



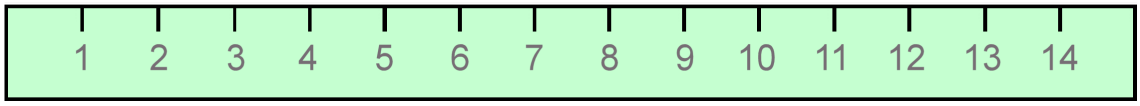
1. How many centimeters long are these things?

a.  _____ cm

b.  _____ cm

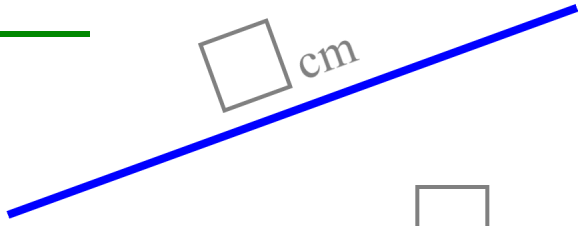
c.  _____ cm

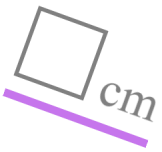
d.  _____ cm

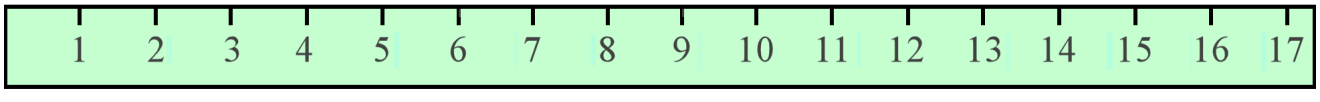


e.  _____ cm

2. Measure the lines with a ruler. (If you don't have one, cut out the ruler at the bottom of the page.)







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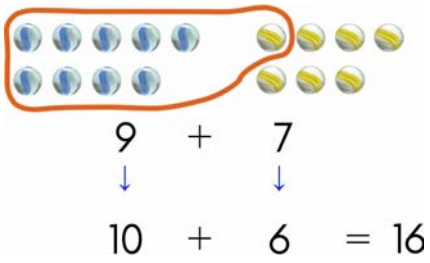
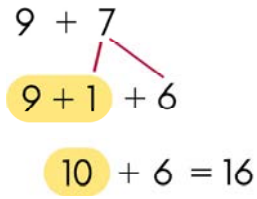
A “Trick” with Nine

Imagine that nine wants to be ten! He is not happy—he wants to become a full TEN!
So, nine asks the other number (this time, seven) to give him one in order to make him a ten.

Seven says, “Okay,” gives one to nine, and has only six left for himself. In the end, we have 10 and 6. We get 16.



We can also show the same thing this way →



1. Circle all of the blue marbles and enough of the yellow ones to make a ten. Add.

a. 9 + 6 → 10 + 5 = _____

b. 9 + 4 → 10 + _____ = _____

c. 9 + 3 → 10 + _____ = _____

d. 9 + 5 → 10 + _____ = _____

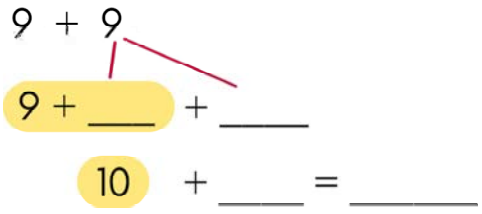
2. Fill in the blanks. Imagine that nine wants to become a ten.

a. 9 + 6 → 9 + ___ + ___ → 10 + ___ = _____

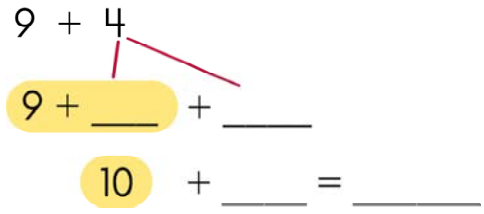
b. 9 + 7 → 9 + ___ + ___ → 10 + ___ = _____

3. Fill in the blanks. Imagine that nine wants to become a ten.

a.



b.



4. How about if the second number is 9, such as 5 + 9?
Can you use the trick with 9 in that case? Explain.

5. Solve.

a. A basket had nine apples in it. Aaliyah ate two, and her brother ate one. How many apples are left?

b. Alice picked 7 flowers and Oliver picked 9.
How many more flowers did Oliver pick than Alice?

How many flowers did the children pick altogether?

6. Fill in the doubles chart again.

1 + 1 = _____	6 + 6 = _____
2 + 2 = _____	7 + 7 = _____
3 + 3 = _____	8 + 8 = _____
4 + 4 = _____	9 + 9 = _____
5 + 5 = _____	10 + 10 = _____

7. Add. Use the trick with nine or "just one more" than a double.

a. 5 + 6 = _____

b. 9 + 8 = _____

c. 2 + 9 = _____

d. 7 + 8 = _____

e. 6 + 7 = _____

8. Right or not? Correct the equations that are *false*.

a. 6 + 6 = 13 **b.** 12 = 4 + 9 **c.** 9 + 6 = 15 **d.** 17 = 9 + 7

A “Trick” with Eight

Imagine that eight wants to be ten! She’s not happy—she wants to become a full TEN!
So eight asks the other number (this time, five) to give her two in order to make her a ten.

8 + 5

Five says, “okay,” gives two to eight, and has only three left for himself. In the end, we have 10 and 3. We get 13.

10 + 3 = 13

We can also show the same thing this way →

8 + 5

8 + 2 + 3

10 + 3 = 13

1. Circle all of the blue marbles and enough of the yellow ones to make a ten. Add.

a. 8 + 6

10 + _____ = _____

b. 8 + 7

10 + _____ = _____

c. 8 + 3

10 + _____ = _____

d. 8 + 4

10 + _____ = _____

2. Fill in the blanks. Imagine that eight wants to become a ten.

8 + 5

8 + ___ + ___

a. 10 + ___ = _____

8 + 8

8 + ___ + ___

b. 10 + ___ = _____

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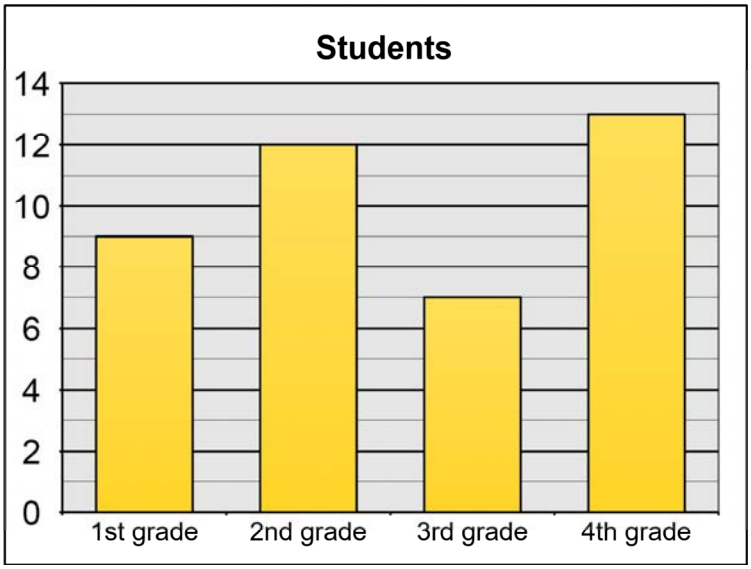
More Bar Graphs

1. Here, the bar for first grade students reaches the line between 8 and 10. That's 9 students.



a. How many students are in 3rd grade?

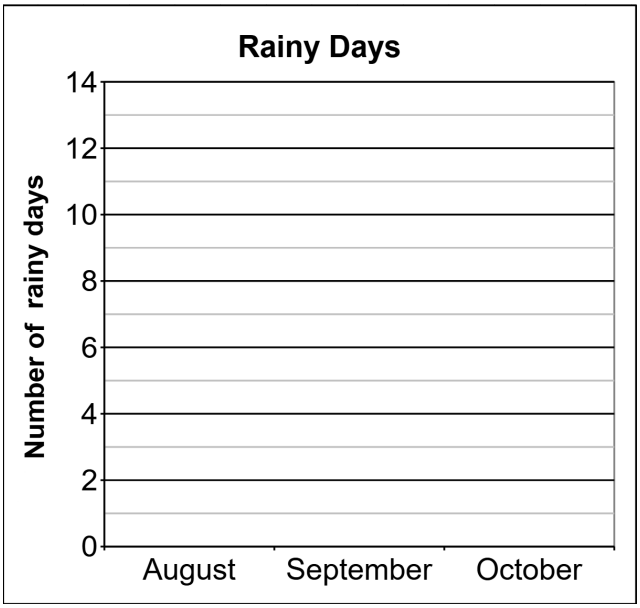
b. How many students are in 4th grade?

c. How many students are in 1st and 2nd grades, in total?

d. Make your own question about the graph!

2. **a.** Make a bar graph by drawing a bar for each month in the image.

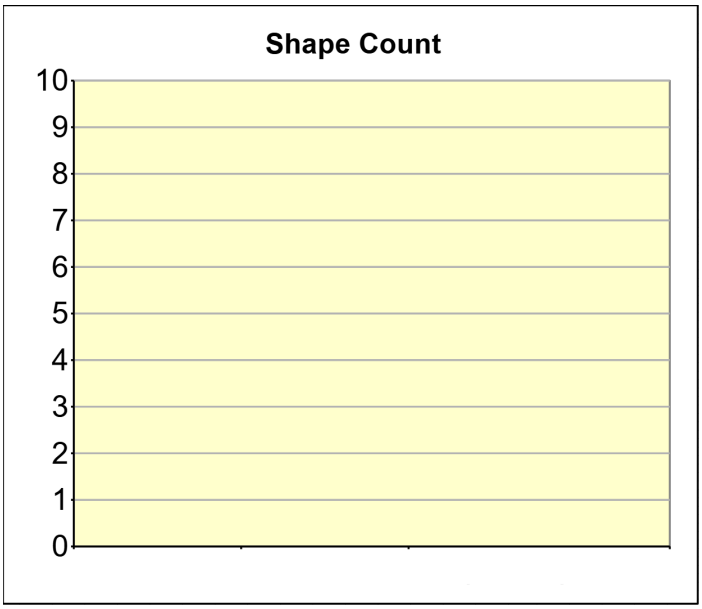
Month	Rainy days
August	7
September	12
October	13



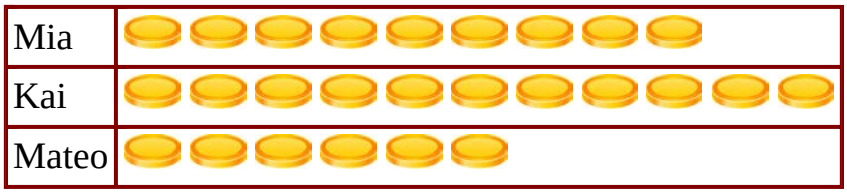
b. How many more rainy days did October have than September?

c. How many more rainy days did October have than August?

3. Draw a bar graph to show the count of each kind of shape (circles, triangles, squares). You will also need to label the bars in the image.

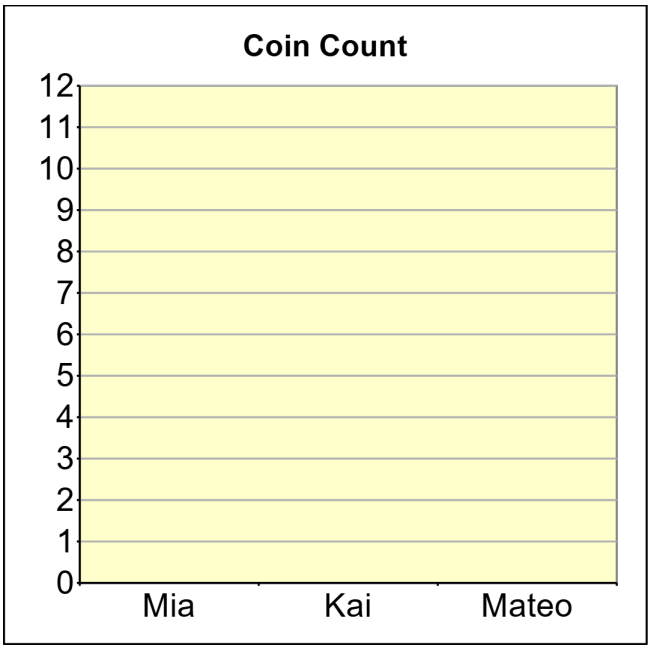


4. Here you see how many coins Mia, Kai, and Mateo have.

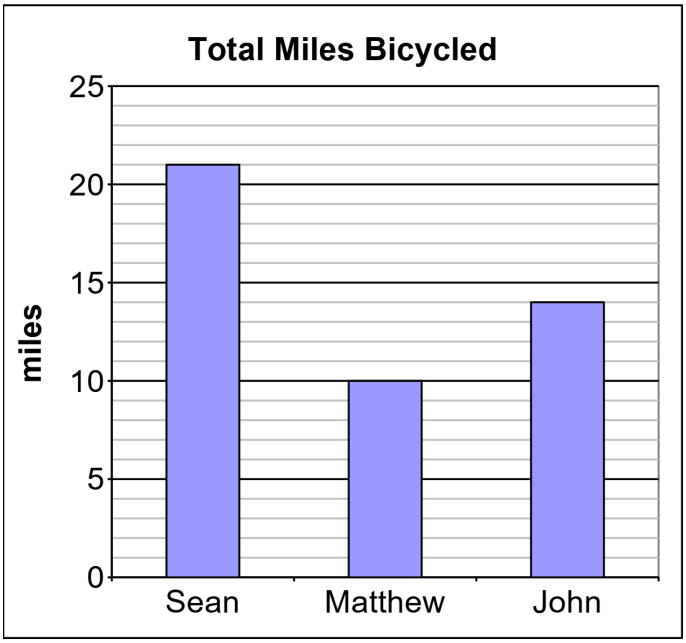


a. Make a bar graph.

b. Make your own question about the graph, and answer it.



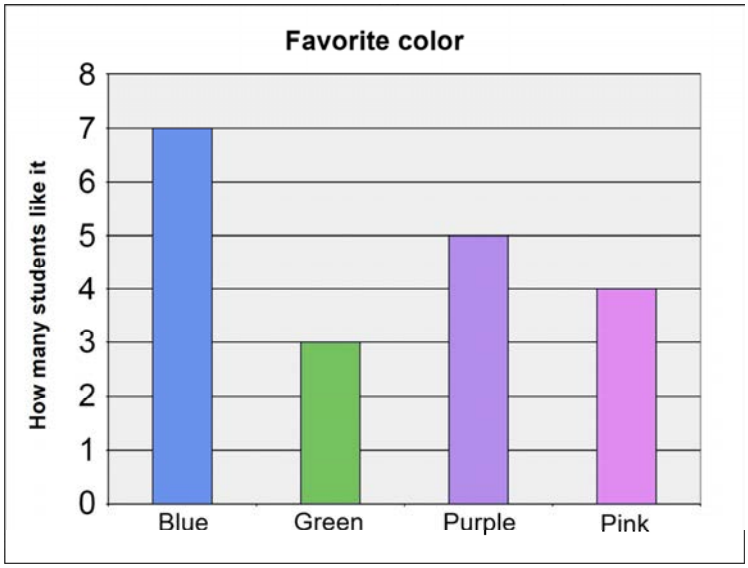
More Practice with Graphs



1. Erica calculated how many more miles Sean bicycled than Matthew.
   She got $22 - 10 = 12$ more miles. Is that correct? If not, correct her answer.

2. Write two questions that you could ask another student about the graph in question 1.
   Then, ask your classmate or a friend the questions. Check their answers.

3. **Activity.** Your teacher will give you a bunch of things. They are of three different kinds. Count each kind, and make a bar graph of the counts.
   Examples include: teaspoons, tablespoons, and regular spoons; beans, rocks, and counters; counters of three different colors; etc.



4. Answer.
   a. There are _____ students whose favorite color is purple.

   b. There are _____ students whose favorite color is blue.

   c. How many fewer students like green than like pink?

   _____

   d. How many more students like blue than like pink?

   _____

Tally Marks

(This lesson is optional.)

1. **Tally marks.** Tally marks are counting marks. When people count, they make one tally mark for each thing they count. For one item or thing, draw one tally mark as " | " . The fifth tally mark is drawn across the four others like this: 𝍸.

   Write the number that matches the tally.

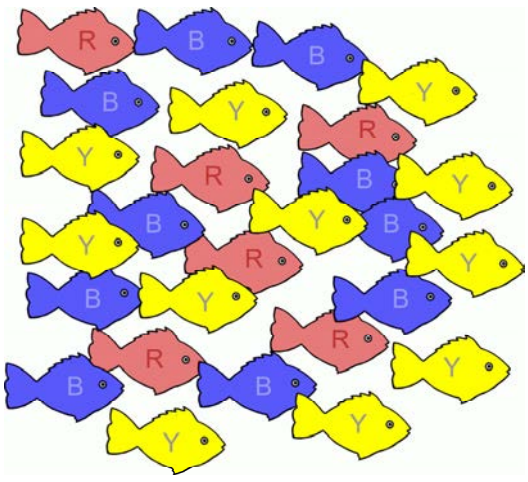
𝍸 |	𝍸 𝍸 ||	𝍸 𝍸 𝍸 ||||	𝍸 𝍸 𝍸 𝍸 |||
a. _____	**b.** _____	**c.** _____	**d.** _____

2. Draw tally marks for these numbers.

a. 7	**b.** 14
c. 16	**d.** 32
e. 41	**f.** 28

3. Count the fish. Use tally marks to keep track. Mark each fish you count and make a tally mark for it. That way you won't count the same fish twice. Then write the number under "Count".

	Tally Marks	Count
Red		
Blue		
Yellow		



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More About Coins

A dime is worth 10 cents. Two dimes are worth 20¢, three dimes are 30¢, four dimes are 40¢, and so on, until 10 dimes are worth 100¢.
And a hundred cents makes **one dollar**!

This is a one-dollar bill.

We write one dollar as **$1**.

Ten dimes are worth 100 cents, which is one dollar:

= 100¢ = $1 =

1. Since a penny () is worth 1¢, how many pennies does it take to make one dollar?

2. **a.** How many nickels ( = 5¢) do you need to make 10 cents?

   b. How many nickels do you need to make 20 cents?

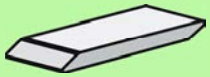
   c. How many nickels do you need to make 30 cents?

   d. How many nickels do you need to make 1 dollar?

3. Add more coins to make the given amount. Draw gray circles with “10” for dimes, gray circles with “5” for nickels, and orange circles with “1” for pennies.

a. 61¢	**b.** 45¢	**c.** 27¢
		

4. Cross out the coins you need to buy the item. Write how many cents you have left.

a.  39¢	b.  45¢	c.  26¢
 Left _____ ¢	 Left _____ ¢	 Left _____ ¢

5. Write the total amount in cents.

a.  _____¢	b.  _____¢
c.  _____¢	d.  _____¢
e.  _____¢	f.  _____¢

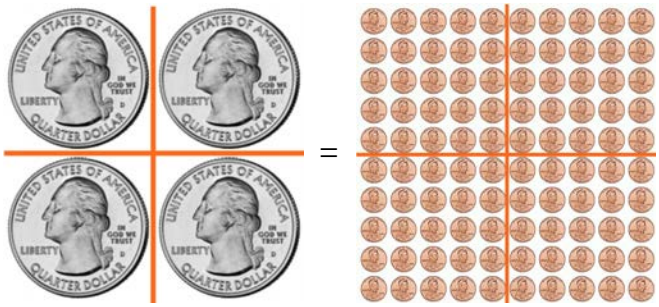
6. You have some money, and then you get some more. How much do you have now?

a.	b.	c.
10¢ + 10¢ = _____¢	24¢ + 5¢ = _____¢	40¢ + 20¢ = _____¢
11¢ + 10¢ = _____¢	25¢ + 5¢ = _____¢	53¢ + 10¢ = _____¢
13¢ + 10¢ = _____¢	20¢ + 5¢ = _____¢	55¢ + 5¢ = _____¢
15¢ + 10¢ = _____¢	27¢ + 5¢ = _____¢	56¢ + 20¢ = _____¢

Quarters, Part 1

One **quarter** is 25 cents.

The word “quarter” means one-fourth. A quarter coin is one-fourth part of a dollar. (One dollar is 100 cents.)



4 quarters = 100¢
1 dollar = $1

1. What is the total value, in cents, of two quarters?

(Hint: to add 25 and 25, first add 20 + 20, and 5 + 5. Lastly add those two sums.)

2. What is the total value, in cents, of three quarters?

3. Quarters and dimes. Write the total amount in cents.

a. 	**b.** 
c. 	**d.** 

4. Quarters and nickels. Write the total amount in cents. (Hint: two nickels make 10¢.)

a. 	**b.** 	**c.** 
d. 	**e.** 	**f.**