



## Baseball Cards

2-6

**This is about**  
using algebraic thinking  
and logic to understand  
rates of change.

### MATERIALS

one set of cards per game,  
pages 51–52  
beans or markers

### MATH CONNECTION

Baseball Cards helps children organize information, notice relationships between numbers, and think logically. These important skills are needed as algebra becomes more formal.

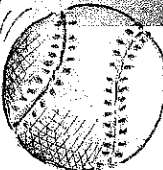
Ben keeps his baseball cards in sets. The following four sets will help you play with numbers and words. Each set has four cards with questions and clues. You and three family members or friends can use the clues to help Ben answer the questions on his baseball cards.

### How

- Copy and cut out the baseball card sets on pages 51–52. Keep each set of four cards together.
- Take a set and give each person a different card.
- Read each card aloud, beginning with a question.
- Work cooperatively to answer the question(s). Discuss each of the clues and how they relate to each other. Make sure everyone gets the opportunity to participate.
- How do you figure out the answer to the question(s)?
- Now do the other sets. What do you discover as you read the clues and answer the questions?

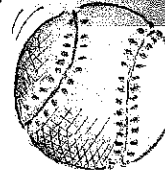


**SET 1**



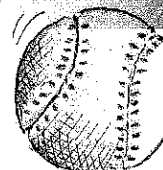
There are 24 Mariners cards in Ben's collection.

**SET 1**



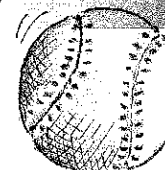
Ben has twice as many Mariners cards as he does Astros cards.

**SET 1**




Ben has three times as many Astros as he does Giants cards.

**SET 1**




How many cards does Ben have altogether in this set?

**SET 2**




Ben has 16 cards in all, Yankees and Red Sox only.

**SET 2**



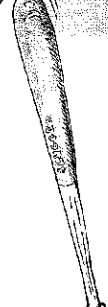
How many Red Sox cards does he have?

**SET 2**



He has 4 more Red Sox cards than Yankees cards.

**SET 2**



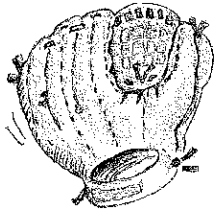
How many Yankees cards does he have?

BASEBALL CARDS



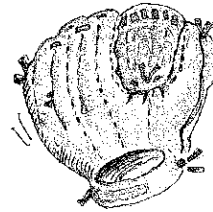
BASEBALL CARDS

**SET 3**



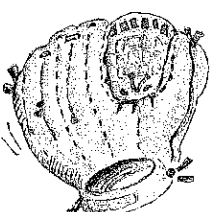
Ben has twice as many Cubs cards as Padres cards.

**SET 3**



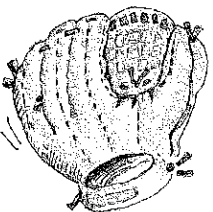
There are fourteen cards in all.

**SET 3**



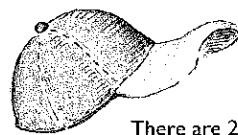
He has half as many A's cards as Padres cards.

**SET 3**



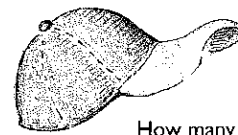
How many of each card does he have?

**SET 4**



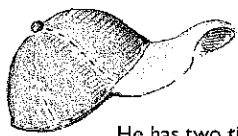
There are 21 Rangers cards in Ben's collection.

**SET 4**



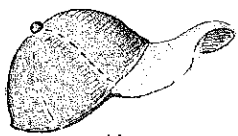
How many rookie cards does he have?

**SET 4**



He has two times as many veteran cards as rookies.

**SET 4**



How many veteran cards does he have?





## Baseball Cards

### Here's More

Ben is 10 years old and lives in California. Once a year, he visits his granddad who lives in Boston. When he visits his granddad, he gets to choose three baseball cards from his granddad's collection. This tradition started when Ben was three years old.

The first time Ben visited, he picked three very old cards. The following year, he selected three new rookie cards.

- Figure out how many cards Ben collected after two years.
- How many cards will Ben have if he visits his granddad every year until he is 19 years old? If he keeps collecting at this rate, how many cards will Ben have when he is 25?
- Make a picture or graph that shows his baseball card collection growing.

BEN'S AGE	VISITS	TOTAL CARDS
3	1	3
4	2	6
5	3	9
6	?	?

For more collection activities, see *FAMILY MATH for Young Children: Comparing*.

Do you have a collection?

How do you choose what will go in it?

How do you organize your collection?

Make a display of your collection.



## Up the Down Staircase

6

### MATERIALS

cubes  
pencil  
crayons  
paper  
grid paper (optional), pages 178–179

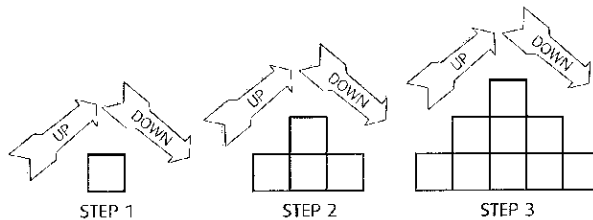
### MATH CONNECTION

Square numbers and square roots can be difficult concepts to understand when taught as rules to memorize. Here we build models using simple numbers and patterns to help us determine outcomes for larger numbers. We are beginning to build a foundation for looking at algebraic expressions in the later grades.

Remember the old lady who lived in the shoe who had so many children she didn't know what to do? Well, she's learned a few things. To keep order in her home she hired a contractor to build two staircases. This way her many children can go up and down the stairs at the same time without blocking each other's way.

### How

- Build the following model and keep adding to the staircase until there are at least 5 steps up and 5 steps down the other side.



- How many cubes are there in a 5-step staircase? Describe how the number of cubes increases every time you add a new step.
- Organize the information to show how the number of cubes increases each time you add a step to the staircases.

STEPS	CUBES
1	1
2	4
3	9
4	?
.	.
.	.
.	.
10	?

- How many cubes would the contractor need to build a 10-step staircase? 20 steps? 50 steps?



This is about exploring square numbers by organizing information and creating patterns.



### Here's More

- Younger children may try the 5-step staircase and stop there. If your child is interested and curious about the higher numbers, keep on building.
- How many cubes would you need for a 100-step staircase?
- If you only had 96 cubes, how high would the staircase be?
- Compare the outside stairs in the illustration above with what you've built. How are they the same? Different?



## Box Math

2-6

ADDITION &amp; SUBTRACTION

### MATERIALS

Box Math Game Boards + and -,  
pages 78–81  
number and operation cards, page 174  
scratch paper  
pencils

### MATH CONNECTION

This activity reinforces the patterns of addition and subtraction. The more we understand how numbers can be put together and taken apart, the easier and more accurate arithmetic computations become. This process is sometimes called *composing* and *decomposing* numbers.

### How

- In this activity, you get the answers first. Your challenge is to place the number cards and operation cards (+ or -) in the correct spaces.
- Copy on card stock the number and operation cards (+ or -) displayed on page 174, and cut them out. Later you can store them in envelopes or small plastic bags.
- Figure out where the number cards go and which operation card you will use to get each answer. Place the number cards in the boxes and one of the operation cards (+ or -) in the circles. To solve each problem, use each number only once.
- Start with the Box Math A Game Board. Arrange the number cards (3, 5, and 7) with one operation card (+ or -) to get 42. Discuss how you worked out the answer.

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \circ & \square \\ \hline 4 & 2 \\ \hline \end{array}$$

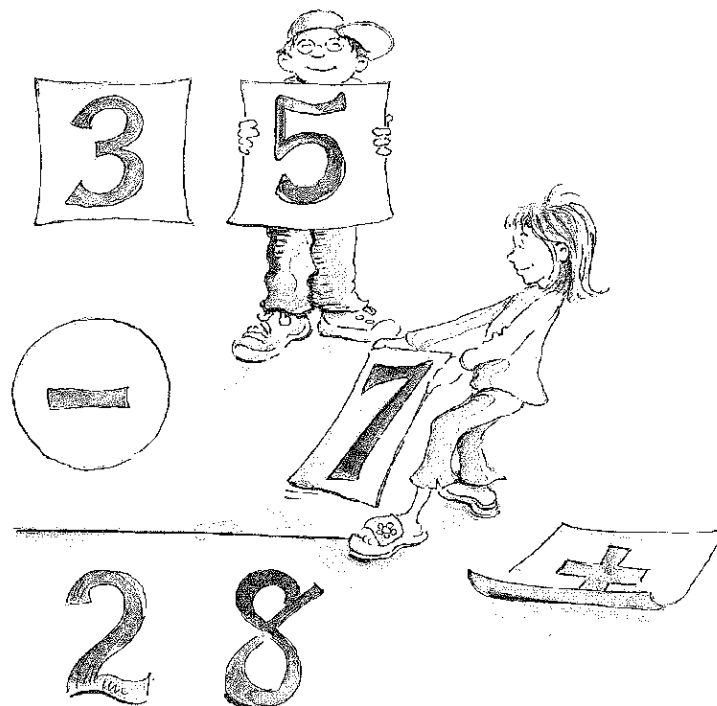
ANSWER:  $35 + 7 = 42$ 

- Now try 28. What do the answers tell you about what numbers go in which boxes?
- Finish the Box Math A Game Board.
- What do you know about the relationships between the answers, the operation cards (+ or -), and the set of numbers?
- Now try Box Math B.
- When your child feels confident with Box Math A and B, try Box Math C and D.

# ACTIVIDADES DE LOS MATEO Y CIENTINA



This is about applying logical thinking and mental math to explore number patterns and place value using addition and subtraction.



## Here's More

- Choose some different numbers and make new problems to share with your family.
- Try the Box Math Multiplication and Division activity on page 94.



You will find *Box Math A* numbers (3, 5, 7) and operation cards (+ or -) on page 174.

ADDITION & SUBTRACTION



BOX MATH

4	2

2	8

6	0

3	2

5	4

7	2

6	8

7	8

4	6

# ACTIVIDADES DE LOS MATEO Y CIENTINA



You will find Box Math B numbers (4, 6, 8) and operation cards (+ or -) on page 174.


ADDITION & SUBTRACTION



BOX MATH B