RACE FOR A FLAT

Getting Ready

What You'll Need

Base Ten Blocks, 1 set per group

Base Ten Blocks Place-Value Mat, 1 per pair

Number cubes marked 1 to 6, 2 per group

Units/Longs Spinner, 1 per pair, page 97

Overhead Base Ten Blocks (optional)

Overview

In this game for two pairs of children, players take turns rolling number cubes and finding the sums of the numbers rolled. They take Base Ten Blocks to represent the sums in an effort to be the first to accumulate blocks with a total value of 100. In this activity, children have an opportunity to:

- ◆ develop understanding of place value
- ◆ count on by ones
- ◆ add mentally
- ◆ regroup, or "trade," units (ones) for longs (tens)

The Activity

Introducing

- ◆ Go over the game rules for *Race for a Flat.*
- ◆ Invite two volunteers to play part of a demonstration game with you. (You may wish to play until someone gets blocks worth 50.)
- ◆ Each player should have a place-value mat. You go first.
- ◆ On your first turn, announce the sum of the digits you roll. If the sum was 10 or more, point out that you must trade 10 units for 1 long.
- ◆ After your second turn, point out that the blocks on your mat are from your first and second turns combined.
- ◆ Play until each player has had several turns. Tell the rest of the class to call out "Trade!" whenever 10 units should be traded for 1 long.

On Their Own

Play *Race for a Flat!*

Here are the rules.

1. This is a game for 2 teams of 2 players each. The object is to get enough longs and units to trade for a flat worth 100.

2. One team rolls 2 number cubes. The players find the sum of the numbers they roll and take units to show that number. Then they put their units on a place-value mat.

3. If the team gets 10 units or more, it trades 10 units for 1 long.

4. Teams take turns rolling, finding the sum, putting units on their mats, and trading units for longs.

5. As soon as a team gets blocks worth 100 or more, it makes a trade for 1 flat. The first team to do this wins.

- Clear your mats. Now play again.

- Be ready to talk about what you did to get a flat.

The Bigger Picture

Thinking and Sharing

Invite children to talk about their games and describe some of the thinking they did.

Use prompts like these to promote class discussion:

- After you rolled the number cubes, how did you know how many units to put on your mat?

- If your first roll was a five and a six, what would you put on your mat? Explain.

- How did you decide when to trade units for longs?

- What was the greatest sum you could get on one roll of two number cubes? When could rolling that sum help you win the game?

Drawing and Writing

Have children pretend that they have blocks worth 93 on their place-value mat. Tell them to draw blocks with a value of 93 on the mat. Then tell them that they may have one more roll. Have them figure out which numbers they could roll to reach 100 or more on their next turn.

Extending the Activity

Have pairs of teams play an alternative version of the game using just one number cube and the *Units/Longs Spinner.* Each team rolls and spins, and

Where's the Mathematics?

Although children may know how to count to 100, they sometimes have difficulty in bridging the decades—that is, in continuing the counting from one decade to the next. For example, when counting "...56, 57, 58, 59..." a child may fail to remember that 60 comes next in the sequence and may instead name some other multiple of ten. *Race for a Flat* reinforces children's understanding of the order in which numbers are sequenced from one decade to the next.

Observe how children determine their sums when they roll the number cubes. Upon seeing the numbers rolled, some children will immediately identify the basic number fact they represent and name the sum. Others will find the sum in different ways, perhaps using units to count one to one or using their fingers to keep track of the count. Notice whether children begin by counting each number individually and then recount the two together or whether they count on from one number through the next. In other words, if a pair rolls 4 and 6, notice whether children count "1, 2, 3, 4" and "1, 2, 3, 4, 5, 6" and then recount all from 1 to 10 or whether they recognize that they can count on starting with 5 or with 7. While any method children use for determining the sums should be acceptable, children's various methods reflect their differing levels of progress.
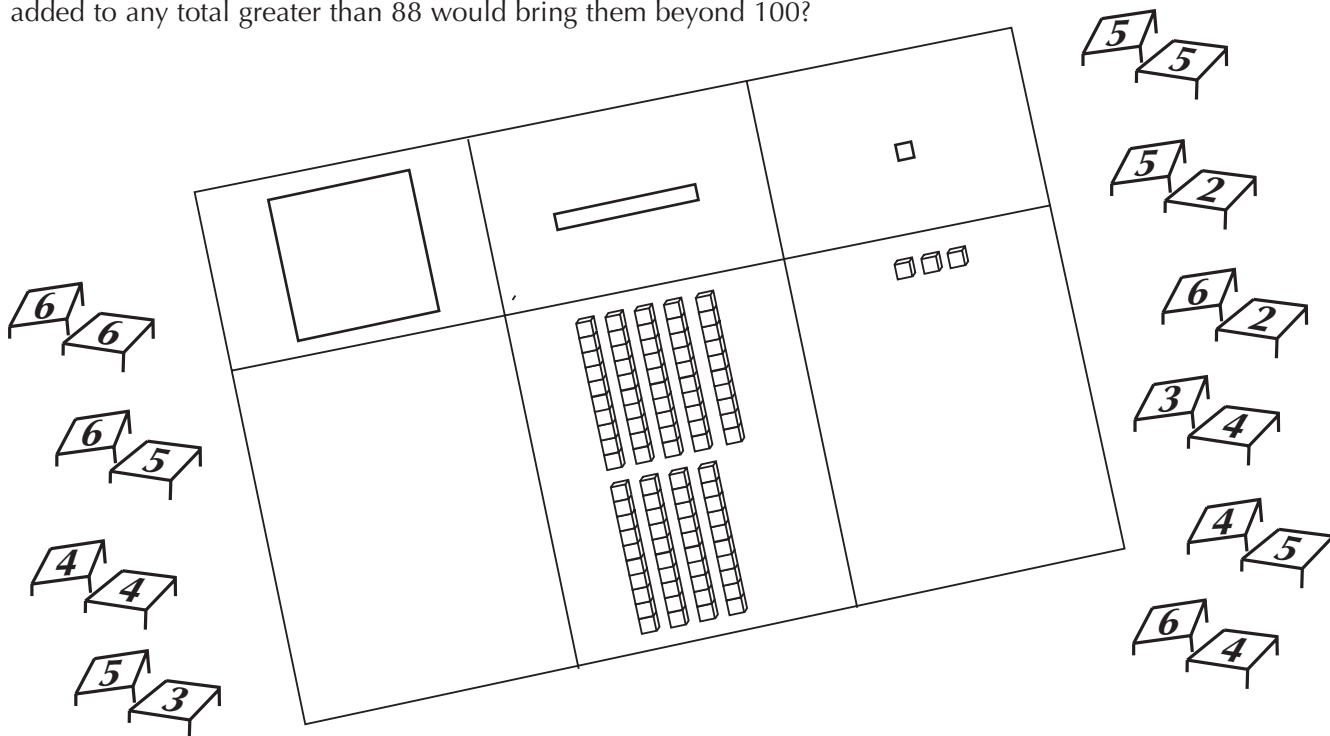
You may want to allow any children who seem to be having difficulty finding sums to play the game with just one number cube. Most children, though, will have no trouble readily recording each turn as an addition fact and keeping a running total until they reach 100 or more. After various rounds, you may wish to challenge teams to compare their blocks with those of their opponents and tell whose blocks represent the greater number.

Through the process of adding blocks to their mats for successive rolls, children's counting and trading abilities should strengthen. To find each new sum, children may count on from the blocks already on their mats. For example, consider a pair that has on its mat 3 longs and 8 units (for a total

then puts the number of blocks rolled of the kind spun on their mat. Again, teams play until they can trade their units and/or longs for a flat.

of 38). If the pair then rolls a 3, children may simply count on, "...39, 40, 41." Instead of adding 3 units to the 8 already in the units column on their mat and then trading 10 units for a long, children may directly add one long to the mat and remove all but one of the units.

Pay particular attention to children's explanations of how they determined that the greatest sum that they can roll on two number cubes, 12, could help them to win the game at the point at which they had a total of 88 or more. Do children realize that 88 plus 12 would bring them to exactly 100 and enable them to trade for a flat? Do they realize that a roll of 12 (units) added to any total greater than 88 would bring them beyond 100?

units

longs