

# Arithmetic

## — BONDED GROUPS —

### PUZZLE

There are two versions of this. The first is the same as the Sum Groups puzzle in Chapter 3, only now the target sums can be bigger.

20	7	9	7	4
	8	4	4	16
	12	5	9	6
	13	7	7	7

The other version uses a 4 by 4 board with a target number, say 20. As in Sum Groups, the board is filled with pairs and triples of numbers that add up to the target. However, now there will be one square not involved in any of those groups. The challenge is to find that number.

## — NUMBER SCRAMBLE —

### ACTIVITY

Roll five dice to create numbers to work with. Roll two more dice to create a two-digit target number - the first die will be the tens place digit and the second die will be the ones digit. The challenge is to use addition, subtraction, and forming two-digit numbers to get as close as possible to the target number - the score is how close they come. You can either have a winner for each round, or you can add up the scores over several rounds and have an overall winner with the lowest score. Allow multiplication once your child knows how to double or triple numbers.

Suppose the roll is: 4, 4, 3, 1, 3 and 22. One player might add and get  $4 + 4 + 3 + 1 + 3 = 15$ . Another player might use  $14 + 4 + 3 + 3 = 24$ . Someone else might have  $34 - 14 + 3 = 23$ .

Suppose the roll is: 1, 2, 5, 6, 4 and 63. A player gets close with  $65 - 4 + 2 + 1 = 64$ . Another one gets it exactly with  $56 + 4 + 2 + 1 = 63$ . A third says  $52 + 6 + 4 + 1 = 63$  also works. Have a chat about why some problems have lots of solutions.

## — THE PRODUCT GAME —

### GAME

Use a shared piece of paper filled out as follows:

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

1	2	3	4	5	6	7	8	9
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The first player moves a token onto any number from 1 to 9 in the 1-9 squares. The second player puts another token on one of the 1-9 squares and claims the product in the 6 by 6 grid. From then on, each player chooses to move either of the two tokens and claims the product (if they can). The first player to claim 3 squares in a row wins.

Mix up the product numbers to give your child better practice identifying the products. See the Chapter 5 Bonus Material for designs of larger boards with larger ranges.

## — MULTIPLICATION BINGO —

### GAME

Each player starts with a 4 by 4 grid of numbers that are possible multiplication products - these numbers can either be randomly assigned or carefully chosen by the player.

To start, two cards are dealt and put face up on the table. If either player has the product of those two numbers, they cover it. From then on, the players take turns taking the top card from the draw pile and choosing which of the two cards to replace. All players who have a match with the product cover it. The first player to get 4 in a row wins.