



Grades

2-5



# Parentheses Puzzles

**Math Concepts:** +, -, x, /, order of operations

**Materials:** Paper, pencil

**Players:** 1 - 6

**Play:** Where you choose to put parentheses can change the value of an expression. For example  $5 - 3 + 1$  can become either  $5 - (3 + 1) = 1$  or  $(5 - 3) + 1 = 3$ . The challenge in these puzzles is to take a string of numbers and operations and insert parentheses into the string, as needed, to get the value be the target value.

**Example:** Find the places to put parentheses in  $10 - 3 - 5 - 2 + 8 - 4$  to make its value 6. One answer for where to put the parentheses is:  $10 - (3 - (5 - 2) + 8 - 4) = 6$ .

**Create:** Create these puzzles by taking any equation, such as  $9 = (2 + 7) \times (5 - 2 \times 2)$  and remove the parentheses. The challenge for your child is how to take  $2 + 7 \times 5 - 2 \times 2$  and add parentheses to it so that the result is 9.

## – DISCUSSION AND TIPS –

See if the students can think of examples of strings of numbers and operations that have more than one way to put parentheses in to get the right answer.

To emphasize the order of operations, ask your students what the value of the expression is without any parentheses.