



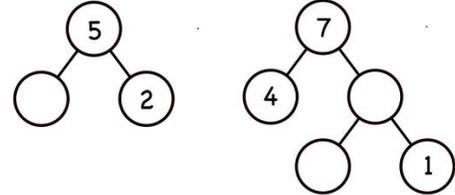
# Shape Sums

**Math Concepts:** Addition - single digit

**Materials:** Paper, pencil

**Players:** 1

**Set up:** Use a diagram of connected shapes, where each shape is meant to contain a number. The numbers in all the shapes directly below and connected to a shape must add up to the value in that shape. In the examples on the right, 3 should be in the circle in the left diagram, and 2 and 3 should be in the two circles in the right diagram.



**How to make:** Make these puzzles by starting with a diagram that is completely filled in and then removing some numbers. If the puzzle has some repeated numbers (see notes in Variations), use a square, triangle, or other shape instead of a circle for that repeated number, if you want.

**Goal:** Fill the empty shapes so that every shape is the sum of all the shapes directly below and connected to it.

## – DISCUSSION AND TIPS –

Discuss with your students how to use number bonds and fact families to fill in the empty shapes.

## – VARIATIONS –

**Repeated numbers:** One option is to use non-circular shapes for repeated numbers. While the value in a circle may duplicate the value in some other circle or shape, the value in a non-circular shape must match the value in all other places with the same shape. For example, all squares have the same value in a given puzzle. Use matching shapes to practice adding twins, near twins, and halving – in the first example on the left, the solver is asked to find a number that is half of 8.

