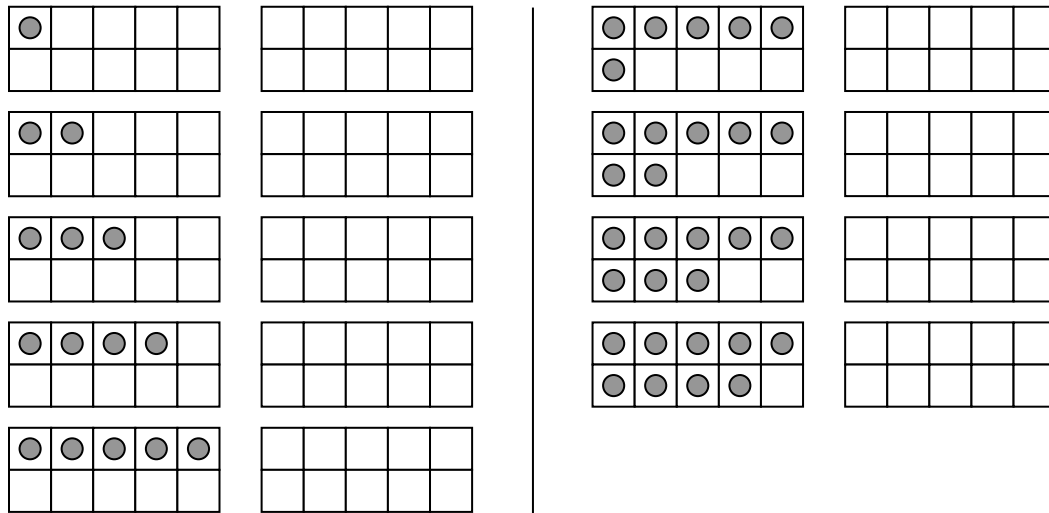


TEACHING TIP

HOW TO USE THE TEN FRAMES



A significant proportion of middle school students do not know their addition facts. These students can find the sum, but by using the inefficient strategy of counting on their fingers. The ten-frame helps students learn a more efficient and a more transferable addition strategy, especially for those facts that have a summand greater than 10.

A ten frame is a 2×5 grid. Consider this sum: $8 + 7 = ?$

Use the Ten Frame above that contains 8 circles. The student thinks “ $8 + 2$ makes 10, and 5 more makes 15.” The student uses the strategy of “making 10”, and decomposes the 7 into $2 + 5$.

Further notes

It is easier to start with the larger number and add the smaller. So $4 + 9$ should be thought of as “ $9 + 1$ makes 10, and 3 more makes 13.”

With some students, you may have to start with a 5 frame, e.g. to solve $3 + 4$, the student thinks, “ $3 + 2$ makes 5, and 2 more makes 7.”

The strategy of “making 10” is used with more difficult addition questions, e.g. $47 + 6 = ?$. The student thinks, “ $47 + 3$ makes 50, and 3 more makes 53.”

The *Counting On* kit from the NSW Department of Education contains a diagnostic test and a large collection of activities to support these students. The textbook *Elementary and Middle School Mathematics, Teaching Developmentally* by John Van de Walle, is an excellent resource, as is *The Maths Game* by George Booker.

MULTIPLICATION TABLE

| X | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

TEN FRAMES

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