Be Fluent: Strategies, Models, and Games to Promote Flexible Fact Fluency

NCTM Hartford
2018

PROFESSIONAL LEARNING
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NUMBER FACT STRATEGIES

ADDITION

- Count-on 1, 2 and 0
- Doubles and near doubles
- Make ten

SUBTRACTION

- Think addition

TEACHING SEQUENCE

- Introduce (see page 2)
- Reinforce (see page 2)
- Practice (see page 4)
- Extend (see page 4)

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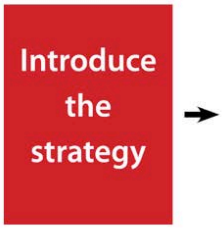
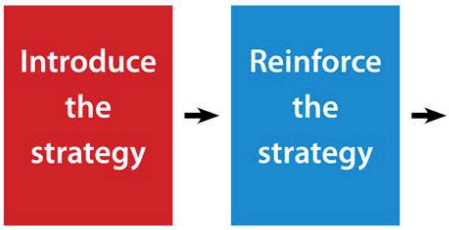
Sequence for Teaching Skills



This stage involves the use of **concrete** materials and **pictorial** representations to model the strategy.

At this first stage, ORIGO resources also include **contextual situations** to provide meaning.

Sequence for Teaching Skills



This stage provides the opportunity for the students to **assimilate** and **internalize** the strategy.

It is an additional link that **connects** the models of the introductory stage to the symbols of the practice stage.

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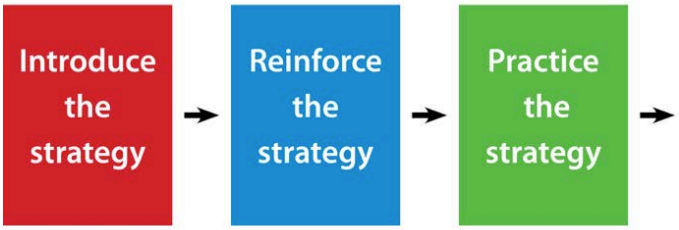
Sequence for Teaching Skills



This stage aims to develop **accuracy** and increase **speed** of recall.

In this stage, a range of different types of written and oral activities is used.

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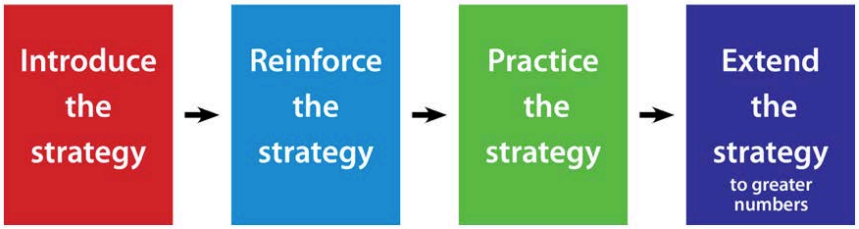
Sequence for Teaching Skills



This stage moves the strategy to examples **beyond** the number fact range, including computation with **decimals**.

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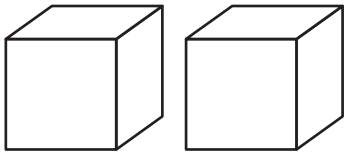
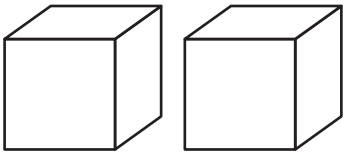
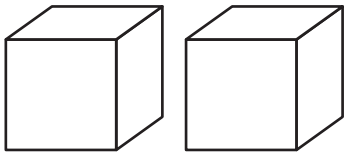
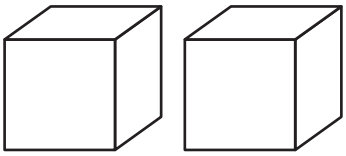
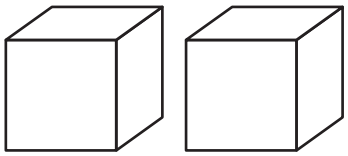
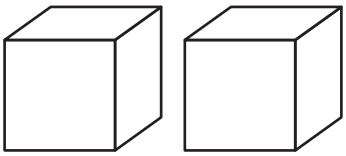
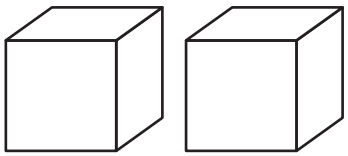
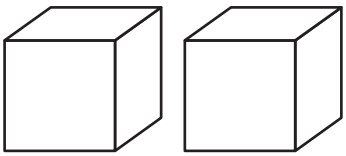
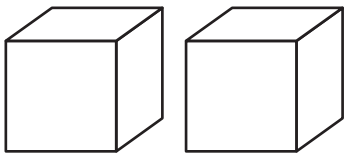
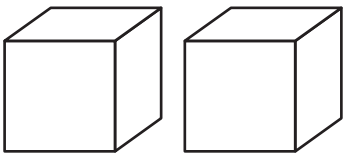
REINFORCE: Count on 1 and 2

- Roll your number cubes and count on 1 or 2.
- Find your answer below.
- Write your numbers on the number cubes. Write the number fact.

 ____ + ____ = 11	 ____ + ____ = 6
 ____ + ____ = 5	 ____ + ____ = 8
 ____ + ____ = 9	 ____ + ____ = 7
 ____ + ____ = 8	 ____ + ____ = 6
 ____ + ____ = 7	 ____ + ____ = 10

Cube A: 4, 5, 6, 7, 8, 9

Cube B:

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REINFORCE: Doubles-plus-1

11	19	13	15
13	9	17	19
17	11	15	9

Cube: 4, 5, 6, 7, 8, 9 *(Same as previous game)*

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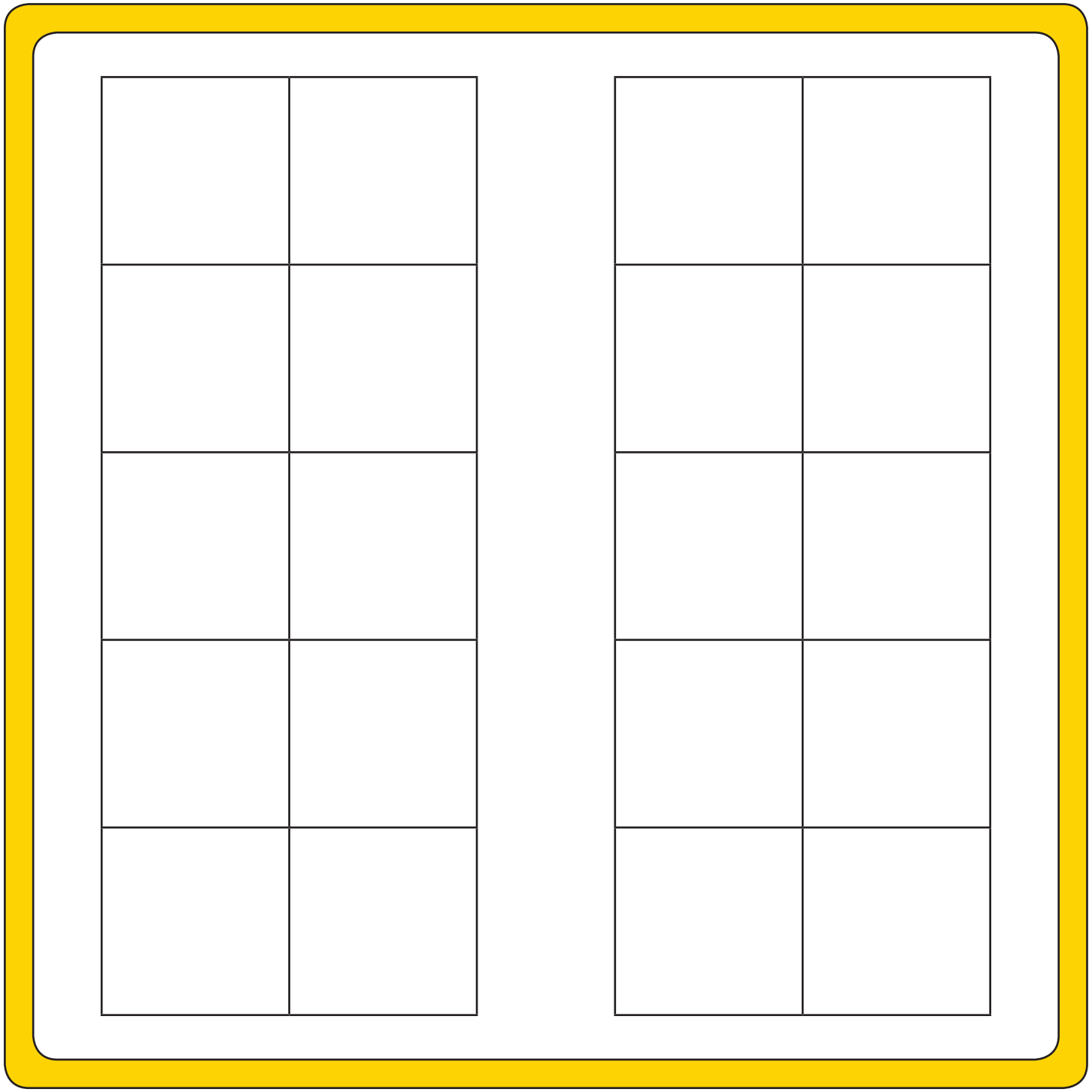
INTRODUCE: Make Ten



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REINFORCE: Make Ten

- Roll your number cubes and write the fact below the example in the grid that will help you figure out the answer.
- Write the answer to both facts.

10 + 6 = ____ ____ + ____ = ____	10 + 6 = ____ ____ + ____ = ____
10 + 5 = ____ ____ + ____ = ____	10 + 5 = ____ ____ + ____ = ____
10 + 5 = ____ ____ + ____ = ____	10 + 5 = ____ ____ + ____ = ____
10 + 4 = ____ ____ + ____ = ____	10 + 4 = ____ ____ + ____ = ____
10 + 4 = ____ ____ + ____ = ____	10 + 4 = ____ ____ + ____ = ____
10 + 3 = ____ ____ + ____ = ____	10 + 3 = ____ ____ + ____ = ____
10 + 3 = ____ ____ + ____ = ____	10 + 3 = ____ ____ + ____ = ____
10 + 2 = ____ ____ + ____ = ____	10 + 2 = ____ ____ + ____ = ____
10 + 1 = ____ ____ + ____ = ____	10 + 1 = ____ ____ + ____ = ____

Cube A: 8, 8, 8, 9, 9, 9

Cube B: 3, 4, 5, 5, 6, 7

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Take or Tally

Player 1	Player 2
13 – _____ = _____	13 – _____ = _____
12 – _____ = _____	12 – _____ = _____
11 – _____ = _____	11 – _____ = _____
10 – _____ = _____	10 – _____ = _____
9 – _____ = _____	9 – _____ = _____
8 – _____ = _____	8 – _____ = _____
Tally	Tally

Cube A: 1, 2, 3, 1, 2, 3

Cube B: 7, 8, 9, 10, 11, 12

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