Developing Fact Fluency from Conceptual Understanding – Rather than Gimmicks!

James Burnett
Founder/CEO

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

MULTIPLICATION

- Use tens (5s)
- Make generalizations (1s and 0s)
- Use doubles (2s, 4s and 8s)
- Build up/down (9s and 6s)

DIVISION

- Think multiplication

TEACHING SEQUENCE

- Introduce
- Reinforce
- Practice
- Extend

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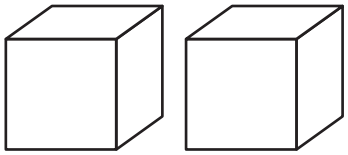
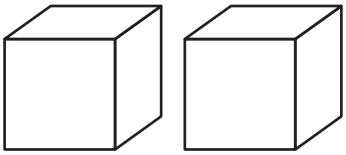
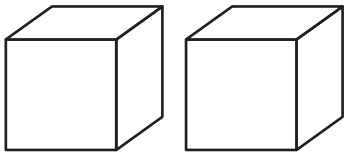
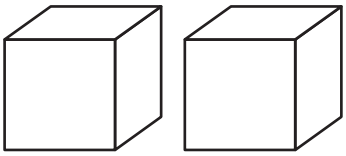
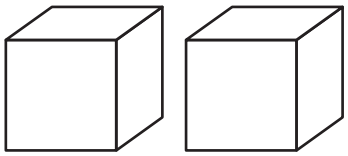
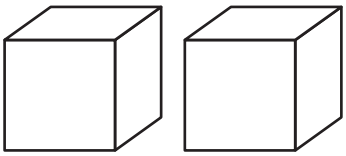
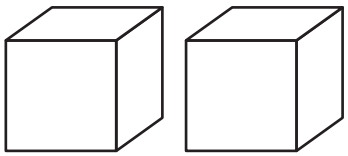
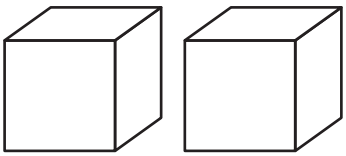
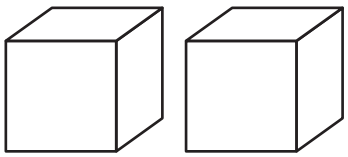
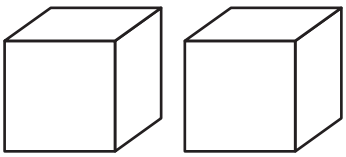
REINFORCE: Count on 1 and 2

- 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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ADDITION CHART

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

- ☐ Count-on facts
- ☐ Use doubles facts
- ☐ Make ten facts

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REINFORCE: Double-add-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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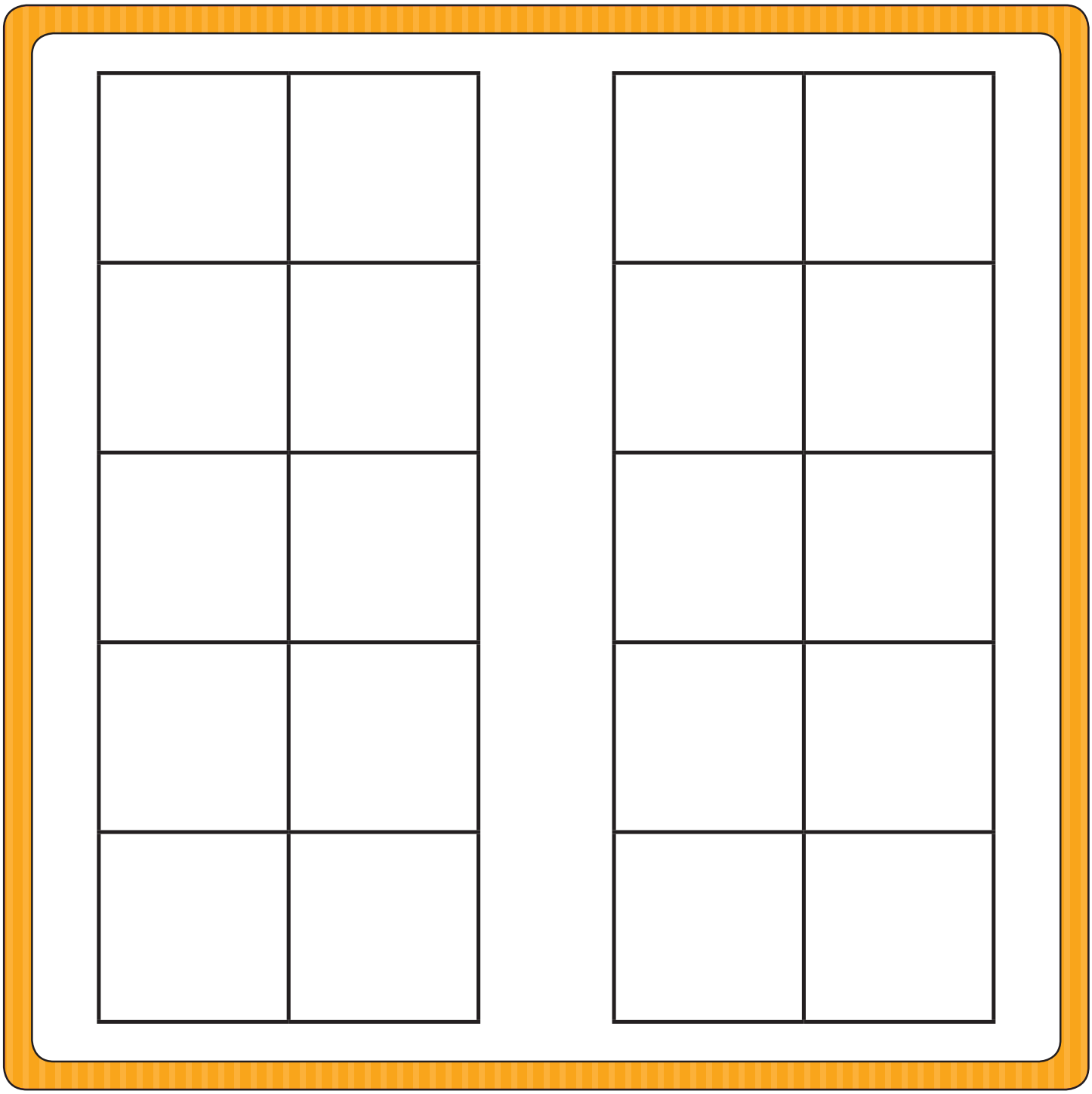
INTRODUCE: Make Ten



ORIGO Education: *Box of Facts (Addition and Subtraction)*

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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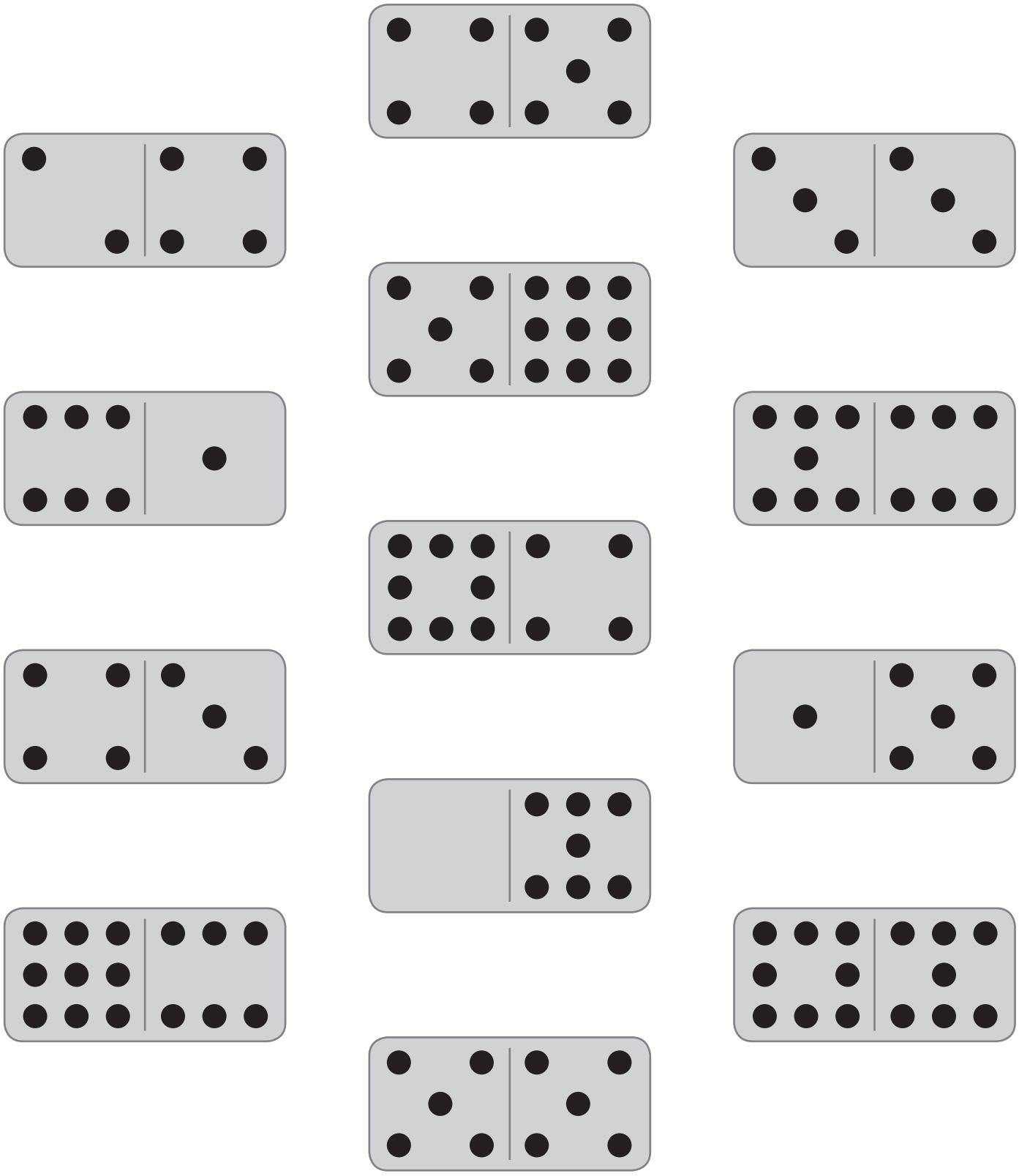
DOMINO SORT

Sort these dominos according to the addition strategy you would use to calculate the total number of dots.



☐ Count On ☐ Use Doubles ☐ Make Ten

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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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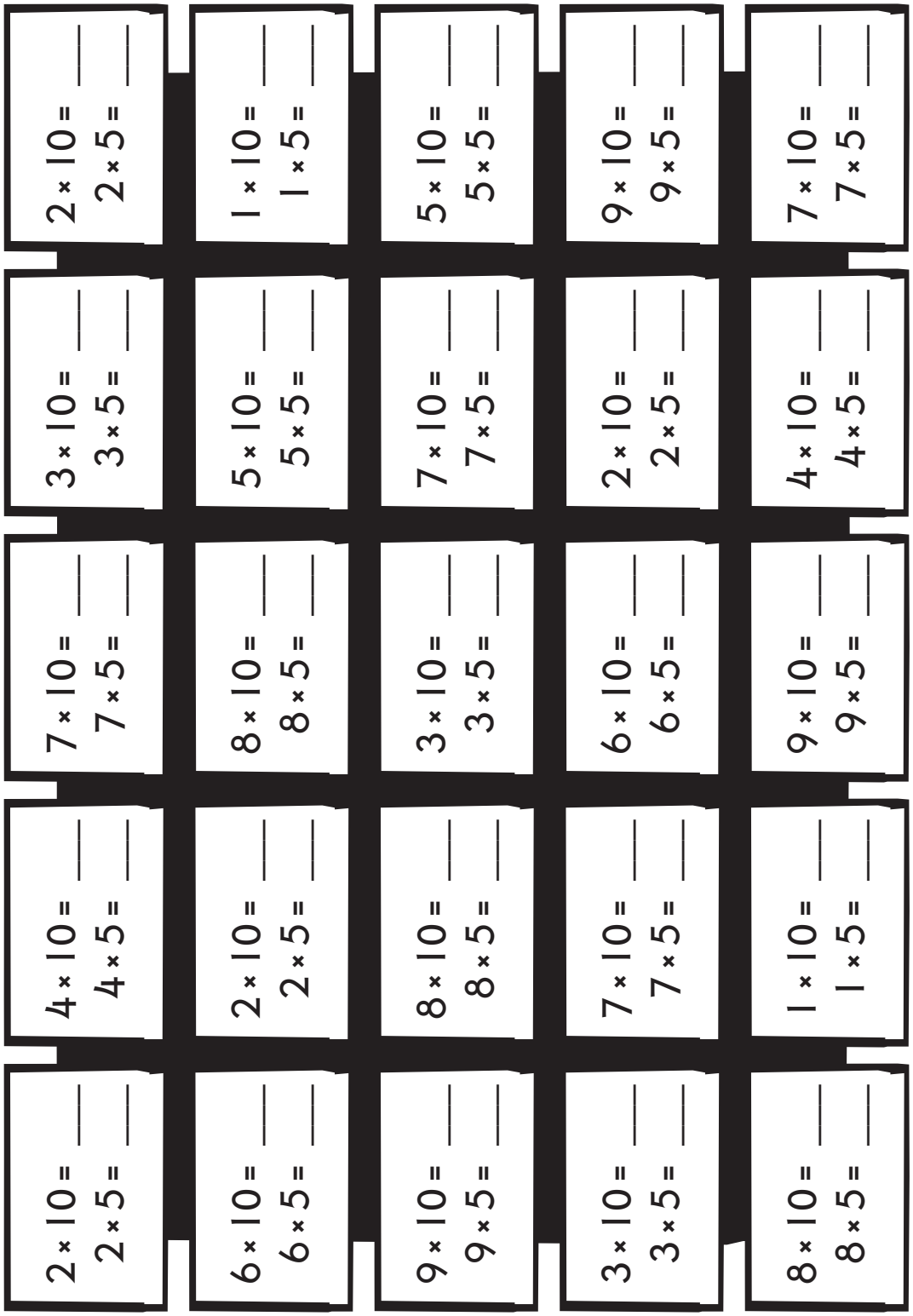
REINFORCE: Five and Tens Facts

Tens Or Fives



Cube A: 6, 5, 4, 3, 2, 1

Cube B: 9, 9, 8, 8, 7, 7

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REINFORCE: Double and Halve

Nice and Easy

90 × 3	90 × 4	90 × 6	90 × 7	90 × 8	90 × 9
70 × 3	70 × 4	70 × 6	70 × 7	70 × 8	70 × 9
50 × 3	50 × 4	50 × 6	50 × 7	50 × 8	50 × 9
30 × 3	30 × 4	30 × 6	30 × 7	30 × 8	30 × 9

Cube A: 15, 15, 25, 35, 45, 45

Cube B: 6, 8, 12, 14, 16, 18

Burnett, J. & Tickle, B. (2007). *Fundamentals: Red Level*, page 22. ORIGO Education.

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Nice and Easy Too!

270	360	540	630	720	810
210	280	420	490	560	630
150	200	300	350	400	450
90	120	180	210	240	270

Burnett, J. & Tickle, B. (2007). *Fundamentals: Red Level*, page 23. ORIGO Education.

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MULTIPLICATION CHART

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

- ☐ Use tens (5s)
- ☐ Make generalizations (0s, 1s)
- ☐ Use doubles (2s, 4s, 8s)
- ☐ Build up/down (9s, 6s)

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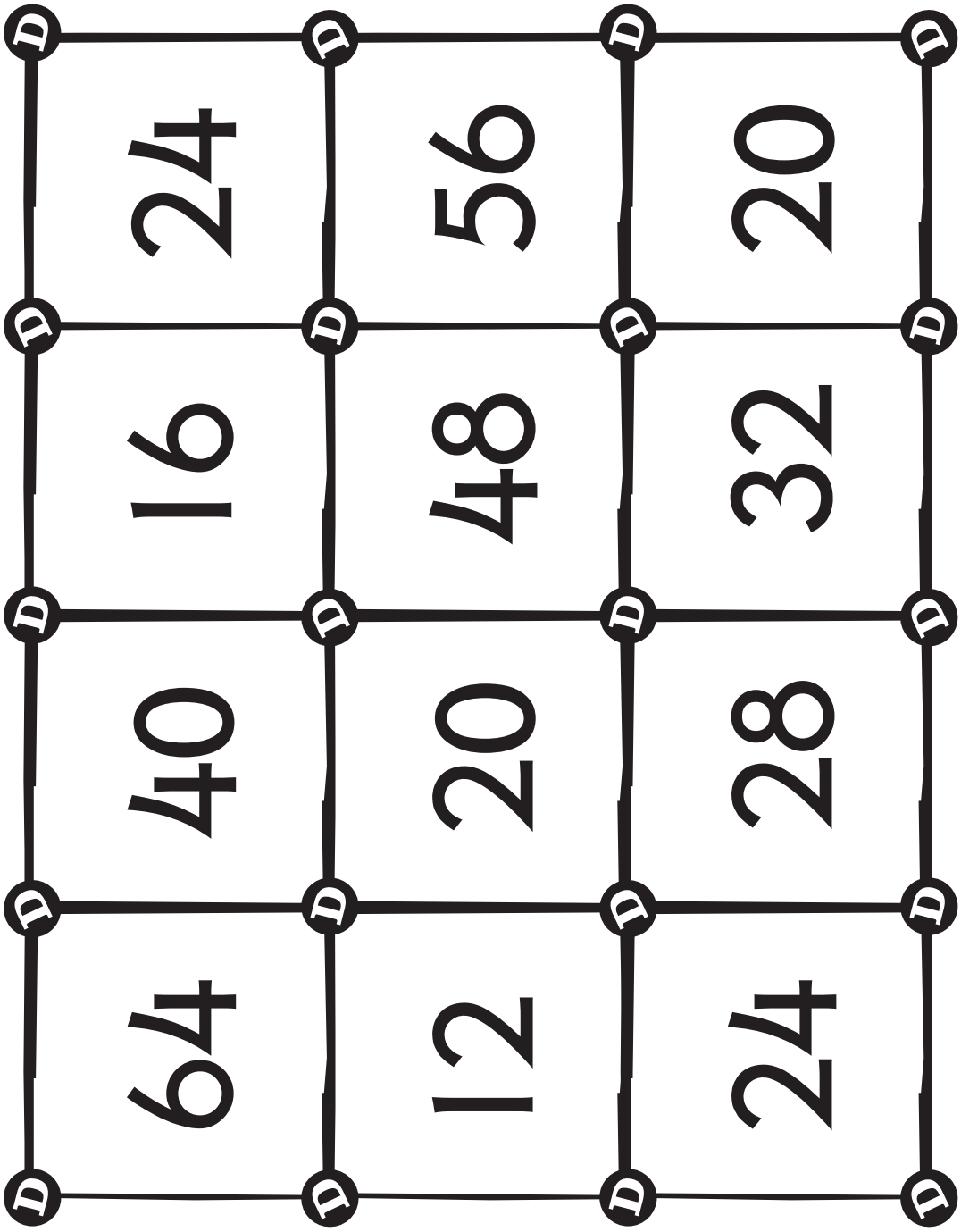
REINFORCE: Fours and Eights Facts

Do the Ds



Cube A: 3, 4, 5, 6, 7, 8

Cube B: DD, DD, DD, DDD, DDD, DDD

Burnett, J. & Tickle, B. (2007). *Fundamentals: Purple Level*, page 54. ORIGO Education.

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