Multiplication and Division Fact Fluency! We Can Do It!

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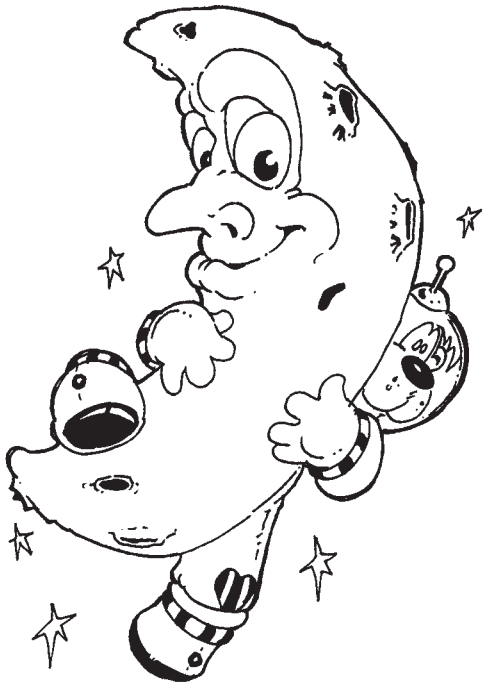
presented by

Kim Sutton

Creative Mathematics
4001 West End Road
Arcata, California 95521
1-800-841-5193
www.creativemathematics.com



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Strategies for the Operations

1. **Commutative Property**
   (eliminates 50% of facts to learn)

2. **Even/Odd Rules of the Operation**
   (creates mathematical reasoning)

3. **Properties of Zero**
   (identity element of addition and subtraction)

4. **Properties of One**
   (identity element of multiplication and division)

5. **Doubles-Doubles Plus/Minus One (times 2)**
   (valuable connections to difficult facts)

6. **Combinations that Make a Ten/Working with a Ten**
   (facilitates place value and indepth computation)

7. **Skip Counting Patterns of 2, 5, 10**
   (always 2, 5, 10, 0, 1, 11, 3, 6, 9, 12 then 4, 8, 7)

8. **Patterns with Three, Six, and Nine**
   (tied to digital root patterns)

9. **Patterns of Nines with All Operations**
   (connections to addition/subtraction visual check)

10. **Inverse Operations** (Triangular Relationship)
    (always the four related questions)

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In the House of Eight

by
Ron Brown
Multiplication

Eight's in the house!

Put your hands together
No time to wait.
We're gonna learn the facts
That go with eight.

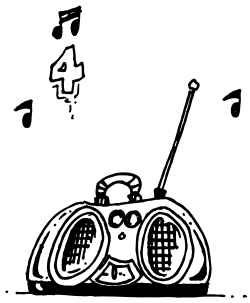
No time to lose.
No time to waste.
Get in the house with eight.

8x0 is 0
8x1 is 8
8x2 is 16
8x3 24

8x4 32
8x5 40
8x6 48
In the house with eight!

8x7 is 56
8x8 64
8x9 72
8x10 80
8x11 88
8x12 96
In the house
You're doin' great.
In the house with eight!

(You're in the house.
You're doin' great.
In the house with eight.
In the house with eight.)



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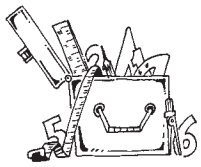
The Pattern Stick Game

MATH TOOLS



- any pattern stick (2-12)
- double dice
- transparent chips
- partner(s)

This is a simple game to play for the "over and over" practice with the meaning of multiplication and decisionmaking regarding addition and the diffference between.

Each player needs a designated pattern stick (2-12), double dice, transparent chips and a partner. Players will take turns. The first player will roll the double dice. The player can deside to add or compute the difference between the numbers on the two dice. That answer is inserted into the meaning statement for multiplication, "_____ groups of _____ = _____ ." The player must state that complete equation. The product will be covered up. The objective is to be the first to cover the complete stick.

Let's say the teacher wants play to take place on the "two stick." For example, a player might roll a three and a four. Those two numbers can be added or the difference between can be computed. If the three and four are added, the player would say, "Seven groups of two equal fourteen." The fourteen would be covered. If the fourteen is covered, the player would say, "The difference between three and four is one, one group of two is two."

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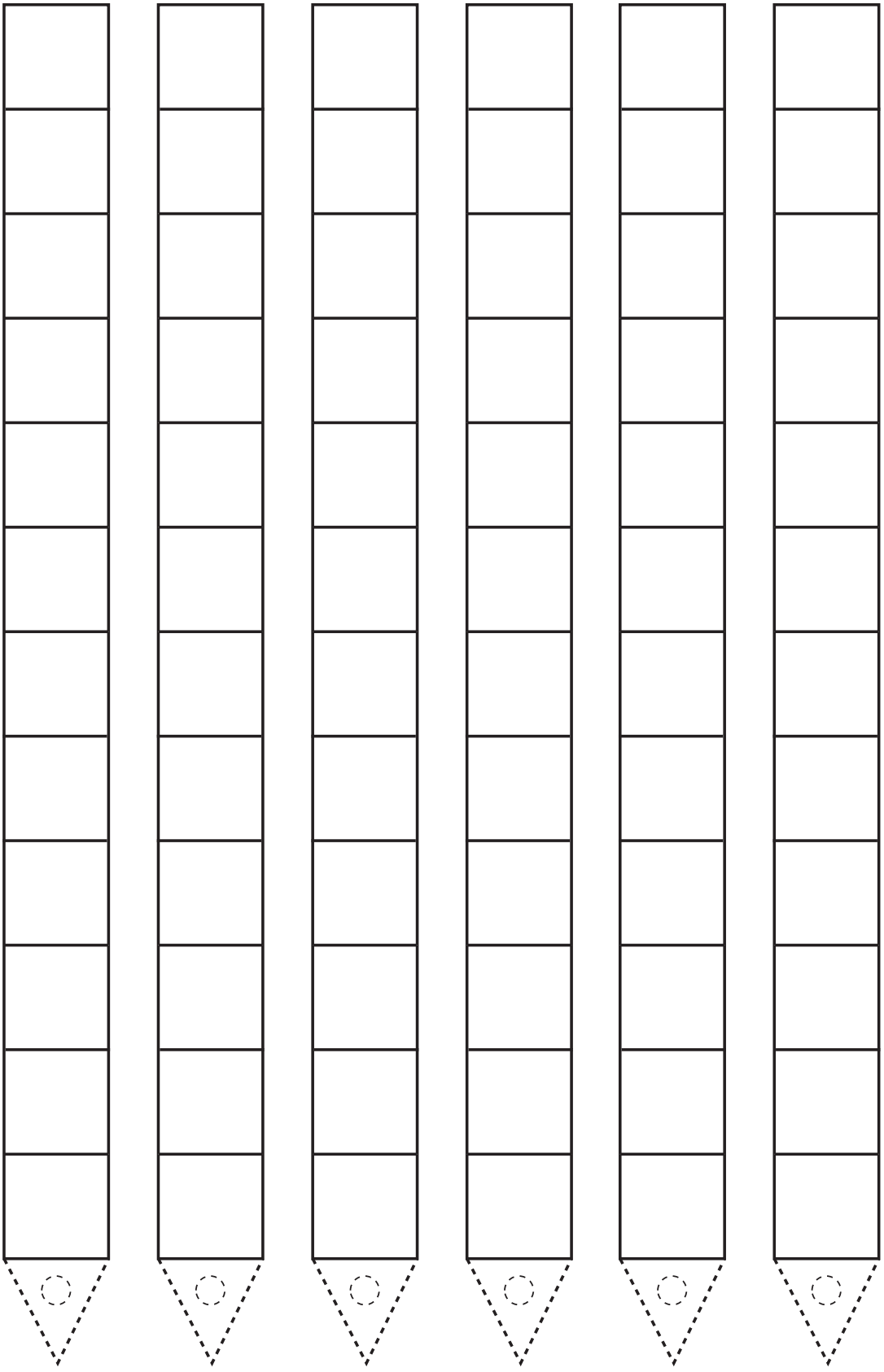
Pattern Sticks



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Name	Date

Factor Fun

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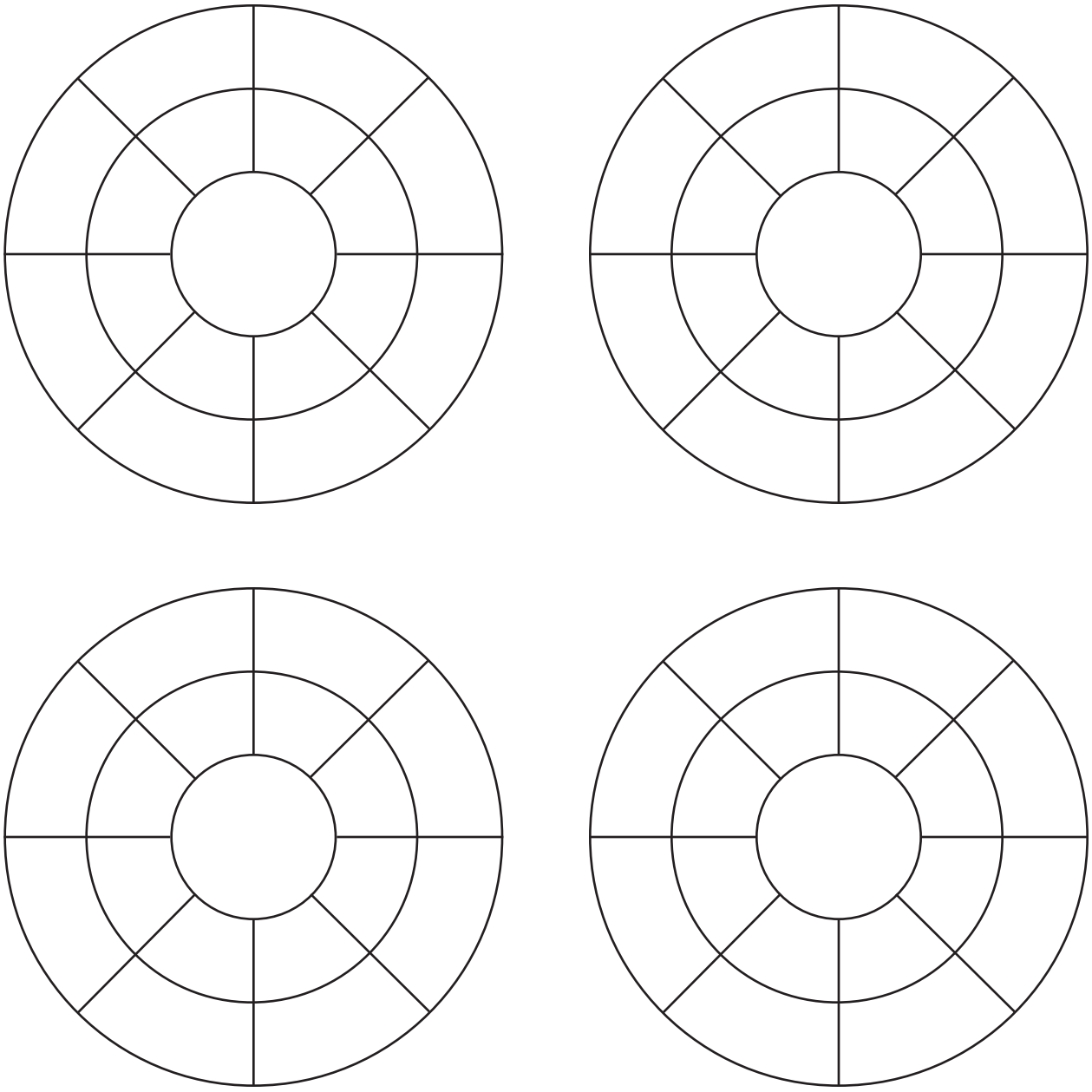
Drill Doughnuts



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time_____
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Drill Command _____

Time _____

Name _____

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Groups Of _____

0 groups of _____ = _____

1 group of _____ = _____

2 groups of _____ = _____

3 groups of _____ = _____

4 groups of _____ = _____

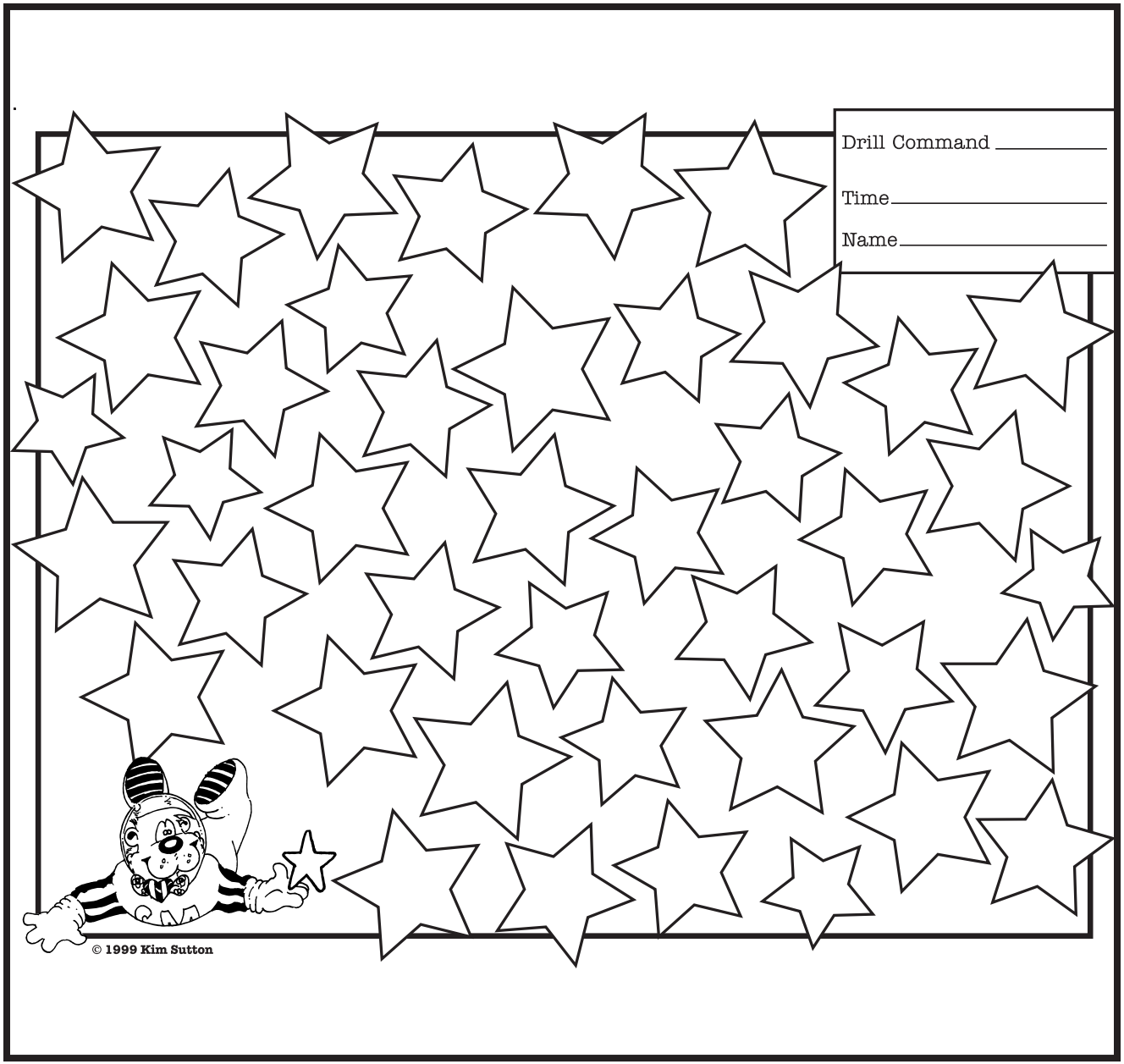
5 groups of _____ = _____

6 groups of _____ = _____

7 groups of _____ = _____

8 groups of _____ = _____

9 groups of _____ = _____



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Cool Threes 3

by
Ron Brown
Skip Counting

Counting by threes is very cool.
It's easy to do when you know the rule.

3 6 9 12
15 18 21
24 27 30
33 36
39 42 45
48 51 54
57 60 63
66 69 72

(Counting by threes is very cool.
It's easy to do when you know the rule.
Threes!
Very cool!)

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