Board Games for Early Mathematics: Division

Start at the beginning, and stick to the order given. Skipping is OK if a learner can use the concepts to solve problems. For tips, background info, and an assessment to show if a different section would help, visit reckonmath.com.

This packet includes these division games and activities:

Think about what division is
Writing number sentences about division
Divide by 2
Division is backwards multiplication
When you see division, you can use multiplication
Learn the words "dividend", "divisor" and "quotient"
Divide dividends between 4 and 9
Divide dividends between 10 and 18
Divide dividends between 20 and 28
Divide dividends between 30 and 36
Divide dividends between 40 and 56
Divide dividends between 63 and 81
Different notations for division

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Think about what division is

Subtraction is backwards addition. Division is backwards _____.

The problem 2 x 3 = ? tells you there are 2 groups of 3, or 3 groups of 2.
It works just as well for both situations.
When 2 x 3 means 2 groups of 3, the question is "How many are there in all?"
When 2 x 3 means 3 groups of 2, the question still is "How many are there in all?"

The problem 6 ÷ 3 = ? tells you there are 6 in all, grouped into 3 groups, or there are 6 in all, grouped into groups of 3 each. It works just as well for both situations.
When 6 ÷ 3 means 6 in all, grouped into 3 groups, the question is "How many are in each group?"
When 6 ÷ 3 means 6 in all, grouped into groups of 3 each, the question is slightly different. Now, it is "How many groups are there?"

No matter which 6 ÷ 3 we are talking about, division is just backwards multiplication, and 6 = 2 x 3. So in both situations, the answer is 2.
We can show this by using the division sign to write 6 = 2 x 3 backwards: 6 ÷ 3 = 2.
To read 6 ÷ 3 = 2 out loud, say "Six divided by three is two."

Questions? **reckonmath.com**

An adult helper can walk learners through this discussion activity, or learners who are comfortable reading can work on their own or with a partner. Learners who aren't used to talking about a text with a partner can use this method: Put a check mark next to any line that makes sense right away. Now look at one of the other lines. Talk about the line with each other. Can the two of you figure out why it makes sense? If you can, put a check mark by it. If you can't, move on to another line. Keep doing this until you have tried to figure out every line. If any lines still don't have a check mark, ask someone else to help you understand why those lines make sense.

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Writing number sentences about division

Any equation has two main amounts: The amounts on either side of the _____.

If 6 ÷ 3 = 2 is just 6 = 2 x 3 backwards, why bother using the ÷ sign at all?

Why not just write 6 = 2 x 3 when you are talking about sorting 6 things into groups?

You could, but remember that we were solving a problem, and 2 was our answer.

The ÷ sign lets us write our answer by itself on one side of the equals sign.

Why would we want to write our answer by itself on one side of the equals sign?

Well, any equation has two main amounts: The amounts on either side of the equals sign.

When we write the equation so that 2 by itself is one of the main amounts, that is like saying "Hello reader, pay attention to the 2."

That is perfect here, because we want readers to notice that 2 is our answer.

Questions? **reckonmath.com**

An adult helper can walk learners through this discussion activity, or learners who are comfortable reading can work on their own or with a partner. Learners who aren't used to talking about a text with a partner can use this method: Put a check mark next to any line that makes sense right away. Now look at one of the other lines. Talk about the line with each other. Can the two of you figure out why it makes sense? If you can, put a check mark by it. If you can't, move on to another line. Keep doing this until you have tried to figure out every line. If any lines still don't have a check mark, ask someone else to help you understand why those lines make sense.

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Skill Builders: Find half of a number, with answer key (M)

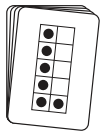
CCSS.MATH.CONTENT.3.NF.A.2

Divide by 2

_____ divided by 2 is _____.

0	**1**	2	3	4	5	6	7	8	9	10
0	1	**2**	3	4	5	6	7	8	9	10
0	1	2	**3**	4	5	6	7	8	9	10
0	1	2	3	**4**	5	6	7	8	9	10
0	1	2	3	4	**5**	6	7	8	9	10
0	1	2	3	4	5	**6**	7	8	9	10
0	1	2	3	4	5	6	**7**	8	9	10
0	1	2	3	4	5	6	7	**8**	9	10
0	1	2	3	4	5	6	7	8	**9**	10
0	1	2	3	4	5	6	7	8	9	**10**

Questions? **reckonmath.com**



A deck of ten frame cards, and counters in two colors.

Dividing by 2 is the same as finding half of a number.

How to play: On your turn, draw a card. Find the number line where the number you drew is big, say what your number divided by 2 is, and put a counter at that place. **Example:** If you draw a three, find the number line where the numeral 3 is big, say "3 divided by 2 is 1 1/2," and put a counter halfway between the 1 mark and the 2 mark. If the other player's counter is already there, you can bump it off.

When all the number lines have a counter in the correct place, the player with more counters wins.

D

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Division is backwards multiplication

My fact is _____. A division version of my fact is _____.

10 ÷ 2 = 5	16 ÷ 8 = 2	9 ÷ 3 = 3	15 ÷ 3 = 5	12 ÷ 6 = 2
8 ÷ 2 = 4	12 ÷ 3 = 4	6 ÷ 3 = 2	4 ÷ 2 = 2	8 ÷ 2 = 4
12 4 = 3	15 ÷ 5 = 2	**FREE SPACE**	10 ÷ 2 = 5	4 ÷ 2 = 2
16 ÷ 4 = 4	9 ÷ 3 = 3	15 ÷ 5 = 3	8 ÷ 4 = 2	16 ÷ 2 = 8
6 ÷ 2 = 3	10 ÷ 5 = 2	12 ÷ 4 = 3	12 ÷ 2 = 6	16 ÷ 8 = 2

If you roll:	Use this multiplication fact:
1	3 x 3 = 9
2	2 x 3 = 6
3	2 x 2 = 4
4	2 x 4 = 8
5	2 x 5 = 10
6	3 x 5 = 15
7	3 x 4 = 12
8	2 x 6 = 12
9	2 x 8 = 16
10	4 x 4 = 16

Skill Builders: Commutative property of multiplication (M), Think about what division is (D)

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A ten-sided die, and counters in two colors.

How to play: On your turn, roll the die. If you roll a zero, it means ten. In the table under the board, find the number you rolled and the multiplication fact that goes with it. Now, look at your game board. Choose one division fact that is a backwards version of the multiplication fact, and say it out loud. **Example:** If you roll a 2, the multiplication fact is "2 x 3 = 6", so you say either "6 ÷ 3 = 2" or "6 ÷ 2 = 3". Cover the same multiplication fact that you chose. If the answer is not available, it is the other player's turn. **The first player to get five in a row wins.** If the board fills and no one has five in a row, the player with more counters wins.

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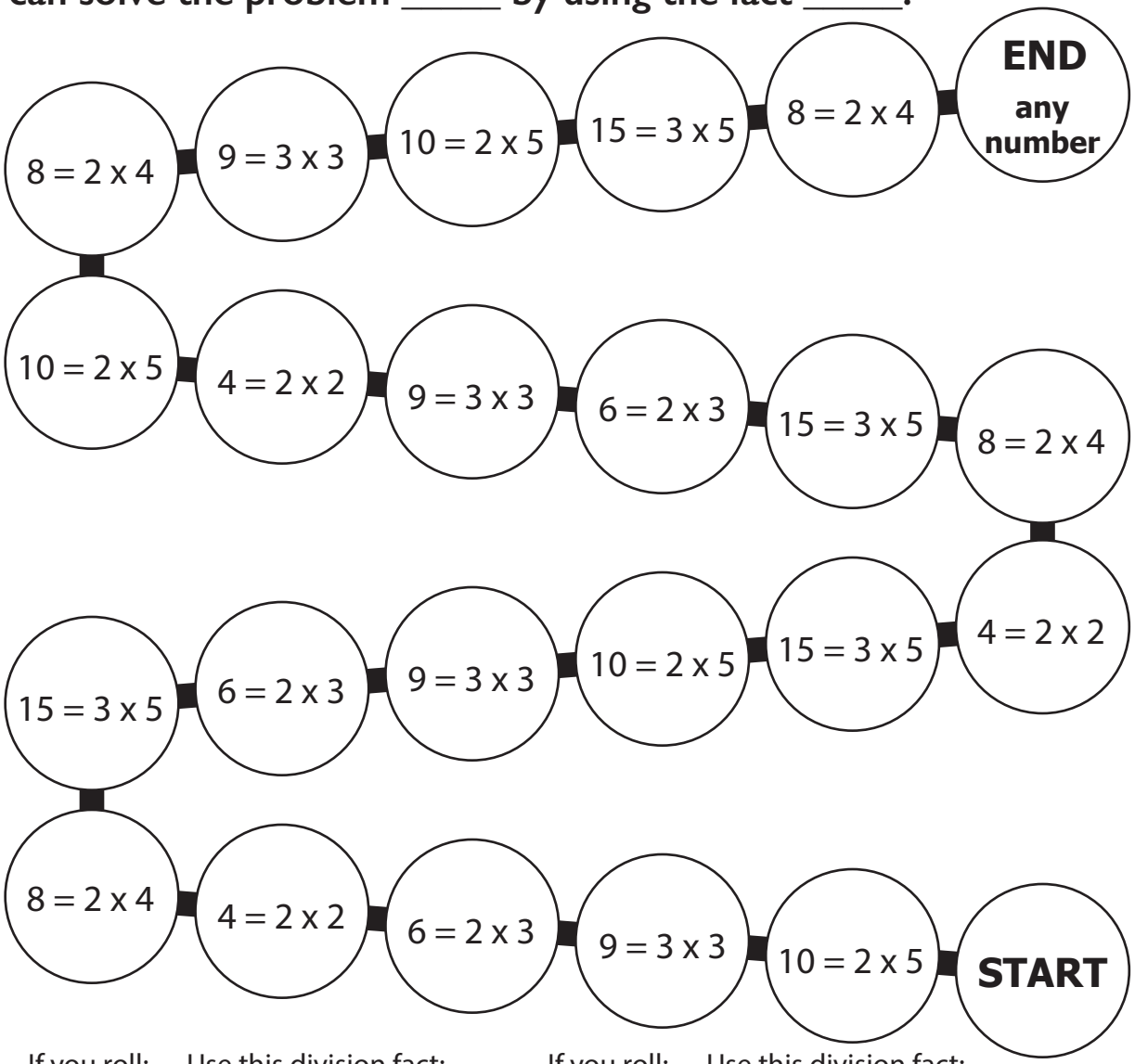
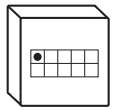
When you see division, you can use multiplication

I can solve the problem _____ by using the fact _____.



If you roll:	Use this division fact:
0	9 ÷ 3 = __
1	6 ÷ 2 = __
2	4 ÷ 2 = __
3	8 ÷ 4 = __
4	10 ÷ 5 = __
5	15 ÷ 5 = __

Questions? **reckonmath.com**



A 0-5 frame die, and two counters.

You can often solve division problems by thinking about multiplication facts. **How to play:** On your turn, roll the die. In the table under the board, find the number you rolled and the division problem that goes with it. Move to the next multiplication sentence that has the answer to the problem in it. **Example:** If you roll a 1, the division problem is 6 ÷ 2 = __. This is the same as saying 6 = 2 x __, so move to the next 6 = 2 x 3. You can land on the END circle by drawing a number that doesn't have any other circle to go to. **The first player to land on END wins.**

Skill Builders: Commutative property of multiplication (M), Think about what division is (D), Division is backwards multiplication (D)

CCSS.MATH.CONTENT.3.OA.B.6

D

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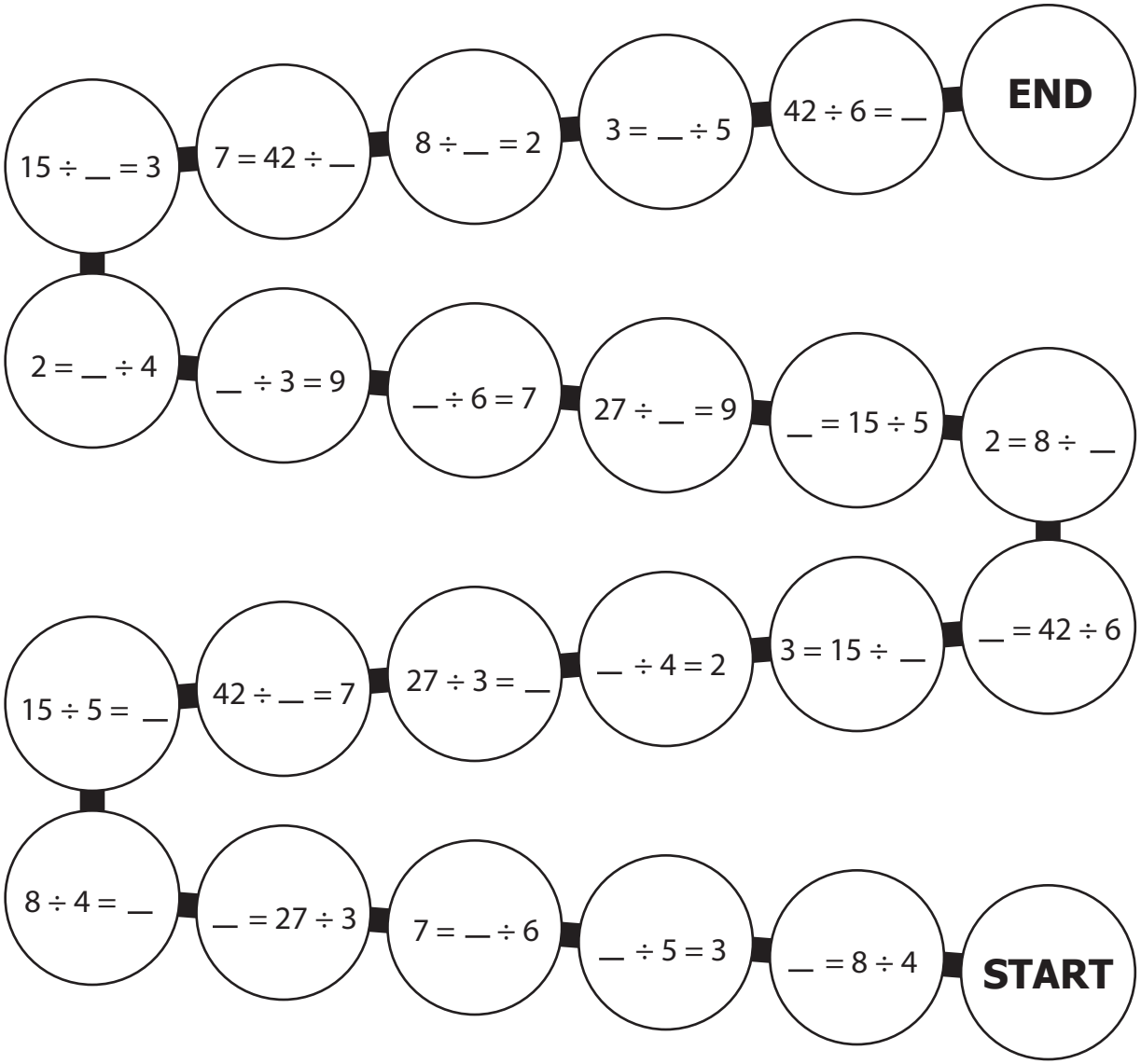
Learn the words "dividend", "divisor" and "quotient"

It's a [dividend / divisor / quotient].



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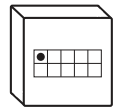

A 0-5 frame die, and two counters.

In the division sentence 8 ÷ 4 = 2, the dividend is 8, the divisor is 4 and the quotient is 2. **Notice:** The dividend and divisor can be on the left of the equals sign and the quotient on the right, or the quotient on the left and the dividend and divisor on the right. **How to play:** On your turn, roll the die and move forward that many spaces. If you roll a zero, roll again. Look at the equation you landed in and say whether the blank is a dividend, a divisor, or a quotient. You do not have to say the number. Just say "Dividend," "Divisor," or "Quotient". **Example:** If you land on the equation __ ÷ 4 = 2, say "Dividend." **The first player to land on END wins.**

D

CCSS.MATH.CONTENT.3.OA.A.4 Skill Builders: Think about what division is (D), Learn the words "factor" and "product" (M)

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Divide dividends between 4 and 9

_____ ÷ _____ is _____.

9 ÷ 3 = __	9 ÷ __ = 3
8 ÷ __ = 2	8 ÷ 2 = __
6 ÷ 2 = __	6 ÷ __ = 2
4 ÷ __ = 2	4 ÷ 2 = __

Skill Builders: Think about what division is (D), When you see division, you can use multiplication (D), Fill in the factors, products between 4 and 9 (M)

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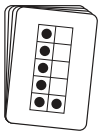

The 2, 3, 4 cards from a deck of ten-frame cards, and counters in two colors.

How to play: On your turn, draw a card. Then cover an oval where the number you drew makes the sentence true. **Example:** If you draw a 4, you can cover 8 ÷ __ = 2. It would also be fine to cover 8 ÷ 2 = __. **This is not a bump game.** If all the ovals with the answer you need are covered, it is the other player's turn. **When the board is covered, the player with more ovals wins.**

D

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Divide dividends between 10 and 18

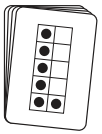
_____ ÷ _____ is _____.

Skill Builders: Think about what division is (D), When you see division, you can use multiplication (D), Fill in the factors, products between 10 and 18 (M)

CCSS.MATH.CONTENT.3.OA.A.4

18 ÷ 3 = __	18 ÷ __ = 3
18 ÷ __ = 2	18 ÷ 2 = __
16 ÷ 4 = __	16 ÷ __ = 4
16 ÷ __ = 2	16 ÷ 2 = __
15 ÷ __ = 3	15 ÷ 3 = __
14 ÷ 2 = __	14 ÷ __ = 2
12 ÷ __ = 3	12 ÷ 3 = __
12 ÷ 2 = __	12 ÷ __ = 2
10 ÷ 2 = __	10 ÷ __ = 2

Questions? **reckonmath.com**



The 4, 5, 6, 7, 8, 9 cards from a deck of ten-frame cards, and counters in two colors.

How to play: On your turn, draw a card. Then cover an oval where the number you drew makes the sentence true. **Example:** If you draw a 9, you can cover 18 ÷ __ = 2. It would also be fine to cover 18 ÷ 2 = __. **This is not a bump game.** If all the ovals with the answer you need are covered, it's the other player's turn. **When the board is covered, the player with more ovals wins.**

D

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Divide dividends between 20 and 28

_____ ÷ _____ is _____.

28 ÷ 4 = __	28 ÷ __ = 4	25 ÷ 5 = __	25 ÷ __ = 5
27 ÷ __ = 3	27 ÷ 3 = __	21 ÷ __ = 3	21 ÷ 3 = __
24 ÷ 4 = __	24 ÷ __ = 4	20 ÷ 4 = __	20 ÷ __ = 4
24 ÷ __ = 3	24 ÷ 3 = __	20 ÷ 2 = __	20 ÷ __ = 2

Skill Builders: Think about what division is (D), When you see division, you can use multiplication (D), Fill in the factors, products between 20 and 28 (M)

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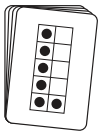

The 5, 6, 7, 8, 9, 10 cards from a deck of ten-frame cards, and counters in two colors.

How to play: On your turn, draw a card. Then cover an oval where the number you drew makes the sentence true. **Example:** If you draw a 9, you can cover 27 ÷ __ = 3. It would also be fine to cover 27 ÷ 3 = __. **This is not a bump game.** If all the ovals with the answer you need are covered, it's the other player's turn. **When the board is covered, the player with more ovals wins.**

D

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Divide dividends between 30 and 36

_____ ÷ _____ is _____.

36 ÷ 6 = __	36 ÷ __ = 6
36 ÷ __ = 4	36 ÷ 4 = __
35 ÷ 5 = __	35 ÷ __ = 5
32 ÷ __ = 4	32 ÷ 4 = __
30 ÷ __ = 10	30 ÷ 10 = __
30 ÷ __ = 5	30 ÷ 5 = __

Skill Builders: Think about what division is (D), When you see division, you can use multiplication (D), Fill in the factors, products between 30 and 36 (M)

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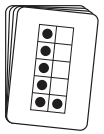

The 6, 7, 8, 9 cards from a deck of ten-frame cards, and counters in two colors.

How to play: On your turn, draw a card. Then cover an oval where the number you drew makes the sentence true. **Example:** If you draw a 9, you can cover 36 ÷ __ = 4. It would also be fine to cover 36 ÷ 4 = __. **This is not a bump game.** If all the ovals with the answer you need are covered, it's the other player's turn. **When the board is covered, the player with more ovals wins.**

D

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Divide dividends between 40 and 56

_____ ÷ _____ is _____.

56 ÷ 7 = __	56 ÷ __ = 7
54 ÷ __ = 9	54 ÷ 9 = __
50 ÷ 5 = __	50 ÷ __ = 5
49 ÷ __ = 7	49 ÷ 7 = __
48 ÷ __ = 8	48 ÷ 8 = __
45 ÷ 5 = __	45 ÷ __ = 5
42 ÷ __ = 6	42 ÷ 6 = __
40 ÷ 5 = __	40 ÷ __ = 5
40 ÷ 4 = __	40 ÷ __ = 4

Skill Builders: Think about what division is (D), When you see division, you can use multiplication (D), Fill in the factors, products between 40 and 56 (M)

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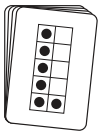

The 6, 7, 8, 9, 10 cards from a deck of ten-frame cards, and counters in two colors.

How to play: On your turn, draw a card. Then cover an oval where the number you drew makes the sentence true. **Example:** If you draw a 10, you can cover 50 ÷ __ = 5. It would also be fine to cover 50 ÷ 5 = __. **This is not a bump game.** If all the ovals with the answer you need are covered, it's the other player's turn. **When the board is covered, the player with more ovals wins.**

D

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Divide dividends between 63 and 81

_____ ÷ _____ is _____.

81 ÷ 9 = __	81 ÷ __ = 9
80 ÷ __ = 8	80 ÷ 8 = __
72 ÷ 8 = __	72 ÷ __ = 8
70 ÷ __ = 7	70 ÷ 7 = __
64 ÷ __ = 8	64 ÷ 8 = __
63 ÷ __ = 9	63 ÷ 9 = __

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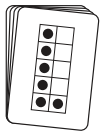
Skill Builders: Think about what division is (D), When you see division, you can use multiplication (D), Fill in the factors, products between 63 and 81 (M)

Questions? **reckonmath.com**



The 7, 8, 9, 10 cards from a deck of ten-frame cards, and counters in two colors.

How to play: On your turn, draw a card. Then cover an oval where the number you drew makes the sentence true. **Example:** If you draw a 10, you can cover 70 ÷ __ = 7. It would also be fine to cover 70 ÷ 7 = __. **This is not a bump game.** If all the ovals with the answer you need are covered, it's the other player's turn. **When the board is covered, the player with more ovals wins.**

D

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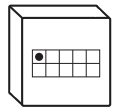
Different notations for division

I rolled a _____, so I got _____. _____ is the same thing.

$12 \div 3$	$\frac{18}{3}$	$6\overline{)30}$	$24/4$	$27 \div 9$
$\frac{8}{2}$	$30/6$	$\frac{24}{4}$	$8 \div 2$	$3\overline{)12}$
$3\overline{)18}$	$\frac{27}{9}$	**FREE SPACE**	$12/3$	$27/9$
$8/2$	$4\overline{)24}$	$30 \div 6$	$18/3$	$18 \div 3$
$2\overline{)8}$	$24 \div 4$	$\frac{12}{3}$	$9\overline{)27}$	$\frac{30}{6}$

0	$12 \div 3$
1	$30 \div 6$
2	$24 \div 4$
3	$8 \div 2$
4	$18 \div 3$
5	$27 \div 9$

Questions? **reckonmath.com**



One 0-5 frame die, and counters in two colors.

There are many different notations for division. The notations all mean the same thing: One number divided by another number.

How to play: On your turn, roll the die and find that line below the board. Look at the division expression on that line, and cover a division expression on the board that means the same thing. If no answer is available, it is the other player's turn. **Example:** If you roll a 1, the division expression means 30 divided by 6. So cover another expression that also means 30 divided by 6.

The first player to get five in a row wins. If the board fills and no one has five in a row, the player with more counters wins.

D

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Skill Builders: When you see division, you can use multiplication (D)

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