

4. [÷ Whole Numbers to 12]

Skill 4.1 Dividing by whole numbers from 1 to 12 using a multiplication table.

MMYellow 11 22 33 44
MMRed 11 22 33 44

Division forms patterns.

Division and multiplication are inverse operations.
(Division undoes multiplication)

Example: If $7 \times 8 = 8 \times 7 = 56$
then $56 \div 8 = 7$
or $56 \div 7 = 8$

| × | 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 |

Q.

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|----|----|----|
| | 56 | 7 | 14 | 35 | 21 | 42 | 28 | 49 | 70 | 63 |
| ÷ 7 | | | | | | | | | | |

A.

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|----|----|----|
| | 56 | 7 | 14 | 35 | 21 | 42 | 28 | 49 | 70 | 63 |
| ÷ 7 | 8 | 1 | 2 | 5 | 3 | 6 | 4 | 7 | 10 | 9 |

$56 \div 7 = ?$ How many 7's go into 56?

Reword the division by turning it into a multiplication.

Ask: "7 multiplied by what number makes 56?" ($7 \times ? = 56$)

Answer: Using the multiplication table

$$7 \times 8 = 56$$

$$\text{So } 56 \div 7 = 8$$

a)

| | | | | | | | | | | |
|-----|----|----|---|---|----|----|----|----|----|----|
| | 28 | 20 | 8 | 4 | 16 | 12 | 36 | 24 | 32 | 40 |
| ÷ 4 | 7 | | | | | | | | | |

b)

| | | | | | | | | | | |
|-----|----|---|----|----|----|----|----|----|----|----|
| | 80 | 8 | 56 | 24 | 48 | 32 | 72 | 40 | 16 | 64 |
| ÷ 8 | 10 | | | | | | | | | |

Skill 4.2 Dividing whole numbers from 1 to 12 using repetitive subtraction.

Division is the same as repeated subtractions.

Example: $56 \div 7 = ?$ How many 7's go into 56?

OR If you have 56, how many times can you take away 7?

$$56 - \underbrace{7 - 7 - 7 - 7 - 7 - 7 - 7 - 7}_{8 \text{ times}} = 0$$

If you have 56 you can take 7 away, 8 times.

So, $56 \div 7 = 8$

Q.

| | | | | | | | | | | |
|----------|----|---|----|----|----|---|----|----|---|----|
| | 21 | 6 | 12 | 30 | 24 | 3 | 18 | 27 | 9 | 15 |
| $\div 3$ | | | | | | | | | | |

A.

| | | | | | | | | | | |
|----------|----|---|----|----|----|---|----|----|---|----|
| | 21 | 6 | 12 | 30 | 24 | 3 | 18 | 27 | 9 | 15 |
| $\div 3$ | 7 | 2 | 4 | 10 | 8 | 1 | 6 | 9 | 3 | 5 |

How many 3's go into 21?

Reword the division by turning it into a subtraction.

Ask: "If you have 21, how many times can you take away 3?"

$$21 - \underbrace{3 - 3 - 3 - 3 - 3 - 3 - 3}_{7 \text{ times}} = 0$$

Answer: If you have 21 you can take 3 away, 7 times. So, $21 \div 3 = 7$

a)

| | | | | | | | | | | |
|----------|----|---|---|----|----|---|----|----|----|---|
| | 16 | 2 | 6 | 20 | 12 | 4 | 14 | 18 | 10 | 8 |
| $\div 2$ | 8 | | | | | | | | | |

$$\Rightarrow 16 \div 2$$

$$\Rightarrow 16 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 = 0 \quad \text{Take 2 away 8 times.}$$

$$\text{So } 16 \div 2 = 8$$

b)

| | | | | | | | | | | |
|----------|----|----|----|----|---|----|----|----|----|----|
| | 18 | 54 | 63 | 27 | 9 | 36 | 90 | 72 | 45 | 81 |
| $\div 9$ | 2 | | | | | | | | | |

c)

| | | | | | | | | | | |
|----------|----|----|----|----|----|---|----|----|----|----|
| | 15 | 40 | 25 | 35 | 50 | 5 | 30 | 45 | 20 | 10 |
| $\div 5$ | 3 | | | | | | | | | |

d)

| | | | | | | | | | | |
|----------|----|----|----|----|----|----|---|----|----|----|
| | 56 | 70 | 14 | 35 | 21 | 49 | 7 | 28 | 42 | 63 |
| $\div 7$ | 8 | | | | | | | | | |