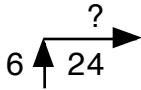# Lesson 8   Division by 6

Notice that all the multiples of 6 are even numbers. Notice also that when you add the digits they add up to 3 or a multiple of 3. In 6x7=42, 42 is an even number and 4+2=6, which is a multiple of 3. Carefully observe the student's progress and only move to the next lesson when you are satisfied with his or her mastery.
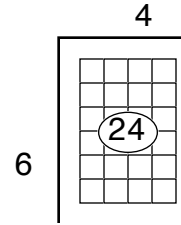
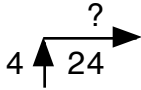**Sample Teacher Manual Page**

Example 1

$$6\overset{\overset{?}{\longrightarrow}}{\uparrow}24 \qquad \frac{24}{6} = \qquad 24 \div 6 =$$

1) "What times 6 is equal to 24?"
2) "6 times what is equal to 24?"
3) "How many 6's can I count out of 24?"
4) "24 divided by 6 equals what number?"

Example 2

$$4\overset{\overset{?}{\longrightarrow}}{\uparrow}24 \qquad \frac{24}{4} = \qquad 24 \div 4 =$$

1) "What times 4 is equal to 24?"
2) "4 times what is equal to 24?"
3) "How many 4's can I count out of 24?"
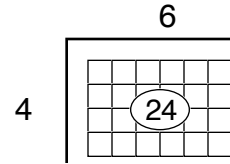4) "24 divided by 4 equals what number?"

1÷1	2÷2	3÷3	4÷4	5÷5	6÷6	7÷7	8÷8	9÷9	10÷10
2÷1	4÷2	6÷3	8÷4	10÷5	12÷6	14÷7	16÷8	18÷9	20÷10
3÷1	6÷2	9÷3	12÷4	15÷5	18÷6	21÷7	24÷8	27÷9	30÷10
4÷1	8÷2	12÷3	16÷4	20÷5	24÷6	28÷7	32÷8	36÷9	40÷10
5÷1	10÷2	15÷3	20÷4	25÷5	30÷6	35÷7	40÷8	45÷9	50÷10
6÷1	12÷2	18÷3	24÷4	30÷5	36÷6	42÷7	48÷8	54÷9	60÷10
7÷1	14÷2	21÷3	28÷4	35÷5	42÷6	49÷7	56÷8	63÷9	70÷10
8÷1	16÷2	24÷3	32÷4	40÷5	48÷6	56÷7	64÷8	72÷9	80÷10
9÷1	18÷2	27÷3	36÷4	45÷5	54÷6	63÷7	72÷8	81÷9	90÷10
10÷1	20÷2	30÷3	40÷4	50÷5	60÷6	70÷7	80÷8	90÷9	100÷10

Answer the questions.

1) How many sixes can you count out of eighteen?_____

2) How many sixes can you count out of fifty-four?_____

3) How many sixes can you count out of twelve?_____

4) How many sixes can you count out of sixty?_____

Divide.

5)

$6\overline{)1\,2}$

6)

$6\overline{)6}$

7)

$6\overline{)2\,4}$

8)

$6\overline{)3\,6}$

9)

$6\overline{)4\,2}$

10)

$6\overline{)1\,8}$

11) $60 \div 6 =$ _____

12) $24 \div 6 =$ _____

13) $42 \div 6 =$ _____

14) $\dfrac{54}{6} =$ _____

15) $\dfrac{30}{6} =$ _____

16) $\dfrac{48}{6} =$ _____

17) How many ants are present if there are 24 legs? (Ants have 6 legs apiece.) _____

18) How much must Dana earn every day in order to earn $30 in 6 days?_____

Answer the questions.

1) How many sixes can you count out of thirty?_____

2) How many sixes can you count out of six?_____

3) How many sixes can you count out of twenty-four?_____

4) How many sixes can you count out of forty-eight?_____

Divide.

5) $6 \overline{)36}$ 6) $6 \overline{)60}$ 7) $6 \overline{)30}$

8) $6 \overline{)18}$ 9) $6 \overline{)54}$ 10) $6 \overline{)42}$

11) $6 \div 6 =$ _____   12) $24 \div 6 =$ _____   13) $18 \div 6 =$ _____

14) $\dfrac{30}{6} =$ _____   15) $\dfrac{48}{6} =$ _____   16) $\dfrac{12}{6} =$ _____

17) If it took Marie 6 minutes to play a song on her harp, how many songs could she play in 1 hour? (1 hour = 60 minutes) _____

18) Roger earned $54 in six hours. How much did he earn each hour?_____

Answer the questions.

1) How many sixes can you count out of fifty-four?_____

2) How many sixes can you count out of thirty-six?_____

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3) How many sixes can you count out of sixty?_____

4) How many sixes can you count out of forty-two?_____

Divide.

5) 6 | 1 8

6) 6 | 5 4

7) 6 | 6

8) 6 | 3 0

9) 6 | 1 2

10) 6 | 2 4

11) 42 ÷ 6 = _____

12) 36 ÷ 6 = _____

13) 48 ÷ 6 = _____

14) $\frac{60}{6}$ = _____

15) $\frac{54}{6}$ = _____

16) $\frac{12}{6}$ = _____

17) Shane has $48 to spend on Christmas gifts for 6 of his friends. How much will he be able to spend on each friend?_____

18) A carpenter has a board that is 18 feet long. If he saws it into 6 equal lengths, how many feet long will each piece be?_____ How many yards long is each piece?_____

Divide.

1)
$$6 \overline{)18}$$

2)
$$6 \overline{)42}$$

3)
$$6 \overline{)54}$$

4)
$$3 \overline{)24}$$

5)
$$5 \overline{)25}$$

6)
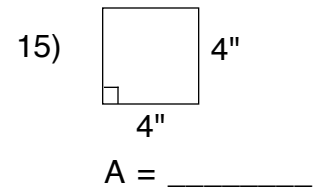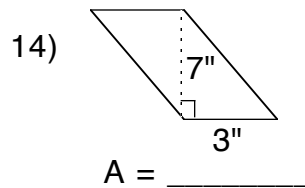$$2 \overline{)18}$$

7)
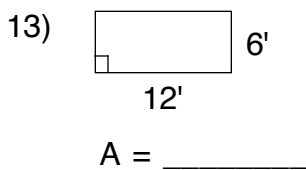$$9 \overline{)54}$$

8)
$$10 \overline{)60}$$

9) $48 \div 6 =$ _____

10) $72 \div 9 =$ _____

11) $\dfrac{21}{3} =$ _____

12) $\dfrac{35}{5} =$ _____

Find the area.

13)

6'

12'

A = _____

14)

7"

3"

A = _____

15)

4"

4"

A = _____

❖   Quick Review

Place value notation can be used to check your work when multiplying. Be sure to place each "carry" in the proper column. Study the example.

Example

$$\begin{array}{r} 1\ 4 \\ \times\ \ 1\ 7 \\ \hline ② \\ ①\ \ 7\ 8 \\ 1\ 4 \\ \hline 2\ 3\ 8 \end{array}$$

$$\begin{array}{r} 1\ 0 + 4 \\ \times\ 1\ 0 + 7 \\ \hline 20 \\ 100 \quad 7\ 0 + 8 \\ 1\ 0\ 0 + 4\ 0 \\ \hline 2\ 0\ 0 + 3\ 0 + 8 \end{array}$$

Sample Student Text Page

Multiply. Check your work with place value notation.

16)
$$\begin{array}{r} 2\ 3 \\ \times\ \ 3\ 6 \\ \hline \end{array}$$

17)
$$\begin{array}{r} 7\ 8 \\ \times\ \ 3\ 4 \\ \hline \end{array}$$

18)
$$\begin{array}{r} 6\ 5 \\ \times\ \ 1\ 5 \\ \hline \end{array}$$

---

19) Each of the 12 white mice had 15 babies. How many baby mice is that?_____

20) The area of the rectangle is 45 square feet and the area of the parallelogram is 61 square feet. What is the difference between their areas?_____

21) Sophie bought 36 skeins of yarn. If she uses 6 skeins for each afghan, how many afghans can she make?_____

22) Kevin earned $39 yesterday and $28 today. How much did he earn in all?_____

Divide.

1)   6 | 1 2

2)   6 | 6 0

3)   6 | 4 2

4)   6 | 2 4

5)   9 | 2 7

6)   5 | 4 0

7)   10 | 2 0

8)   3 | 1 2

9)   15 ÷ 3 = _____

10) 3 0 ÷ 6 = _____

11) $\dfrac{6}{6}$ = _____

12) $\dfrac{12}{2}$ = _____

Add or subtract.

13)   1 3
      + 1 9

14)   2 8
      + 4 9

15)   7 2
      - 2 6

16)   4 7
      - 3 8

**Sample
Student Text
Page**

Multiply. Check your work with place value notation.

17)   4 5
      x 2 2

18)   1 6
      x 1 4

19)   3 9
      x   5

20) Don bought 30 feet of cable for a dog run. How many yards long will his dog run be?_____
     If the cost of the cable is $6 a yard, how much will it cost him?_____

21) A parallelogram has a base of 14" and a height of 18". What is its area?_____

22) Paul drove 46 miles this morning and 28 miles this afternoon. How many miles did he drive
     today?_____

Divide.

1)
$$6\overline{)48}$$

2)
$$6\overline{)18}$$

3)
$$6\overline{)12}$$

4)
$$6\overline{)36}$$

5)
$$9\overline{)72}$$

6)
$$6\overline{)54}$$

7)
$$3\overline{)27}$$

8)
$$5\overline{)45}$$

9) 70 ÷ 10 = _____

10) 16 ÷ 2 = _____

11) $\dfrac{42}{6}$ = _____

12) $\dfrac{60}{6}$ = _____

Add or subtract.

13)
```
    8 5
 +  1 8
```

14)
```
    4 7
 -  3 8
```

15)
```
    4 9
 +  2 1
```

16)
```
    6 4
 -  2 5
```

**Sample
Student Text
Page**

Multiply. Check your work with place value notation.

17)
```
    3 3
 x  2 4
```

18)
```
    4 4
 x  1 4
```

19)
```
    1 5
 x  1 5
```

20) Twenty-four people are lined up for a ride at the fair. If six people can ride at one time, how many turns will be needed to give everyone a ride?_____

21) Mr. Rich made $35 an hour. If he worked for 14 hours, how much did he earn?_____

22) A parallelogram has an area of 42 square feet. If the height is 6 feet, what is the length of the base? (divide) _____

Divide.

1) 6 | 1 2

2) 6 | 2 4

3) 6 | 5 4

4) 6 | 3 0

5) 6 | 4 2

6) 6 | 4 8

7) 6 | 1 8

8) 6 | 3 6

9) $72 \div 9 =$ _____

10) $20 \div 5 =$ _____

11) $\dfrac{8}{2} =$ _____

12) $\dfrac{27}{3} =$ _____

Add or subtract.

13)
```
    2 3
  -   5
```

14)
```
    7 2
  + 1 9
```

15)
```
    5 3
  - 4 5
```

Multiply.

16)
```
    2 2
  x 1 3
```

17)
```
    4 5
  x 2 4
```

18)
```
    1 6
  x 3 7
```

19) Jeremy was bored, so he counted people's feet as they walked by. If he counted 20 feet, how many people had gone by?_____

20) A parallelogram has an area of 36 square feet. If the height is 6 feet, what is the length of the base?_____

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7D
1) 9 x 6 = 54 sq. ft.
2) 6 x 8 = 48 sq. in.
3) 10 x 5 = 50 sq. in.
4) 6 x 6 = 36 sq. mi.
5) 4
6) 9
7) 9
8) 7
9) 9
10) 7
11) 6
12) 5
13) 7
14) 5
15) 8
16) 2
17) 64
18) 99
19) 29
20) 15
21) 6 x 5 = 30 sq. in
    4 x 4 = 16 sq. in
    30 > 16
22) 43 - 28 = 15

7E
1) 3 x 2 = 6 sq. in.
2) 7 x 9 = 63 sq. ft.
3) 8 x 4 = 32 sq. mi.
4) 10 x 10 = 100 sq. ft.
5) 4
6) 6
7) 8
8) 5
9) 7
10) 8
11) 9
12) 7
13) 6
14) 10
15) 7
16) 7
17) 133
18) 18
19) 103
20) 103
21) parallel
22) 5 x 3 = 15 sq. yds.

7F
1) 6 x 7 = 42 sq. ft.
2) 3 x 8 = 24 sq. in.
3) 10 x 9 = 90 sq. ft.
4) 3 x 3 = 9 sq. mi.
5) 3
6) 5
7) 6
8) 8
9) 8
10) 9
11) 10
12) 5
13) 8
14) 8
15) 6
16) 4
17) 12
18) 130
19) 78
20) 39
21) 14 ÷ 2 = 7
22) 30 - 16 = 14

8A
1) 3
2) 9
3) 2
4) 10
5) 2
6) 1
7) 4
8) 6
9) 7
10) 3
11) 10
12) 4
13) 7
14) 9
15) 5
16) 8
17) 24 ÷ 6 = 4
18) $30 ÷ 6 = $5

8B
1) 5
2) 1
3) 4
4) 8
5) 6
6) 10
7) 5
8) 3
9) 9
10) 7
11) 1
12) 4
13) 3
14) 5
15) 8
16) 2
17) 60 ÷ 6 = 10
18) $54 ÷ 6 = $9

8C
1) 9
2) 6
3) 10
4) 7
5) 3
6) 9
7) 1
8) 5
9) 2
10) 4
11) 7
12) 6
13) 8
14) 10
15) 9
16) 2
17) $48 ÷ 6 = $8
18) 18 ÷ 6 = 3
    3 ÷ 3 = 1