

Important Concepts of Grade 5 Mathematics

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Materials Required

Protractor
Ruler
Calculator

A textbook is not needed.

This is a stand-alone course.

Mathematics Grade 5

Version 5

Preview/Review W2 - Lesson 1 TEACHER KEY

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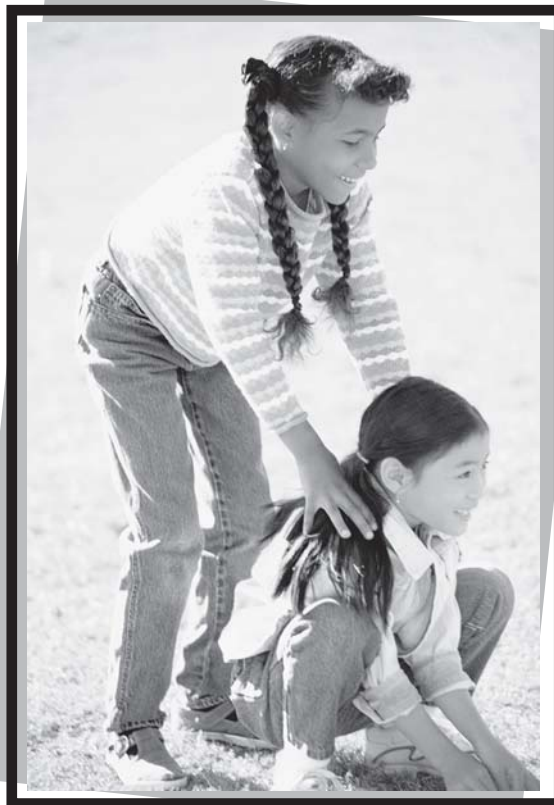
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Preview/Review Concepts for Grade Five Mathematics

TEACHER KEY



*W2 - Lesson 1:
Division*

OBJECTIVES

By the end of this lesson, you should

- understand divisor, dividend, and quotient
- divide 1-digit numbers into 3-digit numbers
- divide decimal numbers



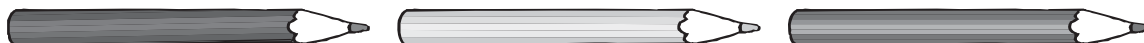
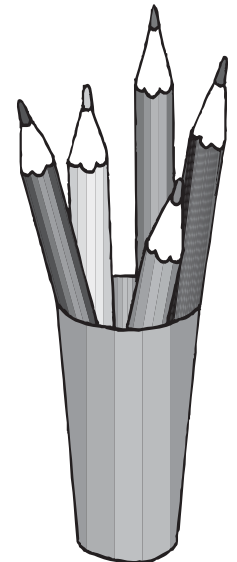
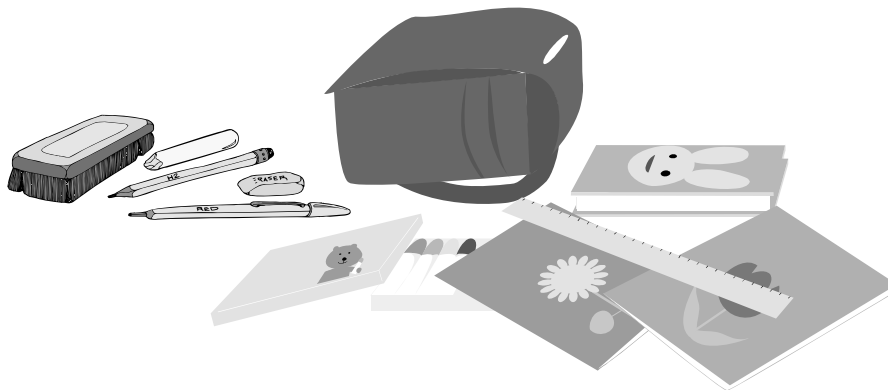

Glossary of Terms

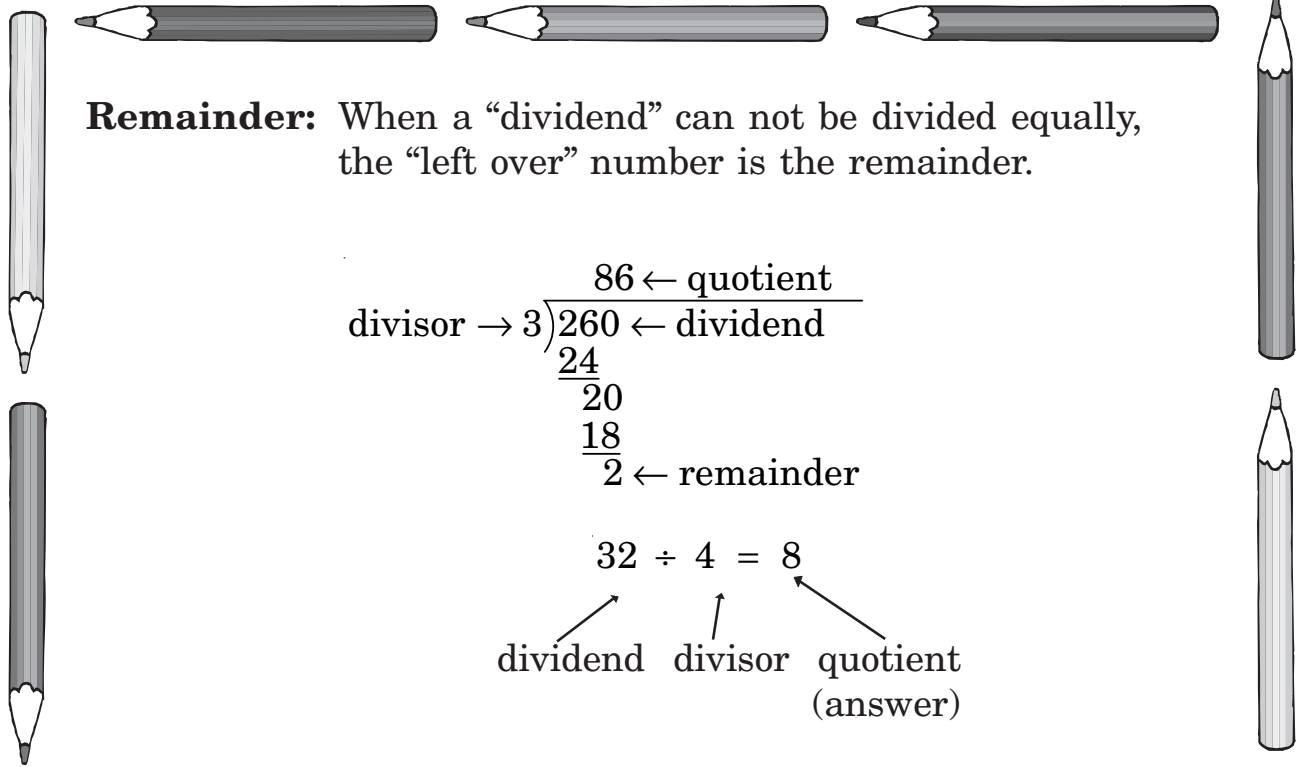


Dividend: This is the number that is being divided.

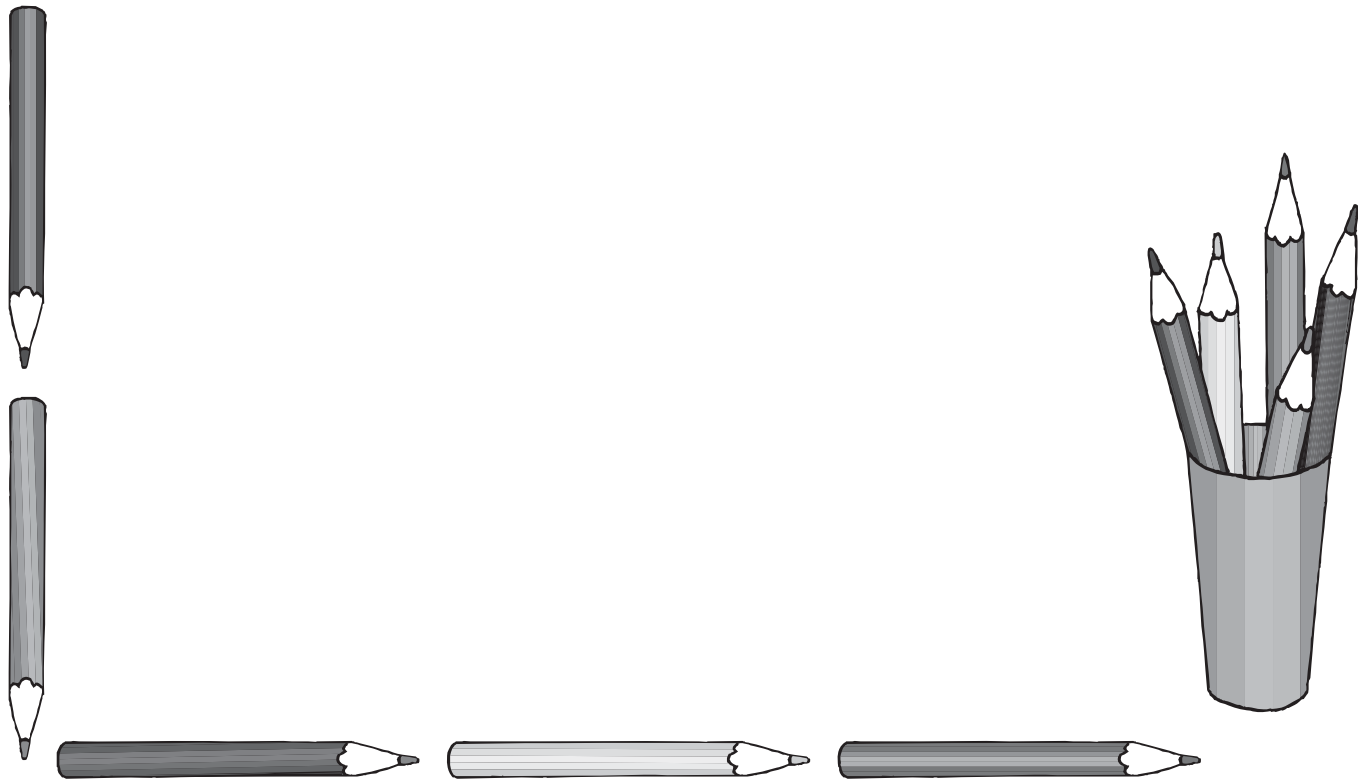
Divisor: The number that tells you “how many pieces the number is divided into” is the divisor.

Quotient: The answer to the division question is the quotient.





Remainder: When a “dividend” can not be divided equally, the “left over” number is the remainder.

$$\begin{array}{r} 86 \leftarrow \text{quotient} \\ \text{divisor} \rightarrow 3 \overline{)260 \leftarrow \text{dividend}} \\ \underline{24} \\ 20 \\ \underline{18} \\ 2 \leftarrow \text{remainder} \end{array}$$
$$\begin{array}{ccc} & 32 \div 4 = 8 & \\ \swarrow & & \nwarrow \\ \text{dividend} & \text{divisor} & \text{quotient} \\ & & \text{(answer)} \end{array}$$


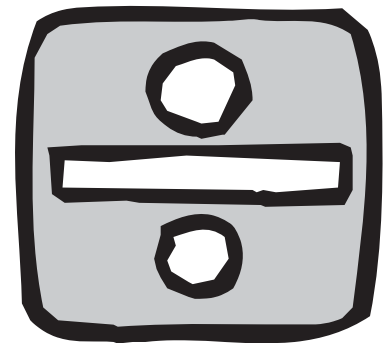
W2 - Lesson 1: Division

Concepts:

- Mental Math
- Estimated Quotient
- 3-Digit by 1-Digit Division
- Dividing Decimals

Mental Math

Complete as many as you can in **one minute**.
Do those you know first.



$6 \div 2 = \underline{3}$ $28 \div 7 = \underline{4}$ $18 \div 3 = \underline{6}$ $30 \div 6 = \underline{5}$ $3 \div 1 = \underline{3}$

$8 \div 8 = \underline{1}$ $18 \div 2 = \underline{9}$ $42 \div 6 = \underline{7}$ $20 \div 4 = \underline{5}$ $28 \div 4 = \underline{7}$

$32 \div 8 = \underline{4}$ $21 \div 3 = \underline{7}$ $27 \div 3 = \underline{9}$ $36 \div 6 = \underline{6}$ $48 \div 6 = \underline{8}$

$20 \div 5 = \underline{4}$ $42 \div 7 = \underline{6}$ $36 \div 4 = \underline{9}$ $11 \div 1 = \underline{11}$ $2 \div 2 = \underline{1}$

$14 \div 2 = \underline{7}$ $9 \div 3 = \underline{3}$ $18 \div 6 = \underline{3}$ $40 \div 8 = \underline{5}$ $8 \div 4 = \underline{2}$

Estimated Quotient

Round the **dividend** to find a number that can be divided easily.
Use your multiplication facts to help you.

$$4\ 725 \div 7 = \underline{\hspace{2cm}} \rightarrow \text{Rounded equals } 4900 \div 7$$

$$\underline{\hspace{2cm}} \rightarrow 49(00) \div 7 = 7(00)$$

$$\underline{\hspace{2cm}} \rightarrow 4900 \div 7 = 700$$

Try the following by rounding the dividend to get a good estimate.

e.g., $6\ 521 \div 8 = \underline{6\ 400 \div 8 = 800}$

Answers may vary

1. $784 \div 8 = \underline{800 \div 8 = 100}$

2. $552 \div 6 = \underline{600 \div 6 = 100}$

3. $8\ 069 \div 9 = \underline{8100 \div 9 = 900 \quad 9000 \div 9 = 1000}$

4. $341 \div 4 = \underline{400 \div 4 = 100}$

5. $348 \div 5 = \underline{350 \div 5 = 70}$

6. $2\ 531 \div 4 = \underline{2400 \div 4 = 600 \quad 2800 \div 4 = 700}$

7. $4\ 683 \div 6 = \underline{4800 \div 6 = 800 \quad 4200 \div 6 = 700}$

8. $2\ 601 \div 5 = \underline{2500 \div 5 = 500}$

3-Digit by 1-Digit Division

1. Estimate $8 \overline{)288}$

What number will 8 go into that is less than 28, but more than 20?

$8 \times 3 = 24$. 24 is less than 28, but more than 20.



Dividing whole Numbers

- Estimate
- Multiply
- Subtract
- Bring it down and repeat

2. Multiply $\begin{array}{r} 3 \\ 8 \overline{)288} \\ \underline{24} \end{array}$

Try your estimation number
 $8 \times 3 = 24$



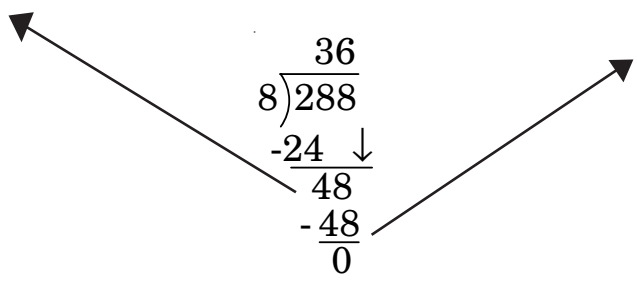
3. Subtract $\begin{array}{r} 3 \\ 8 \overline{)288} \\ \underline{-24} \\ 04 \end{array}$

4. Bring it down and repeat
Bring down the next digit in the dividend, and go to estimation again.

$$\begin{array}{r} 3 \\ 8 \overline{)288} \\ \underline{24\downarrow} \\ 48 \end{array}$$

5. Estimate
 $? \times 8 =$ equal to or less than 48, but greater than 40
 $6 \times 8 = 48$

6. Subtract
 $48 - 48 = 0$



7. Bring it down and repeat
Because no numbers are available to bring down, you're finished!
 $288 \div 8 = 36$

Try the Following!

$$\begin{array}{r}
 1. \quad \begin{array}{r} \mathbf{28} \\ 9 \overline{)252} \\ \underline{-18} \\ \mathbf{72} \\ \underline{-72} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 2. \quad \begin{array}{r} \mathbf{81} \\ 4 \overline{)324} \\ \underline{-32} \\ \mathbf{04} \\ \underline{-04} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 3. \quad \begin{array}{r} \mathbf{46} \\ 8 \overline{)368} \\ \underline{-32} \\ \mathbf{48} \\ \underline{-48} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 4. \quad \begin{array}{r} \mathbf{62} \\ 5 \overline{)310} \\ \underline{-30} \\ \mathbf{10} \\ \underline{-10} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 5. \quad \begin{array}{r} \mathbf{86} \\ 7 \overline{)602} \\ \underline{-56} \\ \mathbf{42} \\ \underline{-42} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 6. \quad \begin{array}{r} \mathbf{19} \\ 9 \overline{)171} \\ \underline{-9} \\ \mathbf{81} \\ \underline{-81} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 7. \quad \begin{array}{r} \mathbf{74} \\ 6 \overline{)444} \\ \underline{-42} \\ \mathbf{24} \\ \underline{24} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 8. \quad \begin{array}{r} \mathbf{88} \\ 3 \overline{)264} \\ \underline{-24} \\ \mathbf{24} \\ \underline{-24} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 9. \quad \begin{array}{r} \mathbf{48} \\ 4 \overline{)192} \\ \underline{-16} \\ \mathbf{32} \\ \underline{-32} \\ \mathbf{0} \end{array}
 \end{array}$$

$$\begin{array}{r}
 10. \quad \begin{array}{r} \mathbf{94} \\ 6 \overline{)564} \\ \underline{-54} \\ \mathbf{24} \\ \underline{-24} \\ \mathbf{0} \end{array}
 \end{array}$$

Dividing Decimals

1. Divide as normal.
2. Move the decimal into the answer in the same way that you move numbers down.
3. Let's go through the first one together.

$$\begin{array}{r} 7. \\ 6 \overline{)42.9} \\ \underline{-42} \\ 0 \end{array}$$

$$\begin{array}{r} 7.15 \\ 6 \overline{)42.90} \\ \underline{-42} \downarrow \downarrow \\ 09 \downarrow \\ \underline{-6} \downarrow \\ 30 \\ \underline{-30} \\ 0 \end{array}$$

If you still have a remainder, add another zero after the decimal and pull down until there is no remainder or you have a repeating decimal.

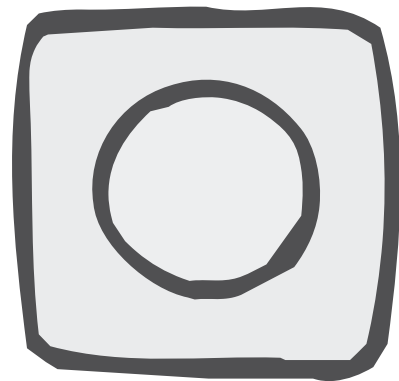


4. What to do with a repeating decimal. $34 \div 12$.

$$\begin{array}{r} 2.833 \\ 12 \overline{)34.000} \\ \underline{-24} \downarrow \downarrow \downarrow \\ 10 \ 0 \downarrow \downarrow \\ \underline{-96} \downarrow \downarrow \\ 40 \downarrow \\ \underline{-36} \downarrow \\ 40 \\ \underline{-36} \\ 4 \end{array}$$

3 will continue to repeat indefinitely. Put a dot over the first repeating digit to show that this is a repeating number.

Answer repeats



Complete the following.

$$\begin{array}{r}
 1. \quad \underline{4.8} \\
 8 \overline{)38.4} \\
 \underline{-32} \\
 6.4 \\
 \underline{-6.4} \\
 0
 \end{array}$$

$$\begin{array}{r}
 2. \quad \underline{4.23} \\
 3 \overline{)12.69} \\
 \underline{-12} \\
 0.6 \\
 \underline{-0.6} \\
 0.9 \\
 \underline{-0.9} \\
 0
 \end{array}$$

$$\begin{array}{r}
 3. \quad \underline{2.56} \\
 2 \overline{)5.12} \\
 \underline{-4} \\
 11 \\
 \underline{-10} \\
 12 \\
 \underline{-12} \\
 0
 \end{array}$$

$$\begin{array}{r}
 4. \quad \underline{4.6125} \\
 4 \overline{)18.4500} \\
 \underline{-16} \\
 24 \\
 \underline{-24} \\
 05 \\
 \underline{-4} \\
 10 \\
 \underline{-8} \\
 20 \\
 \underline{-20} \\
 0
 \end{array}$$

5.
$$\begin{array}{r} \mathbf{11.7\dot{6}} \\ 6 \overline{)70.6} \\ \underline{-6} \\ \mathbf{10} \\ \underline{-6} \\ \mathbf{46} \\ \underline{-42} \\ \mathbf{40} \\ \underline{-36} \\ \mathbf{4} \end{array} \text{ Repeats}$$

6.
$$\begin{array}{r} \mathbf{5.5} \\ 5 \overline{)27.5} \\ \underline{-25} \\ \mathbf{25} \\ \underline{-25} \\ \mathbf{0} \end{array}$$

7.
$$\begin{array}{r} \mathbf{6.1} \\ 9 \overline{)54.9} \\ \underline{-54} \\ \mathbf{09} \\ \underline{-09} \\ \mathbf{0} \end{array}$$

8.
$$\begin{array}{r} \mathbf{5.13\dot{3}} \\ 3 \overline{)15.40} \\ \underline{-15} \\ \mathbf{04} \\ \underline{-3} \\ \mathbf{10} \\ \underline{-09} \\ \mathbf{10} \\ \underline{-09} \\ \mathbf{1} \end{array} \text{ Repeats}$$

3-Step Problem-Solving Process

1. Write the problem in a number question.
2. Solve the problem. **Show your work.**
3. Write a sentence with the answer.

1. John went to *The CD Exchange* to buy some CDs. The sale sign said, “2 for \$14.98.” How much does each CD cost?

Step 1: $\$14.98 \div 2 =$

$\$7.49$

Step 2: $2 \overline{) \$14.98}$

$- 14$

09

$- 8$

18

$- 18$

0

Step 3: *Each CD cost \$7.49*

2. At *The CD Exchange*, you can bring in old CDs for credit in the store. For every 4 CDs you bring, you get one CD from the store. If Bob and his friends bring in 112 CDs, how many CDs can they choose from the store?

Step 1: $112 \text{ CDs} \div 4 \text{ CDs}$

Step 2:

28

$4 \overline{) 112}$

$- 8$

32

$- 32$

0

Step 3: *If Bob and his friends bring in 112 CDs, they can choose 28 CDs in the store*

3. Jessica has 234 CDs. She needs 6 shelves to store them. How many CDs are on each Shelf?

Step 1: $234 \div 6$

Step 2:

$$\begin{array}{r} 39 \\ 6 \overline{)234} \\ \underline{-18} \\ 54 \\ \underline{-54} \\ 0 \end{array}$$

Step 3: *Jessica can divide her CD collection so that 39 CDs are on each shelf.*

