3

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Mathematics

Quarter 2 – Module 13:
Dividing Mentally 2-Digit Numbers by 1-Digit Numbers

ALTERNATIVE DELIVERY MODE
ADM

Mathematics – Grade 3
Alternative Delivery Mode
Quarter 2 – Module 13: Dividing Mentally 2-Digit Numbers by 1-Digit Numbers
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3

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Quarter 2 – Module 13:
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Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dearlearners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide youstep-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessonsin each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check yourlearning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies andreminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering theexercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

What I Need to Know

This module was designed and written to help you understand in dividing numbers mentally without a remainder.This module contains different strategies which are applicable indifferent learning situations. Through the use of these strategies, you will learn how to divide mentally 2-digit numbers without remainder. The knowledge that you will learn from this module isvery important for your day-to-day life activity that involves division.

The lessons are arranged to follow the standard sequence ofthe course. But the order in which you read them can be changed to correspond with the textbook you are now using.

After going through this module, you are expected to:

- divide mentally 2-digit numbers by 1-digit numberswithout remainder using appropriate strategies

Enjoy your journey. Good luck!

What I Know

Before we proceed to mental division, let us review and practice ourmind first on mental multiplication.

Multiply mentally.

1. 7 x 5 = _____
2. 6 x 8 = _____
3. 9 x 4 = _____
4. 3 x 8 = _____
5. 4 x 7 = _____
6. 5 x 3 = _____
7. 6 x 9 = _____
8. 6 x 6 = _____
9. 8 x 8 = _____
10. 5 x 4 = _____

Lesson 1 Divides Mentally 2-digit Numbers by1-digit Numbers without Remainder using Appropriate Strategies

In this lesson you will learn how to divide 2-digit numbers by 1-digitnumbers using mental computation. Remember that division is theinverse of multiplication. Therefore, if you mastered multiplication,you will easily find the quotient in the division process. The strategiesthat you are going to use in mental computation are: Memory Recall, Equivalency, and Distribution over addition. You can use any of these strategies when it is applicable to solve the problem.

What's In

This lesson requires pre-requisite knowledge. These are multiplication facts, division facts, and dividing numbers by multiples of 10 and 100. To ensure mastery of the said pre-requisite knowledge, the following questions are prepared for you. Choose the letter of the correct answer. Write the chosen letter on a separate sheet of paper.

Activity 1

1. Showing that division is the reverse process of multiplication. Findthe missing term in the equation, 6 x 7 = 42; 42 ÷ 7 =_.

a) 6
b) 7
c) 42
d) 67

2. In dividing multiples of 10 and 100, cancel the zero/s in the dividend as many as in the divisor, and then divide. What is **600 ÷ 100**?

a) 6
b) 8
c) 10
d) 60

3. If 2000 ÷ 100 = 20, what is **200 ÷ 10**?

a) 10
b) 20
c) 40
d) 100

4. In some cases, a division can be written as fractions such as 8/2 the same as 8÷2 respectively. If fraction has equivalent, the same through with division. Try to solve this problem. If 15 ÷ 5 = 3, what is**30 ÷ 10**?

a) 1
b) 2
c) 3
d) 4

5. This is about memorizing the division facts as the inverse of multiplication. What is the value of *n* in the equation; 8x7=56, then **56 ÷7 = *n***?

a) 7
b) 8
c) 15
d) 56

What's New

Divide ***mentally.*** Choose the letter of the correct answer.

1. What is 32 ÷ 8?
   a. 1 c. 3
   b. 2 d. 4

2. Solve for the quotient of 45 divided by 5?
   a. 8 c. 10
   b. 9 d. 11

3. What is the value of *n* in the number sentence 38 ÷ 2 = *n*?
   a. 17 c. 19
   b. 18 d. 20

4. 90 ÷ 9 =?
   a. 8 c. 10
   b. 9 d. 11

5. The divisor is 8 and the dividend is 72, what is the quotient?
   a. 9 c. 11
   b. 10 d. 12

What is It

In dividing 2-digit numbers by 1-digit numbers, it is very importantthat you have mastered multiplying 1-digit number by 1-digit number mentally since division is a reverse process of multiplication.

To divide mentally, you can use the following strategies:

Memory Recall – is only applicable if the given problems are division facts which are the reverse process of multiplication. Study thefollowing examples.

Example 1. Mother bought 48 apples in the market. The apples were divided equally among her 6 children. How many apples did each child receive?

To answer this problem, let's find the quotient of 48 divided by 6.

Division Facts: $48 \div 6 = \_\_\_$

- Multiplication Facts: $\_\_\_ \times 6 = 48$, think of a number multiplied by 6 to get the product of 48, and that number is 8.
  Therefore: **48 ÷ 6 = 8 or 8 apples**

Take another example to master this strategy.

Example 2. What is 72 ÷ 9?

Division Facts: $72 \div 9 = \_\_\_$

- Multiplication Facts: $\_\_\_ \times 9 = 72$, think of a number multiplied by 9 to get the product of 72, and that number is 8.
  Therefore: **72 ÷ 9 = 8**

Equivalency – is only applicable if the divisor is 5. This can be done by multiplying 2 on both dividend and divisor, then apply the rules of dividing multiples of 10. See the following examples.

Example 3. The father harvested 75 eggplants from his vegetable garden. Then, the eggplants were divided equally into 5 packs. How many eggplants in each pack?

To solve this problem, let us divide 75 by 5?

► $75 \div 5 =$ _____

Multiplying by 2 ► $(75 \div 5) \times 2 =$ _____

Distribution of multiplier (2) on the dividend and divisor

► $(75 \times 2) \div (5 \times 2) =$ _____

► $150 \div 10 =$ _____

Applying the rules of dividing multiples of 10(cancellation of zeros);

► $15ø \div 1ø =$ _____

► $15 \div 1 = 15$

Therefore: **75 ÷ 5 = 15 or 15 eggplants**

Example 4. Find the quotient of 95 ÷ 5?

► $95 \div 5 =$ _____

Multiplying by 2 ► $(95 \div 5) \times 2 =$ _____

Distribution of multiplier (2)

► $(95 \times 2) \div (5 \times 2) =$ _____

► $190 \div 10 =$ _____

Applying the rules of dividing multiples of 10 (cancellation of zeros);

► $19ø \div 1ø =$ _____

► $19 \div 1 = 19$

Therefore: **95 ÷ 5 = 19**

Distribution of Division over addition – is applicable if the dividend can be renamed into expanded form. But see to it that one of themis the greatest number which is divisible by the divisor and 10. Observe the process of the following examples.

Example 5. What is 78 ÷ 3?

► 78 ÷ 3 = _____ Think of the greatest number that is multiples of (divisor) 3 and 10 fromthe dividend but less than 78.

► 3, 6, 9 …. Multiples of 3

► 30, 60, 90… Multiples of 3 and 10

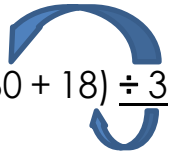
► **60** is the greatest number that is divisible by 3 and 10 less than 78.

Make an expanded form of the dividend using thegreatest number such as; ► 78 = 60 + 18

Substitution of the expanded form from the equation78 ÷ 3 = ___

► (60 + 18) ÷ 3 = ____

Distribution of the divisor over addition



► (60 + 18) ÷ 3 = ____

► (60 ÷ 3) + (18 ÷ 3) = ____

Solve for the quotient, then add

► (60 ÷ 3) + (18 ÷ 3) = ____

20 + 6 = 26

Therefore: **78 ÷ 3 = 26**

Example 6. Divide 84 by 7?

► 84 ÷ 7 =_____Think of the greatest number that is multiples of 7 and 10 but less than 84.

► 7, 14… Multiples of 7

► (70),140, …Multiples of 7 and 10

► **70** is the greatest number that is divisible by 7 and 10less than 84.

Make an expanded form of the dividend using the greatest number such as;

► 84 = 70 + 14

Substitution of the expanded form from the equation

84 ÷ 7 = ____

► (70 + 14) ÷ 7 = ____

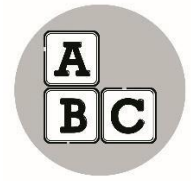
Distribution of the divisor over addition

► (70 ÷ 7) + (14 ÷ 7) = ____

Solve for the quotient, then add

► 10 + 2 = 12

Therefore: **84 ÷ 7 = 12**



What's More

Activity 3

Solve for the quotient *mentally*.

1. 63 ÷ 7 = n?
   a) 6
   b) 7
   c) 8
   d) 9

2. Divide 86 by 2?
   a) 43
   b) 49
   c) 53
   d) 59

3. What is 65 divided by 5?
   a) 11
   b) 12
   c) 13
   d) 14

4. Find the value of *n* if 56 ÷ 7 = n?
   a) 6
   b) 7
   c) 8
   d) 9

5) There are 42 chairs in the theatre. If there are 7 rows of chairs,how many chairs in each row?
   a) 6
   b) 7
   c) 8
   d) 9

What I Have Learned

To divide mentally, you can use the following strategies whereverit is applicable.

Memory Recall – is only applicable if the given problems are division facts which are the inverse of multiplication facts.

Equivalency – is only applicable if the divisor is 5. This can be doneby multiplying by 2 on both dividend and divisor, then apply the rules of the cancellation of zeros.

Distribution of Division over addition – is applicable if the dividend can be renamed into expanded form. But see to it that one of themis the greatest number which is divisible by the divisor and 10.

Aside from these strategies you have learned today, you can still explore, research or make your own strategy in dividing numbers mentally.

In your own understanding, why is it important to know some strategies in dividing numbers mentally? Write your answer inside the box.

Now proceed to the next activity.

What I Can Do

Let the pupils solve the following problem mentally usingappropriate strategies.

1) 90 ÷ 5 = _____

2) 96 ÷ 3 = _____

3) 36 ÷ 9 = _____

4) 96 ÷ 8 = _____

5)49 ÷ 7 = _____

Assessment

Solve mentally using appropriate strategies.

1) There are 25 pupils in a Grade 3 class. The teacher divides them into 5 groups for mathematics activity. How many pupils will consist in each group?

a) 5
b) 7
c) 13
d) 15

2) What is the quotient if 81 is divided by 9?

a) 9
b) 10
c) 15
d) 18

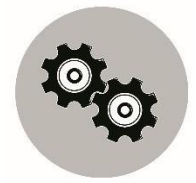
3) There are 64 Grade 3 pupils enrolled in the school. If there are only 4 sections. How many pupils in each section?
a) 6
b) 14
c) 16
d) 18

4) If 75 ÷ 5, what is the quotient?

a) 5
b) 15
c) 16
d) 20

5) The dividend is 56, the divisor is 7, what is the quotient?

a) 4
b) 6
c) 8
d) 12



Additional Activities

A. Divide the following by 5 mentally.

Given number	Quotient
1) 85	
2) 35	
3) 50	

B. Find the quotient mentally.

Number Sentence	Quotient
1) 51 ÷ 3 =	
2) 86 ÷ 2 =	
3) 92 ÷ 4 =	
4) 45 ÷ 3 =	
5) 54 ÷ 9 =	
6) 35 ÷ 7 =	
7) 64 ÷ 8 =	

Answer Key

What I Know	What's In	What's New
1. 35 2. 48 3. 36 4. 24 5. 28 6. 15 7. 54 8. 36 9. 64 10. 20	Activity 1 1. A 2. A 3. B 4. C 5. B	1. D 2. B 3. C 4. C 5. A
What I Can Do	**Assessment**	**What's More**
Activity 4 1. 18 2. 32 3. 4 4. 12 5. 7	1. A 2. A 3. C 4. B 5. C	Activity 3 1. D 2. A 3. C 4. C 5. A
		What's More
		Activity 5 **A.** 1. 17 2. 7 3. 10 B. 1. 17 2. 43 3. 23 4. 15 5. 6 6. 5 7. 8

References

Curriculum Guide: M3NS-IIi-52.2, pp. 82
Teacher's Guide: pp. 201-205
Learner's Guide: pp. 182-184

Chingcuangco, Ofelia G., Henry P. Contemplacion, Eleanor I. Flores, Laura N. Gonzaga, Carolina O. Guevara, Robesa R. Hilario, Gerlie M. Ilagan, Maritess S. Patacsil, Ma. Corazon C. Silvestre, Remylinda T. Soriano, Victoria C. Tafalla, Teresita P. Tagulao, and Dominador J. Villafria. *Mathematics 3 Teachers Guide*. Rex Bookstore, Inc. 2015.

Chingcuangco, Ofelia G., Henry P. Contemplacion, Eleanor I. Flores, Laura N. Gonzaga, Carolina O. Guevara, Robesa R. Hilario, Gerlie M. Ilagan, Maritess S. Patacsil, Ma. Corazon C. Silvestre, Remylinda T. Soriano, Victoria C. Tafalla, Teresita P. Tagulao, and Dominador J. Villafria. Mathematics 3 *Kagamitan ng Mag-aaral sa Sinugbuanong Binisaya*. Book Media Press, Inc. 22-E. Boni Serrano Ave., Q.C. In joint venture with Printwell, Inc. 38 Dansalan St., Mandaluyong City.

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