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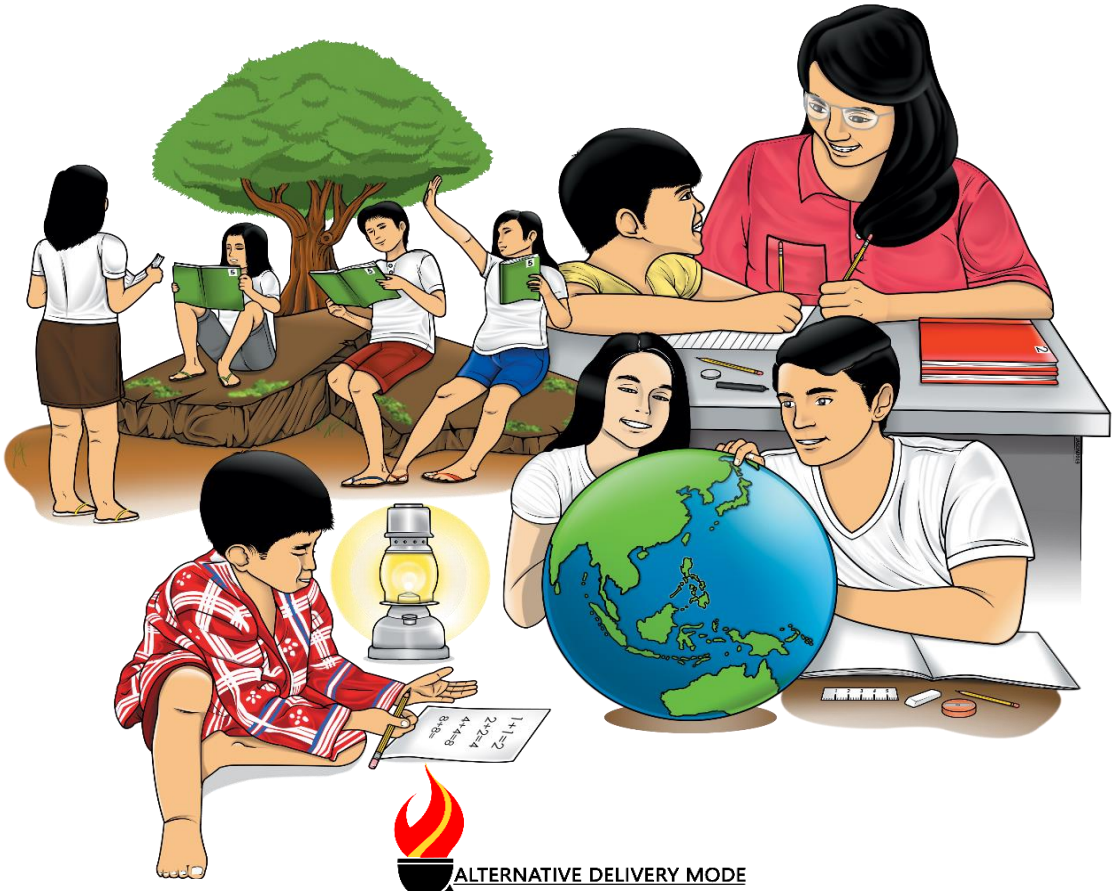
Mathematics

Quarter 1 – Module 11: Dividing Mentally 2- to 4-Digit Numbers by 10, 100 or 1 000 Without and With Remainder



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Quarter 1 – Module 11: Dividing Mentally 2- to 4-Digit Numbers by 10, 100 or 1 000 Without and With Remainder

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DEPARTMENT OF EDUCATION

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, 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 you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in 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 your learning. 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 and reminders 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 the exercises 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

Have you ever wished you could divide numbers easily in your head without using paper and pencil? It may sound difficult, but would you believe that you can do it? This module will help you learn how to divide numbers mentally.

After going through this module, you are expected to:

- divide mentally 2- to 4-digit numbers by 10, 100 or 1 000 without and with remainder.

What I Know

Let us try to see what you know about dividing mentally 2- to 4-digit numbers by 10, 100 or 1 000 without and with remainder.

Remember to use a separate sheet for your answers.

Find each quotient mentally.

1. 50 ÷ 10 = _____
2. 300 ÷ 100 = _____
3. 9 000 ÷ 1000 = _____
4. 35 ÷ 10 = _____
5. 205 ÷ 100 = _____
6. 1 034 ÷ 1000 = _____
7. 451 ÷ 10 = _____
8. 792 ÷ 100 = _____
9. 2 135 ÷ 10 = _____
10. 8 734 ÷ 100 = _____

Are you done answering? If yes, time to check.

Please go to page 12 for the ***Answer Key***.

What's In

Let us review first some of the lessons that can help you understand the new concepts in this module.

Divide the following and fill each cross – number puzzle.

Across

b. 340 ÷ 10
d. 7 650 ÷ 15

Down

a. 65 ÷ 5
c. 4 631 ÷ 11
e. 48 ÷ 12

	a			
	b	c		
	d		e	

Are you done answering? If yes, time to check.

Please go to page 12 for the ***Answer Key***.

Notes to the Teacher

The activities may be supplemented and enhanced with games that will require learners to mentally perform division.

What's New

Let us start learning the new concept with the help of this story problem.

Read the story problem.

Andrea wants to give boxes of oranges to the frontliners of COVID-19 pandemic. How many boxes of 10 oranges each can she make if there are 5 000 oranges?

What is asked in the problem?

- *The number of boxes of oranges Andrea can make.*

What are the given facts that can help you solve the problem?

- *boxes of 10 oranges, 5 000 oranges*

What can you say about Andrea? What kind of person is she?

- *Andrea wanted to keep the frontliners healthy by giving them oranges. She is kind and generous.*

Try to solve the problem mentally.

The next part of this module will help you check if your answer is correct.

What is It

Dividing Mentally 2- to 4-Digit Numbers by 10, 100 or 1 000 Without Remainder

To find out how many boxes of oranges Andrea can make without using paper and pencil, remember the following:

- When a number is divided by 10, all its digits, except in the ones place, become the quotient.
- The digit at the ones place becomes the remainder, if there is any.

5 000 ÷ 10 = 500
quotient

So, 5 000 divided by 10 we get a quotient of 500.

Meaning, Andrea can make 500 boxes of 10 oranges each for the frontliners.

You will notice that there is no remainder since the digit at the ones place is **0**.

Did you also get the same answer? Yes? Good job!

What if Andrea puts 100 oranges in each box? How many boxes of 100 oranges each can she make with 5 000 oranges?

Let us try to solve the problem mentally. But first, you have to remember the following:

- When a number is divided by 100, all its digits, except in the tens and ones places, become the quotient.
- The number formed by the digits in the tens and ones places becomes the remainder, if there is any.

5 000 ÷ 100 = 50
quotient

So, 5 000 divided by 100 we get a quotient of 50.

You will notice that there is no remainder since the digits in the tens and ones places are both **0**.

Did you also get the same answer? Yes? Very good! You are now ready for the next one.

What if Andrea puts 1 000 oranges in each box? How many boxes of 1 000 oranges each can she make with 5 000 oranges?

Let us try to solve the problem mentally. Remember the following:

- When a number is divided by 1 000, all its digits, except in the hundreds, tens and ones places, become the quotient.
- The number formed by the digits in the hundreds, tens, and ones places becomes the remainder, if there is any.

5 000 ÷ 1 000 = 5

quotient

So, 5 000 divided by 1 000 we get a quotient of 5.

You will notice that there is no remainder since the digits in the hundreds, tens and ones places are all **0**.

Did you also get the same answer? Yes? Great!

Before we go to the next lesson, let us try to solve the problems mentally.

	÷ 10	÷ 100	÷ 1000
2 000			
8 000			

If you are done answering, compare your answer to the answers given below.

	÷ 10	÷ 100	÷ 1000
2 000	200	20	2
8 000	800	80	8

Did you also get the same answer? Yes? Great! You are now ready to learn how to divide mentally numbers by 10, 100 or 1 000 with remainder.

Are you ready? Let us start.

Dividing Mentally 2- to 4-Digit Numbers by 10, 100 or 1 000 With Remainder

Let us try to divide **3 472** by **10**.

Let us solve the problem mentally.

- When a number is divided by 10, all its digits, except in the ones place, become the quotient.
- The digit in the ones place becomes the remainder, if there is any.

3 472 ÷ 10 = 347 r. 2

quotient

So, 3 472 divided by 10 gives a quotient of 347 with a remainder of 2.

Did you also get the same answer? Yes? Good job!

Let us try to divide **3 472** by **100**.

Let us solve the problem mentally.

- When a number is divided by 100, all its digits, except in the tens and ones places, become the quotient.
- The number formed by the digits in the tens and ones places becomes the remainder, if there is any.

3 472 ÷ 100 = 34 r. 72

quotient

So, 3 472 divided by 100 is equal to a quotient of 34 with a remainder of 72.

Did you also get the same answer? Yes? Very Good!

Let us try to divide **3 472** by **1 000**.

Let us solve the problem mentally.

- When a number is divided by 1 000, all its digits, except in the hundreds, tens and ones places, become the quotient.
- The number formed by the digits in the hundreds, tens, and ones places becomes the remainder, if there is any.

3 472 ÷ 1 000 = 3 r. 472

quotient

So, 3 472 divided by 1 000 gives a quotient of 3 with a remainder of 472.

Did you also get the same answer? Yes? Great!

Before we go to the next exercise, let us try to solve the problems mentally.

	÷ 10	÷ 100	÷ 1000
1 205			
9 081			

If you are done answering, compare your answer to the answers given below.

	÷ 10	÷ 100	÷ 1000
1 205	120 r.5	12 r.5	1 r.205
9 081	908 r.1	90 r.81	9 r.81

Did you also get the same answer? Yes? Great! You are now ready to work with the problems independently.

What's More

Activity 1. Divide the numbers mentally by 10 and write your answers in your notebook.

1. 90 ÷ 10 =
2. 611 ÷ 10 =
3. 2 193 ÷ 10 =
4. 65 ÷ 10 =
5. 5 983 ÷ 10 =

Activity 2. Divide the numbers mentally by 100 and write your answers in your notebook.

1. 800 ÷ 100 =
2. 492 ÷ 100 =
3. 7 242 ÷ 100 =
4. 1 800 ÷ 100 =
5. 9 001 ÷ 100 =

Activity 3. Divide the numbers mentally by 1 000 and write your answer in your notebook.

1. 7 000 ÷ 1 000 =
2. 8 924 ÷ 1 000 =
3. 5 676 ÷ 1 000 =
4. 3 002 ÷ 1 000 =
5. 2 050 ÷ 1 000 =

Are you done answering? If yes, time to check.

Please go to page 12 for the ***Answer Key***.

What I Have Learned

Always remember:

1. In dividing mentally 2- to 4-digit numbers by 10
   - When a number is divided by 10, all its digits, except in the ones place, become the quotient.
   - The digit in the ones place becomes the remainder, if there is any.
2. In dividing mentally 2- to 4-digit numbers by 100
   - When a number is divided by 100, all its digits, except in the tens and ones places, become the quotient.
   - The number formed by the digits in the tens and ones places becomes the remainder, if there is any.
3. In dividing mentally 2- to 4-digit numbers by 1 000
   - When a number is divided by 1 000, all its digits, except in the hundreds, tens and ones places, become the quotient.
   - The number formed by the digits in the hundreds, tens, and ones places becomes the remainder, if there is any.

What I Can Do

Let us see if you are now ready to solve this problem.

Read and understand the problem, then answer the questions that follow.

John has 112–meter extra piece of rope after fixing their deep well. How many 10-meter rope can he cut from it?

1. What is asked in the problem?
2. What are the given facts that can help you solve the problem?
3. How will you solve the problem?
4. What is the answer to the problem?

Assessment

You are now ready for the next activity.

Divide the problems mentally and write your answers in your notebook.

1. 50 ÷ 10
2. 650 ÷ 100
3. 8 040 ÷ 1 000
4. 91 ÷ 10
5. 121 ÷ 100
6. 7 789 ÷ 1 000
7. 43 ÷ 10
8. 999 ÷ 100
9. 3 110 ÷ 100
10. 9 111 ÷ 10

Are you done answering? If yes, time to check.

Please go to page 12 for the ***Answer Key***.

Additional Activities

Let us try some more. Solve the following problems.

1. How many 100-peso bill will there be in ₱ 7 654? How much will be the remainder?
2. Mrs. Dela Cruz has ₱ 9 095. She wants to give it to the families affected by the Enhanced Community Quarantine (ECQ) in her community. How much will each of the family receive if she decides to give it to 10 families? How much money will be left?

Are you done answering? If yes, time to check.

Please go to page 12 for the ***Answer Key***.

Answer Key

What I Know

1. 5	6. 1 r. 34
2. 3	7. 45 r. 1
3. 9	8. 7 r. 92
4. 3 r. 5	9. 213 r. 5
5. 2 r. 5	10. 87 r. 34

What's In

	a 1		
	b 3	c 4	
		2	
	d 5	1	e 0
			4

What's More

Activity 1	Activity 2	Activity 3
1. 9	1. 8	1. 7
2. 61 r. 1	2. 4 r. 92	2. 8 r. 924
3. 219 r. 3	3. 72 r. 42	3. 5 r. 676
4. 6 r. 5	4. 18	4. 3 r. 2
5. 598 r. 3	5. 90 r. 1	5. 2 r. 50

What I Can Do

1. How many 10m can be cut from the remaining rope?
2. 112m and 10m
3. 112 ÷ 10 = ___
4. 11 ropes

Assessment

1. 5	6. 7 r. 789
2. 6 r. 50	7. 4 r. 3
3. 8 r. 40	8. 9 r. 99
4. 9 r. 1	9. 31 r. 10
5. 1 r. 21	10. 911 r. 1

Additional Activities

1. There will be 76 100-peso bills.
   The remainder is P54.
2. Each family will receive P909.
   There will be P5 left.

References

K to 12 Mathematics Curriculum Guide, August 2016

Mathematics 4 Learner's Material

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