

Mathematics 4

Microlearning Module

QUARTER 1 – Module 12

Estimating the Sum and Difference of Two Numbers by Rounding the Numbers



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Microlearning Module (MLM)

Quarter 1 – Module 12: Estimating the Sum and Difference of Two Numbers by Rounding the Numbers.

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MICROLEARNING MODULE

Name: _____ Grade & Sec: _____ Score: _____

Subject: Mathematics Quarter: 1 MLM No. 12 .

Teacher: _____

Competency: Estimate the sum and difference of two 5- to 6-digit numbers by rounding the addends to the nearest large place value of the numbers

A. Look Back!

Encircle the number that can be rounded to the given number.

1. **100 000**

177 209	165 021	155 297	145 143
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2. **85 000**

84 394	84 452	84 478	85 411
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3. **7 000**

6 223	6 375	6 478	65 411
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B. What's New?



Shrimp Harvest

Mr. Orgo's fishpond harvested 383 266 kilos of shrimp last year and 286 932 kilos this year. Estimate his total harvest in two years.

What is the answer?

C. What Is It?

How to estimate the sum?

To estimate sums, round off the addends to the highest possible place value before adding. For a closer estimate, round off to the next lower place value or use adjusted front-end estimation.

Round off to the highest possible place value

$$\begin{array}{rcl}
 383\,266 & - \text{ rounds off to } 400\,000 & \longrightarrow 400\,000 \\
 + \underline{286\,932} & - \text{ rounds off to } 300\,00 & \longrightarrow + \underline{300\,000} \\
 & \text{about} & 700\,000
 \end{array}$$

Round off to the next lower place value

$$\begin{array}{rcl}
 383\,266 & - \text{ rounds off to } 380\,000 & \longrightarrow 380\,000 \\
 + \underline{286\,932} & - \text{ rounds off to } 290\,00 & \longrightarrow + \underline{290\,000} \\
 & \text{about} & 670\,000
 \end{array}$$

Here's another way to estimate!

Add the front-end digits and adjust the remaining digits.

$$\begin{array}{rcl}
 \boxed{383\,266} & \longrightarrow & \text{about } 80\,000 \\
 + \underline{\boxed{286\,932}} & \longrightarrow & \text{about } \underline{90\,000} \\
 500\,000 & + & 170\,000 = 670\,000
 \end{array}$$

Study these examples.

Estimate the sum:

Round to the highest place value

$$\begin{array}{rcl}
 528\,943 & - \text{ rounds off to } 500\,000 \\
 + \underline{450\,234} & - \text{ rounds off to } + \underline{500\,000} \\
 & \text{about } 1\,000\,000
 \end{array}$$

Round off to the next lower place value

$$\begin{array}{rcl}
 528\,943 & - \text{ rounds off to } 530\,000 \\
 + \underline{450\,234} & - \text{ rounds off to } + \underline{450\,000} \\
 & \text{about } 980\,000
 \end{array}$$

Add the front-end digits and adjust the remaining digits.

$$\begin{array}{rcl}
 \boxed{528\,943} & \longrightarrow & \text{about } 30\,000 \\
 + \underline{\boxed{450\,234}} & \longrightarrow & \text{about } \underline{50\,000} \\
 900\,000 & + & 80\,000 = 980\,000
 \end{array}$$

How to estimate the difference?

To estimate the difference, round off to the highest possible place value, or round off to the next lower place value for a closer estimate.

Study this example.

There were 12 852 visitors on the first day of the Kapeonan Festival and 16 743 on the second day. About how many more visitors were there on the second day than on the first day?



Round off to the highest possible place value

$$\begin{array}{rcl} 16\,743 & - \text{rounds off to } 20,000 & \longrightarrow 20\,000 \\ \underline{-12\,852} & - \text{rounds off to } 10,000 & \longrightarrow \underline{-10\,000} \\ & \text{about} & 10\,000 \end{array}$$

Round off to the next lower place value

$$\begin{array}{rcl} 16\,743 & - \text{rounds off to } 17\,000 & \longrightarrow 17\,000 \\ \underline{-12\,852} & - \text{rounds off to } 13\,000 & \longrightarrow \underline{-13\,000} \\ & \text{about} & 4\,000 \end{array}$$

D. Let's Try!

A. Estimate the sum by rounding off to the highest place value.

$$\begin{array}{rcl} 1. \quad 82\,927 & \longrightarrow & \\ + \underline{20\,612} & \longrightarrow & \end{array}$$

$$\begin{array}{rcl} 2. \quad 932\,285 & \longrightarrow & \\ + \underline{543\,408} & \longrightarrow & \end{array}$$

$$\begin{array}{rcl} 3. \quad 297\,395 & \longrightarrow & \\ + \underline{19\,320} & \longrightarrow & \end{array}$$

$$\begin{array}{rcl} 4. \quad 28\,209 & \longrightarrow & \\ + \underline{87\,087} & \longrightarrow & \end{array}$$

$$\begin{array}{r} 5. \ 286\ 398 \longrightarrow \\ + \ 495\ 508 \longrightarrow \\ \hline \end{array}$$

B. Estimate the difference by rounding to the highest place value.

$$\begin{array}{r} 1. \ 59\ 296 \longrightarrow \\ - \ 36\ 934 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 948\ 308 \longrightarrow \\ - \ 645\ 296 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 859\ 234 \longrightarrow \\ - \ 35\ 011 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 84\ 675 \longrightarrow \\ - \ 49\ 123 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 498\ 567 \longrightarrow \\ - \ 32\ 745 \longrightarrow \\ \hline \end{array}$$

E. Let's Evaluate

A. Estimate the sum by rounding to the highest place value.

$$\begin{array}{r} 1. \ 27\ 894 \longrightarrow \\ + \ 45\ 032 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 385\ 035 \longrightarrow \\ + \ 89\ 234 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 845\ 910 \longrightarrow \\ + \ 756\ 074 \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 94\ 395 \longrightarrow \\ + \ 78\ 495 \longrightarrow \\ \hline \end{array}$$

5. Gestosani Beach Resort in Lebak earned Php 673 356 in January and Php 372 923 in February. About how much was their total amount earned?

Show your answer.

B. Estimate the difference by rounding off to the highest place value.

$$\begin{array}{r} 1. \quad 97\,143 \quad \longrightarrow \\ - 55\,065 \quad \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 374\,501 \quad \longrightarrow \\ - 68\,253 \quad \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 834\,091 \quad \longrightarrow \\ - 94\,495 \quad \longrightarrow \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 773\,971 \quad \longrightarrow \\ - 451\,824 \quad \longrightarrow \\ \hline \end{array}$$

5. Mr. Matabalao harvested 728 945 coconuts in the year 2022, and 575 528 in the year 2023. About how many more coconuts harvested in the year 2022 than in 2023?

Show your answer.

Challenge!

1. Mr. Capulot had a long ride on his motorcycle. He reached Sunlight City, which is 534 295 meters from Mountain View Town. The following day, he continued riding and reached Ocean City, which is 867 102 meters from Sunlight City. What is the estimated distance Mr. Capulot traveled in two days?

2. My mother went shopping to buy home appliances for our new house. She spent Php 105 562 for all the appliances. If she has 182 175 cash, how much money has she left?

F. References

Coronel, Carmelita C., Merly M. Pineda, and Teresita T. Tungol.

Mathematics for Better Life 4 Learner's Material. 2010. Quezon City:
SD Publications

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Math Grade 4 Q1 LC 12

Answer Key

A. Look Back

Encircle the number that can be rounded to the given number.

1. 100 000 = 145 143 2. 85 000 = 85 452 3. 7 000 = 7 218

D. Let's Try

A. Estimate the sum by rounding off to the highest place value.

- | | |
|--|--|
| 1. $82\,927 \rightarrow 80\,000$
+ $20\,612 \rightarrow \underline{20\,000}$
100 000 | 2. $932\,285 \rightarrow 900\,000$
+ $543\,408 \rightarrow \underline{500\,000}$
1 400 000 |
| 3. $297\,395 \rightarrow 300\,000$
+ $19\,320 \rightarrow \underline{20\,000}$
320 000 | 4. $28\,209 \rightarrow 30\,000$
+ $87\,087 \rightarrow \underline{90\,000}$
120 000 |
| 5. $286\,398 \rightarrow 300\,000$
+ $495\,508 \rightarrow \underline{500\,000}$
800 000 | |

B. Estimate the difference by rounding to the highest place value.

- | | |
|--|--|
| 1. $59\,296 \rightarrow 60\,000$
- $36\,934 \rightarrow \underline{40\,000}$
20 000 | 2. $948\,308 \rightarrow 900\,000$
- $645\,296 \rightarrow \underline{600\,000}$
300 000 |
| 3. $859\,234 \rightarrow 90\,000$
- $35\,011 \rightarrow \underline{40\,000}$
65 000 | 4. $84\,675 \rightarrow 80\,000$
- $49\,123 \rightarrow \underline{50\,000}$
30 000 |
| 5. $498\,567 \rightarrow 500\,000$
- $32\,745 \rightarrow \underline{30\,000}$
470 000 | |

E. Let's Evaluate

A. Estimate the sum by rounding to the highest place value.

- $27\,894 \rightarrow 30\,000$
+ $45\,032 \rightarrow \underline{50\,000}$
80 000
- $385\,035 \rightarrow 400\,000$
+ $89\,234 \rightarrow \underline{90\,000}$
490 000
- $845\,910 \rightarrow 800\,000$
+ $756\,074 \rightarrow \underline{800\,000}$
1 600 000
- $94\,395 \rightarrow 90\,000$
+ $78\,495 \rightarrow \underline{80\,000}$
170 000
- $673\,356 \rightarrow 700\,000$
+ $372\,923 \rightarrow \underline{400\,000}$
1 100 000

Challenge!

- | | |
|--|--|
| 1. $534\,295 \rightarrow 500\,000$
+ $867\,102 \rightarrow \underline{900\,000}$
1 400 000 | 2. $182\,175 \rightarrow 200\,000$
- $105\,562 \rightarrow \underline{100\,000}$
100 000 |
|--|--|

B. Estimate the difference by rounding to the highest place value.

- $97\,143 \rightarrow 100\,000$
- $55\,065 \rightarrow \underline{60\,000}$
40 000
- $374\,501 \rightarrow 400\,000$
- $68\,253 \rightarrow \underline{70\,000}$
330 000
- $834\,091 \rightarrow 800\,000$
- $94\,495 \rightarrow \underline{90\,000}$
710 000
- $773\,971 \rightarrow 800\,000$
- $451\,824 \rightarrow \underline{500\,000}$
300 000
- $728\,945 \rightarrow 700\,000$
- $575\,528 \rightarrow \underline{600\,000}$
100 000