

# Grade 6 Numeration Study Package

Test Date: \_\_\_\_\_

## Adding and Subtracting Whole and Decimal Numbers

Calculate each sum and use estimation to check to see if your answer is reasonable.

Example:

$$\begin{array}{r} \phantom{1} \phantom{2} \\ 206 \rightarrow 200 \\ 349 \rightarrow 300 \\ 127 \rightarrow 100 \\ + 467 \rightarrow 500 \\ \hline 1149 \quad 1100 \end{array}$$

$$\begin{array}{r} 329 \\ 462 \\ 503 \\ + 368 \\ \hline \end{array}$$

$$\begin{array}{r} 421 \\ 230 \\ 329 \\ + 547 \\ \hline \end{array}$$

Calculate the difference of the numbers. Add up to check your answer.

Example:

$$\begin{array}{r} \phantom{5} \phantom{17} \\ 36187 \checkmark \\ - 3829 \\ \hline 32358 \end{array}$$

$$\begin{array}{r} 5326 \\ - 1417 \\ \hline \end{array}$$

$$\begin{array}{r} 23000 \\ - 422 \\ \hline \end{array}$$

$$\begin{array}{r} \phantom{1} \phantom{1} \\ 32358 \\ + 3829 \\ \hline 36187 \checkmark \end{array}$$

Estimation can be used to check the reasonableness of a subtraction question.

Example:

$$8702 - 6914$$

$$9000 - 7000 = 2000$$

$\therefore 8702 - 6914$  should be about 2000.

## Adding and Subtracting Decimal Numbers

Remember to line up your decimals when adding and subtracting decimal numbers.

Rewrite each question and solve.

Examples:  $0.56 + 0.98$

$$\begin{array}{r} 0.56 \\ + 0.98 \\ \hline 1.54 \end{array}$$

$9.05 - 6.208$

$$\begin{array}{r} 9.050 \\ - 6.208 \\ \hline 2.842 \end{array}$$

$2.804 + 0.426$

$4.675 + 3.899 + 0.269$

$8.21 - 3.63$

$3.8 - 0.058$

Bennett hiked on three different trails last weekend. The first trail measures 2.863km and the second trail measures 5.501km. If Bennett hiked a total of 10km, what was the distance of the third trail he hiked?

Show all the steps of your solution.

Word Problems: Select one of the following questions to answer. Show all the steps in the solution.

- Rico's home town had a population of 75 692 people in 1990. In 2000, the population was 83 020 people. By how much did the population increase? Determine if your answer is reasonable using estimation.

OR

Balvinder sells chocolate bars to raise money for his school. From Monday to Friday, Balvinder sold \$676 worth of chocolate bars. On Monday he sold \$117, on Tuesday he sold \$130, on Wednesday he sold \$143, and on Friday he sold \$156. Calculate how much he sold on Thursday. Show your work.

## MULTIPLICATION & DIVISION

Estimating Products - Round the numbers and calculate to estimate each product.

Example:

$$64 \times 36 =$$

$$\rightarrow \underline{60} \times \underline{40} = 2400$$

$$122 \times 38 =$$

$$44 \times 1045 =$$

$$78 \times 2196 =$$

Example:

$$\begin{array}{r} 21 \\ \times 1.9 \\ \hline \end{array} \rightarrow \begin{array}{r} 20 \\ \times 2 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 56 \\ \times 3.4 \\ \hline \end{array}$$

$$\begin{array}{r} 43.8 \\ \times 72.0 \\ \hline \end{array}$$

### Multiplying Decimal Numbers by 10, 100, 1000, 10 000

Use mental math to find each product.

Examples:

$$6.5 \times 10 = 65$$

$$6.5 \times 100 = 650$$

$$6.5 \times 1000 = 6500$$

$$6.5 \times 10\,000 = 65\,000$$

$1.9 \times 10 = \underline{\hspace{2cm}}$

$6.73 \times 100 = \underline{\hspace{2cm}}$

$9.365 \times 10\,000 = \underline{\hspace{2cm}}$

$2.6 \times 100 = \underline{\hspace{2cm}}$

$7.2 \times 1000 = \underline{\hspace{2cm}}$

$0.486 \times 1000 = \underline{\hspace{2cm}}$

$2.63 \times 10 = \underline{\hspace{2cm}}$

$1.123 \times 10\,000 = \underline{\hspace{2cm}}$

### Dividing Decimal Numbers by 10, 100, 1000, 10 000

Use mental math to find each quotient.

Examples:

$8.2 \div 10 = \mathbf{0.82}$

$8.2 \div 100 = \mathbf{0.082}$

$8.2 \div 1000 = \mathbf{0.0082}$

$8.2 \div 10\,000 = \mathbf{0.00082}$

$3.4 \div 10 = \underline{\hspace{2cm}}$

$1.63 \div 100 = \underline{\hspace{2cm}}$

$0.5 \div 100 = \underline{\hspace{2cm}}$

$8 \div 10\,000 = \underline{\hspace{2cm}}$

$9.6 \div 1000 = \underline{\hspace{2cm}}$

$6.382 \div 10 = \underline{\hspace{2cm}}$

### Multiplying Whole Numbers by 0.1, 0.01, 0.001

Use mental math to find each product.

Examples:

$74 \times 0.1 = 7.4$

$74 \times 0.01 = 0.74$

$74 \times 0.001 = 0.074$

$14 \times 0.1 = \underline{\hspace{2cm}}$

$519 \times 0.001 = \underline{\hspace{2cm}}$

$6 \times 0.01 = \underline{\hspace{2cm}}$

## **PROBLEM SOLVING**

Answer the following questions on a lined piece of paper. Show all the steps and remember to include word statements.

The Giant Fan Palm produces the world's largest seed. A seed has a mass of about 9.075kg.

**What is the combined mass of 5 seeds?**

The recipe that Ashton wants to make requires 1.5L of evaporated milk. He has four cans of evaporated milk. Each can hold 0.385L of evaporated milk.

**Does he have enough milk to make his recipe?**

EK Coffee Co. packages coffee beans in 4 different size packages. The masses for the packages are 1.195g, 2.24g, 5.249g, and 10.208g.

**What is the mean mass of these bags?**