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Introduction

The **Core Math: Decimals & Percents Course** addresses key numbers and operations concepts regarding the nature and computation of decimal numbers, percents, ratios, and proportions. The subjects in this course include decimal place values, converting between decimals and fractions, doing decimal arithmetic, mixed operations with decimals, decimal word problems, the meaning of percent, changing between percents, decimals, and fractions, arithmetic with percents, calculating percent increase and decrease, percent word problems, ratios, proportions, exchange rates, and measurement conversions. The learning objectives align to US national curriculum standards for grades 4 to 7 and align to Common Core Math Standards for grades 4 to 6. Estimated completion time is approximately 32 hours.

The learning objectives align to Common Core Math Standards for grade 4: 4.NF.5, 4.NF.6, 4.NF.7, 4.MD.2, 4.OA.2, 4.OA.3, for grade 5: 5.NBT.1, 5.NBT.2, 5.NBT.3, 5.NBT.3.a, 5.NBT.3.b, 5.NBT.4, 5.NBT.7, 5.OA.1, for grade 6: 6.NS.2, 6.NS.3, 6.RP.1, 6.RP.2, 6.RP.3, 6.RP.3.b, 6.RP.3.c, 6.RP.3.d, and for grade to 7: 7.EE.3, 7.NS.1.d, 7.NS.2, 7.NS.2.c, 7.NS.2.d, 7.NS.3, 7.RP.1, 7.RP.2, 7.RP.2.c, 7.RP.3.

The **Core Math: Decimals & Percents Course** is organized sequentially in eight Units with 32 lessons, 32 lesson Quizzes, and 8 Unit Tests for pre-assessment and post-assessment. Each of the thirty-two lessons contain audio-supported on-screen instruction and a printable activity sheet with exercises and activities. Each lesson Quiz contains 6 questions generated from a set of 10 questions. Each of the eight Unit Tests contain three questions for each lesson in that Unit from a set of ten questions per lesson. There are 411 instruction screens, 158 practice sheet pages, 11 reference pages, and 640 test questions for a total of 1220 total learning objects in the **Core Math: Decimals & Percents Course**.

Unit 1: Decimal Basics

Lesson 1: Decimal Numbers Common Core Standards

- 4.NF.6, 4.NF.7, 5.NBT.1, 5.NBT.2, 5.NBT.3, 5.NBT.3.a

Learning Objectives

- to learn about what is a decimal number

Defined Vocabulary Words

- decimal numbers, decimal point, decimal places, decimal numbers, decimal part

Lesson Components

Total Learning Objects – 34

Instruction Pages - 24

Activity Pages - 7

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 60 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Changing Decimals to Fractions**Common Core Standards**

- 4.NF.5, 4.NF.6, 5.NBT.3, 5.NBT.3.a

Learning Objectives

- to learn how to change decimal numbers to fractions

Defined Vocabulary Words

- lowest terms, greatest common factor

Lesson Components

Total Learning Objects – 22

Instruction Pages – 16

Activity Pages - 6

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 60 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Comparison Symbols**Common Core Standards**

- 4.NF.7, 5.NBT.3, 5.NBT.3.a

Learning Objectives

- to learn about comparing whole numbers

Defined Vocabulary Words

- comparison symbols

Lesson Components

Total Learning Objects – 12

Instruction Pages – 8

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 60 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 4: Selection of Units**Common Core Standards**

- 4.NF.7, 5.NBT.3, 5.NBT.3.a, 5.NBT.3.b

Learning Objectives

- to learn about comparing decimal numbers

Defined Vocabulary Words

- comparison symbols

Lesson Components

Total Learning Objects – 18

Instruction Pages - 13

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 60 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 5: Rounding Decimals**Common Core Standards**

- 4.OA.3, 5.NBT.4

Learning Objectives

- to learn how about rounding decimal numbers

Defined Vocabulary Words

- rounding

Lesson Components

Total Learning Objects – 20

Instruction Pages - 15

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 60 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 6: Changing Fractions to Decimals**Common Core Standards**

- 4.NF.5

Learning Objectives

- to learn about changing fractions to decimals

Defined Vocabulary Words

- numerator, denominator

Lesson Components

Total Learning Objects – 18

Instruction Pages - 13

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 60 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 2: Addition & Subtraction with Decimals

Lesson 1: Adding Decimals**Common Core Standards**

- 4.MD.2, 5.NBT.7, 6.NS.3, 7.NS.1.d

Learning Objectives

- to learn how to add decimal numbers

Defined Vocabulary Words

- decimal point

Lesson Components

Total Learning Objects – 23

Instruction Pages - 15

Activity Pages - 8

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 30 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Subtracting Decimals**Common Core Standards**

- 4.MD.2, 5.NBT.7, 6.NS.3, 7.NS.1.d

Learning Objectives

- to learn how to subtract decimal numbers

Defined Vocabulary Words

- decimal point

Lesson Components

Total Learning Objects – 20

Instruction Pages – 13

Activity Pages - 7

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 30 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Adding and Subtracting Decimals – Word Problems**Common Core Standards**

- 4.MD.2, 5.NBT.7, 7.EE.3

Learning Objectives

- to learn how to solve word problems with addition and subtraction of decimal numbers

Defined Vocabulary Words

- decimal point

Lesson Components

Total Learning Objects – 18

Instruction Pages – 12

Activity Pages - 6

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 30 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 3: Multiplication with Decimals**Lesson 1: Multiplying Decimals by Tens****Common Core Standards**

- 4.MD.2, 5.NBT.1, 5.NBT.2, 5.NBT.7

Learning Objectives

- to learn how to multiply decimals by tens, hundreds, and thousands

Defined Vocabulary Words

- decimal point

Lesson Components

Total Learning Objects – 17

Instruction Pages - 12

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Multiplying Decimals by Tenths**Common Core Standards**

- 4.MD.2, 5.NBT.1, 5.NBT.2, 5.NBT.7

Learning Objectives

- to learn how to multiply decimals by tenths, hundredths, and thousandths

Defined Vocabulary Words

- decimal point

Lesson Components

Total Learning Objects – 13

Instruction Pages – 9

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions - 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Multiplying Decimals**Common Core Standards**

- 4.MD.2, 5.NBT.2, 5.NBT.7, 6.NS.3, 7.NS.2, 7.NS.2.c

Learning Objectives

- to learn how to manually multiply decimal numbers

Defined Vocabulary Words

- rule for multiplying decimals

Lesson Components

Total Learning Objects – 14

Instruction Pages – 10

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 4: Multiplying Decimals – Word Problems**Common Core Standards**

- 4.MD.2, 4.OA.2, 5.NBT.7, 6.NS.3, 7.EE.3, 7.NS.3

Learning Objectives

- to learn how to solve word problems with multiplication of decimals

Defined Vocabulary Words

- area, unit price

Lesson Components

Total Learning Objects – 19

Instruction Pages - 13

Activity Pages - 6

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 4: Division with Decimals**Lesson 1: Dividing by Tens and Tenths****Common Core Standards**

- 4.MD.2, NBT.1, 1.NBT.2, 5.NBT.7

Learning Objectives

- to learn about dividing numbers by tens and tenths

Defined Vocabulary Words

- dividend

Lesson Components

Total Learning Objects – 18

Instruction Pages - 15

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Dividing Decimals by Whole Numbers**Common Core Standards**

- 4.MD.2, 5.NBT.7, 6.NS.2, 6.NS.3, 7.NS.2, 7.NS.2.c, 7.NS.2.d

Learning Objectives

- to learn about dividing decimals by whole numbers

Defined Vocabulary Words

- divisor, dividend, quotient, repeating decimal

Lesson Components

Total Learning Objects – 21

Instruction Pages – 17

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Dividing Decimals by Decimals**Common Core Standards**

- 4.MD.2, 5.NBT.7, 6.NS.2, 6.NS.3, 7.EE.3, 7.NS.2, 7.NS.2.c, 7.NS.2.d

Learning Objectives

- to learn about manually dividing with decimal numbers

Defined Vocabulary Words

- divisor, dividend, quotient

Lesson Components

Total Learning Objects – 21

Instruction Pages – 17

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 4: Dividing Decimals – Word Problems**Common Core Standards**

- 4.MD.2, 5.NBT.7, 6.NS.2, 6.NS.3, 7.EE.3, 7.NS.3

Learning Objectives

- to learn how to solve word problems with division with decimal numbers

Defined Vocabulary Words

- divisor, dividend, quotient

Lesson Components

Total Learning Objects – 13

Instruction Pages - 19

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 5: Mixed Operations**Lesson 1: Doing Mixed Operations with Decimals****Common Core Standards**

- 4.MD.2, 5.NBT.7, 5.OA.1, 7.EE.3

Learning Objectives

- to learn how to do mixed operations with decimal numbers

Defined Vocabulary Words

- mixed operations

Lesson Components

Total Learning Objects – 17

Instruction Pages - 11

Activity Pages - 6

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 20 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Doing Mixed Operations with Decimals – Word Problems**Common Core Standards**

- 4.MD.2, 5.NBT.7, 6.NS.3, 7.EE.3

Learning Objectives

- to learn how to solve word problems with mixed operations of decimal numbers

Defined Vocabulary Words

- mixed operations

Lesson Components

Total Learning Objects – 28

Instruction Pages – 20

Activity Pages - 8

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 20 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 6: Percent Basics**Lesson 1: The Meaning of Percent****Common Core Standards**

- 6.RP.3.c.

Learning Objectives

- to learn about what percent and percentage means

Defined Vocabulary Words

- percent, percentage

Lesson Components

Total Learning Objects – 10

Instruction Pages - 6

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Changing Between Percents and Decimals**Common Core Standards**

- 6.RP.3.c

Learning Objectives

- to learn how to change between percents and decimal numbers

Defined Vocabulary Words

- percent, percentage, decimal

Lesson Components

Total Learning Objects – 12

Instruction Pages – 9

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Changing Between Percents and Fractions
Common Core Standards

- 6.RP.3.c

Learning Objectives

- to learn how to change between percents and fractions

Defined Vocabulary Words

- percent, percentage

Lesson Components

Total Learning Objects – 16

Instruction Pages – 11

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 4: Finding Percents – Word Problems

Common Core Standards

- 6.RP.3.c, 7.NS.2, 7.NS.2.c

Learning Objectives

- to learn how to solve word problems with finding a percent of a number

Defined Vocabulary Words

- numerator, denominator, lowest terms

Lesson Components

Total Learning Objects – 12

Instruction Pages - 8

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 7: Percent Problems

Lesson 1: Finding the Percent of a Number

Common Core Standards

- 7.EE.3, 7.NS.2, 7.NS.2.c, 7.NS.3, 7.RP.3

Learning Objectives

- to learn how to find a percent of a number

Defined Vocabulary Words

- percent, percentage

Lesson Components

Total Learning Objects – 14

Instruction Pages - 10

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Adding and Subtracting Percents**Common Core Standards**

- 7.EE.3, 7.NS.2, 7.NS.2.c, 7.RP.3

Learning Objectives

- to learn about addition and subtraction of percents

Defined Vocabulary Words

- percent, percentage

Lesson Components

Total Learning Objects – 15

Instruction Pages – 11

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Finding Percent Increase**Common Core Standards**

- 7.EE.3, 7.NS.2, 7.NS.2.c, 7.NS.3, 7.RP.3

Learning Objectives

- to learn how to find the percent increase

Defined Vocabulary Words

- amount increase, base amount, percent increase

Lesson Components

Total Learning Objects – 20

Instruction Pages - 16

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 4: Finding Percent Decrease

Common Core Standards

- 7.EE.3, 7.NS.3 7.RP.3

Learning Objectives

- to learn how to find the percent decrease

Defined Vocabulary Words

- amount increase, base amount, percent increase

Lesson Components

Total Learning Objects – 15

Instruction Pages – 11

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 5: Percents – Word Problems

Common Core Standards

- 7.EE.3, 7.RP.3

Learning Objectives

- to learn how to solve word problems with calculation of percents

Defined Vocabulary Words

- amount increase, base amount, percent increase

Lesson Components

Total Learning Objects – 27

Instruction Pages – 21

Activity Pages - 6

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Unit 8: Practical Problems

Lesson 1: Ratios

Common Core Standards

- 6.RP.1, 6.RP.2, 6.RP.3, 6.RP.3.b, 6.RP.3.d, 7.RP.1, 7.RP.2, 7.RP.3

Learning Objectives

- to learn about ratios

Defined Vocabulary Words

- ratio

Lesson Components

Total Learning Objects – 12

Instruction Pages - 7

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 2: Calculating Proportions

Common Core Standards

- 7.RP.2, 7.RP.2.c, 7.RP.3

Learning Objectives

- to learn about proportions

Defined Vocabulary Words

- equivalent ratios, proportional

Lesson Components

Total Learning Objects – 23

Instruction Pages – 17

Activity Pages - 6

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 3: Converting Measurements

Common Core Standards

- 6.RP.1, 6.RP.2, 6.RP.3, 6.RP.3.b, 6.RP.3.d, 7.NS.3, 7.RP.1, 7.RP.3

Learning Objectives

- to learn about conversion of measurement units

Defined Vocabulary Words

- equivalent ratios, proportional

Lesson Components

Total Learning Objects – 14

Instruction Pages – 11

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

Lesson 4: Converting Money

Common Core Standards

- 6.RP.1, 6.RP.2, 6.RP.3, 6.RP.3.b, 6.RP.3.d, 7.NS.3, 7.RP.1, 7.RP.3

Learning Objectives

- to learn about ratios and exchange rates

Defined Vocabulary Words

- currencies, exchange rates

Lesson Components

Total Learning Objects – 16

Instruction Pages - 11

Activity Pages - 5

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 40 total questions; 10 total per Lesson of which 3 are randomly selected to populate test