

Table of Contents

Series Description	I
Concept Development	2
General Objectives	2
Course Structure	3
Unit Breakdown	6
Unit 1. Numbers up to 99	6
Unit 2: Numbers up to 1000	8
Unit 3: Combinations of Addition and Subtraction	10
Unit 4: Adding Two-Digit Numbers	12
Unit 5: Subtracting Two-Digit Numbers	15
Unit 6: Adding and Subtracting Three and Four-Digit	17
Unit 7: Geometry and Fractions	19
Unit 8: Measurement	21
Unit 9: Money	24
Unit 10: Time	26
Unit 11: Statistics	28
Unit 12: Greater Numbers, Multiplication, and Division	30

Series Description

The objective of the EduSystem **Mathematics K-6** series is to help students develop skills and mathematical concepts in accordance with the standards set forth by the Department of Education of Puerto Rico and the National Council of Teachers of Mathematics. The purpose of the series is to create awareness of why studying mathematical processes is important and how it is necessary for solving problems that relate to real-life situations.

Through its content, strategies, and techniques, the EduSystem **Mathematics K-6** series instills a deep understanding of the concepts, skills, and techniques necessary for the subsequent study of higher mathematics and applications. The way in which the topics, examples, and recommended applications are presented allows students to visualize, understand, and value the usefulness of mathematics in everyday life.

The EduSystem **Mathematics K-6** series covers the following areas and topics: number sense, counting, and cardinal numbers; operations and algebraic thought; numbers and operations in base ten; numbers and operations with fractions and ratios; proportional relationships; numeral systems; expressions and equations; measurement and data; statistics and probability, and geometry.

In each lesson, the objectives have been carefully aligned by taking into consideration the concepts and skills students need to establish connections between the different topics. The instructional focus is based upon conceptual understanding, skills development, and mathematical problems/solutions. It also focuses on the development of critical thinking skills which is the integral means of foundation for the students.

The EduSystem **Mathematics K-6** series encourages the direct application of what students learn and how they visualize the importance of mathematics as a universal discipline relating to society, community, organizations, and institutions. Furthermore, the incorporation of situations and real-life problems in each of the topics aims to awaken an interest in the study of mathematics for students.

Concept Development

The EduSystem **Mathematics K-6** series is directed toward developing a mastery of:

- Mathematical reasoning skills and their applications.
- Application of problem-solving processes and strategies.
- Use of technology as tools to access, analyze, and apply information in the solution of problems in their immediate surroundings.

General Objectives

The objectives of this Series are to:

- Help students develop an interest and appreciation for mathematics.
- Develop mathematical capability within students through experiences that stimulate their curiosity and focus it on investigation, problem solving, and communication.
- Promote that the students visualize mathematics as an integral whole and not as a group of isolated topics.
- ▶ Develop the problem-solving processes in students, as a cornerstone of encouragement, furthering the development of mathematical capacity.
- Stimulate within students the need of using language and academic vocabulary to communicate mathematical ideas.
- Develop mathematical reasoning and critical thinking skills that allow students to visualize mathematics as a relevant discipline in their lives.
- Emphasize the concepts of numbers, operations, and calculations so that they are correctly defined, conceived, and adequately applied.
- Promote the learning of concepts in geometry and measurement through hands-on experiences that incorporate experimentation and discovery of mathematical relationships using solid objects or manipulatives.

Course Structure

The Mathematics 2 course is composed of twelve units. Each unit is composed of lessons. Each lesson contains a presentation divided into sections that develop their individual topics. Each lesson also contains a descriptive log, activities, worksheets, and handouts related to the content and, as in most cases, website links and resources. The practice and review documents generally include word problems, as well as a section devoted solely to solving problems.

We invite you to get to know the presentation sections and the documents that are generally found in the course lessons.

The units are made up of the following:

Lessons

Each unit is composed of several lessons which are divided by topics. Furthermore, each lesson is comprised of the following:

Presentation

Each presentation is composed of the following sections:

Unit Opening

Each unit begins with an image which starts off the first lesson of the unit. This section presents the unit's theme as well as several questions in which the image or theme are explored.



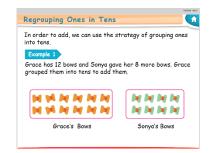


Introduction

Presentation of a situation and questions to be explored.

Topics to Be Developed

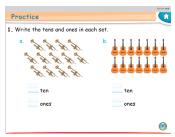
Sections of concept development, where mathematical ideas and concepts are explained. On some occasions, skills are developed from the situation presented in the introduction and other examples are offered.





Practice

Lesson closure in which students apply what they learned through some exercise.



Think About It

A reasoning question is presented and identified with a lightbulb. The goal is to develop students' reasoning and analysis capacities.



Handouts and Worksheets

Think and Practice



It presents exercises and problems after every concept development section. It has activities that help practice, enrich, end reinforce the concepts learned throughout the lesson.

Homework

Practice for each concept building section. Students are provided with a reasonable number of exercises so that they can master the skills and concepts studied in the lesson.



Lesson 0

This lesson is composed of a series of unit documents and of formative and cumulative evaluation that can be used before, during, or after the study of each unit.

What I Know!

A pretest of the concepts and skills to be discussed within the unit.





Connection

Activity that initiates the unit. It relates Mathematics with other fields of study.

Problem Solving

It explains strategies and procedures for the development of problem-solving skills.





Unit review

Practice exercises that allow students to confirm what they have learned in the unit.

Reviewing the Units

Practice exercises that allow the student to confirm what they have learned in previous units.





What I Learned

The skills and concepts learned in the unit are measured. It allows students to do a self-evaluation. The teacher may use it as a test.

Knowing Technology

It presents technology in its different manifestations, including the computer as well as all the gadgets present in our daily lives. It can be found in some units.





Think

It presents activities and includes mathematical reasoning exercises. It can be found in some units.

Unit Breakdown

Below is an itemization of the division of each unit in lessons, including the name of each lesson with its corresponding objectives, skills, and keywords.

Unit I. Numbers up to 99

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Numbers up to 99

Code: C319G02U01L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What I Learned

Lesson I: Tens

Code: C319G02U01L01

Objectives

Identify, count, and prepare tens.

Keywords

ones, tens

Lesson 2: Ones and Tens

Code: C319G02U01L02

Objectives

Complete amounts in tens and ones.

Keywords

ones, tens

Lesson 3: Place Value: Tens and ones

Code: C319G02U01L03

Objectives

Identify the place value of a digit.

Decompose a number according to its place value.

Keywords

after, before, between, numbers, numerals, order.

Lesson 4: Comparing Numbers up to 99

Code: C319G02U01L04

Objectives

- ldentify and compare numerals up to 99.
- Identify the greater and lesser figure.

Keywords

preatest number, greater than, least number, less than.

Lesson 5: Ordering Numbers up to 99

Code: C319G02U01L05

Objectives

- Organize numerals up to 99.
- Fill in numeral sequences up to 99.

Keywords

 comparing numbers, greatest number, greater than, least number, less than, ordering numbers, sequence

Lesson 6: Ordinal Numbers

Code: C319G02U01L06

Objectives

- ldentify ordinal numbers from first to twelfth.
- Find a pattern.

Keywords

ordering numbers in a sequence, ordinal numbers, patterns.

Lesson 7: Odd and even numbers

Code: C319G02U01L07

Objectives

- ldentifies if a number is even or odd.
- ldentifies whether the elements of a set represent an even or odd number.

Keywords

even, numbers, odd.

Unit 2: Numbers up to 1000

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Numbers up to 1000

Code: C319G02U02L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

l Learned

Lesson I: Hundreds

Code: C319G02U02L01

Objectives

ldentify, write, and draw hundreds.

Keywords

hundreds.

Lesson 2: Hundreds, Tens, and Ones

Code: C319G02U02L02

Objectives

Identify, write, and draw hundreds, tens, and ones.

Keywords

hundreds, ones, tens.

Lesson 3: Place Value

Code: C319G02U02L03

Objectives

Write the numbers according to the place value they occupy.

Keywords

hundreds, ones, place value, tens

Lesson 4: Reading and Writing Three and Four-Digit Numbers

Code: C319G02U02L04

Objectives

Read and write three and four-digit numbers.

Keywords

digit, read, write.

Lesson 5: Comparing and Ordering Numbers

Code: C319G02U02L05

Objectives

▶ Use the symbols of greater than, less than or equal to compare numbers.

▶ Place numbers in order.

Keywords

compare, equal to, greater than, less than, order.

Unit 3: Combinations of Addition and Subtraction

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Combinations of Addition and Subtraction

Code: C319G02U03L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

I Learned

Lesson I: Properties of Addition

Code: C319G02U03L01

Objectives

Add numbers.

Apply the properties of addition. (identity, commutative and associative).

Keywords

addends, associative property of addition, identity property of addition, properties of addition, sum, zero.

Lesson 2: Counting Forward

Code: C319G02U03L02

Objectives

Add by counting forward.

Keywords

add, addends, addition, counting.

Lesson 3: Adding with a Number Line

Code: C319G02U03L03

Objectives

Add with a number line.

Keywords

add, addition, number line.

Lesson 4: Combinations of Addition

Code: C319G02U03L04

Objectives

- Apply the properties of addition.
- Add by counting forward.
- Add with a number line.
- Combine addends to find the total.

Keywords

addends, property of zero, property of order, properties of addition, number line, sum.

Lesson 5: Subtracting

Code: C319G02U03L05

Objectives

- Subtract one-digit numbers.
- ldentify the parts of a subtraction equation.

Keywords

b difference, minuend, subtract, subtrahend.

Lesson 6: Subtracting with a Number Line

Code: C319G02U03L06

Objectives

Subtract with a number line.

Keywords

number line, subtract.

Lesson 7: Combinations of Subtraction up to 18

Code: C319G02U03L07

Objectives

Write and solve subtraction combinations.

Keywords

subtraction combinations.

Unit 4: Adding Two-Digit Numbers

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Adding Two-Digit Numbers

Code: C319G02U04L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What I Learned

Lesson I: Adding Tens
Code: C319G02U04L01

Objectives

Add tens.

- Observe tens when adding two-digit numbers.
- Count tens
- Write the sum of two digits by using tens.

Keywords

add, ones, tens, two digits.

Lesson 2: Counting Forward

Code: C319G02U04L02

Objectives

- Count to add.
- Add ones and tens.

Keywords

add, ones, tens.

Lesson 3: The Tens and the Ones

Code: C319G02U04L03

Objectives

- Add tens and ones.
- Observe tens and ones when adding two-digit numbers.
- Count tens and ones.
- Write the sum of two-digit numbers by using tens and ones.

Keywords

ones, tens.

Lesson 4: Regrouping Ones in the Tens

Code: C319G02U04L04

Objectives

Add tens.

Observe tens and ones.

Regroup ones in the tens.

Keywords

ones, regrouping, tens.

Lesson 5: Adding Tens and Ones

Code: C319G02U04L05

Objectives

Add tens.

- Observe tens when adding two-digit numbers.
- Count tens.
- Write the sum of two digits by using tens.
- Solve word problems.

Keywords

ones, regrouping, tens.

Lesson 6: Regrouping to Add Tens and Ones

Code: C319G02U04L06

Objectives

- Add tens.
- Regroup to add tens and ones.
- Solve addition word problems.

Keywords

ones, regrouping, tens.

Lesson 7: Adding Two-Digit Numbers

Code: C319G02U04L07

Objectives

- Add two-digit numbers.
- Regroup to add.
- Solve word problems.

Keywords

add, two digits.

Lesson 8: Estimating Addition

Code: C319G02U04L08

Objectives

- **E**stimate sums.
- ▶ Round to the nearest ten in order to estimate.
- ► Add two-digit numbers.
- Solve addition word problems.

Keywords

estimate, round, tens, hundreds.

Unit 5: Subtracting Two-Digit Numbers

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Subtracting Two-Digit Numbers

Code: C319G02U05L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

I Learned

Lesson I: Subtracting Tens

Code: C319G02U05L01

Objectives

Subtract tens.

Keywords

ones, subtract, tens, two digits.

Lesson 2: Counting Back

Code: C319G02U05L02

Objectives

Count to subtract.

Subtract tens and ones.

Keywords

count, ones, tens.

Lesson 3: Regrouping Tens in Ones

Code: C319G02U05L03

Objectives

Regroup the tens in the ones.

Keywords

regroup, tens.

Lesson 4: Subtracting Tens and Ones

Code: C319G02U05L04

Objectives

Subtract tens and ones.

Regroup in order to subtract tens and ones.

Keywords

ones, subtract, tens.

Lesson 5: Regrouping to Subtract Tens and Ones

Code: C319G02U05L05

Objectives

Regroup the tens in the ones.

Regroup to subtract tens and ones

Keywords

ones, regroup, tens.

Lesson 6: Subtracting Two-Digit Numbers

Code: C319G02U05L06

Objectives

Subtract two-digit numbers.

Keywords

digit, ones, regroup, subtract, tens.

Lesson 7: Checking a Subtraction

Code: C319G02U05L07

Objectives

Add in order to check the result of the subtraction.

Keywords

check the subtraction.

Unit 6: Adding and Subtracting Three and Four-Digit

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Adding and Subtracting Three and Four-Digit

Code: C319G02U06L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What I Learned

Lesson I: Adding Hundreds

Code: C319G02U06L01

Objectives

Add hundreds.

Keywords

hundreds, sum.

Lesson 2: Adding Ones, Tens and Hundreds

Code: C319G02U06L02

Objectives

Add ones, tens and hundreds.

Keywords

addition, hundreds, ones, tens.

Lesson 3: Regrouping Ones and Tens

Code: C319G02U06L03

Objectives

Regroup ones and tens.

Keywords

ones, tens, regroup.

Lesson 4: Adding Three and Four-Digit Numbers with Regrouping

Code: C319G02U06L04

Objectives

Add three and four-digit numbers with regrouping.

Keywords

sum by regrouping.

Lesson 5: Subtracting Hundreds

Code: C319G02U06L05

Objectives

Subtract hundreds.

Keywords

hundreds, subtraction.

Lesson 6: Subtracting Ones, Tens, Hundreds, and Thousands

Code: C319G02U06L06

Objectives

▶ Subtract ones, tens, hundreds, and thousands.

Keywords

hundreds, ones, tens, subtract, thousands.

Lesson 7: Subtracting by Regrouping

Code: C319G02U06L07

Objectives

▶ Regroup the subtraction.

Keywords

regroup.

Lesson 8: Subtracting Three-Digit Numbers

Code: C319G02U06L08

Objectives

Subtract three-digit numbers.

Keywords

three-digit subtraction.

Unit 7: Geometry and Fractions

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Geometry and Fractions

Code: C319G02U07L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

I Learned

Lesson I: Three-Dimensional Shapes

Code: C319G02U07L01

Objectives

Identify three-dimensional shapes by their name.

Name three-dimensional shapes: cone, sphere, and cylinder.

Color three-dimensional shapes.

Keywords

cone, cube, cylinder, rectangular prism, sphere.

Lesson 2: Two-Dimensional Figures

Code: C319G02U07L02

Objectives

Identify two-dimensional shapes.

Name two-dimensional shapes: circle, triangle, rectangle, and square.

ldentify solid figures that are used to draw plane figures.

Keywords

circle, rectangle, square, triangle.

Lesson 3: Sides and Vertexes

Code: C319G02U07L03

Objectives

- Identify the sides that make up a two-dimensional shape.
- Identify the vertices that form part of a two-dimensional shape.
- Count the sides and vertices in two-dimensional shapes.

Keywords

sides, vertices.

Lesson 4: Symmetry

Code: C319G02U07L04

Objectives

Identify symmetric figures.

Draw the axis of symmetry in different figures.

ldentify the figures that have an axis of symmetry.

Keywords

axis of symmetry, symmetry.

Lesson 5: Rotation

Code: C319G02U07L05

Objectives

Recognizes rotation in a figure.

Keywords

Rotation, transformation.

Lesson 6: Patterns with Figures

Code: C319G02U07L06

Objectives

- Identify patterns with shapes and figures.
- ldentify the unit of a pattern.
- Complete patterns with shapes and figures.

Keywords

Rotation, transformation.

Unit 8: Measurement

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson I: The Ruler

Code: C319G02U08L01

Objectives

- Use arbitrary units to measure.
- Use a ruler to measure.

Keywords

ruler, inches.

Lesson 2: Measuring in Inches, Feet, and Yards

Code: C319G02U08L02

Objectives

Measure objects using units of measurement like inches, feet, and yards.

Keywords

lack foot, inch yard.

Lesson 3: Centimeters

Code: C319G02U08L03

Objectives

Use the centimeter as unit of measurement.

Keywords

centimeter, measure, ruler.

Lesson 4: Meters

Code: C319G02U08L04

Objectives

ldentify objects that can be measured in meters.

Keywords

centimeters, measuring tape, meter.

Lesson 5: Weight in Pounds

Code: C319G02U08L05

Objectives

Determine the weight of an object in pounds.

Keywords

balance, pound, weight.

Lesson 6: Weight in Kilograms

Code: C319G02U08L06

Objectives

Determine the weight of an object in kilograms.

Keywords

balance, kilogram, weight.

Lesson 7: Capacity

Code: C319G02U08L07

Objectives

Determine the capacity of different containers.

Keywords

capacity, container, cup, measurement, tablespoon.

Lesson 8: The Cup, the Pint, the Quart, and the Gallon

Code: C319G02U08L08

Objectives

Identify the cup, the pint, the quart, and the gallon as units to measure capacity.

Keywords

cup, gallon, measure, pint, quart.

Lesson 9: The Liter

Code: C319G02U08L09

Objectives

Use the liter as a unit to measure capacity.

Keywords

capacity, liter, measure.

Lesson IO: Perimeter and Area

Code: C319G02U08L10

Objectives

Determine the perimeter of a figure.

Determine the area of a figure.

Keywords

area, perimeter.

Unit 9: Money

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Money

Code: C319G02U09L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

I Learned

Lesson I: Coins

Code: C319G02U09L01

Objectives

- ldentify the coins.
- Compare the coins.
- Count the coins.
- Establish relations between coins.

Keywords

cents, coins, dollars, quarter.

Lesson 2: Counting Coins

Code: C319G02U09L02

Objectives

- Identify the coins.
- Organize the coins from greatest to least.
- Count the coins.
- Establish relations between coins.

Keywords

cents, coins, counting coins, greater value, lesser value.

Lesson 3: Counting Dollars and Cents

Code: C319G02U09L03

Objectives

- ldentify the coins and the dollar.
- Count in sequences of 5 by 5, 10 by 10, and 25 by 25.
- Solve problems.
- Establish relations between coins.

Keywords

cents, counting dollars and cents.

Lesson 4: Equal Quantities

Code: C319G02U09L04

Objectives

- ldentify the coins.
- Compare the coins.
- Count the coins.
- Group and combine coins.
- Establish relations between coins.

Keywords

cents, coins, dollars, equal amounts, money.

Lesson 5: Money for Buying Things

Code: C319G02U09L05

Objectives

- Identify the coins.
- Compare the coins.
- Count the coins.
- Calculate totals and differences.
- Establish relationships between coins.

Keywords

 cents, coins, compare coins, count coins, dollars, money, money needed for buying.

Lesson 6: Adding or Subtracting Money

Code: C319G02U09L06

Objectives

- Observe and combine coins.
- Add money with and without regrouping.
- Subtract money with and without regrouping.
- Solve money-related problems.

Keywords

adding and subtracting money, cents, dollars, money.

Unit 10: Time

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Time

Code: C319G02U10L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

I Learned

Lesson I: The Hour and the Half Hour

Code: C319G02U10L01

Objectives

Identify the hour and half an hour.

Write the hour and half an hour.

Keywords

hour, half hour, digital clock, analog clock.

Lesson 2: The Quarter of an Hour

Code: C319G02U10L02

Objectives

- ldentify the quarters of an hour.
- Write the quarters of an hour.

Keywords

hour, quarters, quarter of an hour.

Lesson 3: The Day

Code: C319G02U10L03

Objectives

- ldentify the difference between morning, afternoon, and evening.
- Identifies noon and midnight.
- Abbreviate the hours in a.m. or p.m.
- Recognize time relations.
- Recognizes the calendar and the relationship between days, weeks, and months.

Keywords

days, months, weeks, morning, afternoon, evening, year, midnight, noon.

Lesson 4: Time Elapsed

Code: C319G02U10L04

Objectives

- Recognize time relations.
- Calculate elapsed time.
- Solve problems.

Keywords

elapsed time.

Lesson 5: Estimating Time

Code: C319G02U10L05

Objectives

- Recognize time relations.
- **E**stimate time.

Keywords

estimate.

Lesson 6: The Calendar

Code: C319G02U10L06

Objectives

- Recognize time relations.
- ▶ Use the calendar to collect information.

Keywords

calendar.

Unit 11: Statistics

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Statistics

Code: C319G02U11L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What

I Learned

Lesson I: Tables

Code: C319G02U11L01

Objectives

Use data charts to solve problems.

Read, analyze, and build data tables.

Keywords

chart, data tables.

Lesson 2: Data Tables

Code: C319G02U11L02

Objectives

Make surveys and analyze the data obtained from them.

▶ Build a table with the data obtained from a survey.

Keywords

surveys.

Lesson 3: Pictographs

Code: C319G02U11L03

Objectives

Analyze pictographs.

Keywords

pictographs.

Lesson 4: Bar Graphs

Code: C319G02U11L04

Objectives

Analyze and build bar graphs.

Keywords

bar graphs.

Lesson 5: The Cartesian Plane

Code: C319G02U11L05

Objectives

Identify and locate coordinates on the Cartesian Plane.

Keywords

linear graphs, points at a linear graph.

Lesson 6: Building Data Graphs

Code: C319G02U11L06

Objectives

Make different graphs using sets of data.

Keywords

building data graphs.

Lesson 7: Probability

Code: C319G02U11L07

Objectives

Determines the probability of an even occurring.

▶ Performs simple experiments to determine probability.

Keywords

experiments, probability.

Unit 12: Greater Numbers, Multiplication, and Division

At the end of this unit, the student will achieve the objectives found in the following lessons.

Lesson 0: Greater Numbers, Multiplication, and Division

Code: C319G01U12L00

Unit Documents: Learning While Playing, Problem Solving, Unit Review I & II and What I Learned

Lesson I: Repeated Addition and Multiplying

Code: C319G02U12L01

Objectives

Use repeated addition to recognize the multiplication.

Keywords

multiplication.

Lesson 2: Skip Counting to Multiply

Code: C319G02U12L02

Objectives

Use addition to be able to multiply.

Keywords

add, multiplication.

Lesson 3: Making Equal Groups

Code: C319G02U12L03

Objectives

Divide objects into equal parts.

Keywords

multiplication.

Lesson 4: Properties of Multiplication

Code: C319G02U12L04

Objectives

ldentify properties of multiplication.

Applies the properties of multiplication (identity, commutative and associative).

Keywords

associative property, commutative property, identity property.

Lesson 5: Repeated Subtraction

Code: C319G02U12L05

Objectives

▶ Use repeated subtraction to recognize the division.

Keywords

division, subtraction.

Lesson 6: Division

Code: C319G02U12L06

Objectives

Divide objects into equal parts.

▶ Relate the repeated subtraction with the division.

Keywords

division, subtract.