Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Number Sense
Unit:	Numbers to 999
Session:	**Counting by Grouping**

Learning Objectives

- Counting a set of objects by grouping them into tens and ones.
- Recognizing and writing equivalent base-10 names for a number.

Overview

We're counting apples in an orchard. We count by ones, twos, fives, and tens, and then express the number of apples as groups of tens and ones left over.

Keywords

Groups of ten

Teaching Strategies

Prior to the session

- Time students as they count a large set of objects (more than 30) by ones and then compare the times and accuracy of the counts.
- Ask students if they can suggest a quicker and more accurate way to count a large set of objects.

At the end of the session

- Time students as they count a large set of objects (more than 30) by twos, fives, and tens, and compare the times and accuracy of the counts.
- Give students copies of three 10 x 10 number charts apiece, and have them circle and describe the sequences that correspond to counting by twos, fives, or tens.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Number Sense
Unit:	Numbers to 999
Session:	**Place Value: Tens and Ones**

Learning Objectives

- Representing the standard form of a number in terms of tens and ones.
- Identifying the standard form of a number given its place value representation.

Overview

We're counting the number of bats that have returned to a cave.
We look at the number of tens and ones in a 2-digit number.

Keywords

Digit
Tens
Ones

Teaching Strategies

Prior to the session

- Have students review how to write and represent the numbers between 10 and 20 as a collection of one group of ten and ones.
- Using number cards have students draw a card at random and give the corresponding word name or numeral of any one- or two-digit number.

At the end of the session

- Have students count a set of objects and sort them into the greatest number of groups of ten and ones left over and write the corresponding numeral.
- Have students represent a two-digit number as at least two equivalent groups of tens and ones, e.g. 24 is two tens and four ones, one ten and fourteen ones, or zero tens and twenty-four ones.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Number Sense
Unit:	Numbers to 999
Session:	**Place Value: Hundreds, Tens, and Ones**

Learning Objectives

- Using base-10 blocks to represent a 3-digit number.
- Identifying the value of each place in a 3-digit number
- Recognizing the word name of a 3-digit number.

Overview

We're counting the number of salmon in a river. We look at the value of each place in a 3-digit number and identify the number's word name.

Keywords

Hundreds
Tens
Ones
3-digit number

Teaching Strategies

Prior to the session

- Have students review how to write and represent two-digit numbers as groups of tens and ones.
- Starting with the word name or numeral of a two-digit number, have students identify and represent the number of tens and ones in the number.

At the end of the session

- Give students a three-digit number and have them use base-10 blocks to represent it and identify the digits in the hundreds, tens, and ones places.
- Have students form as many numbers as they can from three random digits and use base-10 blocks to represent the number and give its word name.
- Have students research how environmentalists trap and count salmon in the Northwest.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Number Sense
Unit:	Numbers to 999
Session:	**Expanded Form and Equivalent Representations of a Number**

Learning Objectives

- Creating equivalent representations of a 2-digit number by regrouping ones and tens.
- Expressing a 2-digit number in expanded form.
- Creating equivalent representations of a 3-digit number by regrouping ones and tens.
- Expressing a 3-digit number in expanded form.

Overview

We look at the number of points scored in a game. We discover how to show 2-digit and 3-digit numbers in different ways.

Keywords

Expanded form

Teaching Strategies

Prior to the session

- Have students review how to write and represent three-digit numbers as groups of hundreds, tens, and ones.
- Starting with the word name or numeral of a three-digit number, have students identify and represent the number of hundreds, tens, and ones in the number.

At the end of the session

- Give students a three-digit number and ask them to use base-10 blocks to represent the number in as many equivalent forms as possible.
- Use base-10 blocks to display non-standard representations of a three-digit number and have students give its name and standard form.
- Give students the word name of a three-digit number and have them represent it using base-10 blocks, and write it in expanded form.

Lesson Plans

Course: Mastering Skills & Concepts: Course II

Module: Number Sense

Unit: Numbers to 999

Session: **Comparing and Ordering**

Learning Objectives

- Using inequality signs to compare 2-digit numbers.
- Determining the order of two or three non-consecutive numbers less than 100.
- Using inequality signs to compare two 3-digit numbers, and a 2-digit and a 3-digit number.
- Determining the order of two or three non-consecutive numbers less than 1,000.

Overview

We're visiting an aquarium. We compare the number of teeth of a killer whale, a dolphin and an alligator, and the number of teeth of three different-sized sharks. We use signs to compare 2- and 3- digit numbers.

Keywords

Greater than
Less than

Teaching Strategies

Prior to the session

- Choose pairs of numbers in a large 10 x 10 number chart and have students explain which number is greater and how they know.
- Have students use base-10 blocks to represent a pair of numbers in standard form and use one-to-one correspondence to compare them.

At the end of the session

- Have students use place value to explain why one number is greater than another.
- Give students three unlike digits, including 0, and have them create the largest and smallest numbers they can and explain their reasoning.
- Have students research the killer whale (the orca), the dolphin, and the alligator, and write story problems that compare other quantitative features of these animals.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Number Sense
Unit:	Numbers to 9,999
Session:	**Place Value: Thousands, Hundreds, Tens, and Ones**

Learning Objectives

- Using base-10 blocks to determine the value of each place in a 4-digit number.
- Expressing a 4-digit number in expanded form.
- Recognizing the word name of 4-digit number.

Overview

We look at the number of visitors and the length of the rollercoaster in a theme park. We examine the place values of 4-digit numbers. We discover how to show 4-digit numbers in expanded form.

Keywords

Thousands
Expanded form

Teaching Strategies

Prior to the session

- Have students use base-10 blocks to demonstrate what happens when 1 is added to 9, when 1 is added to 99, and when 1 is added 999.
- Have students count orally by tens and hundreds as far as they can.

At the end of the session

- Give students a four-digit number and ask them to use base-10 blocks to identify the numbers of thousands, hundreds, tens, and ones in the number.
- Randomly generate four unlike digits, including 0, and have students create and name as many numbers as they can, and identify the value of each place in the number.
- Give students a four-digit number and have them represent it using base-10 blocks and write it in expanded form.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Number Sense
Unit:	Numbers to 9,999
Session:	**Comparing and Ordering**

Learning Objectives

- Using inequality signs to compare 3-digit and 4-digit numbers.
- Ordering numbers on a number line.

Overview

We compare the heights of two parachute jumps and three hot-air balloons.
We use signs to compare these heights. We show how to order numbers on a number line.

Keywords

Greater than
Less than
Number line

Teaching Strategies

Prior to the session

- Use place-value language and base-10 blocks to review with students how to decide which of two given numbers is greater or less than the other.
- Have students use base-10 blocks to represent a pair of four-digit numbers in standard form and use one-to-one correspondence to compare them.

At the end of the session

- Have students use place-value language and base-10 blocks to explain why one four-digit number is greater than another.
- Give students four unlike digits, including 0, and have them create the largest and smallest numbers they can.
- Have students research the lengths and heights of various roller coasters around the world and make bar graphs that display these measures.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Addition and Subtraction
Session:	**Sums Less than 100**

Learning Objectives

- Finding the sum of a 2-digit number and 1-digit number without regrouping.
- Using regrouping to find the sum of two 2-digit numbers.
- Recognizing that the order of two addends does not affect their sum

Overview

We're in a rainforest. We add a 1-digit and a 2-digit number to find the length of a tropical bird. We find the height of trees by adding two 2-digit numbers, using regrouping.

Keywords

Sum
Regroup

Teaching Strategies

Prior to the session

- Present addition sentences within 20 and have students create problems based on these sentences.
- Have students choose a number less than or equal to 20 and write as many addition facts about the number as they can.

At the end of the session

- Have students use base-10 blocks to represent the sum of two two-digit numbers, and write the sum in standard form.
- Have students use base-10 blocks to represent a two-digit number, and then divide the set into two parts and identify the addends they represent.
- Have students research facts about the rain forest and report these data using various picture graphs and bar graphs.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Addition and Subtraction
Session:	**Estimating and Finding Sums less than 1,000**

Learning Objectives

- Using a number line to estimate the sum of two 3-digit numbers.
- Regrouping in the ones place to find the sum of two 3-digit numbers.
- Regrouping in the tens and ones places to find the sum of two 3-digit numbers.

Overview

We're at a ski resort. We estimate the cost of a snowboard and boots using a number line. We use addition to find the cost of the snowboard and boots, and to find the total length of a ski trail.

Keywords

Hundreds
Estimate
Number line

Teaching Strategies

Prior to the session

- On the chalkboard, draw a number line marked in tens to 100 and have students plot the approximate locations of various two-digit numbers.
- Present story problems that involve adding two or more dollar amounts whose sum is less than $100.

At the end of the session

- Have students estimate the sum of numbers that represent the three-digit costs of two or more items.
- Give students two three-digit numbers and ask them to estimate and find their sum, and create a story problem in which these numbers would arise.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Addition and Subtraction
Session:	**Differences within 100**

Learning Objectives

- Using regrouping to subtract a 1-digit number from a 2-digit number.
- Using regrouping to subtract a 2-digit number from a 2-digit number.

Overview

We're comparing a Snowy Owl and a Pygmy Owl. We use subtraction to find the difference in height and the difference in wingspan between the two owls.

Keywords

Subtract
Regroup

Teaching Strategies

Prior to the session

- Review subtraction facts within 20 that do not involve regrouping.
- Present story problems that require students to use subtraction to solve comparison problems.
- Have students use base-10 blocks to solve subtraction problems and show the corresponding addition sentences that check each difference.

At the end of the session

- Have students solve a mix of story problems that involve addition and subtraction of two-digit numbers, and regrouping.
- Have students research the pygmy owl, the snowy owl, and other owls, and compare differences in their heights and wingspans.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Addition and Subtraction
Session:	**Estimating and Finding Differences within 1,000**

Learning Objectives

- Using a number line to estimate the difference between a 3-digit number and a 2-digit number.
- Regrouping in the hundreds place to estimate and find the difference between a 3-digit number and a 2-digit number.
- Checking subtraction using addition.

Overview

We're looking at the numbers of cars on two trains. We use subtraction to estimate and find the difference between the number of cars on each train. We check our subtraction using addition.

Keywords

Estimate
Number line
Regroup

Teaching Strategies

Prior to the session

- Have students review regrouping, especially with 0 in the ones place of the minuend, and find the difference between two-digit numbers.
- Present a variety of story problems involving one- and two-digit numbers and have students check the differences using addition.

At the end of the session

- Have students use place-value language and base-10 blocks to solve and check a variety of subtraction problems.
- Have students research the history of passenger and freight trains and use subtraction to compare the differences among various lengths.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Addition and Subtraction
Session:	**Estimating and Finding Differences within 9,999**

Learning Objectives

- Estimating the difference between a 4-digit number and a 3-digit number.
- Using a base-10 block to represent the subtraction of a 3-digit number from a 4-digit number.
- Applying the subtraction algorithm to find the difference between a 4-digit number and a 3-digit number.

Overview

We're replanting a forest with birch and elm trees. We use subtraction to estimate and find how many elm trees we planted.

Keywords

Estimate
Number line
Regroup

Teaching Strategies

Prior to the session

- Give students numeric data related to two or more objects and have them create a bar graph with a suitable numeric scale.
- Have students use base-10 blocks and place-value language to set up and solve a mix of addition and subtraction problems within 1,000.

At the end of the session

- Have students create number sentences to represent a mix of addition and subtraction story problems, and use base-10 blocks to solve them.
- Have students research the capacity of various large concert halls and auditoriums, and create and solve story problems involving these numbers.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Multiplication
Session:	**Repeated Addition and Arrays**

Learning Objectives

- Recognizing and writing multiplication sentences to represent repeated addition.
- Recognizing and writing multiplication sentences to represent objects in a rectangular array
- Recognizing that the order of two factors does not affect their product.

Overview

We're in a bakery. We discover that we can use multiplication sentences to find out how many pies there are. We learn that we can multiply numbers in any order and get the same answer.

Keywords

Product
Row
Column

Teaching Strategies

Prior to the session

- Give students examples of a family of repeated addition problems (e.g. 3 + 3, 3 + 3 + 3, 3 + 3 + 3 + ...) and have them find the corresponding sums.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Multiplication
Session:	**Skip Counting to Show Multiplication**

Learning Objectives

- Solving comparison problems by skip counting by numbers less than 10.
- Recognizing and using multiplication sentences to show multiples of a measure on a number line within 100.
- Solving comparison problems by skip counting by 10.
- Recognizing and using multiplication sentences to show multiples of a measure on a number line within 1,000.

Overview

We use multiplication on a number line to compare the distances traveled by an explorer with a dog sled and an explorer wearing snowshoes.
We compare the weights of three animals by multiplying by ten on a number line.

Keywords

Number line
Counting by ten

Teaching Strategies

Prior to the session

- Review the multiplication facts using a 10 x 10 multiplication chart.
- Draw and scale a large number line up to 100 on the chalkboard and have students demonstrate repeated addition expressions and their sums along the line.

At the end of the session

- Give students various multiplication sentences and have them represent them along a number line.
- Give students diagrams of objects in a rectangular array and have them write the corresponding multiplication sentence and represent the product as hops along the number line.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Multiplication
Session:	**Finding Products Less than 100**

Learning Objectives

- Exploring a rectangular array to determine products up to 100.
- Using base-10 blocks to find the product of a 2-digit number and a 1-digit number.
- Applying the multiplication algorithm to find the product of a 2-digit number and a 1-digit number.

Overview

We're tiling a swimming pool. We create multiplication sentences using the arrangement of rows and columns of tiles. We discover the cost of some tiles using multiplication.

Keywords

Factor
Regroup

Teaching Strategies

Prior to the session

- Review how to use multiplication sentences to represent objects arranged in rows and columns (rectangular array).
- Review the properties of rectangles and squares and have students use cubes or on-line counting blocks to form different arrangements of rectangles and squares.

At the end of the session

- Give students a blank 10 x 10 multiplication chart and have them use counters to create rectangular arrays that illustrate given sets of multiplication sentences.
- Give students a number less than 100 and using a 10 x 10 multiplication chart, have them find its factors and write as many multiplication sentences for the number as they can.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Division
Session:	**Meaning of Division**

Learning Objectives

- Finding a quotient using the concept of equal groups.
- Finding a quotient using the concept of repeated subtraction.
- Identifying the remainder in a division problem.

Overview

We're in a tailor's workshop. We use division to calculate how many buttons go on each shirt and to find out how many labels we can make from a piece of ribbon.

Keywords

Quotient
Equal groups
Subtract
Remainder

Teaching Strategies

Prior to the session

- Have students review the language used to describe the number of objects in a given number of equal groups and write the corresponding multiplication sentences.
- Have students outline rectangles in a 10 x 10 multiplication chart that define the product of any two numbers.

At the end of the session

- Have students use counters or on-line counting blocks to divide a number into a set of equal groups and write the corresponding division sentence; check using multiplication.
- Have students, with the help of counters or on-line counting blocks, use repeated subtraction to find the quotient of a given number and a given divisor; check using multiplication.
- Have students describe the relationship between a division sentence and the multiplication sentence used to check it.
- Have students use blocks to represent divisions that produce a non-zero remainder and have them explain how

to check the division using multiplication and addition.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Division
Session:	**Dividing by a 1-digit Number**

Learning Objectives

- Using base-10 blocks to find the quotient of a 2-digit number and a 1-digit number.
- Using base-10 blocks to find the quotient of a 3-digit number and a 1-digit number.
- Checking a quotient using multiplication.

Overview

We're at the police station. We use division to assign officers to towns and discover the number of miles driven each day by an officer in a police car.

Keywords

Divisor
Dividend

Teaching Strategies

Prior to the session

- Review the meaning of division as separation into equal groups and as repeated subtraction.
- Remind students of the relationship between division and multiplication; i.e. that division is the inverse of multiplication.

At the end of the session

- Have students solve a division problem using base-10 blocks.
- Have students write a story problem for a division sentence and solve the problem, explaining the meaning of the quotient and remainder, if any, in the context of the problem.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Operations with Numbers
Unit:	Division
Session:	**Fractional Parts**

Learning Objectives

- Identifying and naming equal parts of a whole.
- Using a fraction to express part of a whole.
- Using fractions to represent and compare parts of a group.

Overview

We're having a garden party. We learn about fractions by dividing food into equal parts and by looking at parts of a group of treats. We look at some examples of different fractions.

Keywords

Equal parts
Fraction
Numerator
Denominator

Teaching Strategies

Prior to the session

- Have students discuss the concept of equal sharing and division and have them give examples when this does (or does not) occur.
- Review common shapes, such as rectangles, squares, and circles, and draw other shapes.

At the end of the session

- Give students diagrams of circles and non-square rectangles and have them divide them into equal parts and name the parts (e.g. halves, thirds, fifths, etc.).
- Give students names of fractions and/or the fractions and have them shade geometric figures in as many ways as they can to show the parts.
- Give students sets made up of at least two discrete objects and have them write and name the fractions that represent the part of the whole that each represents.
- Give students fractions that represent the parts of a whole in a given set of discrete objects and have them identify the corresponding parts and the whole.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Geometry and Measurement
Unit:	Geometry
Session:	**Area**

Learning Objectives

- Estimating the area of a shape using non-standard units.
- Finding the area of a shape using standard units.
- Comparing the areas of two or more shapes using standard units.

Overview

We calculate the area of two rectangular parts of a wall to see if we have enough paint to cover both parts. We find the area of a trapezoidal patio, and work out how many tiles we need to cover it.

Keywords

Triangle
Rectangle
Circle
Trapezoid
Square foot

Teaching Strategies

Prior to the session

- Have students cut out drawings of various rectangles, including some that have the same size and shape, and see which ones overlap exactly.
- Have students manipulate pattern blocks or attribute blocks to see which figures tessellate other figures.

At the end of the session

- Have students cut out one-inch squares and use them to cover various rectangles in order to estimate their areas.
- Give students two or more rectangles that have the same area but different dimensions, and have them find their areas by using unit squares.
- Give students a 10 x 10 multiplication chart (whose cells are squares) and ask them to trace as many rectangles as they can whose areas correspond to a given number.
- Give students a set of irregular shapes, such as triangles and trapezoids, and have them create and use unit squares to estimate and compare their areas.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Geometry and Measurement
Unit:	Geometry
Session:	**Volume**

Learning Objectives

- Using standard units to compare the capacity of two or more containers.
- Using cubic units to compare the volume of two solids.

Overview

We're tending to some plants in a greenhouse. We find the capacity of two bottles of plant food, and learn about cups, pints, quarts, and gallons.
We find the volume of two plant pots.

Keywords

Measuring cup
Capacity
Pint
Quart
Gallon
Rectangular prism
Cylinder
Cube
Cubic inch

Teaching Strategies

Prior to the session

- Have students bring various containers to class and ask them how they might compare their sizes.
- Flatten boxes of different sizes to create their nets and calculate the areas of the six rectangles that form the faces of each box and their sum (surface area).

At the end of the session

- Have students bring various boxes to class and using rice, sand, or marbles, etc., measure their volume and arrange them in order from least to greatest.
- Have students bring various bottles to class and using water and standard measuring cups, compare their capacities.
- Have students estimate which box and/or bottle has the greatest capacity, then measure the actual capacity using appropriate, standard measuring containers.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Geometry and Measurement
Unit:	Measurement
Session:	**Time**

Learning Objectives

- Telling time to the nearest minute before and after the hour.
- Working with start time, end time, and elapsed time.

Overview

We're in an air-traffic control tower. We use clocks to show the departure, arrival and flight times of planes.

Keywords

Hour
Minute
P.M.
A.M.

Teaching Strategies

Prior to the session

- Review with students the functions of the hour and minute hands.
- Have students manipulate clock hands to show and read time on the hour and half-hour.

At the end of the session

- Give students digital displays of times and ask them to draw or show these times by manipulating the hands on a clock.
- Pose problems that give either the start or end time, and the duration of an event, and have students determine the corresponding end or start time.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Geometry and Measurement
Unit:	Measurement
Session:	**Money**

Learning Objectives

- Recognizing and using decimal notation to express the value of U.S. currency.
- Determining and comparing values of combinations of bills and coins less than 10 dollars.
- Using a counting up strategy to make change within 10 dollars.

Overview

We're on the boardwalk. We learn about a half dollar, a dollar, five dollars, and ten dollars, and find out how to write amounts of money using a dollar sign. We learn how to combine notes and coins to pay for an item, and how to check change.

Keywords

Half dollar
Dollar
Five dollars
Ten dollars
Decimal point

Teaching Strategies

Prior to the session

- Review the names and characteristics of the penny, nickel, dime, and quarter and their corresponding values.
- Pose story problems that involve finding the sum and difference between various amounts of money less than $1.

At the end of the session

- Give students a table that contains some missing dollar and cent amounts (e.g.$1.35) or their corresponding written values (e.g. one dollar and thirty-five cents), and have them fill in the missing equivalents.
- Have students assemble sets of coins and bills to show a given amount of money.
- Have students calculate the change, given the cost of an item and the amount paid.
-

Have students show as many combinations of coins and bills as they can to show a specified amount of money.

Lesson Plans

Course: Mastering Skills & Concepts: Course II

Module: Geometry and Measurement

Unit: Measurement

Session: **Temperature**

Learning Objectives

- Showing temperatures on a Fahrenheit scale and on a Celsius scale.
- Solving problems involving changes in temperature in degrees Fahrenheit or in degrees Celsius.

Overview

We're in the desert. We use a thermometer to measure temperature in degrees Fahrenheit and degrees Celsius. We measure the temperature at which water freezes and boils, and find the difference between temperatures.

Keywords

Thermometer
Fahrenheit
Celsius

Teaching Strategies

Prior to the session

- Construct a number line with appropriate scale and have students locate various numbers along the line.
- Have students describe the clothes that people wear in various parts of the world and why, e.g. parkas in Alaska, shorts in Florida.

At the end of the session

- Bring in a Fahrenheit and a Celsius thermometer and have students use them to measure the temperature of various liquids (iced water, hot water, etc.) in the room.
- Have students research the men after whom the Fahrenheit and Celsius scales are named.

Lesson Plans

Course:	Mastering Skills & Concepts: Course II
Module:	Algebraic Thinking
Unit:	Properties and Relationships
Session:	**Number Patterns and Properties**

Learning Objectives

- Recognizing and applying the commutative properties of addition and multiplication.
- Recognizing and applying the associative properties of addition and multiplication.
- Choosing the correct number or sign to complete numeric equations.
- Exploring a linear pattern between two quantities.

Overview

We're in a hardware store. We buy some items and learn about the commutative and associative properties of addition and multiplication. We learn to change feet to inches, and yards to feet.

Keywords

Balance
Commutative Property
Associative Property
Parentheses

Teaching Strategies

Prior to the session

- Have students write out the addition facts for numbers less than 10, match pairs of sentences that have the same sum, and describe the relationship between the addends in each pair.
- Have students draw rectangular arrays that show the products of numbers less than 100, match the arrays that are alike except for orientation, and describe the relationship between the factors.

At the end of the session

- Ask students to skip-count along a number line, and show why the order of two factors does not change their product.
- Give students an expression involving the addition of three numbers and ask them to show two ways of finding the sum without changing the order of the numbers.
-

Have students circle a number within a completed 10 x 10 addition chart, and then identify the two numbers that give that sum and write the two corresponding additions sentences.