

Content Scope & Sequence



SCOTT FORESMAN

Investigations

IN NUMBER, DATA, AND SPACE®



Trading Stickers, Combining Coins (Addition, Subtraction, and the Number System 1)

Mathematical Emphases

1 The Base-Ten Number System Understanding the equivalence of one group and the units that comprise it

Math Focus Points

- Recognizing and representing the place value of each digit in 2- and 3-digit numbers
- Using equivalencies among pennies, dimes, and dollars
- Finding different combinations of 100s, 10s, and 1s for a number and recognizing their equivalence (i.e. 1 hundred, 3 tens, and 7 ones equals 1 hundred, 2 tens, and 17 ones, or 13 tens and 7 ones)
- Recognizing and demonstrating the equivalence of one 100 to ten 10s and of one 10 to ten 1s
- Recognizing and using coin equivalencies

2 Computational Fluency Adding and subtracting accurately and efficiently

Math Focus Points

- Adding and subtracting multiples of 10
- Solving addition problems with 2-digit numbers by using strategies that involve breaking numbers apart by place or adding one number in parts
- Solving addition problems with 2-digit numbers that involve more than 10 ones in the ones place and explaining the effect on the sum
- Finding the difference between a 2-digit number and 100
- Adding pennies and dimes to sums up to \$2.00
- Learning/reviewing addition combinations up to $10 + 10$
- Using knowledge of place value to find pairs of 2-digit numbers that add to 100 or a number close to 100
- Using known pairs of 2-digit numbers that add to 100 to find related pairs that add to 100 or a number close to 100 (for example, $20 + 80 = 100$, so $22 + 78 = 100$)
- Estimating the sums of 2-digit numbers by using knowledge of place value and known combinations
- Finding combinations of coins that equal \$1.00

This Unit also focuses on

- Using mathematical tools (cubes, 100 charts and grids, number lines) to solve problems and represent strategies

Classroom Routines focus on

- Learning about temperature: reading a thermometer, learning to associate different temperatures with words such as colder and warmer, establishing landmark temperatures
- Recording information in a table and on a graph
- Reading information from the shape of a graph: hot, cold, increasing, decreasing

Ten-Minute Math activities focus on

- Recognizing and interpreting the value of each digit in 2- and 3-digit numbers
- Finding different combinations of a number, using only 100s, 10s, and 1s and recognizing their equivalence (e.g., 1 hundred, 3 tens, and 7 ones equals 1 hundred, 2 tens, and 17 ones or 13 tens and 7 ones)
- Reading and writing numbers up to 1,000
- Adding multiples of 10 to, and subtracting multiples of 10 from, 2- and 3-digit numbers
- Breaking apart, reordering, or combining numbers within a problem for easier computation
- Using knowledge of place value and known combinations to estimate sums
- Practicing addition and subtraction skills

Assessed Benchmarks

- Demonstrate fluency with the addition combinations up to $10 + 10$
- Add multiples of 10 (up to 100) to and subtract them from 2-digit and small 3-digit numbers
- Solve addition problems with 2-digit numbers using strategies that involve breaking numbers apart by place or adding one number in parts
- Break up 3-digit numbers (less than 200) into 100s, 10s, and 1s in different ways (e.g., 153 equals 1 hundred, 5 tens, and 3 ones; 15 tens and 3 ones; 14 tens and 13 ones, etc.)
- Find combinations of 2-digit numbers that add to 100 or \$1.00

Surveys and Line Plots (Data Analysis)

Mathematical Emphases

1 Data Analysis Describing, summarizing, and comparing data

Math Focus Points

- Describing and interpreting categorical data
- Using summaries such as almost all, very few, half, or more than half
- Using data to compare groups
- Describing the shape of ordered, numerical data: where data are spread out or concentrated, where there are few data, highest and lowest values, and outliers
- Developing arguments based on the data
- Describing what values are typical or atypical in a data set

2 Data Analysis Representing data

Math Focus Points

- Developing classifications to organize categorical data
- Organizing categorical data in different ways to answer different questions
- Representing categorical data by using a picture or graph
- Considering how well a data representation communicates to an audience
- Reading and interpreting a bar graph
- Reading a scale on a graph with intervals larger than 1
- Using a line plot, bar graph, or other representation to represent ordered, numerical data
- Interpreting what the numbers and symbols on a line plot mean
- Developing a consistent scale to show where data are and are not concentrated
- Reading and interpreting a representation of ordered, numerical data

3 Data Analysis Designing and carrying out a data investigation

Math Focus Points

- Developing and revising a survey question
- Interpreting results of a data investigation

4 Linear Measurement Measuring with standard units

Math Focus Points

- Measuring in inches
- Measuring lengths longer than the measuring tool
- Understanding the relationship between feet and inches
- Combining feet and inches to get a total measurement
- Using correct notation to write a measurement in feet and inches

Classroom Routines focus on

- Learning about temperature: reading a thermometer, learning to associate different temperatures with words like colder and warmer, and establishing landmark temperatures
- Recording information in a table and on a graph
- Reading information from the shape of a graph: hot, cold, increasing, decreasing

Ten-Minute Math activities focus on

- Breaking apart, reordering, or combining numbers within a problem for easier computation
- Using knowledge of place value and known combinations to estimate sums and differences
- Practicing addition and subtraction skills
- Using evidence and formulating questions to make hypotheses about the common characteristics of groups of people or things
- Systematically eliminating possibilities
- Generating equivalent expressions for a number using particular constraints
- Practicing computation skills
- Using notation to record expressions

Assessed Benchmarks

- Organize, represent, and describe categorical data, choosing categories that help make sense of the data
- Interpret a bar graph
- Make a line plot for a set of numerical data
- Describe the shape of the data for a numerical data set, including where data are concentrated, where there are few data, what the lowest and highest values are, what the mode is, and where there is an outlier
- Summarize a set of data, describing concentrations of data and what those concentrations mean in terms of the situation the data represent

Collections and Travel Stories (Addition, Subtraction, and the Number System 2)

Mathematical Emphases

① The Base-Ten Number System Extending knowledge of the number system to 1,000

Math Focus Points

- Reading, writing, and sequencing numbers to 1,000
- Using place value to determine the size of any number to 1,000

② The Base-Ten Number System Understanding the equivalence of one group and the discrete units that comprise it

Math Focus Points

- Constructing 1,000 from groups of 100
- Recognizing and representing the groups of 10s in 3-digit numbers
- Representing the structure of 3-digit numbers as being composed of 100s, 10s, and 1s
- Using the value of each place to make 2- and 3-digit numbers closest to 100

③ Computational Fluency Adding and subtracting accurately and efficiently

Math Focus Points

- Estimating the sums of 2- and 3-digit numbers using knowledge of place value and known combinations
- Finding pairs of numbers that add to 100
- Finding the difference between 3-digit numbers
- Solving addition problems with 2- and 3-digit numbers (up to 400) by breaking numbers apart and recombining them
- Representing addition strategies
- Adding and subtracting multiples of 10 and 100
- Developing strategies for solving addition problems by focusing on how each strategy starts
- Gaining fluency with subtraction facts related to addition combinations up to $10 + 10$
- Finding the difference between 2- and 3-digit numbers and 100
- Using multiples of 100 as a landmark to solve subtraction problems
- Finding the difference between two numbers by either adding or subtracting
- Reasoning about how increasing or decreasing the numbers in a subtraction problem affects the difference
- Solving subtraction problems with 2- and 3-digit numbers (up to 300) using strategies that involve either subtracting one number in parts, adding up, or subtracting back

④ Whole-Number Operations Understanding different types of subtraction problems

Math Focus Points

- Solving subtraction problems that involve finding a missing part
- Visualizing and representing the action of a subtraction problem that involves finding a missing part
- Understanding comparison as the difference between two numbers
- Solving subtraction story problems that involve comparison
- Visualizing and representing the action of comparison problems
- Using number lines to represent solutions to comparison problems
- Solving subtraction problems that involve removal
- Visualizing and representing the action of removal problems

Classroom Routines and Ten-Minute Math activities focus on

- Generating equivalent expressions for a number using particular constraints
- Practicing computation skills
- Using notation to record expressions
- Naming, notating, and telling time to the nearest 5 minutes on a digital or analog clock
- Determining intervals of time to the nearest 5 minutes

Assessed Benchmarks

- Read, write, and sequence numbers to 1,000
- Identify the value of each digit in a 3-digit number (100s, 10s, and 1s)
- Identify how many groups of 10 are in a 3-digit number (e.g., 153 has 15 groups of 10, plus 3 ones)
- Solve addition problems with 3-digit numbers (up to 400) by using strategies that involve breaking numbers apart, either by place value or by adding one number in parts
- Solve subtraction story problems in contexts that include removing a part from a whole, comparing 2 quantities, or finding the missing part
- Solve subtraction problems with 2- and 3-digit numbers (up to 300) by using strategies that involve subtracting one number in parts, adding up, or subtracting back

Mathematical Emphases

① Linear Measurement Measuring with standard units

Math Focus Points

- Reviewing the length of units of measure (inch, foot, yard, centimeter, and meter)
- Establishing measurement benchmarks
- Using U.S. standard and metric units to accurately measure length
- Recognizing and explaining possible sources of measurement error

② Linear Measurement Understanding and finding perimeter

Math Focus Points

- Understanding perimeter as the measure around the outside edges of a 2-dimensional figure
- Finding perimeter using standard units
- Creating different shapes with the same perimeter
- Finding the perimeter of an irregular shape

③ Area Measurement Understanding and finding area

Math Focus Points

- Understanding that area is measured in square units
- Understanding that when measuring area, the space being measured must be completely covered with no gaps or overlaps
- Using squares and triangles to make shapes with an area of four square units
- Examining the relationship between the area of squares and triangles
- Understanding that shapes with the same area can look different
- Finding the area of partially covered rectangles
- Finding the area of an irregular shape
- Designing a shape for a given area
- Finding area by counting or calculating whole and partial square units

④ Features of Shape Describing and classifying 2-dimensional figures

Math Focus Points

- Determining the geometric moves needed (slides, flips, turns) to prove or disprove congruence between two shapes
- Identifying the attributes of triangles: three sides, three vertices, and three angles
- Identifying the attributes of quadrilaterals: four sides, four vertices, and four angles
- Comparing the properties of squares and rectangles

⑤ Features of Shape Describing and measuring angles

Math Focus Points

- Recognizing right angles
- Identifying a right angle as having a measure of 90°
- Understanding angle size as the degree of turn
- Comparing the sizes of angles

Classroom Routines focus on

- Learning about temperature: reading a thermometer, learning to associate different temperatures with words like colder and warmer, and establishing landmark temperatures
- Recording information in a table and on a graph
- Reading information from the shape of a graph: hot, cold, increasing, decreasing

Ten-Minute Math activities focus on

- Recognizing and interpreting the value of each digit in 3-digit numbers
- Finding different combinations of numbers, such as 100s, 10s, and 1s, that are equivalent, (i.e., 1 hundred, 3 tens, and 7 ones 5 1 hundred, 2 tens, and 17 ones 5 13 tens and 7 ones 5 12 tens and 17 ones, and so on)
- Reading and writing numbers up to 1,000
- Adding multiples of 10 to, and subtracting multiples of 10 from 3-digit numbers
- Organizing and analyzing visual images
- Developing language and concepts needed to communicate about spatial relationships
- Decomposing images of 2-D shapes and then recombining them to make a given design

Assessed Benchmarks

- Identify and measure the perimeter of a figure using U.S. standard and metric units
- Identify and find the area of given figures by counting whole and partial square units
- Identify triangles as three-sided closed figures with three vertices and three angles
- Identify right angles, and recognize whether an angle is larger or smaller than a right angle

Equal Groups (Multiplication and Division)

Mathematical Emphases

① Whole-Number Operations Understanding the meaning of multiplication

Math Focus Points

- Understanding multiplication as combining equal groups
- Writing and solving multiplication problems in context
- Identifying the number of groups, the number in each group, and the product in a multiplication situation
- Understanding the relationship among skip counting, repeated addition, and multiplication
- Using and understanding multiplication notation

② Whole-Number Operations Reasoning about numbers and their factors and multiples

Math Focus Points

- Finding the multiples of the numbers 2, 3, 4, 5, 6, and 10 by skip counting
- Describing and comparing characteristics of the multiples of a number
- Understanding that doubling (or halving) one factor in a multiplication expression doubles (or halves) the product

③ Whole-Number Operations Understanding and working with an array model of multiplication

Math Focus Points

- Using arrays to model multiplication situations
- Using arrays to find factors of 2-digit numbers up to 50
- Using arrays to identify characteristics of numbers, including prime and square numbers
- Using arrays to find a product by skip counting by one of its dimensions
- Breaking an array into parts to find the product represented by the array

④ Computational Fluency Learning the multiplication combinations with products up to 50 fluently

Math Focus Points

- Using known multiplication combinations to determine the product of more difficult combinations
- Identifying and learning multiplication combinations not yet known

⑤ Whole-Number Operations Developing strategies for division based on understanding the inverse relationship between multiplication and division

Math Focus Points

- Understanding division as the splitting of a quantity into equal groups
- Using the inverse relationship between multiplication and division to solve problems
- Using multiplication combinations to solve division problems
- Using and understanding division notation
- Writing and solving division problems in context

Ten-Minute Math activities focus on

- Telling time to any minute on a digital or analog clock
- Determining intervals of time to the minute
- Finding the multiples of numbers through skip counting
- Becoming familiar with multiplication patterns
- Understanding the relationship between skip counting and multiplication

Assessed Benchmarks

- Demonstrate an understanding of multiplication and division as involving groups of equal groups
- Solve multiplication combinations and related division problems by using skip counting or known multiplication combinations
- Interpret and use multiplication and division notation
- Demonstrate fluency with multiplication combinations with products up to 50 (by the end of Grade 3)

Stories, Tables, and Graphs (Patterns, Functions, and Change)

Mathematical Emphases

① Using Tables and Graphs Using graphs to represent change

Math Focus Points

- Describing the overall shape of a line graph—increasing, decreasing, staying the same
- Finding the difference between values on a line graph, including the difference between a positive and negative value
- Associating a story with its corresponding graph
- Plotting points on a graph to represent a situation in which one quantity is changing in relation to another
- Identifying points on a graph with corresponding values in a table and interpreting the numerical information in terms of the situation the graph represents
- Comparing situations by describing differences in their graphs

② Using Tables and Graphs Using tables to represent change

Math Focus Points

- Using tables to represent the relationship between two quantities in a situation with a constant rate of change
- Interpreting numbers in a table in terms of the situation they represent
- Comparing situations by describing differences in the tables that represent them

③ Linear Change Describing and representing a constant rate of change

Math Focus Points

- Describing the relationship between two quantities in a situation with a constant rate of change, taking into account a beginning amount and a constant increase
- Creating a representation for a situation with a constant rate of change
- Comparing different representations that show the same situation
- Making rules that relate one variable to the other in situations with a constant rate of change
- Connecting the steps of a general method or rule to the parts of the situation they represent

④ Number Sequences Constructing, describing, and extending number sequences with constant increments generated by various contexts

Math Focus Points

- Identifying the unit of a repeating pattern
- Associating counting numbers with elements of a pattern
- Determining the element of an ABC pattern associated with a particular counting number
- Describing and extending a number sequence with a constant increment (e.g., 3, 6, 9, . . . or 2, 5, 8, . . .)
- Identifying numbers that are multiples of three, or one less or one more than a multiple of 3

⑤ Measuring Temperature Understanding temperature and measuring with standard units

Math Focus Points

- Reading and interpreting positive and negative temperatures on a thermometer and on a line graph
- Associating temperatures with particular activities or clothing

Ten-Minute Math activities focus on

- Using evidence and formulating questions to make hypotheses about the common characteristics of numbers
- Systematically eliminating possibilities
- Using mathematical terms to describe numbers
- Generating equivalent expressions for a number using particular constraints
- Practicing computation skills
- Using notation to record expressions

Assessed Benchmarks

- Interpret graphs of change over time, including both the meaning of points on the graph and how the graph shows that values are increasing, decreasing, or staying the same
- Interpret temperature values (i.e., relate temperatures to seasons, to what outdoor clothing would be needed, and so on)
- Create a table of values for a situation with a constant rate of change and explain the values in the table in terms of the situation
- Compare related situations with a constant rate of change by interpreting the graphs, tables, and sequences that represent those situations

Finding Fair Shares (Fractions and Decimals)

Mathematical Emphases

① Rational Numbers Understanding the meaning of fractions (halves, fourths, eighths, thirds, sixths) and decimal fractions (0.50, 0.25) as equal parts of a whole (an object, an area, a set of objects)

Math Focus Points

- Finding equal parts of a whole and naming them with fractions
- Dividing an area into equal parts
- Naming fractional parts with unit fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc.)
- Ordering unit fractions
- Demonstrating that different-shaped pieces that are the same fraction of the same area have equal areas
- Naming fractional parts with fractions that have numerators greater than 1 ($\frac{3}{4}$, $\frac{2}{3}$, $\frac{3}{6}$, etc.)
- Dividing a group into equal parts and naming the parts with fractions
- Identifying equivalent fractional parts
- Using fraction notation to record equivalencies (e.g., $\frac{3}{6} = \frac{1}{2}$, $\frac{1}{2} = \frac{2}{4}$)
- Using mixed numbers to represent quantities greater than 1
- Identifying equivalent fractions and decimals for values involving halves and fourths (e.g., $\frac{1}{2} = 0.50$, $\frac{1}{4} = 0.25$, $2\frac{1}{2} = 2.5$)
- Reading, writing, and interpreting the meaning of the decimal numbers 0.50, 0.25, and numbers greater than 1 with these decimal portions, such as 2.5 and 2.25

② Rational Numbers Using representations to combine fractions (halves, fourths, eighths, thirds, and sixths)

Math Focus Points

- Using representations to combine fractions that sum to 1 (e.g., $\frac{1}{4} + \frac{3}{4} = 1$, $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$, $\frac{1}{2} + \frac{1}{4} + \frac{1}{4} = 1$)
- Using representations to combine fractions to equal other fractions ($\frac{1}{2} = \frac{1}{3} + \frac{1}{6}$)
- Fraction sense is based on the development of visual images of equivalent fractions, especially relationships among halves, fourths, and eighths and among halves, thirds, and sixths. Using understanding of these equivalents in the contexts of rectangular “brownies,” pattern blocks, and groups of things, students find combinations of fractions that are equivalent to a whole or to another fraction (e.g., $\frac{1}{2} + \frac{2}{6} + \frac{1}{6} = 1$, $\frac{1}{3} + \frac{1}{6} = \frac{1}{2}$).

Classroom Routines focus on

- Learning about temperature: reading a thermometer, learning to associate different temperatures with words like colder and warmer, and establishing landmark temperatures
- Recording information in a table and on a graph
- Reading information from the shape of a graph: hot, cold, increasing, decreasing

Ten-Minute Math activities focus on

- Generating equivalent expressions for a number using particular constraints
- Practicing computation skills
- Using notation to record expressions
- Telling time to any minute on a digital or analog clock
- Determining intervals of time to the minute

Assessed Benchmarks

- Divide a single whole or a quantity into equal parts, and name those parts as fractions or mixed numbers
- Identify equivalent fractions (e.g., $\frac{3}{6} = \frac{1}{2}$ and $\frac{1}{3} = \frac{2}{6}$)
- Find combinations of fractions that are equal to one and to other fractions (e.g., $\frac{3}{6} + \frac{1}{2} = 1$; $\frac{1}{6} + \frac{1}{6} = \frac{1}{3}$; and $\frac{1}{3} + \frac{1}{6} = \frac{1}{2}$)

How Many Hundreds? How Many Miles? (Addition, Subtraction, and the Number System 3)

Mathematical Emphases

① Computational Fluency Adding and subtracting accurately and efficiently

Math Focus Points

- Combining hundreds to numbers above 1,000
- Subtracting from multiples of 100
- Adding multiples of 10 and 100 to, and subtracting them from, 3-digit numbers
- Estimating answers to subtraction problems with 3-digit numbers
- Using the relationship of numbers in a subtraction expression to multiples of 100 to solve subtraction problems
- Solving addition problems with 3-digit numbers
- Estimating and solving addition problems with sums greater than 1,000
- Solving addition problems with more than 2 addends
- Estimating which of two sums is greater
- Knowing and using subtraction problems related to the addition combinations to $10 + 10$ (the subtraction facts, e.g., $8 - 5$, $13 - 9$) with fluency
- Solving addition and subtraction problems in the context of money (dollars, cents)
- Determining combinations of addends for a given sum
- Solving addition and subtraction problems with more than one step

② Whole-Number Operations Describing, analyzing, and comparing strategies for adding and subtracting whole numbers

Math Focus Points

- Using story contexts and representations to support explanations about how changing a number in a subtraction problem affects the difference (e.g., $200 - 75 = 125$ and $200 - 78 = 122$)
- Solving addition problems by changing the numbers to create an equivalent problem that is easier to solve
- Using story contexts and representations to support explanations about equivalent addition expressions (e.g., $88 + 105 = 90 + 103$)
- Identifying addition strategies by focusing on how each strategy starts
- Solving subtraction problems that involve comparison, removal, or finding a missing part
- Subtracting 3-digit numbers by using strategies that involve either subtracting one number in parts, adding up, or subtracting back
- Representing solutions to subtraction problems with number lines, 1,000 charts, and/or story contexts
- Subtracting by using strategies that involve changing one number to make a problem that is easier to solve

This Unit also focuses on

- Reading and writing numbers in the thousands
- Fluently solving multiplication combinations with products to 50

Ten-Minute Math activities focus on

- Finding the multiples of numbers through skip counting
- Becoming familiar with multiplication patterns
- Understanding the relationship between skip counting and multiplication
- Using evidence and formulating questions to make hypotheses about the common characteristics of groups of people or things
- Systematically eliminating possibilities

Assessed Benchmarks

- Add multiples of 10 and 100 (up to 1,000) to and subtract them from any 3-digit number
- Solve 3-digit addition problems using at least one strategy efficiently
- Demonstrate fluency with subtraction problems related to the addition combinations to $10 + 10$ (the subtraction facts)
- Solve subtraction problems with 3-digit numbers using strategies that involve either subtracting a number in parts, adding up, or subtracting back
- Demonstrate fluency with multiplication combinations with products up to 50 (final review)

Solids and Boxes (3-D Geometry and Measurement)

Mathematical Emphases

① Features of Shape Describing properties of 3-dimensional shapes

Math Focus Points

- Describing the components and properties of different classes of solids such as polyhedra (3-D shapes having only flat surfaces, such as prisms and pyramids) and nonpolyhedra (such as cones and cylinders)
- Distinguishing between polyhedra and nonpolyhedra
- Distinguishing between prisms and pyramids
- Identifying the components of polyhedra (faces, edges, and vertices) and how they come together to form the whole
- Visualizing and building polyhedra by using knowledge of their components (faces, edges, and vertices) and how they come together to form the whole

② Features of Shape Translating between 2-dimensional and 3-dimensional shapes

Math Focus Points

- Determining the number and shapes of the faces of cubes and other rectangular prisms and how they come together to form the whole
- Designing patterns that make open boxes for a cube
- Designing patterns that make open boxes for 2-cube rectangular prisms
- Determining the number and shapes of the faces of a triangular pyramid and how they come together to form the whole
- Designing patterns that make nets for triangular pyramids
- Communicating about spatial relationships
- Decomposing images of 3-D shapes and then recombining them to make a given structure

③ Volume Structuring rectangular prisms and determining their volume

Math Focus Points

- Determining the number of cubes that will fit in the box made by a given pattern
- Designing patterns for boxes that will hold a given number of cubes
- Seeing that the cubes filling a rectangular prism can be decomposed into congruent layers

Classroom Routines and

Ten-Minute Math activities focus on

- Recognizing and interpreting the value of each digit in 3-digit numbers
- Finding different combinations of a number, using only 100s, 10s, and 1s and recognizing their equivalence (i.e., 1 hundred, 3 tens, and 7 ones = 1 hundred, 2 tens, and 17 ones = 13 tens and 7 ones = 12 tens and 17 ones, etc.)
- Reading and writing numbers up to 1,000
- Adding multiples of 10 to, and subtracting multiples of 10 from, 3-digit numbers
- Breaking apart, reordering, or combining numbers within a problem, for easier computation
- Using knowledge of place value and known combinations to estimate sums and differences
- Practicing addition and subtraction skills
- Organizing and analyzing visual images
- Developing language and concepts needed to communicate about spatial relationships
- Decomposing images of 3-D shapes and then recombining them to make a given structure

Assessed Benchmarks

- Identify and compare attributes of 3-D solids
- Determine the number of cubes (volume) that will fit in the box made by a given pattern
- Design patterns for boxes that will hold a given number of cubes