#### **GRADES 2–8**





VMath Third Edition, Levels C-I, Grades 2-8

## Correlated to the Texas Essential Knowledge and Skills

October 2014



Texas Essential Knowledge and Skills, Grade 2	Vmath, Level C
(b) Knowledge and skills.	
(1) Mathematical process standards. The student use	es mathematical processes to acquire and demonstrate mathematical
understanding. The student is expected to:	
(A) apply mathematics to problems arising in	Module 5: Lesson LP1: 242-245
everyday life, society, and the workplace;	Module 5: Lesson LP2: 246-249
	Module 5: Lesson 3: 258-261
	Module 6: Lesson LP1: 300-303
(B) use a problem-solving model that incorporates	Module 5: Lesson 8: 278-281
analyzing given information, formulating a plan or	Module 7: Lesson 9: 396-399
strategy, determining a solution, justifying the	Module 7: Lesson 10: 400-403
solution, and evaluating the problem-solving	
process and the reasonableness of the solution;	
(C) select tools, including real objects,	Module 4: Lesson LP1: 188-191
manipulatives, paper and pencil, and technology as	Module 4: Lesson LP2: 192-195
appropriate, and techniques, including mental	Module 7: Lesson 6: 384-387
math, estimation, and number sense as	
appropriate, to solve problems;	
(D) communicate mathematical ideas, reasoning,	Module 1: Lesson 10: 74-77
and their implications using multiple	Module 6: Lesson 4: 320-323
representations, including symbols, diagrams,	Module 6: Lesson 7: 332-335
graphs, and language as appropriate;	
(E) create and use representations to organize,	Module 7: Lesson LP1: 356-359
record, and communicate mathematical ideas;	Module 7: Lesson LP2: 360-363
(F) analyze mathematical relationships to connect	Module 7: Lesson LP1: 356-359
and communicate mathematical ideas; and	Module 7: Lesson LP2: 360-363
(G) display, explain, and justify mathematical ideas	Module 7: Lesson 8: 392-395
and arguments using precise mathematical	
language in written or oral communication.	
(2) Number and operations. The student applies mat	hematical process standards to understand how to represent and
compare whole numbers, the relative position and m	agnitude of whole numbers, and relationships within the numeration
system related to place value. The student is expecte	d to:
(A) use concrete and pictorial models to compose	Module 2: Lesson PL2: 88-91
and decompose numbers up to 1,200 in more than	Module 2: Lesson 2: 96-99
one way as a sum of so many thousands, hundreds,	Module 2: Lesson 3: 100-103
tens, and ones;	Module 2: Lesson 10: 128-131
(B) use standard, word, and expanded forms to	Module 1: Lesson 7: 62-65
represent numbers up to 1,200;	
(C) generate a number that is greater than or less	Module 1: Lesson 10: 74-77
than a given whole number up to 1,200;	
(D) use place value to compare and order whole	Module 1: Lesson 10: 74-77
numbers up to 1,200 using comparative language,	
numbers, and symbols (>, <, or =);	
(E) locate the position of a given whole number on	Module 1: Lesson 2: 42-45
an open number line; and	
(F) name the whole number that corresponds to a	Module 1: Lesson 2: 42-45
specific point on a number line.	
(3) Number and operations. The student applies mat	hematical process standards to recognize and represent fractional units
and communicates how they are used to name parts of a whole. The student is expected to:	
(A) partition objects into equal parts and name the	Module 7: Lesson 1: 364-367
parts, including halves, fourths, and eighths, using	Module 7: Lesson 2: 368-371
words;	
(B) explain that the more fractional parts used to	Module 7: Lesson 3: 372-375

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make a whole, the smaller the part; and the fewer	
the fractional parts, the larger the part;	
(C) use concrete models to count fractional parts	Module 7: Lesson 5: 380-383
beyond one whole using words and recognize how	Module 7: Lesson 6: 384-387
many parts it takes to equal one whole; and	
(D) identify examples and non-examples of halves,	Module 7: Lesson 1: 364-367
fourths, and eighths.	
(4) Number and operations. The student applies mat	hematical process standards to develop and use strategies and methods
for whole number computations in order to solve add	lition and subtraction problems with efficiency and accuracy. The
student is expected to:	
(A) recall basic facts to add and subtract within 20	Module 2: Lesson 1: 92-95
with automaticity;	Module 2: Lesson 2: 96-99
	Module 2: Lesson 3: 100-103
	Module 2: Lesson 4: 104-107
	Module 2: Lesson 5: 108-111 Module 2: Lesson 6: 112-115
	Module 2: Lesson 0: 124 127
	Module 2: Lesson 9: 124-127
	Module 3: Lesson 1: 144-147
	Module 3: Lesson 2: 148-151
	Module 3: Lesson 4: 156 159
	Module 3: Lesson 7: 168 171
(P) add up to four two digit numbers and subtract	Module 3: Lesson 1: 02 05
(B) add up to four two-digit numbers and subtract	Module 2: Lesson 1: 92-95
algorithms based on knowledge of place value and	Module 2: Lesson 4: 104 107
argonations of aparations:	Module 2: Lesson 4: 104-107 Module 2: Lesson 5: 108 111
properties of operations,	Module 2: Lesson 5: 100-111 Module 2: Lesson 6: 112-115
	Module 2: Lesson 0: 112-113 Module 3: Lesson 1: 144-147
	Module 3: Lesson 1: 144-147
	Module 3: Lesson 2: 140-131 Module 3: Lesson 3: 152-155
	Module 3: Lesson 4: 156-159
(C) solve one-step and multi-step word problems	Module 2: Lesson 4: 190-199
(c) solve one-step and matti-step word problems	Module 2: Lesson 9: 124-127
using a variety of strategies based on place value	Module 2: Lesson 9: 124-127 Module 2: Lesson 10: 128-131
including algorithms, and	Module 3: Lesson 3: 152-155
	Module 3: Lesson 4: 156-159
(D) generate and solve problem situations for a	Module 2: Lesson 5: 108-111
given mathematical number sentence involving	Module 2: Lesson 10: 128-131
addition and subtraction of whole numbers within	Module 3: Lesson 3: 152-155
1.000.	Module 3: Lesson 4: 156-159
	Module 3: Lesson 9: 176-179
	Module 3: Lesson 10: 180-183
(5) Number and operations. The student applies mat	hematical process standards to determine the value of coins in order to
solve monetary transactions. The student is expected	to:
(A) determine the value of a collection of coins up	Module 5: Lesson 1: 250-253
to one dollar; and	Module 5: Lesson 2: 254-257
	Module 5: Lesson 3: 258-261
(B) use the cent symbol, dollar sign, and the	Module 5: Lesson 1: 250-253
decimal point to name the value of a collection of	Module 5: Lesson 2: 254-257
coins.	Module 5: Lesson 3: 258-261
(6) Number and operations. The student applies mat	hematical process standards to connect repeated addition and
subtraction to multiplication and division situations the	nat involve equal groupings and shares. The student is expected to:
(A) model, create, and describe contextual	Module 2: Lesson 7: 116-119
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multiplication situations in which equivalent sets of	Module 7: Lesson 7: 388-391
concrete objects are joined; and	Module 7: Lesson 8: 392-395
(B) model, create, and describe contextual division	Module 2: Lesson 7: 116-119
situations in which a set of concrete objects is	Module 2: Lesson 8: 120-123
separated into equivalent sets.	Module 3: Lesson 8: 172-175
	Module 7: Lesson 4: 376-379
	Module 7: Lesson 9: 396-399
	Module 7: Lesson 10: 400-403
(7) Algebraic reasoning. The student applies mathem	atical process standards to identify and apply number patterns within
properties of numbers and operations in order to des	cribe relationships. The student is expected to:
(A) determine whether a number up to 40 is even	Module 2: Lesson 7: 116-119
or odd using pairings of objects to represent the	Module 2: Lesson 8: 120-123
number;	
(B) use an understanding of place value to	Module 2: Lesson 7: 116-119
determine the number that is 10 or 100 more or	Module 3: Lesson 5: 160-163
less than a given number up to 1,200; and	
(C) represent and solve addition and subtraction	Module 2: Lesson 5: 108-111
word problems where unknowns may be any one	Module 2: Lesson 7: 116-119
of the terms in the problem.	Module 3: Lesson 3: 152-155
	Module 3: Lesson 4: 156-159
	Module 3: Lesson 6: 164-167
(8) Geometry and measurement. The student applies	s mathematical process standards to analyze attributes of two-
dimensional shapes and three-dimensional solids to c	levelop generalizations about their properties. The student is expected
to:	
(A) create two-dimensional shapes based on given	Module 5: Lesson 6: 270-273
attributes, including number of sides and vertices;	
(B) classify and sort three-dimensional solids,	Module 5: Lesson 4: 262-265
including spheres, cones, cylinders, rectangular	Module 5: Lesson 5: 266-269
prisms (including cubes as special rectangular	Module 5: Lesson 6: 270-273
prisms), and triangular prisms, based on attributes	
using formal geometric language;	
(C) classify and sort polygons with 12 or fewer	Module 5: Lesson 6: 270-273
sides according to attributes, including identifying	Module 5: Lesson 7: 274-277
the number of sides and number of vertices;	
(D) compose two-dimensional shapes and three-	Module 5: Lesson 6: 270-273
dimensional solids with given properties or	Module 5: Lesson 10: 286-289
attributes; and	
(E) decompose two-dimensional shapes such as	Module 5: Lesson 8: 278-281
cutting out a square from a rectangle, dividing a	
shape in half, or partitioning a rectangle into	
identical triangles and identify the resulting	
geometric parts.	
(9) Geometry and measurement. The student applies	s mathematical process standards to select and use units to describe
length, area, and time. The student is expected to:	
(A) find the length of objects using concrete	Module 4: Lesson 2: 200-203
models for standard units of length;	Module 4: Lesson 8: 224-227
	Module 6: Lesson 10: 344-347
(B) describe the inverse relationship between the	
size of the unit and the number of units needed to	
equal the length of an object;	
(C) represent whole numbers as distances from	Module 4: Lesson 6: 216-219
any given location on a number line:	

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(D) determine the length of an object to the	Module 4: Lesson 3: 204-207
nearest marked unit using rulers, yardsticks, meter	Module 4: Lesson 5: 212-215
sticks, or measuring tapes;	
(E) determine a solution to a problem involving	Module 4: Lesson 1: 196-199
length, including estimating lengths;	Module 4: Lesson 4: 208-211
	Module 4: Lesson 7: 220-223
(F) use concrete models of square units to find the	Module 5: Lesson 9: 282-285
area of a rectangle by covering it with no gaps or	
overlaps, counting to find the total number of	
square units, and describing the measurement	
using a number and the unit; and	
(G) read and write time to the nearest one-minute	Module 6: Lesson 1: 308-311
increment using analog and digital clocks and	Module 6: Lesson 2: 312-315
distinguish between a.m. and p.m.	
(10) Data analysis. The student applies mathematica	l process standards to organize data to make it useful for interpreting
information and solving problems. The student is exp	ected to:
(A) explain that the length of a bar in a bar graph	Module 6: Lesson 3: 316-319
or the number of pictures in a pictograph	Module 6: Lesson 5: 324-327
represents the number of data points for a given	Module 6: Lesson 6: 328-331
category;	
(B) organize a collection of data with up to four	Module 4: Lesson 10: 232-235
categories using pictographs and bar graphs with	Module 6: Lesson 3: 316-319
intervals of one or more;	Module 6: Lesson 5: 324-327
	Module 6: Lesson 6: 328-331
	Module 6: Lesson 7: 332-335
(C) write and solve one-step word problems	Module 6: Lesson 4: 320-323
involving addition or subtraction using data	Module 6: Lesson 8: 336-339
represented within pictographs and bar graphs	Module 6: Lesson 9: 340-343
with intervals of one; and	
(D) draw conclusions and make predictions from	Module 4: Lesson 9: 228-231
information in a graph.	Module 6: Lesson 4: 320-323
	Module 6: Lesson 6: 328-331
(11) Personal financial literacy. The student applies n	nathematical process standards to manage one's financial resources
effectively for lifetime financial security. The student	is expected to:
(A) calculate how money saved can accumulate	
into a larger amount over time;	
(B) explain that saving is an alternative to	
spending;	
(C) distinguish between a deposit and a	
withdrawal;	
(D) Identity examples of borrowing and distinguish	
between responsible and irresponsible borrowing;	
(E) identify examples of lending and use concepts	
of benefits and costs to evaluate lending decisions;	
and	
(F) differentiate between producers and	
consumers and calculate the cost to produce a	
simple item.	

Texas Essential Knowledge and Skills, Grade 3	Vmath, Level D
(b) Knowledge and skills.	
(1) Mathematical process standards. The student use	s mathematical processes to acquire and demonstrate mathematical
understanding. The student is expected to:	
(A) apply mathematics to problems arising in	Module 6: Lesson PL2: 316-319
everyday life, society, and the workplace;	
(B) use a problem-solving model that incorporates	Module 2: Lesson PL1: 86-89
analyzing given information, formulating a plan or	Module 4: Lesson PL2: 204-206
strategy, determining a solution, justifying the	Module 5: Lesson PL2: 268-270
solution and evaluating the problem-solving	
process and the reasonableness of the solution;	
(C) select tools, including real objects,	Module 2: Lesson PL2: 90-93
manipulatives, paper and pencil, and technology as	Module 1: Lesson 3: 46-49
appropriate, and techniques, including mental	Module 7: Lesson LP2: 364-367
math, estimation, and number sense as	
appropriate, to solve problems;	
(D) communicate mathematical ideas, reasoning,	Module 1: Lesson 2: 42-45
and their implications using multiple	Module 6: Lesson PL1: 312-315
representations, including symbols, diagrams,	
graphs, and language as appropriate;	
(E) create and use representations to organize,	Module 4: Lesson PL1: 200-203
record, and communicate mathematical ideas;	Module 7: Lesson LP1: 360-363
(F) analyze mathematical relationships to connect	Module 1: Lesson 1: 38-41
and communicate mathematical ideas; and	
(G) display, explain, and justify mathematical ideas	Module 5: Lesson PL1: 264-267
and arguments using precise mathematical	
language in written or oral communication.	
(2) Number and operations. The student applies math	nematical process standards to represent and compare whole numbers
and understand relationships related to place value.	The student is expected to:
(A) compose and decompose numbers up to	Module 2: Lesson 1: 94-97
100,000 as a sum of so many ten thousands, so	Module 2: Lesson 3: 102-105
many thousands, so many hundreds, so many tens,	Module 2: Lesson 4: 106-109
and so many ones using objects, pictorial models,	Module 2: Lesson 10: 129-132
and numbers, including expanded notation as	
appropriate;	
(B) describe the mathematical relationships found	Module 2: Lesson 2: 98-101
In the base-10 place value system through the	Module 2: Lesson 10: 129-132
nundred thousands place;	
(C) represent a number on a number line as being	Module 2: Lesson 5: 110-113
between two consecutive multiples of 10; 100;	Module 2: Lesson 8: 122-123
1,000; or 10,000 and use words to describe relative	Module 2: Lesson 9: 124-128
size of numbers in order to round whole numbers;	Module 2: Lesson 10: 129-132
dilu	Madula 2: Lasson F: 110 112
(D) compare and order whole numbers up to	
	Module 2: Lesson 6: 114-117
symbols >, <, or =.	Module 2: Lesson 7: 118-121
	Module 2: Lesson 10: 129-132
(3) Number and operations. The student applies math	nematical process standards to represent and explain fractional units.
The student is expected to:	
(A) represent fractions greater than zero and less	Module 6: Lesson 1: 320-323
than or equal to one with denominators of 2, 3, 4,	Module 6: Lesson 8: 244-247
6, and 8 using concrete objects and pictorial	
models, including strip diagrams and number lines;	

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(B) determine the corresponding fraction greater	Module 6: Lesson 8: 244-247
than zero and less than or equal to one with	
denominators of 2, 3, 4, 6, and 8 given a specified	
point on a number line;	
(C) explain that the unit fraction 1/b represents the	Module 6: Lesson 4: 330-333
quantity formed by one part of a whole that has	
been partitioned into b equal parts where b is a	
non-zero whole number;	
(D) compose and decompose a fraction $a/b$ with a	Module 6: Lesson 4: 330-333
numerator greater than zero and less than or equal	
to b as a sum of parts 1/b;	
(E) solve problems involving partitioning an object	Module 6: Lesson 2: 324-325
or a set of objects among two or more recipients	Module 6: Lesson 3: 326-329
using pictorial representations of fractions with	
denominators of 2, 3, 4, 6, and 8;	
(F) represent equivalent fractions with	Module 6: Lesson 5: 334-335
denominators of 2, 3, 4, 6, and 8 using a variety of	Module 6: Lesson 6: 336-339
objects and pictorial models, including number	Module 6: Lesson 8: 244-247
(C) explain that two fractions are equivalent if and	Madula (+ Lasson F+ 224 22F
(d) explain that two fractions are equivalent if and	Module 6: Lesson 5: 334-335
on the number line or represent the same point	Module 6: Lesson 6: 336-339
of a same size whole for an area model: and	Module 6: Lesson 8: 244-247
(H) compare two fractions having the same	Module 6: Lesson 7: 340-343
numerator or denominator in problems by	Module 6: Lesson 9: 244-247
reasoning about their sizes and justifying the	Woulle 0. Lesson 6. 244-247
conclusion using symbols, words, objects, and	
pictorial models.	
(4) Number and operations. The student applies math	nematical process standards to develop and use strategies and methods
for whole number computations in order to solve pro	blems with efficiency and accuracy. The student is expected to:
(A) solve with fluency one-step and two-step	Module 3: Lesson 1: 142-145
problems involving addition and subtraction within	Module 3: Lesson 2: 146-147
1,000 using strategies based on place value,	Module 3: Lesson 3: 148-151
properties of operations, and the relationship	Module 3: Lesson 4: 152-155
between addition and subtraction;	Module 3: Lesson 5: 156-159
	Module 3: Lesson 6: 160-163
	Module 3: Lesson 8: 168-169
	Module 3: Lesson 0: 170-173
	Module 2: Lesson 10: 174 175
	Module 3: Lesson 11: 176-175
	Module 3: Lesson 11: 176-179
	Module 3: Lesson 13: 184-187
	Module 3: Lesson 15: 192-195
(B) round to the nearest 10 or 100 or use	Module 3: Lesson 7: 164-167
compatible numbers to estimate solutions to	Module 3: Lesson 14: 188-191
addition and subtraction problems;	
(C) determine the value of a collection of coins and	Module 6: Lesson 9: 348-351
DIIIS;	Module 6: Lesson 10: 352-355
(D) determine the total number of objects when	Module 4: Lesson 1: 207
equally-sized groups of objects are combined or	Module 4: Lesson 2: 208-211
arranged in arrays up to 10 by 10;	Module 4: Lesson 3: 212-215

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	Module 4: Lesson 10: 240-241
(E) represent multiplication facts by using a variety of approaches such as repeated addition, equal- sized groups, arrays, area models, equal jumps on a number line, and skip counting;	Module 4: Lesson 1: 207 Module 4: Lesson 2: 208-211 Module 4: Lesson 3: 212-215 Module 4: Lesson 4: 216-219 Module 4: Lesson 5: 220-223 Module 4: Lesson 6: 224-227 Module 4: Lesson 6: 224-227 Module 4: Lesson 7: 228-231 Module 4: Lesson 8: 232-235 Module 4: Lesson 9: 236-239 Module 4: Lesson 10: 240-241 Module 5: Lesson 7: 292-295
(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts;	Module 4: Lesson 3: 212-215 Module 4: Lesson 5: 220-223 Module 4: Lesson 6: 224-227 Module 4: Lesson 7: 228-231 Module 4: Lesson 8: 232-235 Module 4: Lesson 9: 236-239 Module 4: Lesson 10: 240-241 Module 5: Lesson 3: 276-279 Module 5: Lesson 4: 280-283 Module 5: Lesson 5: 284-287
(G) use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;	Module 4: Lesson 11: 242-246 Module 4: Lesson 12: 247 Module 4: Lesson 13: 248-251 Module 4: Lesson 14: 252-255 Module 4: Lesson 15: 256-259
(H) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally;	Module 5: Lesson 1: 271 Module 5: Lesson 2: 272-275 Module 5: Lesson 3: 276-279 Module 5: Lesson 4: 280-283 Module 5: Lesson 5: 284-287
<ul> <li>(I) determine if a number is even or odd using divisibility rules;</li> <li>(I) determine a quotient using the relationship</li> </ul>	Module 5: Lesson 6: 288-291
between multiplication and division; and (K) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups;	Module 5: Lesson 9: 300-303 Module 5: Lesson 10: 304-307
properties of operations; or recall of facts. (5) Algebraic reasoning. The student applies mathematicationships. The student is expected to:	atical process standards to analyze and create patterns and
(A) represent one- and two-step problems involving addition and subtraction of whole numbers to	Module 3: Lesson 2: 146-147 Module 3: Lesson 8: 168-169

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1,000 using pictorial models, number lines, and	
equations;	
(B) represent and solve one- and two-step	Module 5: Lesson 10: 304-307
multiplication and division problems within 100	
using arrays, strip diagrams, and equations;	
(C) describe a multiplication expression as a	Module 4: Lesson 14: 252-255
comparison such as 3 x 24 represents 3 times as	Module 4: Lesson 15: 256-259
much as 24;	
(D) determine the unknown whole number in a	Module 4: Lesson 11: 242-246
multiplication or division equation relating three	Module 5: Lesson 8: 296-299
whole numbers when the unknown is either a	Module 5: Lesson 9: 300-303
missing factor or product; and	
(E) represent real-world relationships using number	Module 7: Lesson LP1: 360-363
pairs in a table and verbal descriptions.	
(6) Geometry and measurement. The student applies	mathematical process standards to analyze attributes of two-
dimensional geometric figures to develop generalizat	ions about their properties. The student is expected to:
(A) classify and sort two- and three-dimensional	Module 7: Lesson 13: 414-417
figures, including cones, cylinders, spheres,	
triangular and rectangular prisms, and cubes, based	
on attributes using formal geometric language;	
(B) use attributes to recognize rhombuses,	Module 7: Lesson 11: 408-409
parallelograms, trapezoids, rectangles, and squares	Module 7: Lesson 12: 410-413
as examples of quadrilaterals and draw examples of	Module 7: Lesson 13: 414-417
quadrilaterals that do not belong to any of these	
(C) determine the area of rectangles with whole	Madula 7. Losson 15. 422. 425
(c) determine the area of rectangles with whole	Module 7: Lesson 15: 422-425
multiplication related to the number of rows times	
the number of unit squares in each row:	
(D) decompose composite figures formed by	Module 7: Lesson 15: 422-425
rectangles into non-overlanning rectangles to	100001e 7. Lesson 15. 422-425
determine the area of the original figure using the	
additive property of area: and	
(F) decompose two congruent two-dimensional	Module 6: Lesson 1: 320-323
figures into parts with equal areas and express the	
area of each part as a unit fraction of the whole	
and recognize that equal shares of identical wholes	
need not have the same shape.	
(7) Geometry and measurement. The student applies	mathematical process standards to select appropriate units, strategies,
and tools to solve problems involving customary and	metric measurement. The student is expected to:
(A) represent fractions of halves, fourths, and	Module 7: Lesson 9: 400-403
eighths as distances from zero on a number line;	Module 7: Lesson 10: 404-407
(B) determine the perimeter of a polygon or a	Module 7: Lesson 14: 418-421
missing length when given perimeter and	
remaining side lengths in problems;	
(C) determine the solutions to problems involving	Module 7: Lesson 5: 384-387
addition and subtraction of time intervals in	Module 7: Lesson 6: 388-391
minutes using pictorial models or tools such as a	
15-minute event plus a 30-minute event equals 45	
minutes;	
(D) determine when it is appropriate to use	Module 7: Lesson 7: 392-395
measurements of liquid volume (capacity) or	Module 7: Lesson 8: 396-399

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weight; and	
(E) determine liquid volume (capacity) or weight using appropriate units and tools.	Module 7: Lesson 7: 392-395
(8) Data analysis. The student applies mathematical p and interpreting data. The student is expected to:	process standards to solve problems by collecting, organizing, displaying,
(A) summarize a data set with multiple categories	Module 7: Lesson 1: 368-371
using a frequency table, dot plot, pictograph, or bar	Module 7: Lesson 2: 372-375
graph with scaled intervals; and	Module 7: Lesson 3: 376-379
	Module 7: Lesson 4: 380-383
(B) solve one- and two-step problems using	Module 7: Lesson 1: 368-371
categorical data represented with a frequency	Module 7: Lesson 2: 372-375
table, dot plot, pictograph, or bar graph with scaled	Module 7: Lesson 3: 376-379
intervals.	Module 7: Lesson 4: 380-383
(9) Personal financial literacy. The student applies ma	thematical process standards to manage one's financial resources
effectively for lifetime financial security. The student	is expected to:
(A) explain the connection between human	
capital/labor and income;	
(B) describe the relationship between the	
availability or scarcity of resources and how that	
impacts cost;	
(C) identify the costs and benefits of planned and	
unplanned spending decisions;	
(D) explain that credit is used when wants or needs	
exceed the ability to pay and that it is the	
borrower's responsibility to pay it back to the	
Tender, usually with interest;	
(E) list reasons to save and explain the benefit of a	
savings plan, including for college; and	
(F) identify decisions involving income, spending,	
saving, credit, and charitable giving.	

Texas Essential Knowledge and Skills, Grade 4	Vmath, Level E
(b) Knowledge and skills.	
(1) Mathematical process standards. The student use understanding. The student is expected to:	s mathematical processes to acquire and demonstrate mathematical
(A) apply mathematics to problems arising in	Module 7: Lesson PL1: 342-345
everyday life, society, and the workplace;	Module 7: Lesson PL2: 346-349
(B) use a problem-solving model that incorporates	Module 5: Lesson 14: 280-283
analyzing given information, formulating a plan or	Module 7: Lesson 15: 402-405
strategy, determining a solution, justifying the	
solution, and evaluating the problem-solving	
process and the reasonableness of the solution;	
(C) select tools, including real objects,	Module 1: Lesson 6: 56-57
manipulatives, paper and pencil, and technology as	Module 2: Lesson 8: 104-107
appropriate, and techniques, including mental	Module 2: Lesson 9: 108-111
math, estimation, and number sense as	
appropriate, to solve problems;	March 14 C. Lawren D14, 202, 205
(D) communicate mathematical ideas, reasoning,	Module 6: Lesson PL1: 292-295
and their implications using multiple	Module 6: Lesson PL2: 296-300
graphs, and language as appropriate:	
(E) create and use representations to organize,	Module 5: Lesson PL1: 230
record, and communicate mathematical ideas;	Module 5: Lesson PL2: 231
(F) analyze mathematical relationships to connect	Module 1: Lesson 8: 62-65
and communicate mathematical ideas; and	
(G) display, explain, and justify mathematical ideas	Module 3: Lesson PL1: 120-123
and arguments using precise mathematical	Module 3: Lesson PL2: 124-127
language in written or oral communication.	
(2) Number and operations. The student applies math	nematical process standards to represent, compare, and order whole
numbers and decimals and understand relationships	related to place value. The student is expected to:
(A) Interpret the value of each place-value position	Module 1: Lesson 2: 42-45
tenth of the value of the place to its left:	
(B) represent the value of the digit in whole	Module 1: Lesson 2: 198-201
numbers through 1.000.000.000 and decimals to	Noucle 4. Lesson 2. 198-201
the hundredths using expanded notation and	
numerals;	
(C) compare and order whole numbers to	Module 1: Lesson 5: 54-55
1,000,000,000 and represent comparisons using	
the symbols >, <, or =;	
(D) round whole numbers to a given place value	Module 1: Lesson 9: 66-67
through the hundred thousands place;	Module 1: Lesson 10: 68-71
(E) represent decimals, including tenths and	Module 5: Lesson 1: 232-235
hundredths, using concrete and visual models and	Module 5: Lesson 2: 236-239
money;	Module 5: Lesson 8: 260-263
(F) compare and order decimals using concrete and	Module 5: Lesson 3: 240-243
visual models to the hundredths;	
(G) relate decimals to fractions that name tenths	Module 5: Lesson 13: 276-279
and hundredths; and	
(H) determine the corresponding decimal to the	Module 5: Lesson 3: 240-243
tenths or hundredths place of a specified point on	
a number line.	

Texas Essential Knowledge and Skills, Grade 4	Vmath, Level E	
(3) Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:		
(A) represent a fraction $a/b$ as a sum of fractions $1/b$ , where $a$ and $b$ are whole numbers and $b > 0$ , including when a > b;	Module 4: Lesson 5: 210-213	
(B) decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations;	Module 4: Lesson 5: 210-213 Module 5: Lesson 9: 264-265 Module 5: Lesson 10: 266-269 Module 5: Lesson 11: 270-271 Module 5: Lesson 12: 272-275	
(C) determine if two given fractions are equivalent using a variety of methods;	Module 4: Lesson 1: 194-197 Module 4: Lesson 3: 202-205 Module 4: Lesson 4: 206-209 Module 4: Lesson 6: 214-215 Module 4: Lesson 7: 216-219 Module 4: Lesson 8: 220-221	
<ul> <li>(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols &gt;, =, or</li> <li></li> </ul>	Module 4: Lesson 9: 222-223 Module 4: Lesson 10: 224-227	
(E) represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations;	Module 5: Lesson 9: 264-265 Module 5: Lesson 10: 266-269 Module 5: Lesson 11: 270-271 Module 5: Lesson 12: 272-275	
(F) evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, 1/4, 1/2, 3/4, and 1, referring to the same whole; and	Module 5: Lesson 14: 280-283	
(G) represent fractions and decimals to the tenths or hundredths as distances from zero on a number line.	Module 5: Lesson 2: 236-239 Module 5: Lesson 3: 240-243	
(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:		
(A) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;	Module 2: Lesson 1: 82-83 Module 2: Lesson 2: 84-87 Module 2: Lesson 3: 88-91 Module 2: Lesson 4: 92-93 Module 2: Lesson 5: 94-95 Module 2: Lesson 6: 96-99 Module 2: Lesson 7: 100-103 Module 5: Lesson 4: 244-247 Module 5: Lesson 5: 248-251 Module 5: Lesson 6: 252-255 Module 5: Lesson 7: 256-259 Module 6: Lesson 5: 314-317	

Texas Essential Knowledge and Skills, Grade 4	Vmath, Level E
(B) determine products of a number and 10 or 100 using properties of operations and place value understandings:	Module 3: Lesson 3: 136-139
(C) represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15;	Module 3: Lesson 4: 140-143 Module 3: Lesson 5: 144-147 Module 3: Lesson 7: 152-155 Module 3: Lesson 14: 174-177
(D) use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;	Module 3: Lesson 1: 128-131 Module 3: Lesson 2: 132-135 Module 3: Lesson 6: 148-151 Module 3: Lesson 14: 174-177
(E) represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;	Module 3: Lesson 8: 156-159 Module 3: Lesson 9: 160-163 Module 3: Lesson 10: 164-165 Module 3: Lesson 11: 166-167 Module 3: Lesson 12: 168-169 Module 3: Lesson 13: 170-173 Module 3: Lesson 14: 174-177
(F) use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;	Module 3: Lesson 13: 170-173
(G) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers; and	Module 2: Lesson 9: 108-111 Module 2: Lesson 10: 112-115
(H) solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.	Module 2: Lesson 8: 104-107 Module 5: Lesson 15: 284-287
(5) Algebraic reasoning. The student applies mathema equations. The student is expected to:	atical process standards to develop concepts of expressions and
(A) represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity;	Module 2: Lesson 8: 104-107 Module 3: Lesson 14: 174-177 Module 3: Lesson 15: 178-181 Module 6: Lesson 5: 314-317
(B) represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence;	Module 7: Lesson 10: 384-387 Module 7: Lesson 11: 388-391
(C) use models to determine the formulas for the perimeter of a rectangle $(l + w + l + w \text{ or } 2l + 2w)$ , including the special form for perimeter of a square (4s) and the area of a rectangle $(l \times w)$ ; and	Module 7: Lesson 8: 378-379 Module 7: Lesson 9: 380-383
(U) solve problems related to perimeter and area of rectangles where dimensions are whole numbers.	Module 7: Lesson 8: 378-379 Module 7: Lesson 9: 380-383

Texas Essential Knowledge and Skills, Grade 4	Vmath, Level E	
	Module 7: Lesson 15: 402-405	
(6) Geometry and measurement. The student applies to develop generalizations about their properties. The	mathematical process standards to analyze geometric attributes in order estudent is expected to:	
(A) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines;		
(B) identify and draw one or more lines of	Module 6: Lesson 9: 330-331	
symmetry, if they exist, for a two-dimensional figure;	Module 6: Lesson 10: 332-335	
(C) apply knowledge of right angles to identify acute, right, and obtuse triangles; and	Module 6: Lesson 1: 301	
(D) classify two-dimensional figures based on the	Module 6: Lesson 2: 302-305	
presence or absence of parallel or perpendicular	Module 6: Lesson 3: 306-309	
lines or the presence or absence of angles of a specified size.	Module 6: Lesson 4: 310-313	
(7) Geometry and measurement. The student applies than or equal to 180 degrees. The student is expected	mathematical process standards to solve problems involving angles less I to:	
(A) illustrate the measure of an angle as the part of	Module 6: Lesson 1: 301	
a circle whose center is at the vertex of the angle	Module 6: Lesson 7: 322-325	
that is "cut out" by the rays of the angle. Angle measures are limited to whole numbers;	Module 6: Lesson 8: 326-329	
(B) illustrate degrees as the units used to measure	Module 6: Lesson 1: 301	
an angle, where 1/360 of any circle is one degree	Module 6: Lesson 7: 322-325	
and an angle that "cuts" n/360 out of any circle	Module 6: Lesson 8: 326-329	
whose center is at the angle's vertex has a measure		
numbers;		
(C) determine the approximate measures of angles	Module 6: Lesson 7: 322-325	
in degrees to the nearest whole number using a		
(D) draw an angle with a given measure; and	Madula Gulassan PL2: 206-200	
(E) determine the measure of an unknown angle	Module 6: Lesson PL2: 296-300	
(E) determine the measure of an unknown angle formed by two pop-overlapping adjacent angles	Module 6: Lesson 1: 301	
given one or both angle measures	Module 6: Lesson 6: 318-321	
Even one of both angle measures.	Module 6: Lesson 8: 326-329	
(8) Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:		
(A) identify relative sizes of measurement units	Module 7: Lesson 1: 350-353	
within the customary and metric systems;	Module 7: Lesson 2: 354-357	
	Module 7: Lesson 3: 358-361	
(B) convert measurements within the same	Module 7: Lesson 4: 362-365	
measurement system, customary or metric, from a	Module 7: Lesson 5: 366-369	
smaller unit into a larger unit or a larger unit into a	Module 7: Lesson 6: 370-373	
smaller unit when given other equivalent measures		
represented in a table; and		
(c) solve problems that deal with measurements of	Module 5: Lesson 8: 260-263	
money using addition subtraction multiplication	Noaule /: Lesson 2: 354-357	
or division as appropriate	IVIOQUIE /: LESSON 3: 358-361	
	IVIOAUIE 7: Lesson 4: 362-365	

Texas Essential Knowledge and Skills, Grade 4	Vmath, Level E
	Module 7: Lesson 5: 366-369
	Module 7: Lesson 6: 370-373
	Module 7: Lesson 7: 374-377
(9) Data analysis. The student applies mathematical p and interpreting data. The student is expected to:	rocess standards to solve problems by collecting, organizing, displaying,
(A) represent data on a frequency table, dot plot, or	Module 7: Lesson 12: 392-395
stem-and-leaf plot marked with whole numbers	Module 7: Lesson 13: 396-400
and fractions; and	Module 7: Lesson 14: 401
(B) solve one- and two-step problems using data in	Module 7: Lesson 13: 396-400
whole number, decimal, and fraction form in a	
frequency table, dot plot, or stem-and-leaf plot.	
(10) Personal financial literacy. The student applies m	athematical process standards to manage one's financial resources
effectively for lifetime financial security. The student	is expected to:
(A) distinguish between fixed and variable	
expenses;	
(B) calculate profit in a given situation;	
(C) compare the advantages and disadvantages of	
various savings options;	
(D) describe how to allocate a weekly allowance	
among spending; saving, including for college; and	
sharing; and	
(E) describe the basic purpose of financial	
institutions, including keeping money safe,	
borrowing money, and lending.	

Texas Essential Knowledge and Skills, Grade 5	Vmath, Level F
(b) Knowledge and skills.	
<ol> <li>Mathematical process standards. The student use understanding. The student is expected to:</li> </ol>	s mathematical processes to acquire and demonstrate mathematical
(A) apply mathematics to problems arising in	Module 7: Lesson 5: 364-365
everyday life, society, and the workplace;	Module 1: Lesson 10: 75-78
(B) use a problem-solving model that incorporates	Module 3: Lesson PL1: 122-125
analyzing given information, formulating a plan or	Module 3: Lesson PL2: 126-127
strategy, determining a solution, justifying the	Module 5: Lesson PL2: 257
solution, and evaluating the problem-solving	Module 3: Lesson 15: 176-179
(C) select tools, including real objects.	Module 1: Lesson 1: 38-41
manipulatives, paper and pencil, and technology as	Module 2: Lesson PI 1: 80-81
appropriate, and techniques, including mental	Module 7: Lesson 10: 380-383
math, estimation, and number sense as	
appropriate, to solve problems;	
(D) communicate mathematical ideas, reasoning,	Module 4: Lesson PL1: 186-189
and their implications using multiple	Module 7: Lesson PL1: 342-343
graphs, and language as appropriate:	
(E) create and use representations to organize,	Module 6: Lesson PL1: 296
record, and communicate mathematical ideas;	Module 6: Lesson PL2: 297-299
(F) analyze mathematical relationships to connect	Module 1: Lesson 10: 75-78
and communicate mathematical ideas; and	Module 2: Lesson PL2: 82-85
	Module 4: Lesson PL2: 190-193
(G) display, explain, and justify mathematical ideas	Module 1: Lesson 3: 46-49
and arguments using precise mathematical	Module 1: Lesson 4: 50-53
language in written or oral communication.	Module 5: Lesson PL1: 252-256
(2) Number and operations. The student applies math rational numbers and understand relationships as rel	nematical process standards to represent, compare, and order positive ated to place value. The student is expected to:
(A) represent the value of the digit in decimals	Module 1: Lesson 2: 42-45
through the thousandths using expanded notation	Module 2: Lesson 3: 92-95
and numerals;	Module 2: Lesson 4: 96-99
	Module 2: Lesson 5: 100-103
(B) compare and order two decimals to	Module 2: Lesson 1: 86-89
thousandths and represent comparisons using the	Module 2: Lesson 6: 104-105
	Module 2: Lesson 7: 106-107
	Module 2: Lesson 8: 108-111
(C) round decimals to tenths or hundredths.	Module 2: Lesson 2: 90-91
	Module 2: Lesson 9: 112-116
	Module 2: Lesson 10: 117-120
	Module 3: Lesson 13: 170-174
	Module 3: Lesson 14: 175
	Module 3: Lesson 15: 176-179
(3) Number and operations. The student applies math	nematical process standards to develop and use strategies and methods
for positive rational number computations in order to	solve problems with efficiency and accuracy. The student is expected
(A) estimate to determine solutions to	Module 3: Lesson 13: 170-17/

Texas Essential Knowledge and Skills, Grade 5	Vmath, Level F
mathematical and real-world problems involving	
(B) multiply with fluency a three-digit number by a	Module 3 <sup>.</sup> Lesson 6 <sup>.</sup> 146-149
two-digit number using the standard algorithm;	Module 3: Lesson 7: 150-153
(C) solve with proficiency for quotients of up to a	Module 3: Lesson 10: 160-163
four-digit dividend by a two-digit divisor using	Module 4: Lesson 12: 235
strategies and the standard algorithm;	
(D) represent multiplication of decimals with	Module 3: Lesson 8: 154-155
products to the hundredths using objects and	
(E) solve for products of decimals to the	Madula 2: Losson 0: 1E6 1E0
(L) solve for products of decimals to the	Would 3: Lesson 9: 120-129
using strategies based on place-value	
understandings, properties of operations, and the	
relationship to the multiplication of whole	
numbers;	
(F) represent quotients of decimals to the	Module 3: Lesson 11: 164-165
hundredths, up to four-digit dividends and two-	
digit whole number divisors, using objects and	
pictorial models, including area models;	
(G) solve for quotients of decimals to the	Module 3: Lesson 12: 166-169
digit whole number divisors using strategies and	
algorithms, including the standard algorithm:	
(H) represent and solve addition and subtraction of	Module 4: Lesson 1: 194-197
fractions with unequal denominators referring to	Module 4: Lesson 2: 198-201
the same whole using objects and pictorial models	Module 4: Lesson 3: 202-205
and properties of operations;	Module 4: Lesson 4: 206-209
	Module 4: Lesson 5: 210-211
	Module 4: Lesson 6: 212-215
	Module 4: Lesson 7: 216-219
	Module 4: Lesson 8: 220-223
	Module 4: Lesson 9: 224-228
(I) represent and solve multiplication of a whole	Module 4: Lesson 10: 229
number and a fraction that refers to the same	Module 4: Lesson 11: 230-234
area models;	Module 4: Lesson 15: 245-248
(J) represent division of a unit fraction by a whole	Module 4: Lesson 13: 236-239
number and the division of a whole number by a	Module 4: Lesson 14: 240-244
unit fraction such as $1/3 \div 7$ and $7 \div 1/3$ using	
objects and pictorial models, including area	
models;	
(K) add and subtract positive rational numbers	Module 3: Lesson 1: 128-131
fluently; and	Module 3: Lesson 2: 132-135
	Module 3: Lesson 3: 136-137
	Module 3: Lesson 4: 138-141
	Module 3: Lesson 5: 142-145
	Module 3: Lesson 6: 146-149

Texas Essential Knowledge and Skills, Grade 5	Vmath, Level F
(L) divide whole numbers by unit fractions and unit	Module 4: Lesson 13: 236-239
fractions by whole numbers.	Module 4: Lesson 14: 240-244
(4) Algebraic reasoning. The student applies mathema equations. The student is expected to:	atical process standards to develop concepts of expressions and
(A) identify prime and composite numbers;	Module 5: Lesson 1: 258-261
(D) represent and calve multi-step problems	Martula Echanger 4: 200
(B) represent and solve multi-step problems	Module 5: Lesson 4: 269
using equations with a letter standing for the	Module 5: Lesson 9: 284-287
unknown guantity;	
(C) generate a numerical pattern when given a rule	Module 5: Lesson 5: 270-273
in the form $y = ax$ or $y = x + a$ and graph;	Module 5: Lesson 10: 288-291
(D) recognize the difference between additive and	Module 5: Lesson 5: 270-273
multiplicative numerical patterns given in a table or	Module 5: Lesson 10: 288-291
graph;	
(E) describe the meaning of parentheses and	Module 5: Lesson 2: 262-265
brackets in a numeric expression;	Module 5: Lesson 3: 266-268
	Module 5: Lesson 6: 274-275
(F) simplify numerical expressions that do not	Module 5: Lesson 2: 262-265
involve exponents, including up to two levels of	Module 5: Lesson 3: 266-268
grouping,	Module 5: Lesson 6: 274-275
	Module 5: Lesson 7: 276-279
	Module 5: Lesson 8: 280-283
(G) use concrete objects and pictorial models to	provides opportunities:
develop the formulas for the volume of a	Module 7: Lesson 7: 371
rectangular prism, including the special form for a	
cube $(V = I \times w \times h, V = s \times s \times s, and V = Bh)$ ; and	
(H) represent and solve problems related to	Module 7: Lesson 8: 372-375
perimeter and/or area and related to volume.	
(5) Geometry and measurement. The student	Module 7: Lesson 1: 348-351
applies mathematical process standards to classify	Module 7: Lesson 2: 352-355
two-dimensional figures by attributes and	
dimensional figures in a hierarchy of sets and	
subsets using graphic organizers based on their	
attributes and properties.	
(6) Geometry and measurement. The student applies	mathematical process standards to understand, recognize, and quantify
volume. The student is expected to:	
(A) recognize a cube with side length of one unit as	Module 7: Lesson 5: 364-365
a unit cube having one cubic unit of volume and the	Module 7: Lesson 6: 366-370
volume of a three-dimensional figure as the	Module 7: Lesson 7: 371
number of unit cubes ( <i>n</i> cubic units) needed to fill it with no gaps or overlans if possible; and	
(B) determine the volume of a rectangular prism	Module 7: Lesson 5: 361-265
with whole number side lengths in problems	Module 7: Lesson 6: 366-370
related to the number of layers times the number	Module 7: Lesson 7: 371

Texas Essential Knowledge and Skills, Grade 5	Vmath, Level F
of unit cubes in the area of the base.	
(7) Geometry and measurement. The student	Module 7: Lesson 3: 356-359
applies mathematical process standards to select	Module 7: Lesson 4: 360-363
appropriate units, strategies, and tools to solve	
problems involving measurement. The student is	
expected to solve problems by calculating	
conversions within a measurement system,	
customary or metric.	
(8) Geometry and measurement. The student applies	mathematical process standards to identify locations on a coordinate
plane. The student is expected to:	
(A) describe the key attributes of the coordinate	Module 7: Lesson 9: 376-379
plane, including perpendicular number lines (axes)	
where the intersection (origin) of the two lines	
coincides with zero on each number line and the	
given point (0, 0); the x-coordinate, the first	
number in an ordered pair, indicates movement	
parallel to the x-axis starting at the origin; and the	
y-coordinate, the second number, indicates	
movement parallel to the y-axis starting at the	
origin;	
(B) describe the process for graphing ordered pairs	Module 7: Lesson 9: 376-379
of numbers in the first quadrant of the coordinate	
plane; and	
(C) graph in the first quadrant of the coordinate	Module 7: Lesson 9: 376-379
plane ordered pairs of numbers arising from	Module 7: Lesson 10: 380-383
mathematical and real-world problems, including	
those generated by number patterns or found in an	
Input-output table.	
and interpreting data. The student applies mathematical p	rocess standards to solve problems by collecting, organizing, displaying,
(A) represent categorical data with bar graphs or	Module 6: Lesson 1: 300-303
frequency tables and numerical data, including	Module 6: Lesson 2: 304-307
data sets of measurements in fractions or decimals,	Module 6: Lesson 3: 308-311
with dot plots or stem-and-leaf plots;	Module 6: Lesson 4: 312-315
	Module 6: Lesson 5: 316-319
	Module 6: Lesson 8: 378-322
	Module 6: Lesson 0: 320-332
	Madula C. Lesson 10: 224 227
	Module 6: Lesson 10: 334-337
(B) represent discrete paired data on a scatterplot;	Module 6: Lesson 3: 308-311
and	Module 6: Lesson 6: 320-323
	Module 6: Lesson 7: 324-327
(C) solve one- and two-step problems using data	Module 6: Lesson 1: 300-303
from a frequency table, dot plot, bar graph, stem-	Module 6: Lesson 2: 304-307
and-leaf plot, or scatterplot.	Module 6: Lesson 3: 308-311
	Module 6: Lesson 4: 312-315
	Module 6: Lesson 5: 316-319
	Module 6: Lesson 8: 328-332
	Module 6: Lesson 9: 333
	Module 6: Lesson 10: 334-337

Texas Essential Knowledge and Skills, Grade 5	Vmath, Level F
(10) Personal financial literacy. The student applies m	athematical process standards to manage one's financial resources
effectively for lifetime financial security. The student	is expected to:
(A) define income tax, payroll tax, sales tax, and	
property tax;	
(B) explain the difference between gross income	
and net income;	
(C) identify the advantages and disadvantages of	
different methods of payment, including check,	
credit card, debit card, and electronic payments;	
(D) develop a system for keeping and using	
financial records;	
(E) describe actions that might be taken to balance	
a budget when expenses exceed income; and	
(F) balance a simple budget.	

Texas Essential Knowledge and Skills, Grade 6	Vmath, Level G
(b) Knowledge and skills.	
(1) Mathematical process standards. The student use	s mathematical processes to acquire and demonstrate mathematical
understanding. The student is expected to:	F
(A) apply mathematics to problems arising in	Module 6: Lesson PL1: 290-291
everyday life, society, and the workplace;	Module 6: Lesson 8: 322-323
(B) use a problem-solving model that incorporates	Module 3: Lesson PL2: 138-139
analyzing given information, formulating a plan or	Module 7: Lesson PL2: 292-295
strategy, determining a solution, justifying the	
solution, and evaluating the problem-solving	
process and the reasonableness of the solution;	Madula 2: Lasson 1: 88 01
(c) select tools, including real objects, manipulatives, paper and pencil, and technology as	Module 2. Lesson 1. 200 201
appropriate, and techniques, including mental	Would 5. Lesson 1. 250-251
math, estimation, and number sense as	
appropriate, to solve problems;	
(D) communicate mathematical ideas, reasoning,	Module 2: Lesson 1: 88-91
and their implications using multiple	Module 4: Lesson PL1: 182-186
representations, including symbols, diagrams,	Module 4: Lesson PL2: 187
graphs, and language as appropriate;	
(E) create and use representations to organize,	Module 5: Lesson PL1: 245
record, and communicate mathematical ideas;	Module 7: Lesson PL1: 290-291
(F) analyze mathematical relationships to connect	Module 1: Lesson 4: 50-53
and communicate mathematical ideas; and	Module 1: Lesson 10: 72-75
(G) display, explain, and justify mathematical ideas	Module 1: Lesson 1: 38-41
and arguments using precise mathematical	Module 1: Lesson 3: 56-49
language in written or oral communication.	Module 3: Lesson PL1: 134-137
(2) Number and operations. The student applies math	nematical process standards to represent and use rational numbers in a
variety of forms. The student is expected to:	
(A) classify whole numbers, integers, and rational	Module 2: Lesson 7: 112-115
Numbers using a visual representation such as a	
sets of numbers:	
(B) identify a number, its opposite, and its absolute	Module 2: Lesson 8: 116-119
value;	Module 2: Lesson 9: 120-123
	Module 2: Lesson 10: 124-127
(C) locate, compare, and order integers and	Module 2: Lesson 9: 120-123
rational numbers using a number line;	Module 2: Lesson 10: 124-127
	Module 3: Lesson 1: 140-143
	Module 3: Lesson 2: 144-147
(D) order a set of rational numbers arising from	Module 3: Lesson 1: 140-143
mathematical and real-world contexts; and	Module 3: Lesson 2: 144-147
(E) extend representations for division to include	Module 3: Lesson 9: 172-175
fraction notation such as <i>a/b</i> represents the same	
number as $a \div b$ where $b \neq 0$ .	
(3) Number and operations. The student applies mathematical structures and structure applies and the structure of the structu	nematical process standards to represent addition, subtraction,
multiplication, and division while solving problems ar	nd justifying solutions. The student is expected to:
(A) recognize that dividing by a rational number	Module 3: Lesson 8: 168-171
and multiplying by its reciprocal result in equivalent	

Texas Essential Knowledge and Skills, Grade 6	Vmath, Level G
values;	
(B) determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one;	Module 3: Lesson 7: 164-167
(C) represent integer operations with concrete models and connect the actions with the models to standardized algorithms;	Module 3: Lesson 2: 144-147
(D) add, subtract, multiply, and divide integers fluently; and	Module 3: Lesson 3: 148-151 Module 3: Lesson 4: 152-155 Module 3: Lesson 5: 156-159
(E) multiply and divide positive rational numbers fluently.	Module 2: Lesson 2: 92-95 Module 2: Lesson 3: 96-99 Module 2: Lesson 4: 100-104 Module 2: Lesson 5: 105-107 Module 2: Lesson 6: 108-111 Module 3: Lesson 6: 160-163 Module 3: Lesson 7: 164-167 Module 3: Lesson 9: 172-175 Module 3: Lesson 10: 176-179
(4) Proportionality. The student applies mathematica	l process standards to develop an understanding of proportional nected to:
(A) compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships;	Module 5: Lesson 4: 260-263 Module 5: Lesson 5: 264-267
(B) apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates;	Module 5: Lesson 4: 260-263 Module 5: Lesson 5: 264-267
(C) give examples of ratios as multiplicative comparisons of two quantities describing the same attribute;	Module 5: Lesson 3: 256-259 Module 5: Lesson 4: 260-263 Module 5: Lesson 5: 264-267
(D) give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients;	Module 5: Lesson 3: 256-259 Module 5: Lesson 5: 264-267
(E) represent ratios and percents with concrete models, fractions, and decimals;	Module 5: Lesson 1: 250-251 Module 5: Lesson 6: 268-271 Module 5: Lesson 7: 272-275 Module 5: Lesson 8: 276-279 Module 5: Lesson 9: 280-284
(F) represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers;	Module 5: Lesson 6: 268-271 Module 5: Lesson 7: 272-275 Module 5: Lesson 8: 276-279 Module 5: Lesson 9: 280-284
(G) generate equivalent forms of fractions,	Module 5: Lesson 6: 268-271

Texas Essential Knowledge and Skills, Grade 6	Vmath, Level G
decimals, and percents using real-world problems,	Module 5: Lesson 7: 272-275
including problems that involve money; and	Module 5: Lesson 8: 276-279
	Module 5: Lesson 9: 280-284
(H) convert units within a measurement system,	Module 5: Lesson 10: 285-288
including the use of proportions and unit rates.	
(5) Proportionality. The student applies mathematica relationships. The student is expected to:	l process standards to solve problems involving proportional
(A) represent mathematical and real-world	Module 5: Lesson 1: 250-251
problems involving ratios and rates using scale	Module 5: Lesson 4: 260-263
factors, tables, graphs, and proportions;	Module 5: Lesson 5: 264-267
(B) solve real-world problems to find the whole	Module 5: Lesson 5: 264-267
given a part and the percent, to find the part given	
the whole and the percent, and to find the percent	
given the part and the whole, including the use of	
Concrete and pictorial models; and	Madula F. Losson F. 264 267
to show equal parts of the same whole.	Nodule 5: Lesson 5: 264-267
(6) Expressions, equations, and relationships. The stu	dent applies mathematical process standards to use multiple
representations to describe algebraic relationships. T	he student is expected to:
(A) identify independent and dependent quantities	Module 4: Lesson 9: 210-213
from tables and graphs;	Module 4: Lesson 10: 214-217
(B) write an equation that represents the	Module 4: Lesson 9: 210-213
relationship between independent and dependent	Module 4: Lesson 10: 214-217
	NA
(C) represent a given situation using verbal descriptions tables graphs and equations in the	Module 4: Lesson 10: 214-217
form $v = kx$ or $v = x + h$	
(7) Expressions, equations, and relationships. The stu	dent applies mathematical process standards to develop concepts of
expressions and equations. The student is expected t	0:
(A) generate equivalent numerical expressions	Module 4: Lesson 3: 194-197
using order of operations, including whole number	
exponents and prime factorization;	
(B) distinguish between expressions and equations	Module 4: Lesson 1: 188-189
verbally, numerically, and algebraically;	Module 4: Lesson 2: 190-193
(C) determine if two expressions are equivalent	Module 4: Lesson 4: 198
using concrete models, pictorial models, and	
algebraic representations, and	Madula 4: Losson E: 100
(D) generate equivalent expressions using the	
commutative, associative, and distributive	
properties.	
(8) Expressions, equations, and relationships. The stu	dent applies mathematical process standards to use geometry to
represent relationships and solve problems. The stud	ent is expected to:
(A) extend previous knowledge of triangles and	Module 6: Lesson 6: 316-317
their properties to include the sum of angles of a	Module 6: Lesson 7: 318-321
triangle, the relationship between the lengths of	
sides and measures of angles in a triangle, and	

Texas Essential Knowledge and Skills, Grade 6	Vmath, Level G	
determining when three lengths form a triangle;		
(B) model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes;	Module 6: Lesson 1: 296-299 Module 6: Lesson 2: 300-303 Module 6: Lesson 3: 304-307 Module 6: Lesson 4: 308-311 Module 6: Lesson 5: 312-315 Module 6: Lesson 10: 328-331	
(C) write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers; and	Module 6: Lesson 1: 296-299 Module 6: Lesson 2: 300-303 Module 6: Lesson 3: 304-307 Module 6: Lesson 4: 308-311 Module 6: Lesson 5: 312-315 Module 6: Lesson 8: 322-323 Module 6: Lesson 9: 324-327	
(D) determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.	Module 6: Lesson 1: 296-299 Module 6: Lesson 2: 300-303 Module 6: Lesson 3: 304-307 Module 6: Lesson 4: 308-311 Module 6: Lesson 5: 312-315 Module 6: Lesson 8: 322-323 Module 6: Lesson 9: 324-327	
(9) Expressions, equations, and relationships. The stu inequalities to represent situations. The student is ex	dent applies mathematical process standards to use equations and pected to:	
(A) write one-variable, one-step equations and inequalities to represent constraints or conditions within problems;	Module 4: Lesson 11: 218-221	
(B) represent solutions for one-variable, one-step equations and inequalities on number lines; and	Module 4: Lesson 12: 222-225	
(C) write corresponding real-world problems given one-variable, one-step equations or inequalities.		
(10) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to:		
(A) model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts; and	Module 4: Lesson 6: 200-201 Module 4: Lesson 7: 202-205 Module 4: Lesson 8: 206-209 Module 4: Lesson 13: 226-229 Module 4: Lesson 14: 230-233 Module 4: Lesson 15: 234-237	
(B) determine if the given value(s) make(s) one- variable, one-step equations or inequalities true.	Module 4: Lesson 7: 202-205 Module 4: Lesson 8: 206-209 Module 4: Lesson 13: 226-229 Module 4: Lesson 14: 230-233 Module 4: Lesson 15: 234-237	
(11) Measurement and data. The student applies	Module 7: Lesson 10: 328-331	

Texas Essential Knowledge and Skills, Grade 6	Vmath, Level G
mathematical process standards to use coordinate	
geometry to identify locations on a plane. The	
student is expected to graph points in all four	
quadrants using ordered pairs of rational numbers.	
(12) Measurement and data. The student applies mat representations to analyze problems. The student is e	hematical process standards to use numerical or graphical expected to:
(A) represent numeric data graphically, including	Module 7: Lesson 3: 3-4-307
dot plots, stem-and-leaf plots, histograms, and box	Module 7: Lesson 4: 308-311
plots;	Module 7: Lesson 5: 312-315
	Module 7: Lesson 8: 322-323
	Module 7: Lesson 0: 322-323
(B) use the graphical representation of numeric	Module 7: Lesson 3: 3-4-307
data to describe the center, spread, and shape of	Module 7: Lesson 7: 318-321
the data distribution;	
(C) summarize numeric data with numerical	Module 7: Lesson 1: 296-299
summaries, including the mean and median	Module 7: Lesson 2: 300-303
(measures of center) and the range and	Module 7: Lesson 3: 3-4-307
interquartile range (IQR) (measures of spread), and	Module 7: Lesson 6: 316-317
use these summaries to describe the center,	Module 7: Lesson 7: 318-321
spread, and shape of the data distribution; and	Module 7: Lesson 8: 322-323
(D) summarize categorical data with numerical and	Module 7: Lesson 1: 296-299
graphical summaries, including the mode, the	Module 7: Lesson 1: 200 200 Module 7: Lesson 2: 300-303
percent of values in each category (relative	Module 7: Lesson 6: 316-317
frequency table), and the percent bar graph, and	Module 7: Lesson 7: 218-221
use these summaries to describe the data	
distribution.	
(13) Measurement and data. The student applies mat	hematical process standards to use numerical or graphical
representations to solve problems. The student is exp	pected to:
(A) interpret numeric data summarized in dot plots,	Module 7: Lesson 9: 324-327
stem-and-leaf plots, histograms, and box plots; and	
(B) distinguish between situations that yield data	
with and without variability.	
(14) Personal financial literacy. The student applies m	athematical process standards to develop an economic way of thinking
and problem solving useful in one's life as a knowledge	geable consumer and investor. The student is expected to:
(A) compare the features and costs of a checking	
account and a debit card offered by different local	
financial institutions;	
(B) distinguish between debit cards and credit	
(C) balance a check register that includes deposits	
withdrawals and transfers:	
(D) explain why it is important to establish a	
positive credit history;	
(E) describe the information in a credit report and	
how long it is retained;	
(F) describe the value of credit reports to	
borrowers and to lenders;	
(G) explain various methods to pay for college,	
including through savings, grants, scholarships,	
student loans, and work-study; and	

Texas Essential Knowledge and Skills, Grade 6	Vmath, Level G
(H) compare the annual salary of several	
occupations requiring various levels of post-	
secondary education or vocational training and	
calculate the effects of the different annual salaries	
on lifetime income.	

Texas Essential Knowledge and Skills, Grade 7	Vmath, Level H
(b) Knowledge and skills.	
(1) Mathematical process standards. The student use	s mathematical processes to acquire and demonstrate mathematical
understanding. The student is expected to:	
(A) apply mathematics to problems arising in	Module 5: Lesson PL1: 212-215
everyday life, society, and the workplace;	Module 5: Lesson PL2: 216-219
	Module 7: Lesson PL1: 316-320
	Module 7: Lesson PL2: 321
(B) use a problem-solving model that incorporates	Module 4: Lesson PL1: 166-169
analyzing given information, formulating a plan or	Module 4: Lesson PL2: 170-173
strategy, determining a solution, justifying the	
solution, and evaluating the problem-solving	
process and the reasonableness of the solution;	
(C) select tools, including real objects,	Module 1: Lesson 4: 48-49
manipulatives, paper and pencil, and technology as	Module 1: Lesson 8: 62-65
appropriate, and techniques, including mental	
math, estimation, and number sense as	
appropriate, to solve problems;	
(D) communicate mathematical ideas, reasoning,	Module 2: Lesson PL2: 80-83
and their implications using multiple	Module 6: Lesson PL1: 252-255
representations, including symbols, diagrams,	Module 6: Lesson PL2: 256-259
graphs, and language as appropriate;	
(E) create and use representations to organize,	Module 1: Lesson 9: 66-70
record, and communicate mathematical ideas;	Module 1: Lesson 10: 71-74
(F) analyze mathematical relationships to connect	Module 3: Lesson PL1: 122-126
and communicate mathematical ideas; and	Module 3: Lesson PL2: 127
(G) display, explain, and justify mathematical ideas	Module 1: Lesson 1: 38-39
and arguments using precise mathematical	Module 1: Lesson 2: 40-43
language in written or oral communication.	Module 1: Lesson 3: 44-47
(2) Number and operations. The student applies	Module 2: Lesson 1: 84-87
mathematical process standards to represent and	Module 2: Lesson 2: 88-91
use rational numbers in a variety of forms. The	
student is expected to extend previous knowledge	
of sets and subsets using a visual representation to	
describe relationships between sets of rational	
(2) Number and operations. The student applies math	pomatical process standards to add, subtract, multiply, and divide while
(5) Number and operations. The student applies mati	t is expected to:
(A) add subtract multiply and divide rational	Module 2: Lesson 3: 92-95
numbers fluently: and	Module 2: Lesson J: 96-99
	Module 2: Lesson 4: 50-55
	Module 2: Lesson 5: 100
	Module 2: Lesson 7: 105
	Module 2: Lesson 7: 105
	Would 2: Lesson 9: 110-113
	IVIOQUIE 2: LESSON 10: 114-117
	Noaule 3: Lesson 1: 128-131
	Module 3: Lesson 2: 132-135
	Module 3: Lesson 3: 136-139
	Module 3: Lesson 4: 140-143
	Module 3: Lesson 5: 144-147

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	Module 3: Lesson 6: 148
	Module 3: Lesson 7: 149
	Module 3: Lesson 8: 150-153
	Module 3: Lesson 9: 154-157
	Module 3: Lesson 10: 158-161
(B) apply and extend previous understandings of	Module 2: Lesson 3: 92-95
operations to solve problems using addition,	Module 2: Lesson 4: 96-99
subtraction, multiplication, and division of rational	Module 2: Lesson 5: 100
numbers.	Module 2: Lesson 6: 101-104
	Module 2: Lesson 7: 105
	Module 2: Lesson 8: 106-109
	Module 2: Lesson 9: 110-113
	Module 2: Lesson 10: 114-117
	Module 3: Lesson 1: 128-131
	Module 3: Lesson 2: 132-135
	Module 2: Lesson 2: 126 120
	Module 3: Lesson 4: 140 142
	Module 3: Lesson 4: 140-143
	Module 3: Lesson 5: 144-147
	Module 3: Lesson 7: 149
	Module 3: Lesson 8: 150-153
	Module 3: Lesson 9: 154-157
	Module 3: Lesson 10: 158-161
(4) Proportionality. The student applies mathematica	I process standards to represent and solve problems involving
roportional relationships. The student is expected to	or bioless standards to represent and solve problems involving
(A) represent constant rates of change in	Module 5: Lesson 3: 228
mathematical and real-world problems given	Module 5: Lesson 10: 2/1-2/7
pictorial, tabular, verbal, numeric, graphical, and	
algebraic representations, including $d = rt$ ;	
(B) calculate unit rates from rates in mathematical	Module 5: Lesson 3: 228
and real-world problems;	
(C) determine the constant of proportionality ( <i>k</i> =	Module 5: Lesson 1: 220-223
y/x) within mathematical and real-world problems;	Module 5: Lesson 4: 229
	Module 5: Lesson 7: 232-235
	Module 5: Lesson 8: 236-239
(D) solve problems involving ratios, rates, and	Module 5: Lesson 5: 230
percents, including multi-step problems involving	Module 5: Lesson 6: 231
percent increase and percent decrease, and	Module 5: Lesson 9: 240-243
financial literacy problems; and	
(E) convert between measurement systems,	Module 5: Lesson 4: 229
including the use of proportions and the use of unit	
rates.	
(5) Proportionality. The student applies mathematica	l process standards to use geometry to describe or solve problems
involving proportional relationships. The student is ex	xpected to:
(A) generalize the critical attributes of similarity,	Module 5: Lesson 1: 220-223
including ratios within and between similar shapes;	

Texas Essential Knowledge and Skills, Grade 7	Vmath, Level H
(B) describe $\pi$ as the ratio of the circumference of a circle to its diameter; and	Module 6: Lesson 1: 260-263
(C) solve mathematical and real-world problems	Module 5: Lesson 2: 224-227
(6) Proportionality. The student applies mathematica	process standards to use probability and statistics to describe or solve
nrohlems involving proportional relationships. The stu	ident is expected to:
(A) represent sample spaces for simple and	Module 7: Lesson 5: 338-341
compound events using lists and tree diagrams;	Module 7: Lesson 7: 344-347
<ul> <li>(B) select and use different simulations to represent simple and compound events with and without technology;</li> </ul>	Module 7: Lesson 8: 348-351
<ul> <li>(C) make predictions and determine solutions using experimental data for simple and compound events;</li> </ul>	Module 7: Lesson 6: 342-343
<ul> <li>(D) make predictions and determine solutions using theoretical probability for simple and compound events;</li> </ul>	Module 7: Lesson 9: 352-355
(E) find the probabilities of a simple event and its complement and describe the relationship between the two;	Module 7: Lesson 9: 352-355
(F) use data from a random sample to make inferences about a population;	Module 7: Lesson 10: 356-359
(G) solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents;	Module 7: Lesson 4: 334-337
(H) solve problems using qualitative and	Module 7: Lesson 5: 338-341
quantitative predictions and comparisons from	Module 7: Lesson 7: 344-347
simple experiments; and	Module 7: Lesson 9: 352-355
<ul> <li>(I) determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces.</li> </ul>	Module 7: Lesson 6: 342-343
(7) Expressions, equations, and relationships. The student applies mathematical process standards to represent linear relationships using multiple representations. The student is expected to represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$ .	Module 4: Lesson 8: 198-201
(8) Expressions, equations, and relationships. The student applies mathematical process standards to develop geometric relationships with volume. The student is expected to:	
(A) model the relationship between the volume of	Module 6: Lesson 10: 294-297
a rectangular prism and a rectangular pyramid	Module 6: Lesson 12: 302-326
having both congruent bases and heights and	Module 6: Lesson 13: 307
connect that relationship to the formulas;	
(B) explain verbally and symbolically the	Module 6: Lesson 11: 298-301
relationship between the volume of a triangular	Module 6: Lesson 12: 302-326
prism and a triangular pyramid having both	
congruent bases and neights and connect that	

Texas Essential Knowledge and Skills, Grade 7	Vmath, Level H	
relationship to the formulas; and		
(C) use models to determine the approximate	Module 6: Lesson 2: 264-267	
and connect the models to the actual formulas.	Module 6: Lesson 3: 268-271	
(9) Expressions, equations, and relationships. The stu	dent applies mathematical process standards to solve geometric	
problems. The student is expected to:		
(A) solve problems involving the volume of	Module 6: Lesson 8: 286-289	
rectangular prisms, triangular prisms, rectangular	Module 6: Lesson 9: 290-293	
pyramids, and triangular pyramids;		
(B) determine the circumference and area of	Module 6: Lesson 2: 264-267	
circles;	Module 6: Lesson 3: 268-271	
	Module 6: Lesson 6: 281	
(C) determine the area of composite figures	Module 6: Lesson 4: 272-275	
containing combinations of rectangles, squares,	Module 6: Lesson 5: 276-280	
parallelograms, trapezoids, triangles, semicircles,	Module 6: Lesson 6: 281	
and quarter circles; and		
(D) solve problems involving the lateral and total	Module 6: Lesson 7: 282-285	
surface area of a rectangular prism, rectangular		
by determining the area of the shape's pet		
(10) Expressions, equations, and relationships. The st	udent applies mathematical process standards to use one-variable	
equations and inequalities to represent situations. The student is expected to:		
(A) write one-variable, two-step equations and	Module 4: Lesson 1: 174-177	
inequalities to represent constraints or conditions	Module 4: Lesson 6: 192-193	
within problems;	Module 4: Lesson 7: 194-197	
(B) represent solutions for one-variable, two-step	Module 4: Lesson 6: 192-192	
equations and inequalities on number lines: and	Module 4: Lesson 7: 192-193	
	1000012 4. Lesson 7. 194-197	
(C) write a corresponding real-world problem given	Module 4: Lesson 4: 184-187	
a one-variable, two-step equation or inequality.		
(11) Expressions, equations, and relationships. The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:		
(A) model and solve one-variable, two-step	Module 4: Lesson 2: 178-181	
equations and inequalities;	Module 4: Lesson 3: 182-183	
	Module 4: Lesson 4: 184-187	
	Module 4: Lesson 5: 188-191	
	Module 4: Lesson 9: 202-206	
	Module 4: Lesson 10: 207-210	
(B) determine if the given value(s) make(s) one-	Module 4: Lesson 2: 178-181	
variable, two-step equations and inequalities true;	Module 4: Lesson 3: 182-183	
and	Module 4: Lesson 4: 184-187	
	Module 4: Lesson 5: 188-191	
	Module 4: Lesson 9: 202-206	
	Module 4: Lesson 10: 207-210	
(C) write and solve equations using geometry	Module 6: Lesson 14: 308	
concepts, including the sum of the angles in a		

Texas Essential Knowledge and Skills, Grade 7	Vmath, Level H
triangle, and angle relationships.	Module 6: Lesson 15: 309
(12) Measurement and data. The student applies main data. The student is expected to:	thematical process standards to use statistical representations to analyze
(A) compare two groups of numeric data using	Module 7: Lesson 1: 322-325
comparative dot plots or box plots by comparing	Module 7: Lesson 2: 326-329
their shapes, centers, and spreads;	Module 7: Lesson 3: 330-333
(B) use data from a random sample to make	Module 7: Lesson 3: 330-333
inferences about a population; and	Module 7: Lesson 10: 356-359
(C) compare two populations based on data in	Module 7: Lesson 1: 322-325
random samples from these populations, including	Module 7: Lesson 2: 326-329
informal comparative inferences about differences	Module 7: Lesson 3: 330-333
between the two populations.	
(13) Personal financial literacy. The student applies m	nathematical process standards to develop an economic way of thinking
and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:	
(A) calculate the sales tax for a given purchase and	
calculate income tax for earned wages;	
(B) identify the components of a personal budget,	
including income; planned savings for college,	
retirement, and emergencies; taxes; and fixed and	
variable expenses, and calculate what percentage	
(C) create and organize a financial assets and	
(c) create and organize a financial assets and	
statement.	
(D) use a family budget estimator to determine the	
minimum household budget and average hourly	
wage needed for a family to meet its basic needs in	
the student's city or another large city nearby;	
(E) calculate and compare simple interest and	
compound interest earnings; and	
(F) analyze and compare monetary incentives,	
including sales, rebates, and coupons.	

Texas Essential Knowledge and Skills, Grade 8	Vmath, Level I
(b) Knowledge and skills.	
(1) Mathematical process standards. The student use	s mathematical processes to acquire and demonstrate mathematical
understanding. The student is expected to:	
(A) apply mathematics to problems arising in	Module 6: Lesson 5: 304-307
everyday life, society, and the workplace;	Module 4: Lesson PL2: 186-189
(B) use a problem-solving model that incorporates	Module 2: Lesson PL2: 93-97
analyzing given information, formulating a plan or	Module 3: Lesson PL1: 136-139
strategy, determining a solution, justifying the	Module 3: Lesson PL2: 140-143
solution, and evaluating the problem-solving	
process and the reasonableness of the solution;	Madula 2. Lasson 7. 120 122
(c) select tools, including real objects,	Module 2: Lesson 7: 120-123
appropriate and techniques including mental	Module 7: Lesson PL1: 334-337
math. estimation. and number sense as	Module 7: Lesson PL2: 338-341
appropriate, to solve problems;	
(D) communicate mathematical ideas, reasoning,	Module 2: Lesson 7: 120-123
and their implications using multiple	Module 6: Lesson PL2: 284-287
representations, including symbols, diagrams,	
graphs, and language as appropriate;	
(E) create and use representations to organize,	Module 4: Lesson PL1: 182-185
record, and communicate mathematical ideas;	Module 7: Lesson 8: 370-372
(F) analyze mathematical relationships to connect	Module 1: Lesson 9: 70-73
and communicate mathematical ideas; and	Module 2: Lesson PL1: 90-93
(G) display, explain, and justify mathematical ideas	Module 5: Lesson PL1: 240-243
and arguments using precise mathematical	Module 5: Lesson PL2: 244-247
language in written or oral communication.	Module 6: Lesson PL1: 280-283
(2) Number and operations. The student applies math	nematical process standards to represent and use real numbers in a
variety of forms. The student is expected to:	
(A) extend previous knowledge of sets and subsets	Module 2: Lesson 1: 98-101
using a visual representation to describe	Module 2: Lesson 6: 119
relationships between sets of real numbers;	
(B) approximate the value of an irrational number,	Module 2: Lesson 7: 120-123
Including $\pi$ and square roots of numbers less than 225, and locate that rational number	Module 2: Lesson 8: 124-127
approximation on a number line:	Module 2: Lesson 9: 128-130
	Module 2: Lesson 10: 131-134
(C) convert between standard decimal notation and	Module 2: Lesson 2: 102-105
scientific notation; and	Module 2: Lesson 3: 106-109
	Module 2: Lesson 4: 110-113
	Module 2: Lesson 5: 114-118
(D) order a set of real numbers arising from	Module 2: Lesson 6: 119
mathematical and real-world contexts.	
(3) Proportionality. The student applies mathematica	process standards to use proportional relationships to describe
dilations. The student is expected to:	
(A) generalize that the ratio of corresponding sides	Module 6: Lesson 1: 288-291
of similar shapes are proportional, including a	Module 6: Lesson 2: 292-295
shape and its dilation;	Module 6: Lesson 9: 320-323
(B) compare and contrast the attributes of a shape	Module 6: Lesson 7: 312-315

Texas Essential Knowledge and Skills, Grade 8	Vmath, Level I
and its dilation(s) on a coordinate plane; and	Module 6: Lesson 8: 316-319
	Module 6: Lesson 9: 320-323
(C) use an algebraic representation to explain the	Module 6: Lesson 9: 320-323
effect of a given positive rational scale factor	
applied to two-dimensional figures on a coordinate	
plane with the origin as the center of dilation.	I process standards to ovalein propertional and new propertional
(4) Proportionality. The student applies mathematical relationships involving slope. The student is expected	to:
(A) use similar right triangles to develop an	Module 5: Lesson 3: 254-255
understanding that slope, <i>m</i> , given as the rate	
comparing the change in y-values to the change in	
x-values, $(y_2 - y_1)/(x_2 - x_1)$ , is the same for any two	
points $(x_1, y_1)$ and $(x_2, y_2)$ on the same line;	
(B) graph proportional relationships, interpreting	Module 4: Lesson 14: 226-229
the unit rate as the slope of the line that models	Module 4: Lesson 15: 230-233
(C) use data from a table or graph to determine the	Module 1: Lesson 11: 226-229
rate of change or slope and y-intercept in	Module 4: Lesson 15: 230-233
mathematical and real-world problems.	
(5) Proportionality. The student applies mathematica	l process standards to use proportional and non-proportional
relationships to develop foundational concepts of fur	nctions. The student is expected to:
(A) represent linear proportional situations with	Module 4: Lesson 7: 202-205
tables, graphs, and equations in the form of $y = kx$ ;	Module 4: Lesson 8: 206-209
	Module 4: Lesson 9: 210-213
	Module 4: Lesson 10: 214-217
	Module 4: Lesson 11: 218-221
	Module 4: Lesson 15: 230-233
	Module 5: Lesson 2: 250-253
(B) represent linear non-proportional situations	Module 4: Lesson 7: 202-205
with tables, graphs, and equations in the form of y	Module 4: Lesson 8: 206-209
$= mx + b$ , where $b \neq 0$ ;	Module 4: Lesson 9: 210-213
	Module 4: Lesson 12: 222-223
	Module 5: Lesson 2: 250-253
(C) contrast bivariate sets of data that suggest a	Module 4: Lesson 12: 222-223
linear relationship with bivariate sets of data that	Module 5: Lesson 4: 256-259
do not suggest a linear relationship from a	
graphical representation;	Madula A. Lassan 2: 104 107
(D) use a trend line that approximates the linear	Module 4: Lesson 2: 194-197
nredictions:	Module 4: Lesson 9: 210-213
	WOULIE 4: LESSON 13: 224-225
(E) solve problems involving direct variation;	Module 4: Lesson 9: 210-213
	Module 4: Lesson 10: 214-217
	Module 4: Lesson 11: 218-221
	Module 5: Lesson 2: 250-253
(F) distinguish between proportional and non-	Module 5: Lesson 5: 260-263

Texas Essential Knowledge and Skills, Grade 8	Vmath, Level I
proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$ , where $b \neq 0$ ;	
(G) identify functions using sets of ordered pairs,	Module 4: Lesson 3: 198
tables, mappings, and graphs;	Module 4: Lesson 4: 199
	Module 4: Lesson 5: 200
	Module 4: Lesson 6: 201
	Module 4: Lesson 7: 202-205
	Module 4: Lesson 8: 206-209
	Module 4: Lesson 9: 210-213
	Module 5: Lesson 2: 250-253
(H) identify examples of proportional and non-	Module 5: Lesson 6: 264-267
proportional functions that arise from	
mathematical and real-world problems; and	
(I) write an equation in the form $y = mx + b$ to	Module 4: Lesson 10: 214-217
model a linear relationship between two quantities	Module 4: Lesson 11: 218-221
using verbal, numerical, tabular, and graphical	Module 5: Lesson 1: 248-249
representations.	
(6) Expressions, equations, and relationships. The stu	dent applies mathematical process standards to develop mathematical
relationships and make connections to geometric for	mulas. The student is expected to:
(A) describe the volume formula $V = Bh$ of a	Module 7: Lesson 6: 362-365
cylinder in terms of its base area and its height;	Module 7: Lesson 7: 366-369
(B) model the relationship between the volume of a	Module 7: Lesson 6: 362-365
cylinder and a cone having both congruent bases	
and heights and connect that relationship to the	
formulas; and	
(C) use models and diagrams to explain the	Module 7: Lesson 8: 370-372
Pythagorean theorem.	Module 7: Lesson 9: 372-375
(7) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to solve problems. The student is expected to:	
(A) solve problems involving the volume of	Module 7: Lesson 6: 362-365
cylinders, cones, and spheres;	Module 7: Lesson 7: 366-369
(B) use previous knowledge of surface area to make	Module 7: Lesson 4: 354-357
connections to the formulas for lateral and total	Module 7: Lesson 5: 358-362
surface area and determine solutions for problems	
involving rectangular prisms, triangular prisms, and	
cylinders;	
(C) use the Pythagorean Theorem and its converse to solve problems; and	Module 7: Lesson 9: 372-375
(D) determine the distance between two points on	Module 7: Lesson 10: 376-379
a coordinate plane using the Pythagorean	
Theorem.	
(8) Expressions, equations, and relationships. The stu	dent applies mathematical process standards to use one-variable
equations or inequalities in problem situations. The s	tudent is expected to:
(A) write one-variable equations or inequalities	Module 3: Lesson 1: 144-147
with variables on both sides that represent	Module 3: Lesson 2: 148-151
provients using rational number coefficients and	

Texas Essential Knowledge and Skills, Grade 8	Vmath, Level I
constants;	Module 3: Lesson 3: 152-155
	Module 3: Lesson 4: 156-159
	Module 3: Lesson 5: 160-161
	Module 3: Lesson 6: 162-165
	Module 3: Lesson 7: 166-169
	Module 3: Lesson 10: 174-177
(B) write a corresponding real-world problem when	
given a one-variable equation or inequality with	
rational number coefficients and constants:	
(C) model and solve one-variable equations with	Module 2: Lesson 2: 102-105
variables on both sides of the equal sign that	Module 3: Lesson 1: 144-147
represent mathematical and real-world problems	Module 3: Lesson 2: 148-151
using rational number coefficients and constants;	Module 3: Lesson 3: 152-155
and	Module 3: Lesson 4: 156-159
	Module 3: Lesson 5: 160-161
	Module 3: Lesson 6: 162-165
	Module 3: Lesson 7: 166-169
(D) use informal arguments to establish facts about	Module 6: Lesson 3: 296-299
the angle sum and exterior angle of triangles, the	Module 6: Lesson 4: 230-303
angles created when parallel lines are cut by a	
transversal, and the angle-angle criterion for	
similarity of triangles.	Madula 2. Lasson 9. 170 171
(9) Expressions, equations, and relationships. The student applies mathematical process standards to	Module 3: Lesson 8: 170-171
use multiple representations to develop	Module 5: Lesson 7: 269
foundational concepts of simultaneous linear	Module 5: Lesson 8: 269
equations. The student is expected to identify and	Module 5: Lesson 9: 270-274
verify the values of x and y that simultaneously	Module 5: Lesson 10: 275-278
satisfy two linear equations in the form $y = mx + b$	Nodule 3. Lesson 10. 273 270
from the intersections of the graphed equations.	
(10) I wo-dimensional shapes. The student applies mathematical process standards to develop transformational geometry concepts. The student is expected to:	
(A) generalize the properties of orientation and	Module 6: Lesson 7: 312-315
congruence of rotations, reflections, translations,	Module 6: Lesson 8: 316-319
and dilations of two-dimensional shapes on a	Module 6: Lesson 9: 320-323
coordinate plane;	
(B) differentiate between transformations that	Module 6: Lesson 6: 308-311
preserve congruence and those that do not;	Module 6: Lesson 9: 320-323
	Module 6: Lesson 10: 324-327
(C) explain the effect of translations, reflections	Module 6: Lesson 7: 312-315
over the x- or y-axis, and rotations limited to 90°,	Module 6: Lesson 8: 316-319
180, 270°, and 360° as applied to two-dimensional	
representation: and	
(D) model the effect on linear and area	Module 7: Lesson 1: 342-345
measurements of dilated two-dimensional shapes.	Module 7: Lesson 2: 346-349

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	Module 7: Lesson 3: 350-353
(11) Measurement and data. The student applies mathematical process standards to use statistical procedures to describe data. The student is expected to:	
(A) construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data:	Module 4: Lesson 2: 194-197
(B) determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points; and	Module 4: Lesson 1: 190-193
(C) simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected.	
(12) Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:	
(A) solve real-world problems comparing how interest rate and loan length affect the cost of credit;	
(B) calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator;	
(C) explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time;	
<ul><li>(D) calculate and compare simple interest and compound interest earnings;</li></ul>	
<ul> <li>(E) identify and explain the advantages and disadvantages of different payment methods;</li> </ul>	
(F) analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility; and	
(G) estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college.	