UNIT 5

Functions & Relationships

Alaskan Math Standards (GLE's) for This Unit

These Alaskan math standards underly the language development of the unit. Many of these standards are addressed during the regular math program and in the concrete introduction of the key vocabulary words for the unit.

The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by

[7] F&R-1 describing or extending patterns (linear), up to ten terms, represented in tables, sequences, or in problem situations (M4.3.1)

[7] F&R-2 generalizing relationships (linear) using a table of ordered pairs, a function, or an equation (M4.3.4)

[7] F&R-3 describing in words how a change in one variable in a formula affects the remaining variables (how changing the length affects the area of a quadrilateral) (M4.3.2)

[7] F&R-4 using a calculator as a tool when describing, extending, or representing patterns (L) (M4.3.3)

Alaskan Language Standards (GLE's) for This Unit

AK.R.3.1. Reading: The student uses strategies to decode or comprehend the meaning of words in texts. (E.B.1)

[7] 3.2.2. Reading aloud short factual information (e.g., reports, articles) (L)

AK.R.3.3. Reading: The student restates/summarizes and connects information. (E.B.3)

AK.R.3.5. Reading: The student follows written directions. (E.C.2)

[7] 3.5.1. Completing a task by following written, multi-step directions (e.g., answer a multi-faceted text question) (L)

[7] 3.5.2. Identifying the sequence of steps in a list of directions (e.g., what is the first step, what is the second step)

[7] 3.3.4. Applying rules of capitalization (e.g., titles and proper nouns)

AK.W.3.4. Writing: The student revises writing. (E.A.5, E.A.8)

AK.E.A. A student should be able to speak and write well for a variety of purposes and audiences. A student who meets the content standard should:

E.A.1. Apply elements of effective writing and speaking. These elements include ideas, organization, vocabulary, sentence structure, and personal style.

E.A.2. In writing, demonstrate skills in sentence and paragraph structure, including grammar, spelling, capitalization, and punctuation.

E.A.3. In speaking, demonstrate skills in volume, intonation, and clarity.

INTRODUCTION OF MATH VOCABULARY

Functions & Relationships

Concrete Introduction of Key Vocabulary
Note: *A vocabulary graphic is provided in this unit for each of the key words. Definitions for all of the key words can be found in the glossary at the back of this program.*

PATTERN

Direct the students' attention to patterns in their clothing items. Show the following number pattern: 2, 7, 12, 17, 22... — have the students determine how the pattern was created (adding 5 to each number). Show other number patterns.

TERMS

Show the students a sample of trail mix or another food that has different ingredients. Have the students identify the items that make up the sample. Relate these to the terms in math (numbers and symbols) — e.g., 4x-7=5 (4, x, 7, and 5 are terms).

RULES

Show the pictures of sports, from the back of this unit. Have the students suggest some of the rules of the different games. Relate this to math rules; show examples of math rules for addition, multiplication, subtraction, and division.

Functions & Relationships

Concrete Introduction of Key Vocabulary
Note: *A vocabulary graphic is provided in this unit for each of the key words. Definitions for all of the key words can be found in the glossary at the back of this program.*

ORDERED PAIRS

Show two slices of bread and one slice of cheese. Have the students suggest other ingredients that can be used to make sandwiches. Refer to the bread and cheese and show their numbers as ordered pairs: 2 slices of bread and 1 slice of cheese (2,1). Demonstrate the use of numbered pairs on a graph (x,y).

FORMULA

Show the students the picture of the cook from the end of this unit. Lead the students to understand that the cook is following a recipe. Use this to introduce formulas in math. Show sample formulas, e.g., finding the circumference of a circle, the volume of a box, the area of a triangle, etc.

VARIABLE

Make an overhead of the signs from the end of this section. Have the students identify the different signs and their messages. Lead the students to suggest why a picture sign is more effective than those that use written words (speed of recognition). Use this as an analogy for variables — just as the pictures represent words, in math letters and symbols can be used to represent numbers (e.g, xy).

Functions & Relationships

Concrete Introduction of Key Vocabulary
Note: *A vocabulary graphic is provided in this unit for each of the key words. Definitions for all of the key words can be found in the glossary at the back of this program.*

RATIO

Show the students a set of measuring spoons. Have them use the spoons to determine the ratio of teaspoons to tablespoons (3:1). Use measuring cups to show the ratios of cups to pints, quarts, and gallons (2:1, 4:1, and 16:1).

FUNCTION

Show the picture of the vending machine, from the back of this unit. Use this to represent input and output. Relate function to math; show examples of function (see the glossary for an example).

AVERAGE

Use a ruler and a fulcrum to create a teeter totter. When the ruler is perfectly balanced, direct the students' attention to the equal lengths on both sides of the center. Use this to introduce average in math. Give each student some play money. The students should add their money amd write the amounts on the board. Then, find the average by adding all of the amounts and dividing by the number of students.

Functions & Relationships

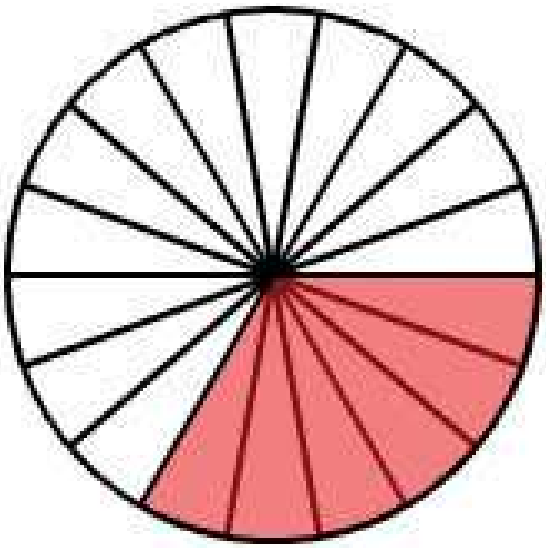
Concrete Introduction of Key Vocabulary
Note: *A vocabulary graphic is provided in this unit for each of the key words. Definitions for all of the key words can be found in the glossary at the back of this program.*

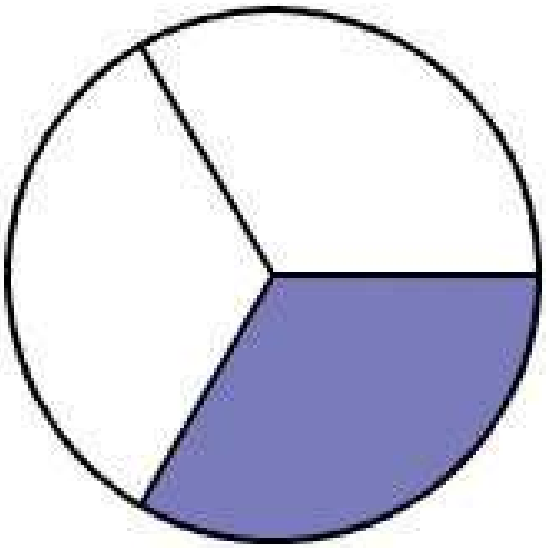
AREA

Show the students 2 or 3 different table cloths, napkins, etc. Have the students contrast the materials. Lead them to note the difference in their areas. If possible, show a sample of an area rug. Draw shapes on the board and determine their areas, using the appropriate math formulas.

VOCABULARY PICTURES

PATTERN



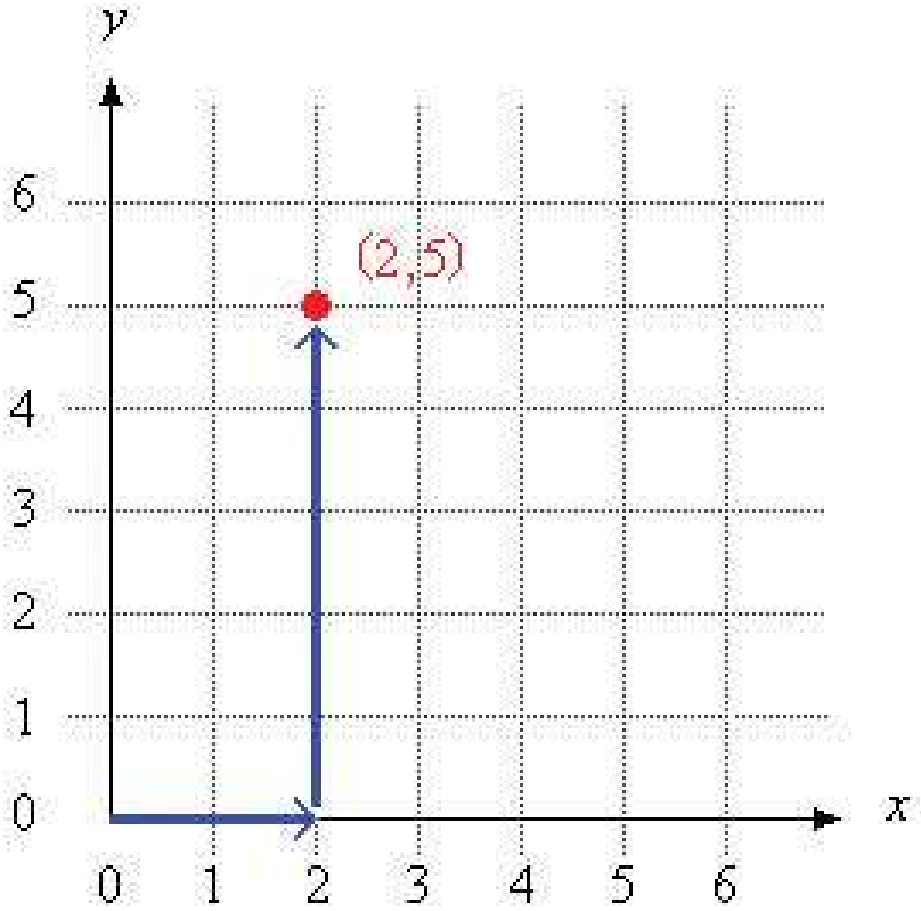


$$\frac{6}{18} \div \frac{6}{6} = \frac{1}{3}$$

TERMS


Class Rules
Respect
Every
Single
Person
Especially
Classmates &
Teachers
Respect yourself
Respect others
Respect our school

RULES


y
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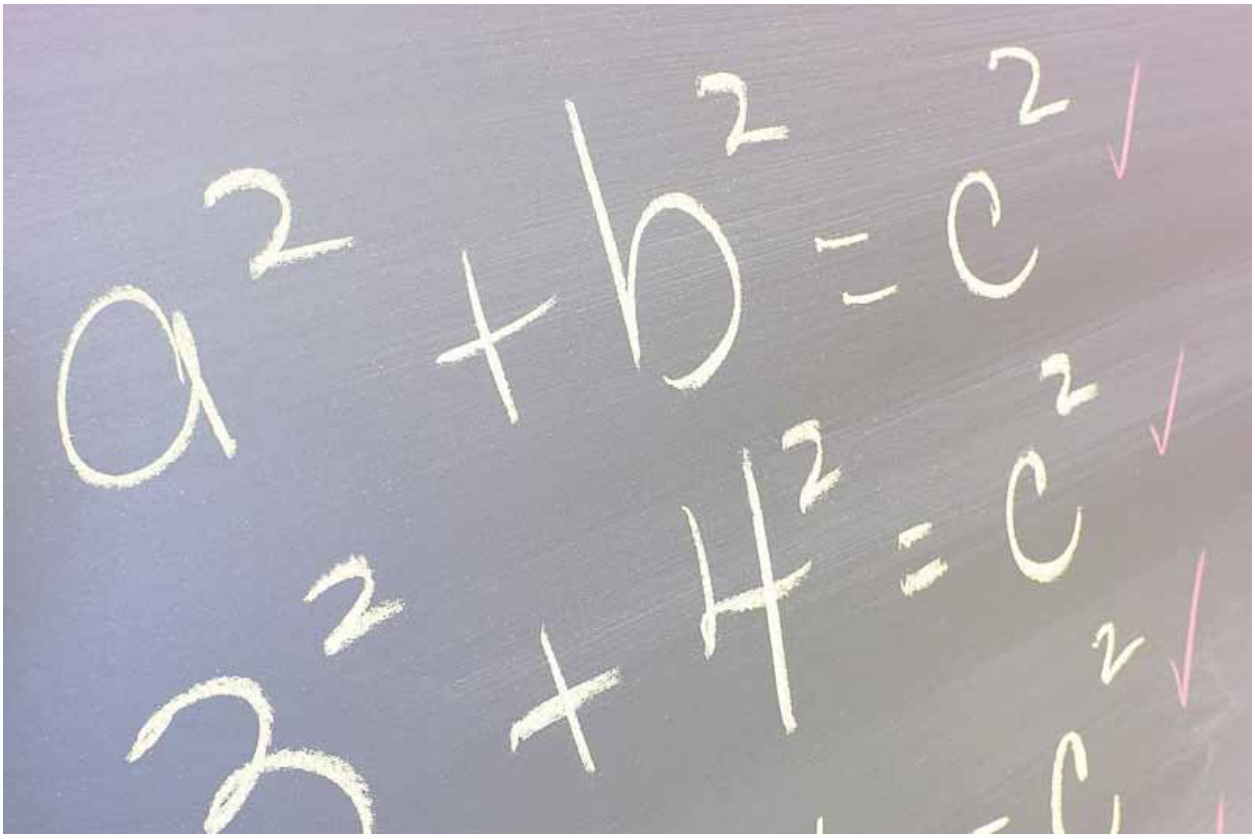
(2,5)
0
1
2
3
4
5
6

ORDERED PAIRS


a² + b² = c²
a² + b² = c²

FORMULA


DO NOT
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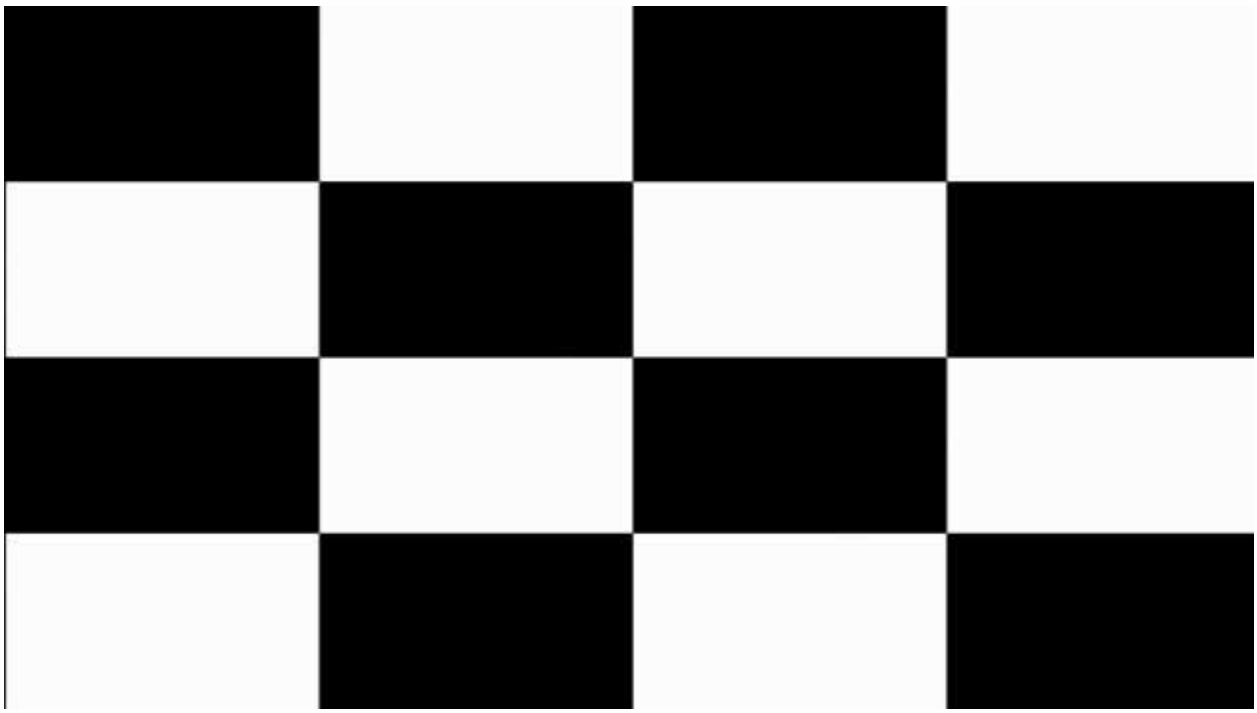
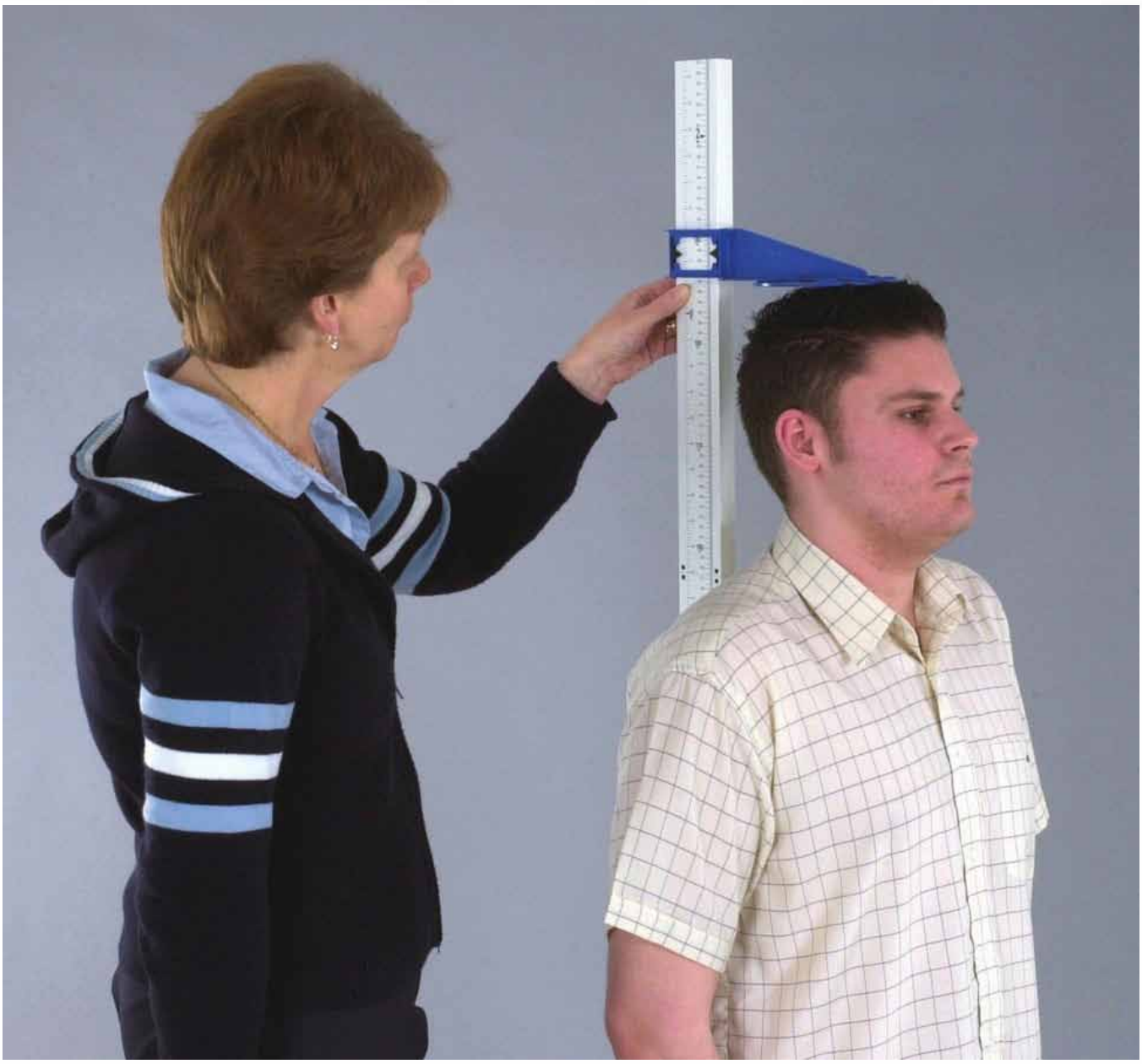
ROUTE
66
MAIN ST.
YIELD
ONE
WAY
CAUTION
CONSTRUCTION
ZONE
ENTER AT
YOUR OWN RISK

VARIABLE

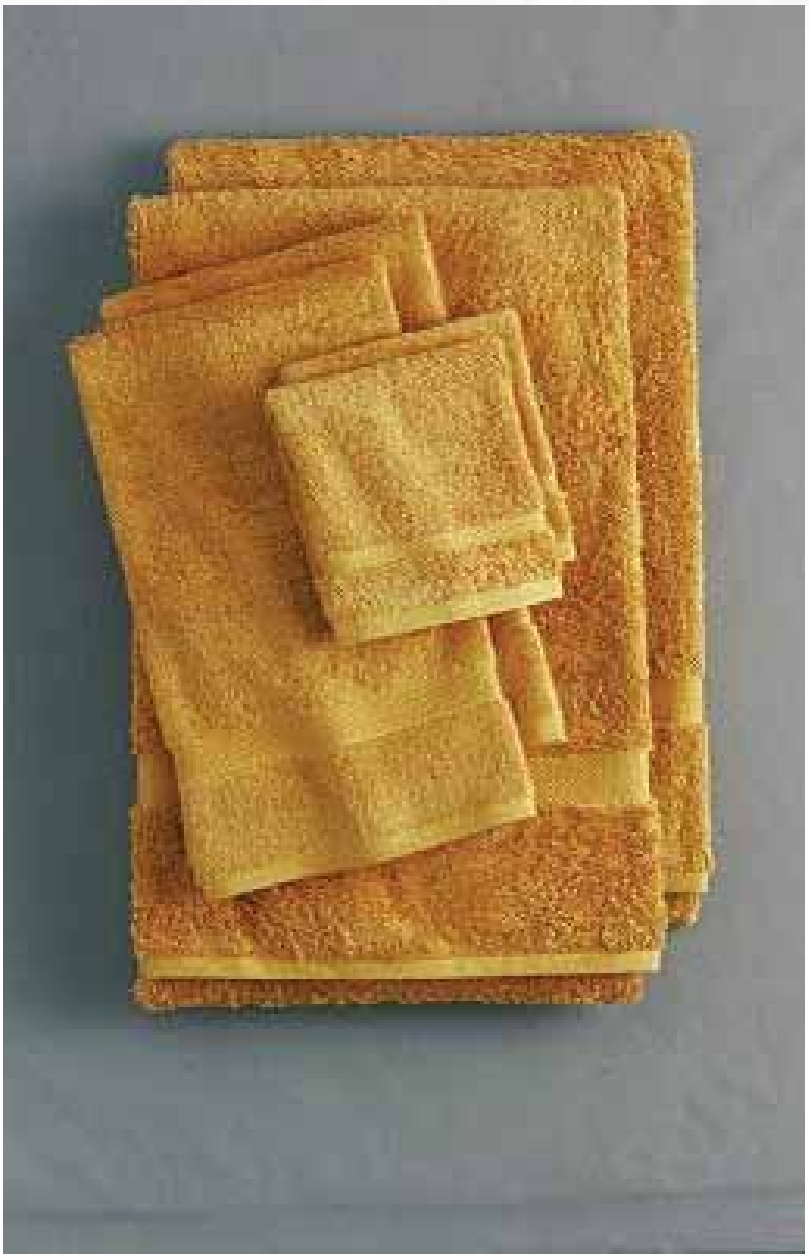


RATIO

FUNCTION



AVERAGE



AREA

LANGUAGE ACTIVITIES

Language and Skills Development

LISTENING

Review the key math words introduced in this unit. If the vocabulary pictures were not presented during the introduction, show them to the students at this time.

Mini Pictures

Provide each student with a copy of the mini-pictures page from the Student Support Materials. When you say the key words, the students must find the pictures for them. Then, have the students cut out the pictures. Say the keywords and the students should hold up the pictures for them.

Flick

Give a student a flashlight. Say a vocabulary word. Tell the student to listen for that word. Then, say a number of words, eventually repeating the vocabulary word that you said at the beginning of the round. The student should "flick" on his/her flashlight when he/she hears the vocabulary word. You may wish to insert the vocabulary word in a running story. This activity may also be done in team form. In this case, provide the first player in each team with a flashlight. The first player to turn his/her flash light on at the correct time wins the round. Repeat until all students have played.

Hop the Line

Make a masking tape line on the floor. Have the students stand on the line—their toes touching the masking tape. Have the students listen for a specific word or sentence. Say a number of other words or sentences, eventually repeating the word or sentence you said at the beginning of the round. When the students hear that word or sentence, they must hop to the other side of the line. When the students hop to the other side of the line, they should then turn around and place their toes on the line once again. Repeat this process using a number of different vocabulary words or sentences.

Locomotive

Have the students stand in a straight line in the center of the room. Each student should place his hands on the shoulders of the student in front of him/her. Mount a picture on each of the four walls in the classroom. Tell the students that when they hear one of the four vocabulary words (for the four pictures on the walls), they should step in that direction while still holding onto the shoulders of the players in front of them. Say the four words a number of times; the students should step toward the pictures as they are named.

Language and Skills Development

Stretch

Place the vocabulary pictures on the floor, in a scattered form. The pictures should be quite close together. Have a student stand beside the pictures. Say a vocabulary word for one of the pictures. The student should place his/her left foot on that picture. Then, say other vocabulary words and the student must identify the correct pictures with different parts of his/her body. You may wish to have two students participate in this process at the same time for added motivation.

Half Match

Collect the picture halves from the previous activity. Mix all of the halves together and give them to the students. Say a sentence, leaving out the key word. The two students who have the illustration halves for the word that completes the sentence should show their halves. Continue in this way until all of the illustration halves have been presented.

Language and Skills Development

SPEAKING

Sheet Golf

Before the activity begins, obtain an old sheet. Cut a hole (approximately two inches in diameter) in each end of the sheet. Group the students into two teams. Have the first player from each team hold opposite ends of the sheet. Place a marble or small ball in the center of the sheet. When you say "Go," the players must then lift their ends of the sheet and attempt to cause the marble or ball to fall through the hole in the other player's side of the sheet. When the ball or marble falls through one of the holes, the player on that side of the sheet must say the name of a vocabulary picture you show or he/she should repeat a sentence you said at the beginning of the round. Repeat with other pairs of students until all students have participated. If the sheet is large enough, all students can play—divide the students into four groups (one group for each side). Cut a hole in the sheet near each side. When the marble or ball falls through, all the players on that side must say the name of a vocabulary picture that you show. Repeat.

The Disappearing Pictures

Mount five or six pictures on the board, vertically. Point to the picture at the top and tell the students to name it. Continue in this way until the students have named all of the pictures from top to bottom. Then, remove the last picture and repeat this process—the students should say all of the vocabulary words, including the name for the "missing" picture. Then, remove another picture from the board and have the students repeat this process. Continue in this way until the students are saying all of the vocabulary words from a blank board or until the students cannot remember the "missing pictures."

What's That Word?

Mount the vocabulary illustrations on the chalkboard. Tell a "running story" and point to the vocabulary illustrations as the words appear in the running story. When you point to an illustration, the students should say the vocabulary word for it. The running story is used to include the vocabulary words in natural flowing language. Repeat this process until the students have said the vocabulary words a number of times.

Language and Skills Development

Flashlight Name

Mount the vocabulary pictures on the board and the walls of the classroom. Darken the classroom as much as possible. Use a strong flashlight to direct the students' attention to one of the pictures. The students should identify the picture that is illuminated by the light of the flashlight. Continue in this way until all of the vocabulary words have been said a number of times.

Right or Wrong?

Mount the vocabulary pictures on the board. Point to one of the pictures and say its vocabulary word. The students should repeat the vocabulary word for that picture. However, when you point to a picture and say an incorrect vocabulary word for it, the students should remain silent. Repeat this process until the students have responded a number of times to the different vocabulary pictures.

Flashlight Spin

Group the students in a circle. Set a flashlight in the center of the circle. Turn the flashlight on and spin the flashlight on the floor. When the flashlight stops, the student at whom the flashlight is pointing must then identify a vocabulary picture you show, or he/she must repeat a sentence that you said at the beginning of the round. Repeat until many students have responded.

Whose Name?

Mount the vocabulary pictures on the board. Provide each student with a blank flashcard. Each student should write his/her name on the card. When the students' cards are ready, collect them and mix them together. Redistribute the name cards to the students so that each student has the name card of another student. Point to a vocabulary picture on the board and call a student's name. The student whose name you called should then read the name on the name card he/she has. It is that student who should say a complete sentence about a vocabulary picture that you point to. Repeat this process until all students have responded.

Language and Skills Development

READING

Introduce the math sight words to the students — match the sight words with the vocabulary graphics. The sight words are included in the Student Support Materials, attached to these lesson plans.

Sight Recognition

Word Length

Before the activity begins, cut a number of sight word cards into different lengths (e.g., 5 in., 15 cm., etc.). Place the sight word cards on the floor at one end of the classroom. Group the students into two teams at the other end of the classroom. Place two rulers on the floor beside the sight words. Say a different measurement to the first player in each team. When you say "Go," the first player in each team must rush to the sight word cards. Each player must then use the ruler to locate a sight word card that is the same length as the measurement you said. When a player has done this successfully, he/she should read the sight word on that card. Repeat until all players in each team have participated.

Ribbon Reading

Before the activity begins, lay a long length of wide ribbon on the floor and print sight words on the ribbon, using a felt pen. Group the students in a circle. Run the ribbon around the inside of the circle, having the students hold it. Tie the ends of the ribbon together. When you say "Go," the students must pass the ribbon around as quickly as they can until you clap your hands. When you clap your hands, each student should look at the sight word on the ribbon in front of him/her. Call upon each student to read the sight word closest to his/her hands. Repeat a number of times.

Student Support Materials

Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

Decoding/Encoding

Pilot's Alphabet

Introduce and practice the Pilot's Alphabet with the students (see the end of this unit). When the students know the alphabet, spell one of the sight words, using the words of the alphabet. For example, for ratio you would say, "Romeo, Alpha, Tango, India, Oscar." The students should listen to the words that you say and then name the sight word. Repeat using the other key math words from this unit.

Language and Skills Development

Run the Line
Have the students stand in a scattered form in the classroom. Cut the sight words into their individual letters/syllables. Give each of the students a cut out letter/syllable, except for two students who will be IT for the first round of the activity. Give the two players who have no letters/syllables cards a length of string or yarn. The students who have the letters/syllables cards must hold their cards up so that they can be easily read. Say a sight word to each of the two students who are IT (a different word to each student). When you say "Go," the two students must then join together those students who have the letters/syllables necessary to produce the sight word you said. The first player to "run his/her line" to the correct students/letters/syllables, wins the round. Repeat with other pairs of students until all students have had an opportunity to participate.

Letter Encode
Give each student his/her envelope that contains the alphabet letters. Show a picture from this unit. The students must use the cut-out letters to spell the word for the picture. Review the students' work. Repeat, until all of the words have been spelled.

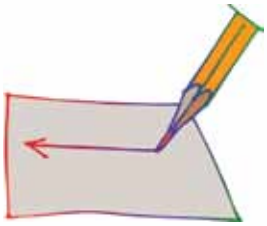
Student Support Materials
Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

Reading Comprehension

Student Support Materials
Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

Language and Skills Development

WRITING



Writing Relay

Group the students into two teams. Say one of the vocabulary words. When you say "Go," the first player from each team must rush to the chalkboard and write only the FIRST letter of the word. He/She should then run to the back of the team and the next player should rush to the chalkboard to add the SECOND letter, and so on. The winning team is the team that correctly completes the spelling of the word first. Repeat using other vocabulary words.

Wrong!

Provide each student with writing paper and a pen. Write the sight words on the chalkboard, purposely misspelling some of them. The students should write only those words that are misspelled, correcting the errors as they write the words. Afterward, review the students' responses.

Horizontal Completion

Before the activity begins, cut each of the sight word cards in half, horizontally. Provide each student with writing paper and a pen. Then, provide each student with one of the word halves. Each student should mount his/her word half on the sheet of writing paper. Then, the students should complete their words by writing in the missing halves. Some students should have the upper halves of the sight words and other students should have the lower halves. Afterwards, review the students' responses. You may wish to provide each student with more than one half so that he/she completes more than one sight word.

Syllable Time

Provide each student with writing paper and a pen. Say a syllable that is found in one of the sight words. Each student should then write the sight word that contains that syllable. Depending upon the syllable that you say, more than one sight word may be correct. Repeat this process with other syllables. Afterwards, review the students' responses.

Language and Skills Development

Alphabet Code

Assign a number to each letter of the alphabet. Write the letters across the top of the chalkboard, and write the numbers for them underneath (one number for each letter). Provide each student with writing paper and a pen. Spell one of the sight words, using the numbers for the letters rather than the letters themselves. The students should write the numbers you say on their sheets of paper. Then, when the word has been spelled in this way, each student should write the word you spelled, using the letters for the numbers dictated.

Student Support Materials

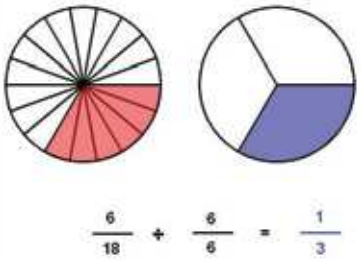
Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.

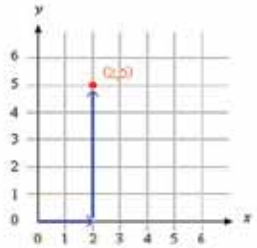
STUDENT SUPPORT MATERIALS

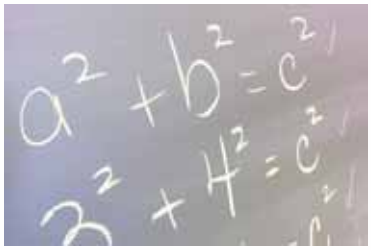
Listening • Mini Pictures

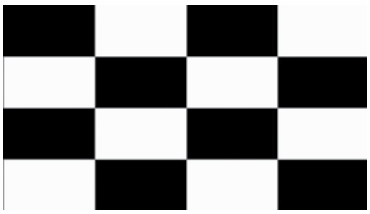
Listening: Mini Pictures

Have the students cut out the pictures. Say the key math words from this unit, and the students should hold up the pictures for them.



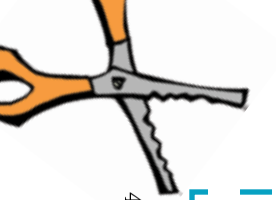






STUDENT SUPPORT MATERIALS

Sight Words



patterns

terms

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ordered pairs

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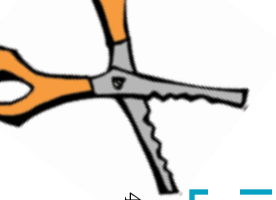
variable



average

function

ratio

area

STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

Sight Words Activity Page

Have the students circle the word for each picture.

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ordered pairs
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function
average
area

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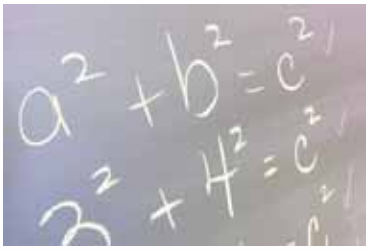

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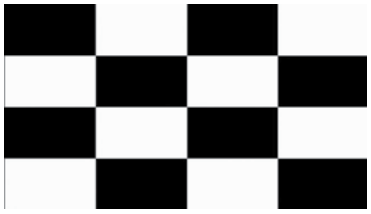

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Sight Words Activity Page

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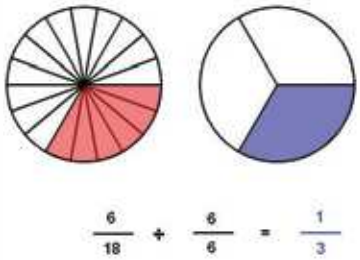

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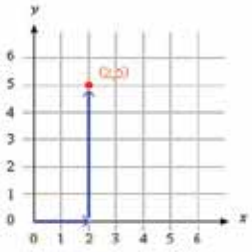

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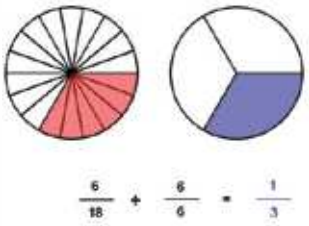
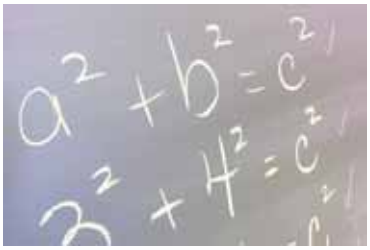
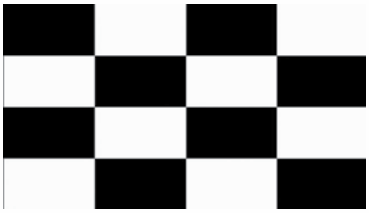
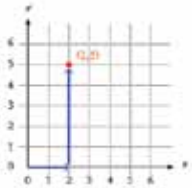
Sight Words Activity Page

Write the numbers on their correct vocabulary graphics.









1. **pattern**
2. **terms**
3. **rules**
4. **ordered pairs**
5. **formula**
6. **variable**
7. **extend**
8. **function**
9. **average**
10. **area**

Sight Words Activity Page

Write the key words from this unit horizontally in the boxes (more than one copy of each word can be written). Fill in all other boxes with any letters. Exchange page with another student. Find key words and circle.

Sight Words Activity Page

Highlight or circle the words in this word find.

variable
rules
extend
formula
pattern
average
terms
ordered pairs
area
function

t t a v a n p a t t e r n r t i i e
e f o r m a r e l f s r r d t r r u
m u e e u u n x r f o r m u l a f o
r e n u e a r i r a n s l e r a e n
a r e a r v o r d e r e d p a i r s
e x t e n d o t v e c d s e i a p e
r n e x t e n e r g a o r n g u e a
l r p e e o r d e r e d p a i r e t
a i o e a n l r n e f u n c t i o i
r n r t r r a c t e t a a e r u s a
f u n c t i o n e e a v e r f r n r
r e a r o r u l e s p r t t t a n e
c s a f r x v e x v a r i a b l e v
g e s v a r i a e e t r t g e o u e
i d r r f a v e r a g e r t n r e s
s r i l t v i a o n d t a r e a d b
r r p a t t e r t r r u s n c e l e
e a e r a t e r m s m i t e r a e m
v f a a o a e m u o v a s a p a c v
e i r a e n n a e s e t f p t e a s

Sight Words Activity Page

ANSWER KEY

variable
rules
extend
formula
pattern
average
terms
ordered pairs
area
function

t t a v a n p a t t e r n r t i i e
e f o r m a r e l f s r r d t r r u
m u e e u u n x r f o r m u l a f o
r e n u e a r i r a n s l e r a e n
a r e a r v o r d e r e d p a i r s
e x t e n d o t v e c d s e i a p e
r n e x t e n e r g a o r n g u e a
l r p e e o r d e r e d p a i r e t
a i o e a n l r n e f u n c t i o i
r n r t r r a c t e t a a e r u s a
f u n c t i o n e e a v e r f r n r
r e a r o r u l e s p r t t t a n e
c s a f r x v e x v a r i a b l e v
g e s v a r i a e e t r t g e o u e
i d r r f a v e r a g e r t n r e s
s r i l t v i a o n d t a r e a d b
r r p a t t e r t r r u s n c e l e
e a e r a t e r m s m i t e r a e m
v f a a o a e m u o v a s a p a c v
e i r a e n n a e s e t f p t e a s

STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

Have the students cut out the word parts and glue them into their correct words.

pa_____ern

t_____ms

rul_____

_____dered pairs

for_____la

mu	**tt**	**ia**
es	**er**	

Encoding Activity Page

var_____**ble**

ra_____

func_____

aver_____

ar_____

tion	**or**	**tio**
age	**ea**	

Encoding Activity Page

Have the students cut out the word halves and glue them together to create the key words for this unit.

pat	ed pairs
ter	ble
ru	tio
order	les
for	tern

Encoding Activity Page

varia	ea
ra	tion
func	ms
aver	mula
ar	age

Encoding Activity Page

Cut out and encode the syllables of the words OR number the syllables in their correct sequence.

a	va	ri	ble
_____	_____	_____	_____

mu	for	la
_____	_____	_____

Encoding Activity Page

ver	age	a
_____	_____	_____

ti	ra	o
_____	_____	_____

STUDENT SUPPORT MATERIALS

Reading Comprehension

What's the Answer?

Read the text and then select the correct answer for it. Fill in the bullet beside the answer of your choice.

1. 1. Which of these shows a pattern?
   - ❍ 1, 3, 4, 5, 6, 9
   - ❍ 0, 3, 2, 6, 7, 8
   - ❍ 2, 4, 6, 8, 10
   - ❍ 10-3=7

2. Which of these shows terms?
   - ❍ triangle
   - ❍ composite numbers
   - ❍ prime
   - ❍ 4x

3. Rules in math help all people...
   - ❍ to get the same answer.
   - ❍ to get different answers, using the same rules.
   - ❍ to find composite numbers.
   - ❍ to find the addends in an addition expression.

4. Which of these is an ordered pair?
   - ❍ 4x
   - ❍ x + y
   - ❍ (4, 5)
   - ❍ 3 + 5

5. A composite number
   - ❍ compare composite and prime numbers.
   - ❍ listen better.
   - ❍ work something out.
   - ❍ to find ratios in an expression.

6. Which of these is a variable?
   - ❍ 2,4,6
   - ❍ exponent
   - ❍ digit
   - ❍ Y

What's the Answer?

7 Which of these shows a ratio?

- ❍ (3:1)
- ❍ (4,6,8)
- ❍ 6x
- ❍ 7 - 4

8 Which of these shows a function?

- ❍ %
- ❍ f(x)
- ❍ (3:1)
- ❍ 5 + 3

9 What is the average of these numbers: 5+3+2+6?

- ❍ 4
- ❍ 6
- ❍ 8
- ❍ 9

10 An area shows...

- ❍ the number of integers in an expression.
- ❍ the size of a surface.
- ❍ the exponent for a multiplication expression.
- ❍ the length of an object.

What's the Answer?

ANSWER KEY

1. Which of these shows a pattern?
   - ❍ 1, 3, 4, 5, 6, 9
   - ❍ 0, 3, 2, 6, 7, 8
   - ● 2, 4, 6, 8, 10
   - ❍ 10-3=7

2. Which of these shows terms?
   - ❍ triangle
   - ❍ composite numbers
   - ❍ prime
   - ● 4x

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   - ❍ to get different answers, using the same rules.
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   - ❍ exponent
   - ❍ digit
   - ● Y

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- ❍ 6
- ● 8
- ❍ 9

10 An area shows...

- ❍ the number of integers in an expression.
- ● the size of a surface.
- ❍ the exponent for a multiplication expression.
- ❍ the length of an object.

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.

1	Patterns are arranged	A	to get the same answer.
2	6x shows	B	symbols to show how to work something out.
3	Rules in math help people	C	used to represent a number.
4	(4,5) is an example of	D	terms being multiplied.
5	A formula has numbers and E ratio	E	ratio of two things.
6	A variable is a symbol	F	of a surface.
7	(6:1) shows the	G	the center of a set of values.
8	A function is a special relationship	H	an ordered pair.
9	An average is	I	between values.
10	Area is the size	J	following a rule or rules.

1→_____ 2→ _____ 3→ _____ 4→ _____

5→ _____ 6→ _____ 7→ _____ 8→ _____

9→ _____ 10→ _____

Reading Comprehension Activity Page

ANSWER KEY

1	Patterns are arranged	A	to get the same answer.
2	6x shows	B	symbols to show how to work something out.
3	Rules in math help people	C	used to represent a number.
4	(4,5) is an example of	D	terms being multiplied.
5	A formula has numbers and E ratio	E	ratio of two things.
6	A variable is a symbol	F	of a surface.
7	(6:1) shows the	G	the center of a set of values.
8	A function is a special relationship	H	an ordered pair.
9	An average is	I	between values.
10	Area is the size	J	following a rule or rules.

1→ J 2→ D 3→ A 4→ H

5→ B 6→ C 7→ E 8→ I

9→ G 10→ F

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.

This is something that is arranged following a rule or rules.	**This can be numbers and variables that are multiplied together.**	**These help people to get the same math answers.**
These can be used to show position on a graph, as in (4,5).	**These show us how to work something out.**	**These can be letters that represent numbers.**
How many teaspoons make a tablespoon would be an example of this.	**This is a special relationship between values.**	**This is the center of a set of values.**
This is the size of a surface.		

variable **terms** **formula** **rules**

ratio **ordered pairs** **function** **pattern**

area **average**

Reading Comprehension Activity Page

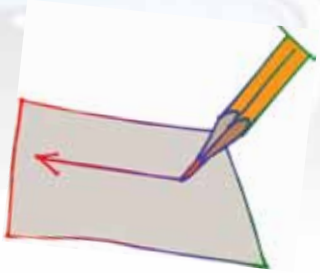
ANSWER KEY

This is something that is arranged following a rule or rules. pattern	**This can be numbers and variables that are multiplied together.** terms	**These help people to get the same math answers.** rules
These can be used to show position on a graph, as in (4,5). ordered pairs	**These show us how to work something out.** formula	**These can be letters that represent numbers.** variables
How many teaspoons make a tablespoon would be an example of this. ratio	**This is a special relationship between values.** function	**This is the center of a set of values.** average
This is the size of a surface. area		

STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page



Have the students complete the writing of the key math words.

patt_____n

t_____ms

ru_____s

or_____ed pairs

for_____la

varia_____

ra_____

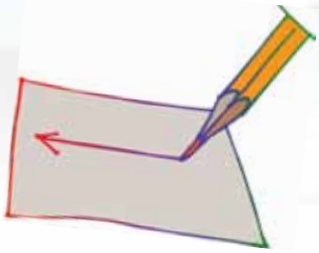
func_____

a_____age

ar_____

Writing Activity Page

Have the students complete the writing of the key math words.



p_____n

t_____s

r_____s

or_____s

fo_____a

va_____e

r_____o

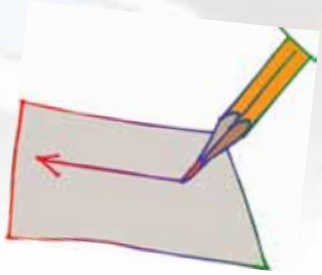
fu_____n

av_____e

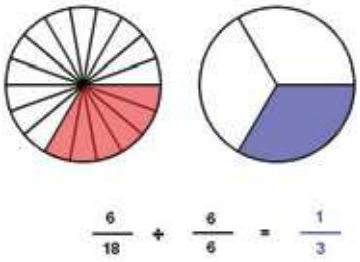
a_____e

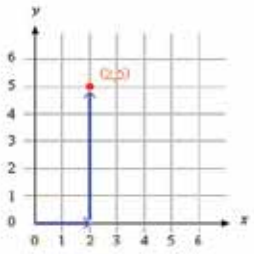
Basic Writing Activity Page

Have the students write the word for each picture.



_____ _____ _____

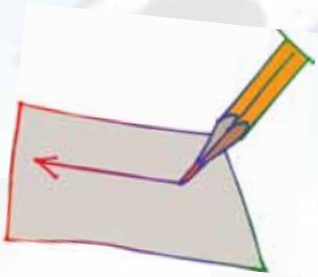


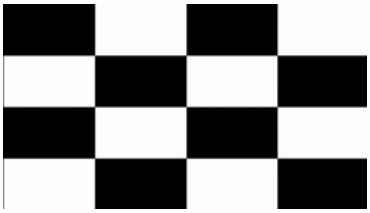


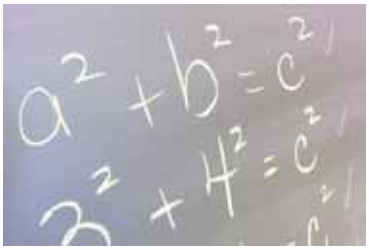
_____ _____ _____

Basic Writing Activity Page

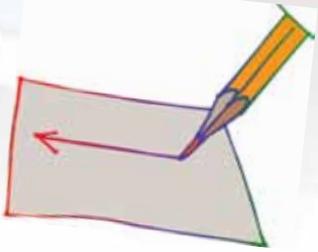
Have the students write the word for each picture.

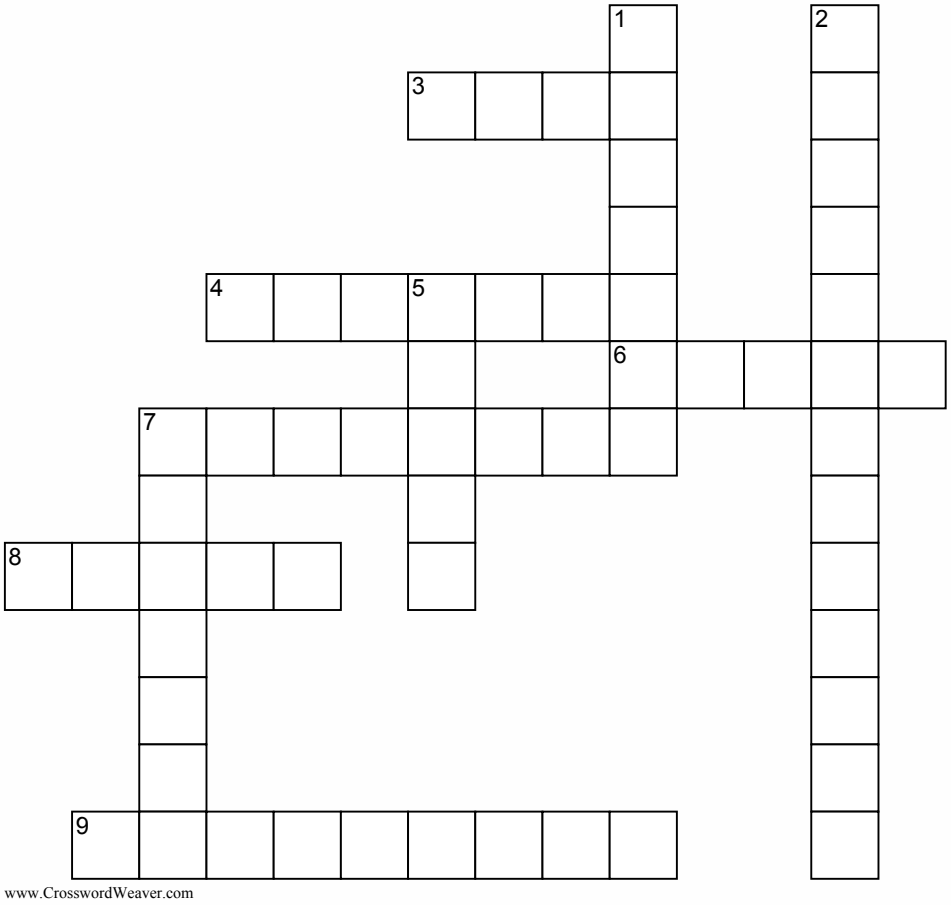






Crossword Puzzle





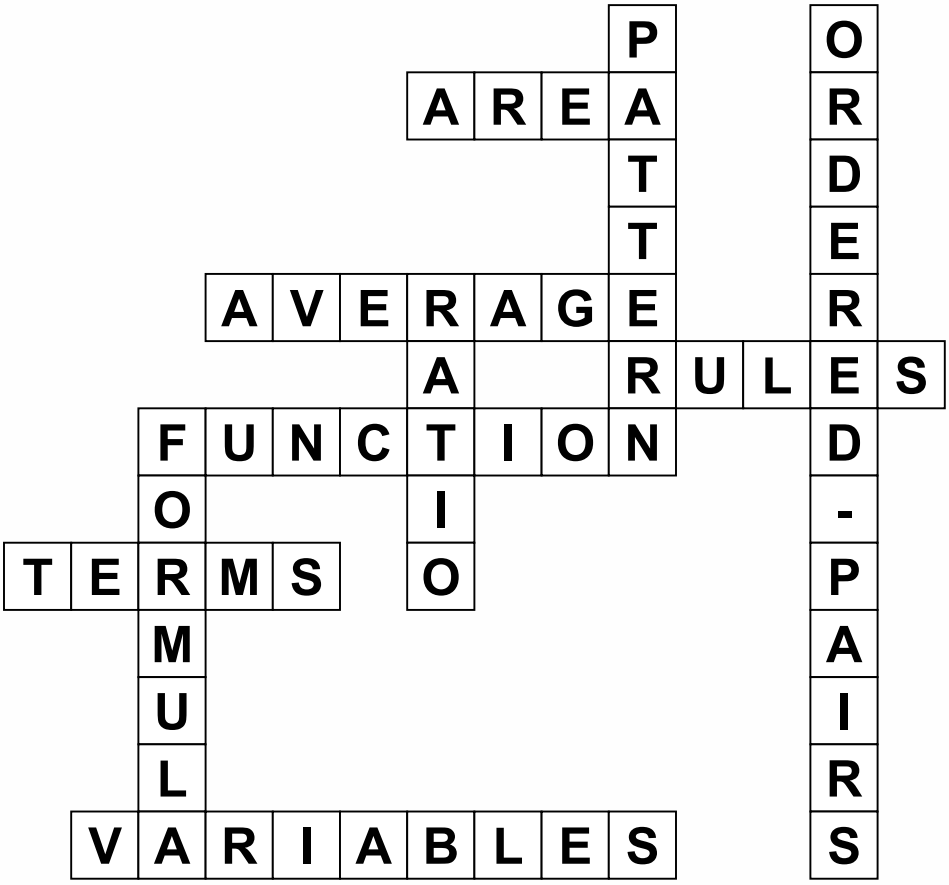
ACROSS

3 This is the size of a surface.
4 This is the center of a set of values.
6 These help people to get the same math answers.
7 This is a special relationship between values.
8 This can be numbers and variables that are multiplied together.
9 These can be letters that represent numbers.

DOWN

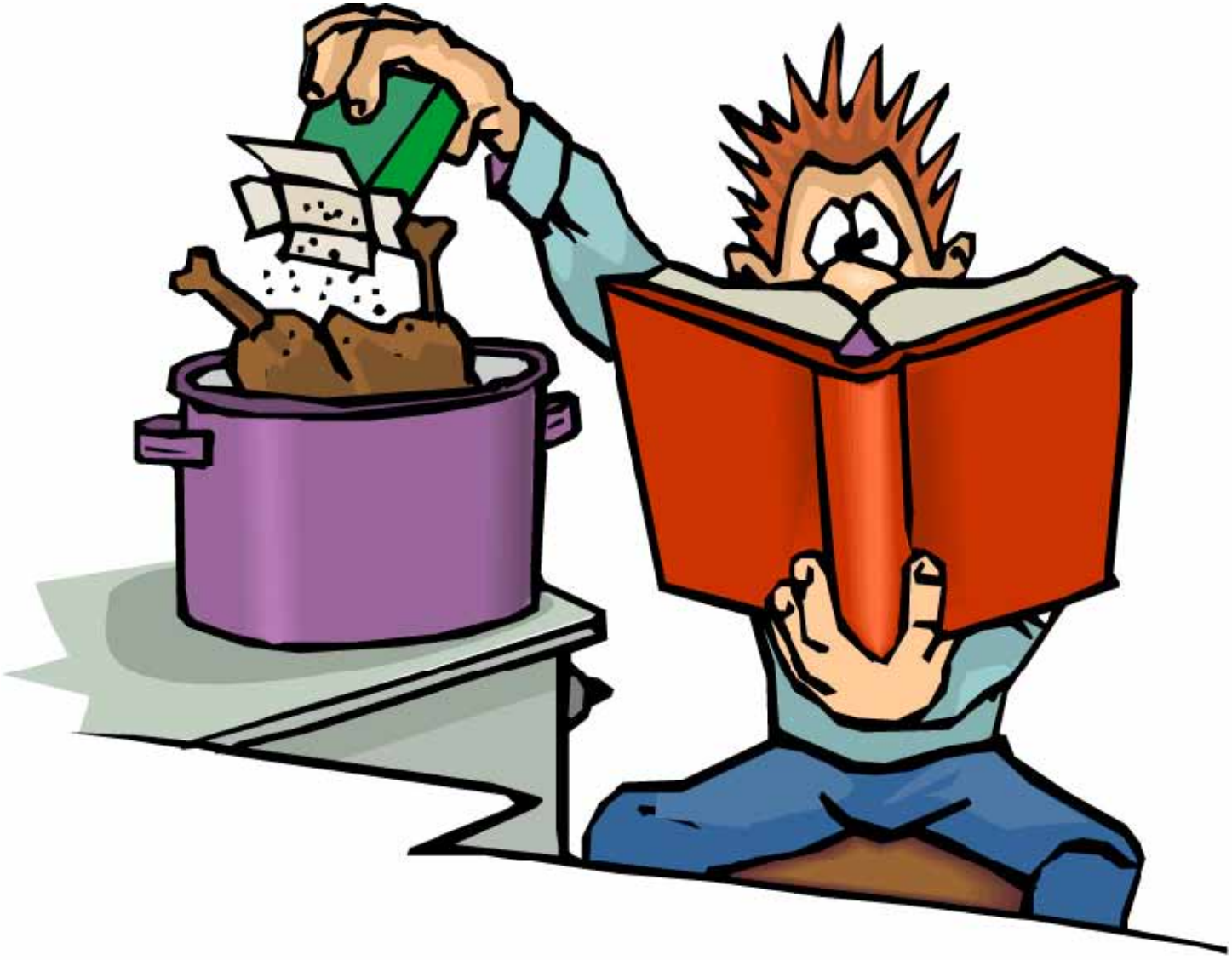
1 This is smething that is arranged following a rule or rules.
2 These can be used to show position on a graph, as in (4,5).
5 How many cups make up a quart would be an example of this.
7 These show us how to work something out.

Crossword Puzzle Answers



The Pilot's Alphabet

A - alpha
B - bravo
C - charlie
D - delta
E - echo
F - foxtrot
G - gulf
H - hotel
I - india
J - Juliette
K - kilo
L - lima
M - mike
N - November
O - oscar
P - papa
Q -Quebec
R - Romeo
S - Sierra
T - tango
U - uniform
V - Victor
W- whiskey
X - x-ray
Y - Yankee
Z - Zulu



UNIT ASSESSMENT

Functions & Relationships

Unit Assessment Teacher's Notes
Grade 7 • Unit 5

Date:_____

Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

BASIC LISTENING

Turn to page 1 in your test. Look at the pictures in the boxes.

1. Write the number 1 by the picture for **PATTERN**.
2. Write the number 2 by the picture for **TERMS.**
3. Write the number 3 by the picture for **RULES**.
4. Write the number 4 by the picture for **ORDERED PAIRS**.
5. Write the number 5 by the picture for **FORMULA**.
6. Write the number 6 by the picture for **VARIABLE.**
7. Write the number 7 by the picture for **RATIO**.
8. Write the number 8 by the picture for **FUNCTION**.
9. Write the number 9 by the picture for **AVERAGE**.
10. Write the number 10 by the picture for **AREA**.

SIGHT RECOGNITION

Turn to pages 2 and 3 in your test. Look at the pictures in the boxes. Circle the word for each picture.

DECODING/ENCODING

Turn to pages 4 and 5 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

Unit Assessment

Provide each student with a copy of the students' pages. Read the following instructions aloud. The students should answer the questions on their copies of the assessment.

READING COMPREHENSION

Turn to page 6 in your test. Write each word under its definition.
Refer to Student Support Materials for answer key.

BASIC WRITING

Turn to page 7 in your test. Look at the pictures in the boxes. Write the word for each picture.

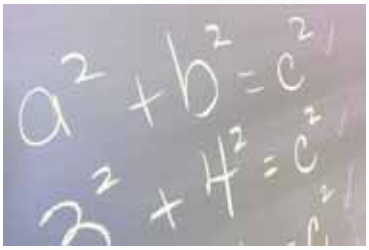
Teacher: To get a percentage for this student's assessment, divide the total number of questions correct by the total number of questions, then multiply this answer by 100 to determine the percentage of questions answered correctly.

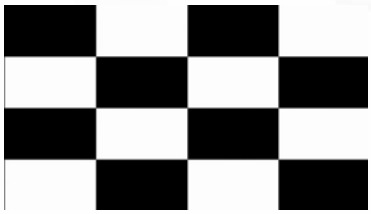
MATH PROGRAM

Unit Assessment Student Pages
Grade 7 • Unit 5

Date:_____ **Student's Name:_____**

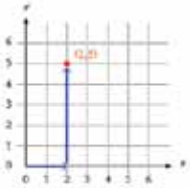
Number Correct:_____ **Percent Correct:_____**

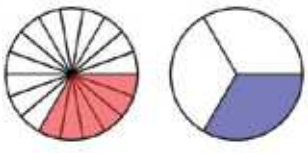

$a^2 + b^2 = c^2$
$a^2 + b^2 = c^2$



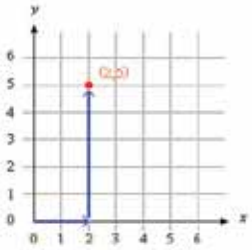

Class Rules
Respect yourself
Respect others
Respect our school


DO NOT ENTER
ROUTE 66
MAIN ST.
YIELD
ONE WAY
CAUTION
CONSTRUCTION ZONE




$\frac{6}{18} + \frac{6}{6} = \frac{1}{3}$

pattern
terms
rules
ordered pairs
formula
variable
ratio
function
average
area



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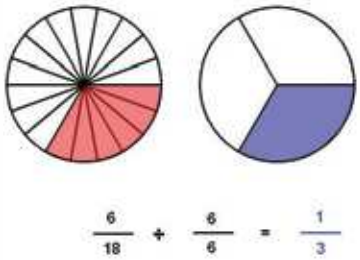

pattern
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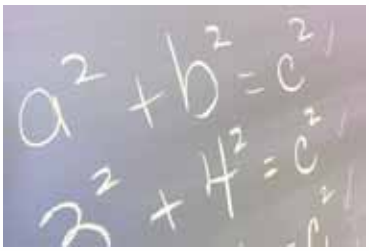
average
area



pattern
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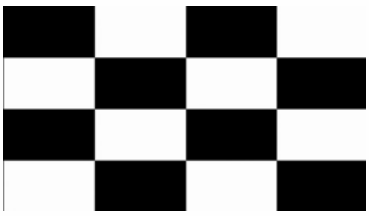

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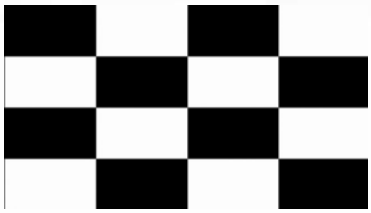
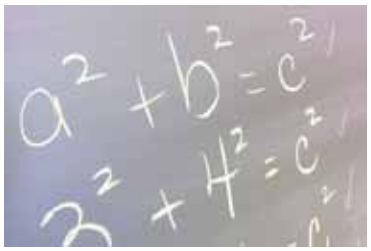
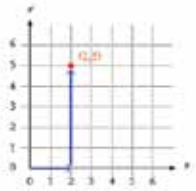
This is something that is arranged following a rule or rules.	This can be numbers and variables that are multiplied together.	These help people to get the same math answers.
These can be used to show position on a graph, as in (4,5).	These show us how to work something out.	These can be letters that represent numbers.
How many teaspoons make a tablespoon would be an example of this.	This is a special relationship between values.	This is the center of a set of values.
This is the size of a surface.		

terms	variable	ratio	ordered pairs
rules	function	formula	average
pattern	area		

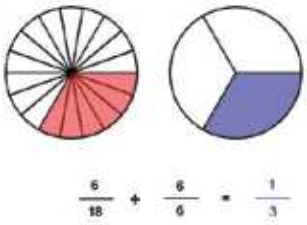



DO NOT
ENTER
ROUTE
66
MAIN ST.
ONE
WAY
YIELD
OP
CAUTION
CONSTRUCTION
ZONE


a² + b² = c²
a² + b² = c²




Class Rules
Respect yourself
Respect others
Respect our school


6/18 + 6/6 = 1/3