UNIT 4

Estimation & Computation

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 mathematical operations by

[7] N-5 [using models, explanations, number lines, real-life situations L], describing or illustrating the effects of arithmetic operations on rational numbers (fractions, decimals) (M1.2.3)

The student demonstrates understanding of measurable attributes by

[7] MEA-1 estimating length to the nearest sixteenth of an inch or millimeter, volume to the nearest cubic centimeter or milliliter or angle to the nearest 30 degrees (L) (M2.3.1)

[7] MEA-2 identifying or using equivalent English (square inches, square feet, square yards) or metric systems (square centimeters, square meters) (M2.3.2)

The student solves problems (including real-world situations) using estimation by

[7] E&C-1 identifying or using [a variety of L] strategies, including truncating, rounding, frontend estimation, compatible numbers, to check for reasonableness of solutions (M3.3.1)

[7] E & C 2 comparing results of different strategies (L) (M3.3.1)

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

Estimation & Computation

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.*

ESTIMATE

Cut pictures of items from a catalog. Note the actual cost of each item. Show one item and have each student estimate its cost. Repeat with the other pictures. Determine the student(s) who estimate closest to the actual costs of the items. Use this to introduce estimate.

ROUNDING

Show the students two items: introduce one as costing $19.98 and the other as $36.45 (or similar costs). Show the students 2 $20.00 bills. Lead them to tell that a single $20.00 will cover the $19.98 item and the two bills together would cover the $36.45 item. Use this to introduce rounding off in math. Use some actual numerical examples with the students.

PRODUCT

Collect food items from around the world and/or the U.S. (as shown on the food labels). Lay a map of the world on the floor. Have the students place the products on their countries of origin. Relate this to math products, in multiplication.

Estimation & Computation

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.*

VARIETY

Collect a variety of food items (i.e. vegetables). Introduce them to the students, having the students compare and contrast their attributes. Have the students suggest other varieties of items.

VALUE

Place a box of cake mix, a bag of pancake mix, and any other such food containers in front of the students. Have the students tell what food can be produced with each item. Use this as an analogy for values that can be produced through operations in math. Show examples, such as 2+4=6, 3x5=15, etc.

EQUIVALENT

Show the students a fruit, such as an orange, then cut another orange in half. Lead the students to realize that the 2 halves equal the whole orange. Use this to introduce equivalent fractions.

Estimation & Computation

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.*

UNITS

Mount a length of paper on the board. Tell the students that you are going to draw a number house. Make a place value chart, the columns of which are the rooms (tens and ones will suffice). Direct the students' attention to the ones' room. Put small 1 to 9 cards in the ones' room. Use this to introduce units or ones (1 to 9).

EXPONENT

Cut a slit in the bottom of a cardboard box. Place three pilot bread crackers in the box. Drop the crackers through the slit. Show the number of biscuits created by drawing a circle on the board and writing a small 3 in the upper right of the circle--this indicates how many crackers were made. Relate this to exponents (i.e. 2x2x2=).

ADDENDS

Collect sandwich ingredients. Stress adding bread, plus butter, plus cheese, plus bread, etc. Use the ingredients to represent addends (i.e. 1+1+1+1=4) .

VOCABULARY PICTURES


Screamer Spyders
big wheel in back, mini-wheel in front
AS SEEN IN
• LOOK • LIFE • BOYS' LIFE
Injection molded seat has built-in side, rear reflectors
Butterfly handlebars . . grab hold and go
5-speed stick shift with safety parking brake . . boss, man
Built-in coil-spring shocks in rear and dual rear handbrakes
5-speed with torsion spring front suspension to smooth out bumps in the roughest roads
$78.95
This is our wide-tired, low slung, boomt-to-the-racing bike. The big 20x2.125-in. chester slick rear tire puts more rubber on the road for screaming starts. Mini 16-in. front wheel for speed. Smooth action derailleur gear system has 34 to 60 gear ratio range. Slip it through the gears and kills seem to flatten out . . straightaways seem like downhill. Butterfly handlebars have gold-color racer-style wrapping for a real custom touch. Chrome-plated fenders, handlebars, chain guard and backbar. Flamboyant yellow with red frame. So easy to buy when you just use the phone.
6 C 477389—Shipping weight 48 lbs. $78.95
One of the newest ideas from Sears Sports Center
NO, NO . . . NOT A BIKE! I WANT A SPYDER! AREN'T YA WITH IT, SANTA?
$49.95
20-inch 3-speed with new "sissy" backbar
Modern backbar has up-to-the-minute styling. This mover has a sporty stick shift with 34, 51 and 68 gear ratios. Black and silver quilted Spyder seat. Chrome-plated rims, handlebars and trim. 20x1.75-in. chester slick rear tire and 20x1½-in. front tire. Spyder-style gooseneck fenders. Flamboyant green color. So easy to buy when you just use the phone.
6 C 476829—Shpg. wt. 45 lbs. . $49.95
$58.95
20-inch 3-speed with the new big wheel that's really boss
Dazzling metallic flake wheel and colors. Fast shifting 3-speed sport console has 34, 51 and 68 gear ratios . . an unbeatable combination. Also has the new buttress-style vinyl covering on top of "sissy" backbar.
20x1.75-in. chester slick rear and 20x1½-in. front tire. Flamboyant red.
6 C 477389—Shipping wt. 45 lbs. $58.95
The Wheel. (Not shown.) Charcoal glitter. Silver-color inserts on spokes. Standard rims.
6 C 48984—Shpg. wt. 3 lbs. 4 oz. $5.95
$58.95
20-inch 5-speed has fully padded backbar and smooth derailleur shift
Real comfort on this flamboyant blue beauty thanks to the padded backrest and quilted bucket bucket seat. 5-on-the-floor stick shift with 34 to 69 gear ratio range. Smooth shifting because derailleur gear system actually derails chain from one sprocket to another. Chester slick 20x2.125-in. redline rear tire for traction and 20x1.75-in. front tire speed. Front and rear handbrakes for increased safety.
6 C 476825—Shipping weight 48 pounds. $58.95
Sears 429

ESTIMATE


PORK SHOULDER
ROAST
48 ¢ LB
CENTER CUT
PORK TENDERLOIN
$3.89 LB
CABEZA
1'20€
PER KG

ROUNDING


THE WORL

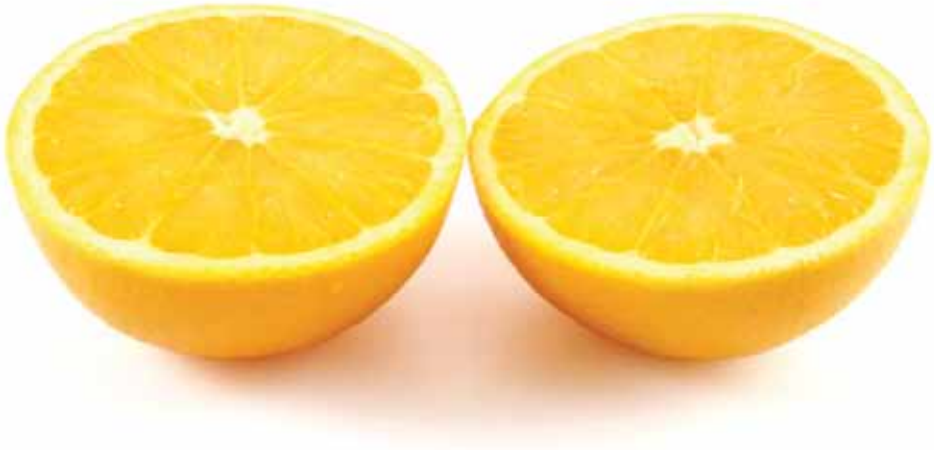
PRODUCT


www.Online-Tutorials.com

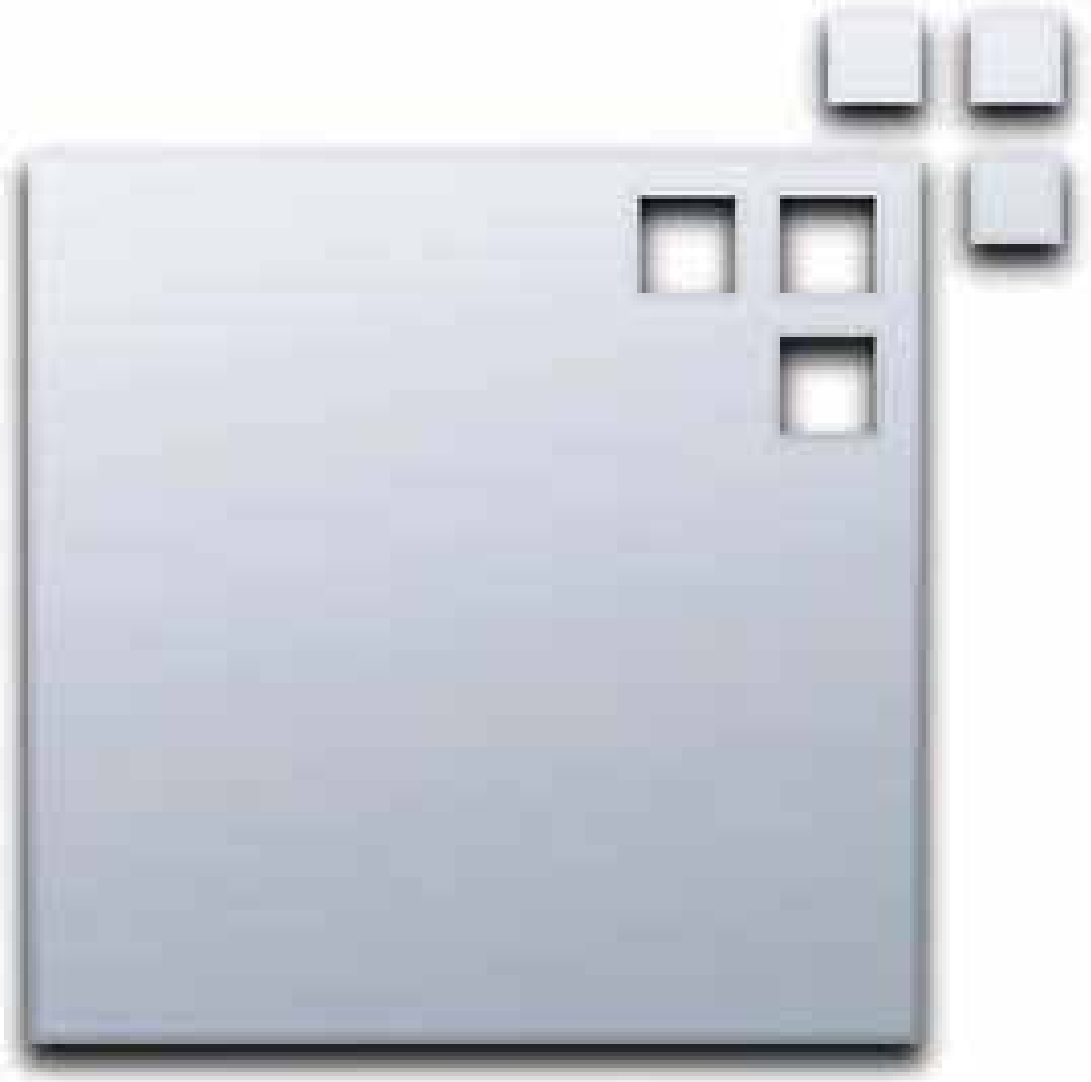
VARIETY


BOOKSEL
teacake

VALUE



EQUIVALENT



UNITS

$$2 \times 2 = 2^2 = 4$$

$$2 \times 2 \times 2 = 2^3 = 8$$

$$2 \times 2 \times 2 \times 2 = 2^4 = 16$$

$$2 \times 2 \times 2 \times 2 \times 2 = 2^5 = 32$$

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^6 = 64$$

$$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^7 = 128$$

EXPONENT

$6 + 1 = 7$

ADDENDS

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.

Number That Word

Mount the vocabulary graphics on the board. Provide each student with three blank flashcards. Each student should write the numbers 1, 2, and 3 on his/her cards - one number per card. Point to one of the vocabulary graphics. Then, say three vocabulary words. Each student should show the number card that matches the picture you pointed to. Repeat with other graphics and vocabulary words.

Back-to-Back Race

Have two pairs of students stand in the center of the classroom. The students in each pair should stand back-to-back with arms interlocked. Lay the vocabulary illustrations on the floor in a scattered form. Say one of the vocabulary words. The two pairs of students must then race to the illustration for the vocabulary word you said without unlocking their arms. The first pair to reach the correct illustration wins the round. Repeat with other pairs of students.

Airplane Land

Scatter the vocabulary pictures on the floor. Have the students sit in a large circle around the pictures. Prepare two paper airplanes. Give the airplanes to two students. Say one of the vocabulary words. The students should toss their airplanes, attempting to land them on the picture for the vocabulary word you said. Repeat until all students have participated.

Language and Skills Development

Fanball

Tape the vocabulary pictures to the floor and group the students around them. Give a "hand fan" and an inflated balloon to two students. Say one of the vocabulary words. The two students should then use their fans to move the balloons to the picture that represents the vocabulary word you said. The first player to fan his/her balloon over the correct picture wins the round. Repeat.

Circle Hop

Scatter the vocabulary pictures on the floor. Using masking tape, make a circle around each picture. Have two or more students stand in the center of the classroom. Say one of the vocabulary words. The students should then hop to the circle which contains the picture that represents the vocabulary word you said. Then, remove the picture from the circle and say another vocabulary word. Continue until all the pictures have been removed from the floor. The students must remember where the graphics were in order to hop to the correct masking tape circles.

Language and Skills Development

SPEAKING

Illustration Build-Up

Mount the vocabulary illustrations on the chalkboard. Point to two of the illustrations. The students should then say the vocabulary words for those two illustrations. Then, point to another illustration. The students should repeat the first two vocabulary words and then say the vocabulary word for the third illustration you pointed to. Continue in this way until the students lose the sequence of words.

Picture Bingo

Give the students the mini pictures used earlier. Each student should place them face down on his/her desk. Then, have each student turn one picture face up. Say a vocabulary word. Any student or students who have the picture for that word face up must say a complete sentence using that vocabulary word. Those pictures should then be put to the side and other pictures turned over. Continue in this way until a student or students have no pictures left on their desks.

Centered Speaker

Group the students into two teams of equal numbers. The two teams should stand, facing one another, about ten feet apart. Have one student stand between the two teams as IT for the first round of the activity. Give each player in Team One a number. Then, give each player in Team Two a number. The numbers you give the players should be "scattered" so that, for example, number One in each team is not directly opposite one another. Call a number. The two players from the teams who have that number must then exchange places as quickly as possible. However, IT must attempt to reach one of the vacated positions before the other player arrives. The player who is "stuck in the middle" becomes IT, and must then identify a vocabulary picture that you show him/her. To add spice to this activity, all students in each team may pretend to run when you call a number. In this way, IT will not be as certain as to which players are exchanging places. Repeat until many students have identified vocabulary pictures.

Language and Skills Development

Stick of Chance

Before the activity begins, obtain four or five popsicle sticks. Break the popsicle sticks into different lengths. Hold the popsicle sticks in your hands so that they all appear to be the same length. Have individual students remove the sticks from your hands. The "winner" is the student who receives the longest stick; he/she must then identify a vocabulary picture you point to, or repeat a sentence that you said at the beginning of the round. Repeat this process until many students have responded in this way.

Half Match

Before the lesson begins, prepare a photocopy of each of the vocabulary pictures. Cut each of the photocopied pictures in half. Give the picture halves to the students (a student may have more than one picture half). Say one of the vocabulary words. The two students who have the halves of the picture for that word must show their halves and repeat the word orally. Continue in this way until all of the vocabulary words have been reviewed. This activity may be repeated more than once by collecting, mixing, and redistributing the picture halves to the students. This activity may also be adapted for team form. To do this, cut each of the vocabulary pictures in half. Place half of the pictures in one pile and the other halves in another pile (one pile for each team). Say a vocabulary word. When you say "Go," the first player from each team must rush to his/her pile of picture halves. Each player must find the half of the picture for the vocabulary word you said. The first player to correctly identify the picture half and to repeat the vocabulary word for it wins the round. Repeat until all players have played.

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

Funnel Words

Group the students into two teams. Give the first player in each team a funnel. Mount the sight words on the walls, board, and windows, around the classroom. Say one of the sight words. The students with the funnels must then look through them to locate the sight word you named. The first student to do this correctly wins the round. Repeat with other pairs of students until all players in each team have played.

String Along

Join all of the students together with string (the students do not need to move from their seats). Before tying the ends of the string together, insert a roll of tape over one of the ends of the string. Tie the ends of the string together. Turn your back to the students. The students should pass the roll of tape along the string as quickly as possible. When you clap your hands, the student left holding the tape must then identify a sight word you show him. Repeat this process until many students have responded and until all of the sight words have been correctly identified 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

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.

Language and Skills Development

Flashlight Encode

Cut each of the sight words in half. Mount all of the word halves in a scattered form on the chalkboard. Stand in front of the chalkboard with two flashlights. Shine the light of one flashlight on a word half. Then, shine the light of the other flashlight on its matching half. The students should say the sight word. However, when the lights of the two flashlights are shining on word halves that do not go together, the students should remain silent. If four flashlights are available, this activity may be done in team form. In this case, give the first player in each team two flashlights. Say a sight word. The first player in each team must then use his/her two flashlights to illuminate the word halves for the sight word you said. The first player to do this correctly wins the round.

Student Support Materials

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

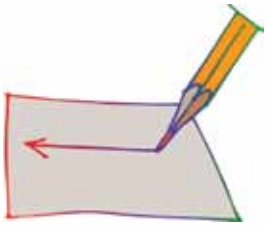
Reading Comprehension

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



Say Again

Group the students into two teams. Whisper a sight word to the first player in each team. When you say "Go," the first player in each team must whisper the same sight word to the next player in the team. The students should continue in this way until the last player in the team hears the sight word. When the last player in the team hears the sight word, he/she must rush to the chalkboard and write the word on the board. The first team to do this correctly wins the round. Repeat until each player has written a sight word in this way.

Numbered Pictures

Mount the vocabulary pictures on the chalkboard and number each one. Provide each student with writing paper and a pen. Call the number of a picture. Each student should write the vocabulary word for the picture represented by that number. Repeat until all vocabulary words have been written. Review the students' responses.

Back Writing

Group the students into two teams. Have the first player from each team stand in front of the board. Use the index finger of your writing hand to "write" the first letter of a sight word on the two players' backs. When you have done this, say "Go." Each of the players should then write a sight word on the board that begins with that letter. Repeat with other pairs of players until all players in each team have played and until all sight words have been written a number of times.

Yarn Spell

Group the students into two teams. Give the first player in each team lengths of yarn or string. Say a vocabulary word. When you say "Go," the first player in each team must then use the yarn or string to "write" the word on the floor. The first player to complete his/her word wins the round. Repeat this process until all players in each team have played. If pipe cleaners are available, they may be used in place of the yarn or string (have both long and short lengths of the pipe cleaners ready for the activity).

Language and Skills Development

Every Second Letter

Write a sight word on the board, omitting every second letter. Provide the students with writing paper and pens. The students should look at the incomplete word on the board and then write the sight word for it on their papers. Repeat using other sight words.

This activity may also be done in team form. In this case, have the incomplete words prepared on separate flash cards. Mount one of the cards on the board. When you say "Go," the first player from each team must rush to the board and write the sight word for it—adding all of the missing letters. Repeat until all players have participated.

Student Support Materials

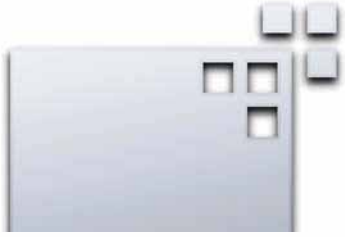
Have the students complete the sight recognition and encoding activities in the Student Support Materials. When finished, review their work.

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.



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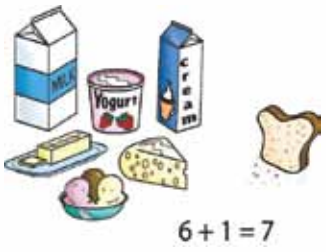
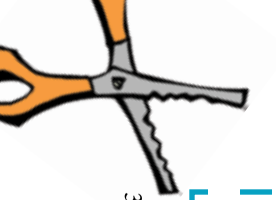


STUDENT SUPPORT MATERIALS

Sight Words



estimate

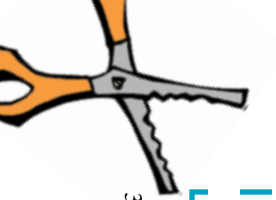
rounding

product

variety

value

equivalent



units

exponent

addends

STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

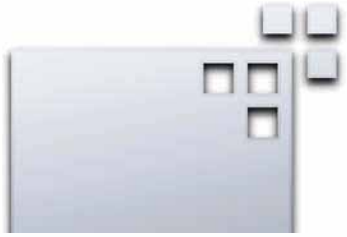
Sight Words Activity Page

Have the students circle the word for each picture.

estimate
product
rounding
variety
value
equivalent
units
exponent
addends

estimate
product
rounding
variety
value
equivalent
units
exponent
addends

estimate
product
rounding
variety
value
equivalent
units
exponent
addends



estimate
product
rounding
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value
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units
exponent
addends

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exponent
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estimate
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rounding
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value
equivalent
units
exponent
addends

Sight Words Activity Page

estimate
product
rounding
variety
value
equivalent
units
exponent
addends

estimate
product
rounding
variety
value
equivalent
units
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addends

estimate
product
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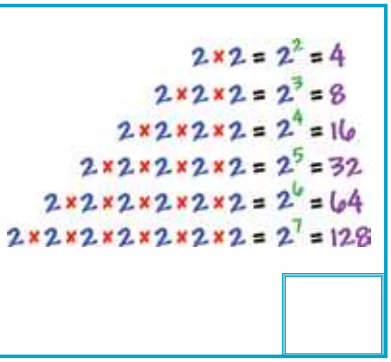
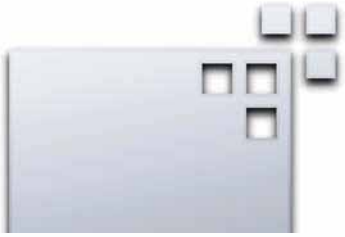
addends

Sight Words Activity Page

Write the numbers on their correct vocabulary graphics.





1. **estimate**
2. **product**
3. **rounding**
4. **variety**
5. **value**
6. **equivalent**
7. **units**
8. **exponent**
9. **addends**

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.

variety
estimate
exponent

equivalent
product
addends

value
rounding
units

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

Sight Words Activity Page

ANSWER KEY

variety
estimate
exponent

equivalent
product
addends

value
rounding
units

i i v e x p o n i n t a t d a i l t
t u n i e **e q u i v a l e n t** t t p
l i o e r l e q u i v a l e o d r i
d p e d e e p t o e x p o n e n v a
t t r **u n i t s** o r i e u a c t u x
s a n i a **v a r i e t y** n v i u i l
e d d i t c e q i u v l e n t n e e
t t r o u n d v i d r v a r i e t e
s n t n x n s d v t **p r o d u c t** i
u a i t s v e l u e o s s o r v t e
e x p o n e n t g p r u o n d i n g
u a d d e n d e e e **v a l u e** n i t
n t q u e d v t e s t i m e t e u r
s d **e s t i m a t e** e s t i m a i u
n r d l i n n a v a r i t y g a t s
u e y l v p r o o d u c t u r m o e
s n c n i s e t **a d d e n d s** u m g
p r o d u p i i a d d e d s v a o n
a n e t s **r o u n d i n g** c o s e i
d r u l n t t o t d i a r i l e m s

STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

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

es_____mate

pro_____t

r_____ding

var_____ty

val_____

ie	duc	ue
oun	uiv	

Encoding Activity Page

eq_____alent

un_____

ex_____nent

add_____

its	ti
po	ends

Encoding Activity Page

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

esti	**duct**
pro	**ue**
roun	**alent**
var	**nits**
val	**mate**

Encoding Activity Page

equiv	iety
u	nent
expo	ends
add	ding

Encoding Activity Page

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

va | e | lent | qui

_____ _____ _____ _____

po | ex | nent

_____ _____ _____

ri | ty | va | e

_____ _____ _____ _____

Encoding Activity Page

mate **es** **ti**

_____ _____ _____

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. When we estimate we
   - ❍ display composite numbers.
   - ❍ find prime numbers.
   - ❍ guess at a value of something.
   - ❍ demonstrate the inverse expression.

2. A product is what we get when we
   - ❍ add two composite numbers.
   - ❍ multiply numbers.
   - ❍ divide numbers.
   - ❍ subtract two prime numbers.

3. With numbers, we round
   - ❍ to the farthest number.
   - ❍ only to prime numbers.
   - ❍ to the nearest integer.
   - ❍ only to composite numbers.

4. A variety is
   - ❍ when all things in a group are the same.
   - ❍ different things from the same group.
   - ❍ an exponent that has a prime number.
   - ❍ an integer that is a composite number.

5. In the equation, 3x4=12, 12 shows
   - ❍ the sum of the equation.
   - ❍ the addends of the equation.
   - ❍ the value of the equation.
   - ❍ the exponent of the equation.

6. When things are equivalent, they are
   - ❍ different.
   - ❍ products.
   - ❍ estimates.
   - ❍ the same.

What's the Answer?

7 The digits from 1 to 9 are

- ❍ addends.
- ❍ exponents.
- ❍ units.
- ❍ products.

8 An exponent shows...

- ❍ how many times a number is used in multiplication.
- ❍ how often a prime number is used in addition.
- ❍ how often a composite number is used in subtraction.
- ❍ how often rounding is done in division.

9 In this expression, 2+4+5, what are the numbers (2, 4, 5)?

- ❍ They are exponents.
- ❍ They are addends.
- ❍ They are products.
- ❍ They are sums.

What's the Answer?

ANSWER KEY

1. When we estimate we
   - ❍ display composite numbers.
   - ❍ find prime numbers.
   - ● guess at a value of something.
   - ❍ demonstrate the inverse expression.

2. A product is what we get when we
   - ❍ add two composite numbers.
   - ● multiply numbers.
   - ❍ divide numbers.
   - ❍ subtract two prime numbers.

3. With numbers, we round
   - ❍ to the farthest number.
   - ❍ only to prime numbers.
   - ● to the nearest integer.
   - ❍ only to composite numbers.

4. A variety is
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   - ● different things from the same group.
   - ❍ an exponent that has a prime number.
   - ❍ an integer that is a composite number.

5. In the equation, 3x4=12, 12 shows
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   - ❍ the addends of the equation.
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- ❍ They are exponents.
- ● They are addends.
- ❍ They are products.
- ❍ They are sums.

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.

1	We can estimate	A	different things within a group.
2	We get a product	B	to the nearest integers.
3	We round numbers	C	the value of the operation.
4	A variety is	D	are the same.
5	In the equation, 4-3=1, 1 is	E	also called units.
6	Things that are equivalent	F	the values of things.
7	The digits 1 to 9 are	G	when we multiply numbers.
8	Numbers that are added together	H	a number was used to multiply.
9	An exponent shows how many times	I	are called addends.

1→_____ 2→ _____ 3→ _____ 4→ _____

5→ _____ 6→ _____ 7→ _____ 8→ _____

9→ _____

Reading Comprehension Activity Page

ANSWER KEY

1	We can estimate	A	different things within a group.
2	We get a product	B	to the nearest integers.
3	We round numbers	C	the value of the operation.
4	A variety is	D	are the same.
5	In the equation, 4-3=1, 1 is	E	also called units.
6	Things that are equivalent	F	the values of things.
7	The digits 1 to 9 are	G	when we multiply numbers.
8	Numbers that are added together	H	a number was used to multiply.
9	An exponent shows how many times	I	are called addends.

1→ F 2→ G 3→ B 4→ A

5→ C 6→ D 7→ E 8→ I

9→ H

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.

This is when we guess the value of something.	This is the answer we get when we multiply numbers.	This is when we go to the nearest integer.
A bunch of different vegetables would be an example of this.	This is what we get whenever we do a math operation.	This is when things are almost the same.
These are digits that show ones.	This tells how many times a number has been used in a multiplication expression.	These are the numbers that are added together in an addition expression.

variety equivalent estimate value

rounding units product

exponent addends

Reading Comprehension Activity Page

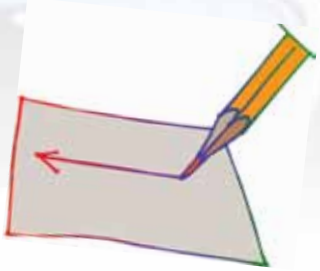
ANSWER KEY

This is when we guess the value of something. estimate	**This is the answer we get when we multiply numbers.** product	**This is when we go to the nearest integer.** rounding
A bunch of different vegetables would be an example of this. variety	**This is what we get whenever we do a math operation.** value	**This is when things are almost the same.** equivalent
These are digits that show ones. units	**This tells how many times a number has been used in a multiplication expression.** exponent	**These are the numbers that are added together in an addition expression.** addends

STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page



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

es_____mate

_____oduct

r_____nding

var_____ty

val_____

equ_____alent

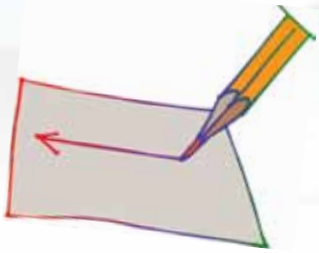
un_____

ex_____nent

add____s

Writing Activity Page

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



es_____**e**

pr_____**t**

r_____**g**

v_____**y**

v_____**e**

eq_____**t**

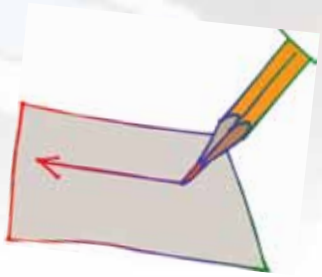
u_____**s**

ex_____**t**

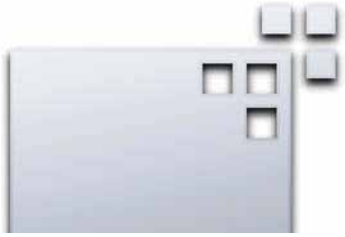
ad_____**s**

Basic Writing Activity Page

Have the students write the word for each picture.

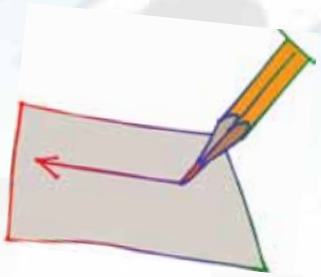


$2 \times 2 = 2^2 = 4$
$2 \times 2 \times 2 = 2^3 = 8$
$2 \times 2 \times 2 \times 2 = 2^4 = 16$
$2 \times 2 \times 2 \times 2 \times 2 = 2^5 = 32$
$2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^6 = 64$
$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^7 = 128$

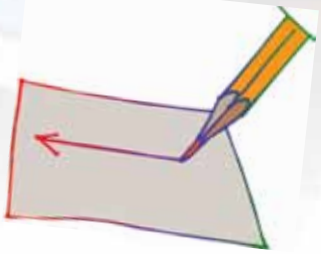


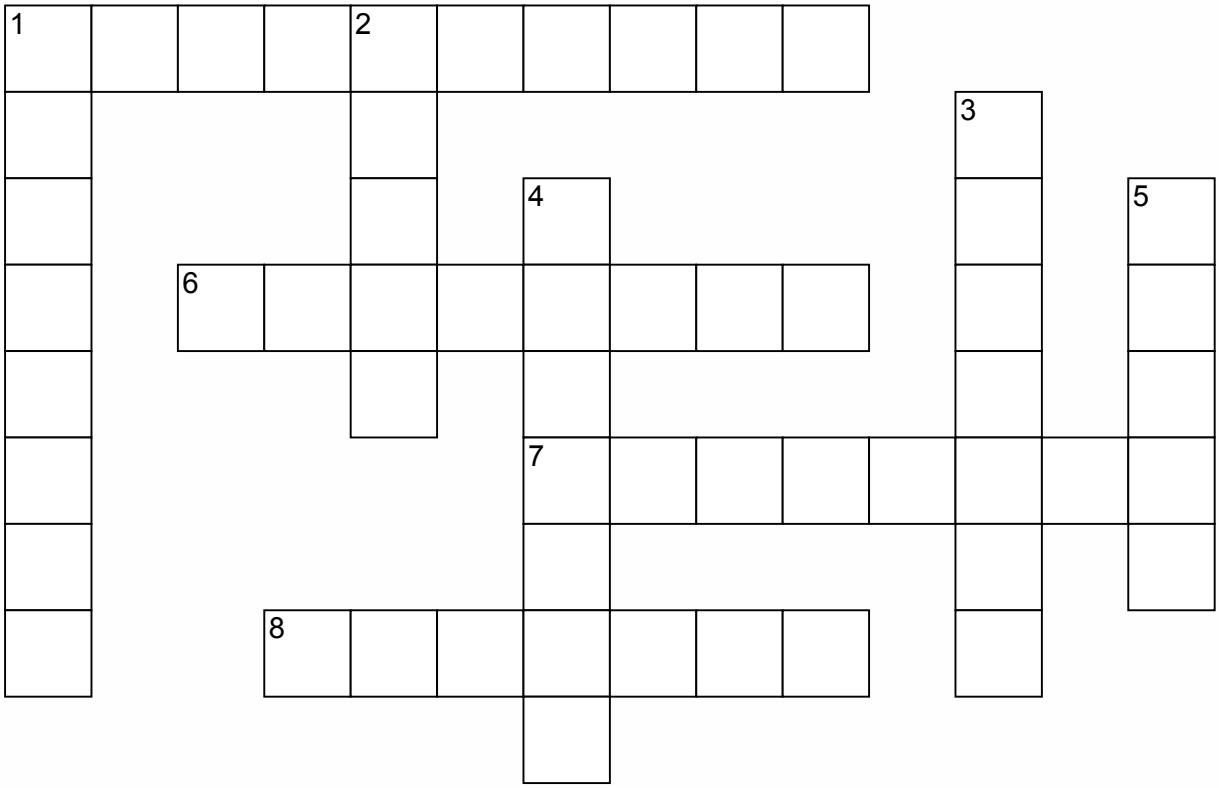
Basic Writing Activity Page

Have the students write the word for each picture.



Crossword Puzzle





www.CrosswordWeaver.com

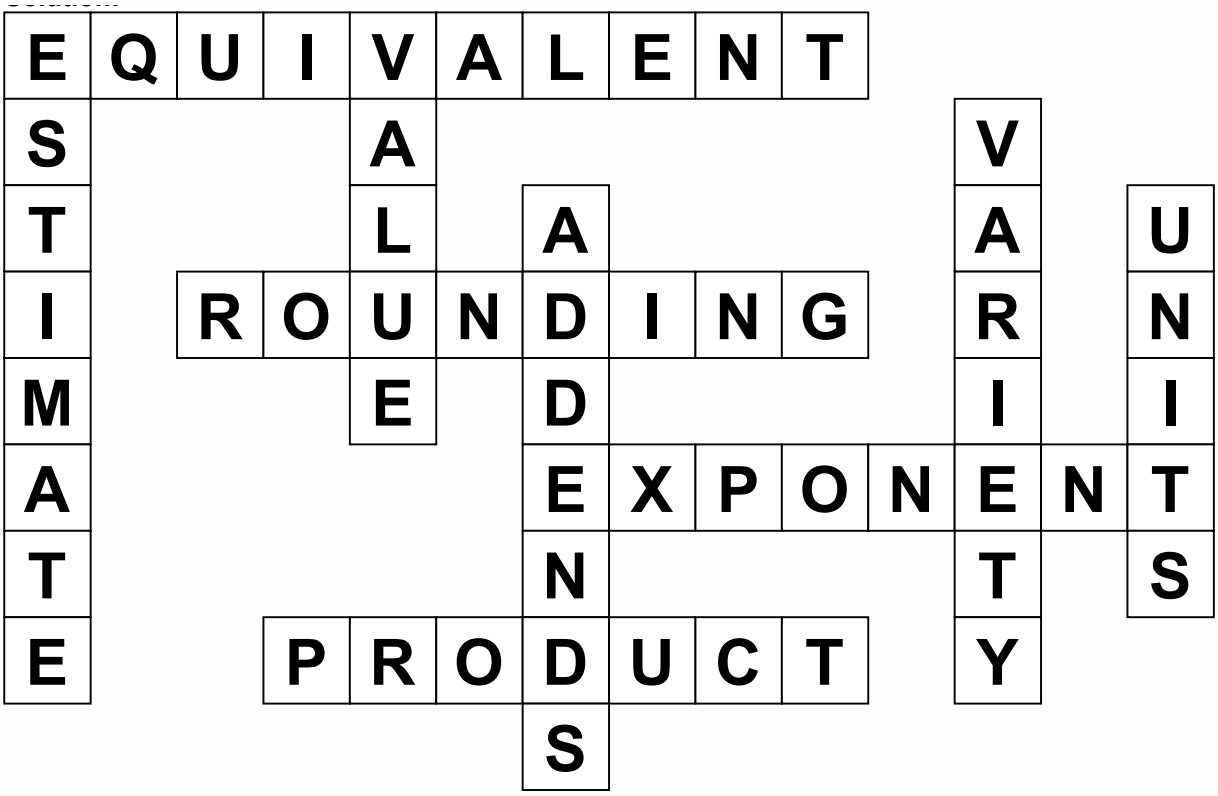
ACROSS

1 This is when things are almost the same.
6 This is when we go to the nearest integer.
7 This tells how many times a number has been used in a multiplication expression.
8 This is the answer we get when we multiply numbers.

DOWN

1 This is when we guess the value of something.
2 This is what we get whenever we do a math operation.
3 A bunch of different vegetables would be an example of this.
4 These are the numbers that are added together in an addition expression.
5 These are digits that show ones.

Crossword Puzzle Answers



UNIT ASSESSMENT

ESTIMATION & COMPUTATION

Unit Assessment Teacher's Notes
Grade 7 • Unit 4

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 **ESTIMATE**.
2. Write the number 2 by the picture for **PRODUCT**.
3. Write the number 3 by the picture for **ROUNDING**.
4. Write the number 4 by the picture for **VARIETY**.
5. Write the number 5 by the picture for **VALUE**.
6. Write the number 6 by the picture for **EQUIVALENT**.
7. Write the number 7 by the picture for **UNITS**.
8. Write the number 8 by the picture for **EXPONENT**.
9. Write the number 9 by the picture for **ADDENDS**.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 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.

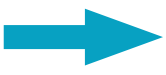
READING COMPREHENSION

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.

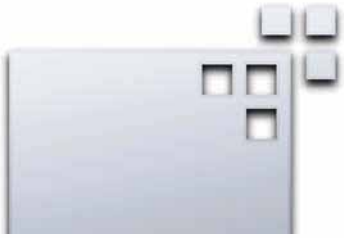


MATH PROGRAM

Unit Assessment Student Pages
Grade 7 • Unit 4

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

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



$$2\times2=2^2=4$$
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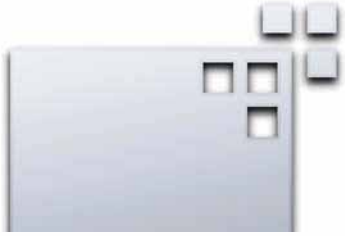
$$2\times2\times2\times2\times2=2^5=32$$
$$2\times2\times2\times2\times2\times2=2^6=64$$
$$2\times2\times2\times2\times2\times2\times2=2^7=128$$

6 + 1 = 7



estimate
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estimate
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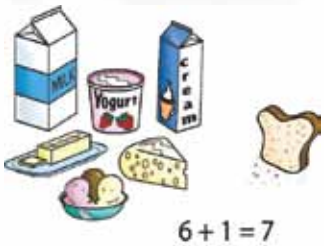
A bunch of different vegetables would be an example of this.	This is what we get whenever we do a math operation.	This is when things are almost the same.
These are digits that show ones.	This tells how many times a number has been used in a multiplication expression.	These are the numbers that are added together in an addition expression.

variety	rounding	units	estimate
addends	equivalent	product	value
exponent			



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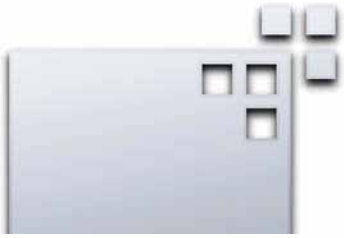

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