Integrating culturally responsive place-based content with language skills development for curriculum enrichment

UNIT DEVELOPMENT
Jim MacDiarmid

PROOFING & PAGE DESIGN
Kathy Dye

COVER DESIGN
Crystal Worl

CURRICULUM ASSISTANT
Michael Obert

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Introduction to the Developmental Language Process in Math

OVER THE YEARS, much has been written about the successes and failures of students in schools. There is no end to the solutions offered, particularly for those students who are struggling with academics. For example, there have been efforts to bring local cultures into the classroom, thus providing the students with familiar points of departure for learning.

While the inclusion of Native concepts, values, and traditions into a curriculum provide a valuable foundation for self-identity and cultural pride, they may not, on their own, fully address improved academic achievement.

Through math lessons, students are exposed to new information and to the key vocabulary that represents that information. While the students may acquire, through various processes, the scientific information, the vocabulary is often left at an exposure level and not internalized by the students. Over time, this leads to language delay that impacts negatively on a student’s ongoing achievement.

Due to weak language bases, many Native Alaskan high school students struggle with texts that are beyond their comprehension levels and writing assignments that call for language they do not have.

This program is designed to meet the academic realities faced by high school students every day, using a developmental process that integrates culture with skills development.

To this end, each key vocabulary word, in math, is viewed as a concept. The words are introduced concretely, using place-based information and contexts. Whenever possible, the concept is viewed through the Native heritage cultural perspectives. Using this approach, the students have the opportunity to acquire new information in manageable chunks, the sum total of which represent the body of information to be learned in the math program.

When the key vocabulary/concepts have been introduced, the students are then taken through a sequence of listening, speaking, reading, and writing activities designed to instill the vocabulary into their long-term memories.

This is the schema for the Developmental Language Process:

The Developmental Language Process—Math

1. VOCABULARY

   ACTIVITIES
   As much as possible, use concrete materials to introduce the new words to the students. Match the materials with the vocabulary pictures.

2. BASIC LISTENING
   Whole Group

3. BASIC SPEAKING
   Whole Group

4. BASIC READING
   Sight Recognition
   Whole Group
   Individual

5. BASIC WRITING
   Decoding & Encoding

6. BASIC WRITING

7. EXTENSION
Finally, at the end of each unit, the students will participate in enrichment activities based on recognized and research-based best practices. By this time, the science information and vocabulary will be familiar, adding to the students’ feelings of confidence and success. These activities will include place-based and heritage culture perspectives of the information learned.

This approach is radically different from current practices in most science classes. Historically, little or no formal vocabulary development takes place. It is assumed that the vocabulary is being internalized during the learning process, which is most often an erroneous assumption.

Increasing the language bases of the students will lead to improved comprehension in listening and reading, and higher levels of production in creative speaking and writing.

This, coupled with the place-based and culturally-responsive content, will provide the students with the foundations necessary for ongoing confidence and achievement.

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**The Integration of Math Content and Language Development**

1. **Introduction of Key Math Vocabulary**
2. **Math Vocabulary Development**
   - Listening, Speaking, Reading, & Writing
3. **Math Application**
   - Teacher-Directed, Group, & Individual Activities
M1.1.1 Read, write, order, count, and model one-to-one correspondence with whole numbers to 100.

M1.1.2 Use, model, and identify place value positions of 1s, 10s, and 100s.

M1.1.3 Model and explain the processes of addition and subtraction, describing the relationship between the operations.

M1.1.4 Select and use various representations of ordinal and cardinal numbers.

M1.1.5 Identify, model, and label simple fractions, describing and defining them as equal parts of a whole, a region, or a set.

M1.2.1 Read, write, model, order, and count with positive whole numbers to 1,000,000 and negative whole numbers.

M1.2.2 Use, model, and identify place value positions from 0.001 to 1,000,000.

M1.2.3 Model and explain the processes of multiplication and division. Describe the relationships among the four basic operations.

M1.2.4 Identify and describe different uses for the same numerical representation.

M1.2.5 Model and explain the process of adding and subtracting fractions with common denominators and decimals that represent money.

[3] N-3 using appropriate representations of ordinal or cardinal numbers (M1.1.4)

[4] N-4 identifying, describing with explanations, or illustrating equal parts of a whole, a region, or a set (using models) (M1.2.4)

[4] N-5 identifying, describing with explanations, or illustrating equivalent fractions or mixed numbers
UNIT 1

Note: In this program, Units 1 to 5 contain readiness language content. The key words were selected from previous math levels and lead the students into the grade 6 program. All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.
KEY VOCABULARY
Key Vocabulary

**IDENTIFY**
To recognize something. This can involve one or all of the five senses. This includes identifying simple fractions.

**DESCRIBE**
To tell something about an item, situation, etc. This includes describing patterns in the number system.

**EXPLAIN**
To tell why, who, where, how, etc. This includes explaining math operations.
**Key Vocabulary**

**ORDER**
To put something in a sequence. This also relates to the order of operations in math.

**MODEL**
To show or represent something. For example, modeling one-to-one correspondence with whole numbers.
LESSONS
Language and Skills Development

LISTENING

Same or Different?
Provide each student with two blank flashcards. Each student should then make
a happy face on one of his/her cards and a sad face on the other card. When the
students’ cards are ready, say two sentences, using the math terms from this unit.
If the two sentences are exactly the same, the students should hold up their happy
face cards. However, if there is any difference between the two sentences, the
students should hold up their sad face cards. Repeat, using a number of different
pairs of sentences.

Flashlight Find
Mount the math vocabulary pictures on the walls, board and windows. Have
a student stand in the center of the classroom with a flashlight. Say one of the
vocabulary words and the student must find the picture for the vocabulary word
you said using the light of the flashlight. This activity may also be conducted in
teams. In this case, have two flashlights available. Have a player from each team
stand in the center of the classroom. When you say the vocabulary word, each
player must attempt to find the correct picture with the light of his/her flashlight.
The first player to correctly identify the picture for the vocabulary word you said
wins the round. Repeat until all players have played.

SPEAKING

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 stu-
dents have responded a number of times to the different vocabulary pictures.

Visual Memory
Mount the math vocabulary pictures on the board. The students should look
carefully at the pictures. Then, have the students close their eyes. Remove one
of the pictures from the board and place it to the side. The students should then
open their eyes and identify the “missing picture.” Continue in this way until all of
the pictures have been removed. Another way to conduct this activity is to do the
reverse. In this case, prepare two or three extra sets of vocabulary pictures. Mount a
number of pictures on the board. The students should look carefully at the pictures.
Then, have the students close their eyes. Add another picture to the board. The
students should open their eyes and identify the “new picture.” This activity (and
the previous form of the activity) may be done in team form. In this case, the first
player to identify the new or missing picture wins the round.
**Language and Skills Development**

**READING**

**Face**
Mount the sight words around the classroom on the walls, board, and windows. Group the students into two teams. Give the first player in each team a flashlight. Darken the classroom, if possible. Say one of the sight words. When you say “Go,” the students should turn their flashlights on and attempt to locate the sight word you said. The first player to do this correctly wins the round. Repeat until all players in each team have participated.

**Circle of Words**
Before the activity begins, prepare a page that contains the sight words. Provide each student with a copy of the page. The students should cut the sight words from their pages. When a student has cut out the sight words, he/she should lay them on his/her desk in a circle. Then, each student should place a pen or pencil in the center of the circle of sight word cards. Each student should spin the pen/pencil. Say a sight word. Any student or students whose pens/pencils are pointing to the sight word you said, should call “Bingo.” The student or students should then remove those sight words from their desks. Continue in this way until a student or students have no sight words left on their desks.

**WRITING**

**Letter Encode**
Provide each student with four copies of the alphabet page from the end of this unit. The students should cut out the letters and place them in individual envelopes. Each student should write his/her name on the envelope. These cut out letters will be used for encoding activities throughout this math enrichment program. Have the students lay their cut out letters on the floor or desks. Show a picture from this unit. The students should then use the cut out letters to spell the word for it. Repeat this process, until all of the math words have been spelled.

**Numbered Illustrations**
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.
VOCABULARY
PICTURES
DESCRIBE
EXPLAIN
IDENTIFY
MODEL
ORDER
STUDENT SUPPORT MATERIALS

Listening • Mini Pictures
Listening: Mini Pictures

Say the key math words for this unit and associate each word with a number from one to five. The students must write the numbers of the words under their pictures.
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition and Encoding

Reading Comprehension
order
model
Sight Words Activity Page

Have the students circle the word for each picture.
Encoding Activity Page

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

```plaintext
or  plain
ex  cribe
iden  der
des  del
mo  tify
```
Have the students cut out the word parts and glue them into their correct words.

__________________der
ex__________________ain
i__________________tify
descr__________________
__________________del
ibe or mo
pl den
# Word and Definition Match

*Have the students write the word numbers under their matching definitions.*

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This is when we know what something, someone, etc. is.</strong></td>
<td><strong>This is when we tell how something looks, acts, or works, etc.</strong></td>
<td><strong>This is something we do when we sleep.</strong></td>
</tr>
<tr>
<td><strong>This is a type of book used in math.</strong></td>
<td><strong>This is when we tell how, why, when, etc. about something.</strong></td>
<td><strong>This is when we add whole numbers and fractions together.</strong></td>
</tr>
<tr>
<td><strong>This is when we think about what happens first, second, etc.</strong></td>
<td><strong>This is when we ask a question about math.</strong></td>
<td><strong>This is when we show how something works, looks, etc.</strong></td>
</tr>
</tbody>
</table>

1. explain  
2. order  
3. model  
4. describe  
5. identify
What’s the Answer?

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.

1. What is the order used in addition, multiplication, subtraction, and division?
   - It is the use of whole numbers in place of fractions.
   - It is what needs to be done first, second, and so on.
   - It is when a person buys a math book.

2. What can we describe in math?
   - the weather
   - how to solve a problem
   - the things we need to read

3. What order is there in math?
   - colors
   - operations
   - smells

4. How can a person explain something in math?
   - by telling how he/she got the answer
   - by going to sleep after finding the answer
   - by not saying anything after finding the answer

5. What is one thing we can identify in math?
   - what we have to do to find food
   - what we might do to solve a problem
   - what we might show before eating a meal
STUDENT SUPPORT MATERIALS

Basic Writing
ACROSS

1. To tell why, who, where, how, etc. This includes explaining math operations.
2. To recognize something. This can involve one or all of the five senses. This includes identifying simple fractions.
3. To put something in a sequence. This also relates to the order of operations in math.
4. To show or represent something. For example, modeling one-to-one correspondence with whole numbers.
5. To tell something about an item, situation, etc. This includes describing patterns in the number system.

DOWN

2. To recognize something. This can involve one or all of the five senses. This includes identifying simple fractions.

Crossword Puzzle Answers

EXPLAIN

ORDER

MODEL

DESCRIBE

DEIFY
Have the students write the word for each picture.
Teacher note: When using the Developmental Language Process in math, listening comprehension and creative writing are not always used. However, we have included these skills in this assessment. It is your decision as to whether or not to include them in the unit’s assessment.
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 on top of the picture for IDENTIFY.
2. Write the number 2 on top of the picture for DESCRIBE.
3. Write the number 3 on top of the picture for EXPLAIN.
4. Write the number 4 on top of the picture for ORDER.
5. Write the number 5 on top of the picture for MODEL.

LISTENING COMPREHENSION
Turn to page 2 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.

1. When we identify something, we know what it is.
2. When we describe something, we tell something about it.
3. When we explain something, we don't know what it is.
4. When things are in order, they are mixed-up.
5. When we model something, we show how to do it.

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

DECODING/ENCODING
Turn to page 4 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 5 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING
Turn to page 6 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING
Turn to page 7 in your test. Write a sentence of your own, using each word.
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.
1. T F
2. T F
3. T F
4. T F
5. T F
1. When we identify something,
   - we say we have never seen it before.
   - we don't know what it is.
   - we know what it is.

2. We can use the following to describe something:
   - air.
   - words.
   - ears.

3. When we explain something, we
   - tell about it.
   - ask about it.
   - say we never did it.

4. When things are in order, they are
   - disorganized.
   - big.
   - organized.

5. When we show how to do something, we are
   - predicting.
   - modeling.
   - inferring.
Note: In this program, Units 1 to 5 contain readiness language content. The key words were selected from previous math levels and lead the students into the grade 6 program. All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.
KEY VOCABULARY
Key Vocabulary

EQUAL
Having the same amount or value.

SET
A collection of items.

ELEMENT
A member of a set.
Key Vocabulary

**PARENTHESES**
A pair of symbols used to enclose part of a mathematical expression.

**INEQUALITY**
Not equal in size, amount, or value.
Language and Skills Development

LISTENING

**Turn and Face**
Mount the vocabulary pictures on the walls and board. Group the students together in the center of the classroom. Say one of the vocabulary words and the students should turn to face the picture for the word you said. Depending upon the size of your class, this activity may be done in small groups. This activity may also be done in team form. In this case, have a player from each team stand in the center of the classroom. When a player faces the wrong direction (i.e., the wrong picture), he/she is “out” until a later round of the activity. Repeat until all players have had an opportunity to participate.

**Flashlight Find**
Mount the math vocabulary pictures on the walls, board and windows. Have a student stand in the center of the classroom with a flashlight. Say one of the vocabulary words and the student must find the picture for the vocabulary word you said using the light of the flashlight. This activity may also be conducted in teams. In this case, have two flashlights available. Have a player from each team stand in the center of the classroom. When you say the vocabulary word, each player must attempt to find the correct picture with the light of his/her flashlight. The first player to correctly identify the picture for the vocabulary word you said wins the round. Repeat until all players have played.

**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.

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

SPEAKING

**Flip of the Coin**
Provide each student with a penny. Keep one penny for yourself. Mount the vocabulary pictures on the board. Have the students (gently) toss their pennies into the air. Each student should look to see which side of his/her penny is face-up. Toss your penny into the air in the same way. Call the side of your penny that is face-up. The students who have the same side of coin face up must then identify (orally) a vocabulary picture you point to. For example, if the heads side of your coin is face up, the students who have heads showing on their coins must then orally identify the vocabulary picture you point to. Repeat this process a number of times.
Language and Skills Development

READING

Balloon Volleyball
Group the students into two teams. The two teams should stand, facing one another. Toss a round, inflated balloon to the members of Team One. The members of Team One must then bounce the balloon to the members of Team Two. The players should continue to bounce the balloon back and forth in this way until a team loses the balloon. You may wish to establish the rule that players may not move their feet during the activity. When a team loses the balloon, show them a vocabulary picture and all team members in that team must say the vocabulary word for it. Repeat until players in both teams have responded a number of times.

Half Time
Before the activity begins, cut each of the sight words in half. Keep one half of each sight word and give the remaining halves to the students. Hold up one of your halves and the student who has the other half of that word must show his/her half and say the sight word. Repeat in this way until all students have responded. An alternative to this approach is to give all of the word halves to the students. Say one of the sight words and the two students who have the halves that make up the sight word must show their halves. Depending upon the number of students in your class, you may wish to prepare extra sight word cards for this activity.

WRITING

The Other Half
Cut each of the sight words in half. Give each student a sheet of writing paper, a pen, and one of the word halves. Each student should glue the word half on his/her writing paper and then complete the spelling of the word. You may wish to have enough word halves prepared so that each student completes more than one word. Afterwards, review the students’ responses.

Student Support Materials
Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.
VOCABULARY
PICTURES
ELEMENT
EQUAL
INEQUALITY
PARENTHESES
SET
STUDENT SUPPORT MATERIALS

Listening • Mini Pictures
Numbered Pictures

Say the key math words for this unit and associate each word with a number from one to five. The students must write the numbers of the words under their pictures.
Mini Pictures

Provide each student with a copy of this page. The students should cut out the pictures and lay them on the floor or desks. Say the key words a number of times; the students must hold up the pictures for the words you say. You can also have pairs of students participate in the activity, to see which student can locate the correct graphic first. Later, say three words and the students must find the correct pictures to reproduce the sequence of words that you said. Repeat using different sequences of key words.
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition and Encoding

Reading Comprehension
element set equal
inequality
parentheses
Sight Words Activity Page

Have the students circle the word for each picture.

equal set element parentheses inequality

equal set element parentheses inequality

equal set element parentheses inequality

equal set element parentheses inequality
**Encoding Activity Page**

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

<table>
<thead>
<tr>
<th>eq</th>
<th>theses</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>ity</td>
</tr>
<tr>
<td>ele</td>
<td>et</td>
</tr>
<tr>
<td>paren</td>
<td>ual</td>
</tr>
<tr>
<td>unequal</td>
<td>ment</td>
</tr>
</tbody>
</table>
Encoding Activity Page

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

- e__________________
- s__________________
- e__________________ment
- parenthe__________________
- in__________________ity

ses  qual  equal
le  et
**Word and Definition Match**

*Have the students write the word numbers under their matching definitions.*

<table>
<thead>
<tr>
<th>These are whole numbers.</th>
<th>This is a group of things.</th>
<th>This is a part of a set.</th>
</tr>
</thead>
<tbody>
<tr>
<td>These can be used to mark off parts of a math sentence.</td>
<td>These are fractions.</td>
<td>These are part of an addition sentence.</td>
</tr>
<tr>
<td>These are found in a circle.</td>
<td>This is when things are not the same.</td>
<td>This is when things are the same.</td>
</tr>
</tbody>
</table>

1. equal  2. set  3. element  4. parentheses  5. inequality
What’s the Answer?

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.

1. When things are equal, they are
   - ☐ different.
   - ☐ the same.
   - ☐ almost the same.

2. A set is
   - ☐ a circle.
   - ☐ a thing used to show the temperature.
   - ☐ a collection of things.

3. An element is
   - ☐ part of a circle.
   - ☐ part of a set.
   - ☐ part of a score.

4. Parts of a math sentence can be marked off with
   - ☐ parachutes.
   - ☐ parentheses.
   - ☐ place value.

5. Four and six would be examples of
   - ☐ equality.
   - ☐ equal.
   - ☐ inequality
Which Belongs?

Have the students write the word that is correct for each sentence.

1. Things are **equal/element** when they are the same.

2. A **score/set** contains elements.

3. An **element/equation** is found in a set.

4. **Parentheses/Patterns** are used to mark off parts of math sentences.

5. **Increase/Inequality** is when things are not the same.
STUDENT SUPPORT MATERIALS

Basic Writing
Crossword Puzzle

ACROSS

1 A pair of symbols used to enclose part of a mathematical expression.
2 A member of a set.
4 Not equal in size, amount, or value.
5 A collection of items.

DOWN

3 Having the same amount or value.
Crossword Puzzle Answers

PARENTHESSES

LEQUALITYN

SET
Basic Writing Activity Page

Have the students write the word for each picture.

Have the students write the word for each picture.

Have the students write the word for each picture.
Teacher note: When using the Developmental Language Process in math, listening comprehension and creative writing are not always used. However, we have included these skills in this assessment. It is your decision as to whether or not to include them in the unit’s assessment.
MATH PROGRAM

Unit Assessment Teacher’s Notes
Grade 6  •  Unit 2

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 on top of the picture for EQUAL.
2. Write the number 2 on top of the picture for SET.
3. Write the number 3 on top of the picture for ELEMENT.
4. Write the number 4 on top of the picture for PARENTHESES.
5. Write the number 5 on top of the picture for INEQUALITY.

LISTENING COMPREHENSION
Turn to page 2 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.

1. Things in order are always equal.
2. A set is a collection of things.
3. An element is a part of a set.
4. Parentheses identify elements in a set.
5. Inequality means that things in a set are equal.

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

DECODING/ENCODING
Turn to page 4 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 5 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING
Turn to page 6 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING
Turn to page 7 in your test. Write a sentence of your own, using each word.
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 6 • Unit 2

Date:_____________      Student’s Name:____________________

Number Correct:__________       Percent Correct:__________
1. T F
2. T F
3. T F
4. T F
5. T F
equal
set
element
parentheses
inequality

equal
set
element
parentheses
inequality

equal
set
element
parentheses
inequality

equal
set
element
parentheses
inequality
1. Which of these would be equal?
- a rock and a feather
- a feather and a salmon
- two feathers

2. What is a set?
- It is a group of things.
- It is when we model something.
- It is when we identify something.

3. What is an element?
- It is things that are in order.
- It is part of a set.
- It is what we use to explain something.

4. Which of these are parentheses?
- symbols that can be used in a math sentence
- symbols that show inequality
- symbols that show things that are equal

5. Which word best means inequality?
- same
- big
- different
EQUAL

_____________________________________________________________

SET

_____________________________________________________________

ELEMENT

_____________________________________________________________

PARENTHESES

_____________________________________________________________

INEQUALITY

_____________________________________________________________
Note: In this program, Units 1 to 5 contain readiness language content. The key words were selected from previous math levels and lead the students into the grade 6 program. All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.
KEY VOCABULARY
Key Vocabulary

VARIOUS
Relating to a number of different items. This can relate to ordinal and cardinal numbers.

LABEL
A word or phrase that identifies something. In math, the students can label fractions by their types.

DEFINE
To describe something. This can relate to defining simple fractions.
Key Vocabulary

EXTEND

This refers to stretching out something. In math, this includes extending patterns inherent in the number system.

CONVERT

To change something into a different form or property. In math, this can include converting numbers from standard forms to expanded forms.
LESSONS
Language and Skills Development

LISTENING

Let’s Move
Identify an appropriate body movement for each vocabulary word. This may involve movements of hands, arms, legs, etc. Practice the body movements with the students. When the students are able to perform the body movements well, say a vocabulary word. The students should respond with the appropriate body movement. You may wish to say the vocabulary words in a running story. When a vocabulary word is heard, the students should perform the appropriate body movement. Repeat, until the students have responded to each word a number of times. Rather than using body movements, or—in addition to the body movements—you may wish to use “sound effects” for identifying vocabulary words. The students should perform the appropriate body movements/sound effects for the words you say.

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.

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

SPEAKING

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.”

Under the Bridge
Have two students stand facing one another with hands clasped. The two students should raise their hands above their heads to resemble the arch of a bridge. Have the remaining students line up in a straight line. The students should file “under the bridge” in single file. When you clap your hands, the two students should lower their hands, trapping one of the students “on the bridge.” The student who is trapped should then identify a vocabulary picture you show him/her. Repeat until a number of students have responded.
**Language and Skills Development**

**READING**

**Configurations**

Before the activity begins, print the sight words on an overhead transparency sheet (fill the transparency with words). Place the transparency on an overhead projector and project the sight words onto the board. Review the sight words with the students. Then, outline each of the sight words on the board with chalk. When a configuration has been created for each sight word, turn the overhead projector off. Then, point to one of the configurations and call upon a student to identify the sight word for the configuration. Continue in this way until all of the sight words have been correctly identified. You may wish to turn the projector on momentarily to verify a student’s response.

**Sensory Letters**

Stand behind a student. Use the index finger of your writing hand to “write” a letter/syllable from a sight word on the student’s back. The student should feel the letter/syllable. Then, the student must name a sight word that contains that letter/syllable. This activity may also be done in team form. In this case, group the students into two teams. “Write” a letter/syllable on the backs of the last players in each team. When you say, “Go,” the last player in each team must repeat this process with the player in front of him/her. The players should continue in this way until the first player in the team feels the letter/syllable. That player must then identify a sight word that contains that letter/syllable. The first player to do this successfully wins the round. Repeat until all players have played.

**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.

**WRITING**

**Numbered Illustrations**

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.

**Student Support Materials**

Have the students work on the activity pages from the Student Support Materials from this unit. Afterward, review their work.
VOCABULARY
PICTURES
CONVERT
DEFINE
EXTEND
VARIOUS
STUDENT SUPPORT MATERIALS

Listening  ●  Mini Pictures
Numbered Pictures

Say the key math words for this unit and associate each word with a number from one to five. The students must write the numbers of the words under their pictures.
Mini Pictures

Provide each student with a copy of this page. The students should cut out the pictures and lay them on the floor or desks. Say the key words a number of times; the students must hold up the pictures for the words you say. You can also have pairs of students participate in the activity, to see which student can locate the correct graphic first. Later, say three words and the students must find the correct pictures to reproduce the sequence of words that you said. Repeat using different sequences of key words.
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition and Encoding

Reading Comprehension
define label various
Sight Words Activity Page

Have the students circle the word for each picture.

various label define extend convert

various label define extend convert

various label define extend convert

various label define extend convert
Encoding Activity Page

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

<table>
<thead>
<tr>
<th>vary</th>
<th>bel</th>
</tr>
</thead>
<tbody>
<tr>
<td>la</td>
<td>ous</td>
</tr>
<tr>
<td>de</td>
<td>vert</td>
</tr>
<tr>
<td>ex</td>
<td>fine</td>
</tr>
<tr>
<td>con</td>
<td>tend</td>
</tr>
</tbody>
</table>
Encoding Activity Page

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

var__________________s

__________________bels
de__________________e

ex__________________d

con__________________t

[Cut-out sections provided for word parts: ten, ver, iou, fin, la]
Word and Definition Match

Have the students write the word numbers under their matching definitions.

<table>
<thead>
<tr>
<th>This is when we describe something.</th>
<th>This means inequality.</th>
<th>This is a set that has different elements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is when we change something.</td>
<td>This is a number of different things.</td>
<td>This means that things are equal.</td>
</tr>
<tr>
<td>This can tell what something is.</td>
<td>This is when we put things in an order.</td>
<td>This is when we stretch something out.</td>
</tr>
</tbody>
</table>

1. various  2. label  3. define  4. extend  5. convert
What’s the Answer?

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.

1. In math, there are various
   ○ numbers.
   ○ food types.
   ○ plants.

2. When we label something, we
   ○ throw it out.
   ○ tell what it is.
   ○ buy a new one.

3. When we define something, we
   ○ explain it.
   ○ hide it.
   ○ mail it to someone.

4. When we extend a number, we
   ○ get rid of it.
   ○ do not change its form.
   ○ change its form.

5. When we convert numbers, we
   ○ do not change them.
   ○ change them into a different form.
   ○ change them into parentheses.
Which Belongs?

Have the students write the word that is correct for each sentence.

1. There are variety/various types of numbers.

2. We can label/set numbers by their types.

3. We can defunct/define what we do in math.

4. We can extend/exert a number’s form.

5. We can compose/convert fractions into whole numbers.
STUDENT SUPPORT MATERIALS

Basic Writing
ACROSS

3 Relating to a number of different items.
4 To describe something.
5 This refers to stretching out something.

DOWN

1 A word or phrase that identifies something.
2 To change something into a different form.
Crossword Puzzle Answers

L C
VARIOUS
B N
E V
L DEFINE
R EXTEND
Basic Writing Activity Page

Have the students write the word for each picture.
Teacher note: When using the Developmental Language Process in math, listening comprehension and creative writing are not always used. However, we have included these skills in this assessment. It is your decision as to whether or not to include them in the unit’s assessment.
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 on top of the picture for VARIOUS.
2. Write the number 2 on top of the picture for LABEL.
3. Write the number 3 on top of the picture for DEFINE.
4. Write the number 4 on top of the picture for EXTEND.
5. Write the number 5 on top of the picture for CONVERT.

LISTENING COMPREHENSION
Turn to page 2 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.

1. Various elements can be found in a set.
2. A label is an element in a set.
3. When we define something, we describe it.
4. When we extend something, we shorten it.
5. When we convert something, we don’t change its form.

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

DECODING/ENCODING
Turn to page 4 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 5 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING
Turn to page 6 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING
Turn to page 7 in your test. Write a sentence of your own, using each word.
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.
various    label    define    extend    convert
various    label    define    extend    convert
various    label    define    extend    convert
various    label    define    extend    convert
various    label    define    extend    convert
<table>
<thead>
<tr>
<th>var</th>
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<th>ous</th>
<th>ious</th>
<th>eous</th>
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<th>uous</th>
<th>ius</th>
<th>ios</th>
<th>os</th>
</tr>
</thead>
<tbody>
<tr>
<td>la</td>
<td>bol</td>
<td>bil</td>
<td>bal</td>
<td>el</td>
<td>rable</td>
<td>bel</td>
<td>behl</td>
<td>bahl</td>
<td>tel</td>
</tr>
</tbody>
</table>
1. Which word goes with various?
   - none
   - one
   - many

2. Where would you probably find a label?
   - in a bottle
   - under a bottle
   - on a bottle

3. Which word goes with define?
   - element
   - parentheses
   - explain

4. When we extend something, what do we do?
   - We make something shorter.
   - We make something longer.
   - We don't do anything.

5. When we convert something, we
   - change it.
   - leave it alone.
   - put it in order.
VARIOUS

_____________________________________________________________

LABEL

_____________________________________________________________

DEFINE

_____________________________________________________________

EXTEND

_____________________________________________________________

CONVERT

_____________________________________________________________
UNIT 4

Note: In this program, Units 1 to 5 contain readiness language content. The key words were selected from previous math levels and lead the students into the grade 6 program. All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.
KEY VOCABULARY
Key Vocabulary

EVEN
Numbers that can be divided by 2.

ODD
Numbers that cannot be divided by 2.

NUMERAL
A symbol used to represent a number.
Key Vocabulary

NUMERICAL

This relates to numbers. Things are represented by numbers rather than by letters.

SYMBOL

These represent math operations.
LESSONS
**Language and Skills Development**

**LISTENING**

**Nod and Clap**
Mount the vocabulary pictures on the board. Point to one of the pictures and say its name. The students should nod their heads to indicate that you said the correct vocabulary word for the picture. However, when you point to a picture and say an incorrect name for it, the students should clap their hands ONCE. Repeat this process until all of the vocabulary pictures have been used a number of times in this way.

**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.

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

**SPEAKING**

**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

Face
Mount the sight words around the classroom on the walls, board, and windows. Group the students into two teams. Give the first player in each team a flashlight. Darken the classroom, if possible. Say one of the sight words. When you say “Go,” the students should turn their flashlights on and attempt to locate the sight word you said. The first player to do this correctly wins the round. Repeat until all players in each team have participated.

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.

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.

WRITING

Watch Your Half
Prepare a photocopy of each of the vocabulary pictures. Cut the photocopied pictures in half. Keep the picture halves in separate piles. Group the students into two teams. Give all of the picture halves from one pile to the players in Team One. Give the picture halves from the other pile to the players in Team Two. Say a vocabulary word. When you say “Go,” the student from each team who has the picture half for the vocabulary word you said should rush to the board and write the word on the board. The first player to do this correctly wins the round. Repeat until all players have participated. This activity may be played more than once by collecting, mixing, and redistributing the picture halves to the two teams.

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

PICTURES
EVEN
NUMERAL
NUMERICAL
ODD
SYMBOL
STUDENT SUPPORT MATERIALS

Listening • Mini Pictures
Numbered Pictures

Say the key math words for this unit and associate each word with a number from one to five. The students must write the numbers of the words under their pictures.
Mini Pictures

Provide each student with a copy of this page. The students should cut out the pictures and lay them on the floor or desks. Say the key words a number of times; the students must hold up the pictures for the words you say. You can also have pairs of students participate in the activity, to see which student can locate the correct graphic first. Later, say three words and the students must find the correct pictures to reproduce the sequence of words that you said. Repeat using different sequences of key words.
STUDENT SUPPORT MATERIALS

Reading  •  Sight Recognition and Encoding

Reading Comprehension
numeral
odd
even
symbol

numerical
Sight Words Activity Page

Have the students circle the word for each picture.
Have the students cut out the word halves and glue them together to create the key words for this unit.
Encoding Activity Page

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

o____________________

ev_____________________

nu________________________al

numer________________________cal

sym_________________________

en   bol   dd

mer   i
**Word and Definition Match**

*Have the students write the word numbers under their matching definitions.*

<table>
<thead>
<tr>
<th>These numbers can be divided by 2.</th>
<th>This is a math sentence that has parentheses.</th>
<th>This is a symbol for a number.</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is something that can be used to show math words.</td>
<td>This is a set.</td>
<td>This is a set with different elements.</td>
</tr>
<tr>
<td>This is when we convert numbers.</td>
<td>These numbers cannot be divided by 2.</td>
<td>This relates to numbers.</td>
</tr>
</tbody>
</table>

1. even  
2. odd  
3. numeral  
4. numerical  
5. symbol
What’s the Answer?

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.

1. When is a number even?
   - ☐ when it can be divided by 3
   - ☑ when it cannot be divided by 2
   - ☐ when it can be divided by 2

2. When is a number odd?
   - ☐ when it can be divided by 2
   - ☐ when it cannot be divided by 2
   - ☑ when it can be divided by 3

3. What is an example of a numeral?
   - ☑ 2 is a numeral.
   - ☑ Y is a numeral.
   - ☐ + is a numeral.

4. What does numerical relate to?
   - ☐ shapes
   - ☐ sizes
   - ☑ numbers

5. Which one of these is a math symbol?
   - ☐ symbol
   - ☐ @
   - ☐ =
Which Belongs?

Have the students write the word that is correct for each sentence.

1. An **even**/oven number can be divided by 2.

2. An **equal**/odd number cannot be divided by 2.

3. A **numeral**/element is a number.

4. Numerical/Label is about numbers.

5. Parentheses/Symbols show different math operations and other things.
Crossword Puzzle

ACROSS

3 Numbers that can be divided by 2.
4 This relates to numbers.
5 Numbers that cannot be divided by 2.

DOWN

1 A symbol used to represent a number.
2 This represents operations and other aspects of math operations.
Crossword Puzzle Answers

S Y M B O L

O D D

N U M E R I C A L

E V E N R

N U M

S

E V E N
Basic Writing Activity Page

Have the students write the word for each picture.

<table>
<thead>
<tr>
<th>Traffic sign showing speed limit 70</th>
<th>Keypad with letters and numbers</th>
<th>Measuring tape</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>White keyboard key</td>
<td></td>
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<tr>
<td></td>
<td></td>
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</tbody>
</table>
Teacher note: When using the Developmental Language Process in math, listening comprehension and creative writing are not always used. However, we have included these skills in this assessment. It is your decision as to whether or not to include them in the unit’s assessment.
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 on top of the picture for EVEN numbers.
2. Write the number 2 on top of the picture for ODD numbers.
3. Write the number 3 on top of the picture for NUMERAL.
4. Write the number 4 on top of the picture for NUMERICAL.
5. Write the number 5 on top of the picture for SYMBOL.

LISTENING COMPREHENSION

Turn to page 2 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.

1. Even numbers can be divided by 3.
2. Odd numbers cannot be divided by 2.
3. A numeral shows a number.
4. Numerical relates to parentheses.
5. The equal sign is a symbol used in math.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 4 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.

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Turn to page 5 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

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CREATIVE WRITING
Turn to page 7 in your test. Write a sentence of your own, using each word.
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.
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<td>bahl</td>
<td>icad</td>
</tr>
<tr>
<td>bol</td>
<td>dac</td>
</tr>
</tbody>
</table>
1. Even numbers
   - are converted.
   - can be divided by 2.
   - have various elements.

2. Odd numbers
   - can be divided by 3.
   - cannot be divided by 2.
   - can be divided by 2.

3. Which of these is a numeral?
   - y
   - ( 
   - 4

4. Numerical has to do with
   - labels.
   - numbers.
   - inequality.

5. Which of these is a math symbol?
   - +
   - &
   - @
<table>
<thead>
<tr>
<th>EVEN</th>
</tr>
</thead>
<tbody>
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<td>ODD</td>
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<td>NUMERAL</td>
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UNIT 5

Note: In this program, Units 1 to 5 contain readiness language content. The key words were selected from previous math levels and lead the students into the grade 6 program. All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.
KEY VOCABULARY
**Key Vocabulary**

- **ROUNDING**: To change a number to a more convenient value.
- **ESTIMATE**: To make an approximate or rough calculation, often based on rounding.
- **REMAINDER**: The amount left over after dividing a number.
Key Vocabulary

**SOLVE**

To work out the answer or solution to a mathematical problem.

**DIVISIBILITY**

Refers to numbers that can be divided without a remainder. In math, there are divisibility rules. Relate this to indivisible as contained in the Pledge of Allegiance.
Language and Skills Development

LISTENING

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.

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.

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

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.

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.
Language and Skills Development

READING

Funny Face
Have two students stand, facing one another. The object of the activity is for the students to look at each other without laughing. The first student to laugh must identify a sight word for a graphic that you show. If both students laugh at the same time, then call upon each student to identify a sight word. Repeat with other pairs of students until all students have participated.

Something’s Missing
Before the activity begins, prepare “clozure” word cards—sight word cards that have letters/syllables missing. Show one of the clozure word cards to the students and call upon them to identify the sight word it represents. This activity may also be done in team form. In this case, group the students into two teams. Lay the clozure word cards on the floor at the other end of the classroom. Say one of the sight words (or say a different sight word to the first player in each team). When you say “Go,” the first player from each team must rush to the clozure word cards and find the clozure word card for the sight word you said. Repeat until all players have played.

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.

WRITING

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.

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

PICTURES
DIVISIBILITY
ESTIMATE
\[ \begin{array}{c}
5 \overline{193} \\
965 \\
\underline{46} \\
15 \\
\end{array} \]

\[ 15 \div 5 = 3 \]
REMAINDER
ROUNDING
SOLVE
STUDENT SUPPORT MATERIALS

Listening • Mini Pictures
Numbered Pictures

Say the key math words for this unit and associate each word with a number from one to five. The students must write the numbers of the words under their pictures.
Mini Pictures

Provide each student with a copy of this page. The students should cut out the pictures and lay them on the floor or desks. Say the key words a number of times; the students must hold up the pictures for the words you say. You can also have pairs of students participate in the activity, to see which student can locate the correct graphic first. Later, say three words and the students must find the correct pictures to reproduce the sequence of words that you said. Repeat using different sequences of key words.
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition and Encoding

Reading Comprehension
divisibility

solve
Sight Words Activity Page

Have the students circle the word for each picture.

- 14
- 965
- 15
- 46
- 45
- 15
- 1 + 1 = 2
- rounding
- estimate
- remainder
- divisibility
- solve
Encoding Activity Page

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

round
es
remain
der
de
bility
timate
ve
sol
ing
Encoding Activity Page

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

r______________________ding

__________________timate

re______________________der

di______________________ibility

s______________________ve

ol vis es

main oun
Word and Definition Match

Have the students write the word numbers under their matching definitions.

1. **rounding**
2. **estimate**
3. **remainder**
4. **divisibility**
5. **solve**
What’s the Answer?

Have the students read the text and then select the correct answer for it. They should fill in the appropriate bullet beside the answer of their choice.

1. What are we doing when we round numbers?
   - We are converting them to a different value.
   - We are explaining odd numbers.
   - We are putting numerals in parentheses.

2. When we estimate, what are we doing?
   - We are identifying odd and even numbers.
   - We are guessing.
   - We are labeling numbers by their values.

3. When do we get a remainder?
   - When we add numerals.
   - When we divide numerals.
   - When we order numerals by their values.

4. Divisibility means that
   - a number is odd or even.
   - a number is in a set.
   - a number can be divided.

5. When we solve a problem, we
   - describe the problem.
   - identify the problem.
   - answer the problem.
Which Belongs?

Have the students write the word that is correct for each sentence.

1. We can change the number 27 by **rounding/identifying** it.

2. When we **extricate/estimate**, we are guessing.

3. The **remainder/model** is left over when we divide numbers.

4. There are **defining/divisibility** rules in math.

5. We can **sieve/solve** math problems.
STUDENT SUPPORT MATERIALS

Basic Writing
Crossword Puzzle

ACROSS

2 To work out the answer or solution to a mathematical problem.
4 This refers to numbers that can be divided without a remainder.
5 Changing a number to a more convenient value.

DOWN

1 The amount left over after dividing a number.
3 To make an approximate or rough calculation, often based on rounding.
Crossword Puzzle Answers

REMAIN

DIVISIBILITY

E

ROUNDING

SOLVE

ESTIMATE
Basic Writing Activity Page

Have the students write the word for each picture.

1

1+1=2

15÷5=3
UNIT ASSESSMENT

Teacher note: When using the Developmental Language Process in math, listening comprehension and creative writing are not always used. However, we have included these skills in this assessment. It is your decision as to whether or not to include them in the unit’s assessment.
MATH PROGRAM

Unit Assessment Teacher’s Notes
Grade 6  •  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 on top of the picture for ROUNDING.
2. Write the number 2 on top of the picture for ESTIMATE.
3. Write the number 3 on top of the picture for REMAINDER.
4. Write the number 4 on top of the picture for SOLVE.
5. Write the number 5 on top of the picture for DIVISIBILITY.

LISTENING COMPREHENSION
Turn to page 2 in your test. Listen to the sentences I say. Circle “T” for true and “F” for false sentences.

1. Rounding numbers changes their value.
2. When we estimate, we tell about inequalities.
3. A remainder is the amount left over after dividing.
4. When we solve a problem, we find its answer.
5. Divisibility refers to numbers that can be divided with no remainders.

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

DECODING/ENCODING
Turn to page 4 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 5 in your test. Read the sentence part and fill in the bullet for the correct sentence ending.

BASIC WRITING
Turn to page 6 in your test. Look at the pictures in the boxes. Write the word for each picture.

CREATIVE WRITING
Turn to page 7 in your test. Write a sentence of your own, using each word.
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.
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rounding estimate remainder solve divisibility
1. When we round numbers, it makes it
   - harder to read numbers.
   - easier to find parentheses.
   - easier to read numbers.

2. When we estimate we
   - know how many.
   - guess how many.
   - extend numerals.

3. A remainder is what is left over when we
   - add.
   - multiply.
   - divide.

4. When we solve a problem, we
   - find its answer.
   - make up various symbols.
   - estimate.

5. Divisibility relates to dividing
   - with no remainder.
   - with a small remainder.
   - with a big remainder.
ROUNDING

_____________________________________________________________

ESTIMATE

_____________________________________________________________

REMAINDER

_____________________________________________________________

SOLVE

_____________________________________________________________

DIVISIBILITY

_____________________________________________________________