



MATH

FOR LANGUAGE DEVELOPMENT
BASED ON ALASKA MATH STANDARDS
GRADE 8 • BOOK 3



Sealaska Heritage Institute



UNIT 11:

Statistics & Probability

Data Display

Note: All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.



INTRODUCTION OF MATH VOCABULARY

Process Skills

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.

frequency distribution

Make a table of the students' favorite Alaskan animals on the board. Now draw a frequency distribution of these favorites. Which animal won gold? Silver? Bronze?

circle graph

Make a table of the students' favorite Alaskan towns or cities. Place the percentages in a circle graph on the board. Which place won and why? Do they have a least favorite?

box and whisker plot

Have the students draw their funniest cat faces on a sheet of paper. Did all students include whiskers? Show them the picture of the box and whisker plot on page 801. Explain that these whiskers represent the range of non-outlier data—perhaps those cats far beyond the norm!

Process Skills

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.

stem and leaf plot

List the ages of all students on the board. Show them how to arrange these ages on a stem and leaf plot. Can they brainstorm times that this may be useful?

histogram

Show the students the picture of a histogram and bridge on page 805. Explain that histograms have continuous data and can be helpful in finding trends. Climate change researchers are constantly looking for trends. What other occupations look for trends?

scatter plot

Make a table of the students' favorite colors and separate them by gender. Then draw a scatter plot on the board using this data. Are there any obvious trends in color preference separating the two genders?

Process Skills

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.

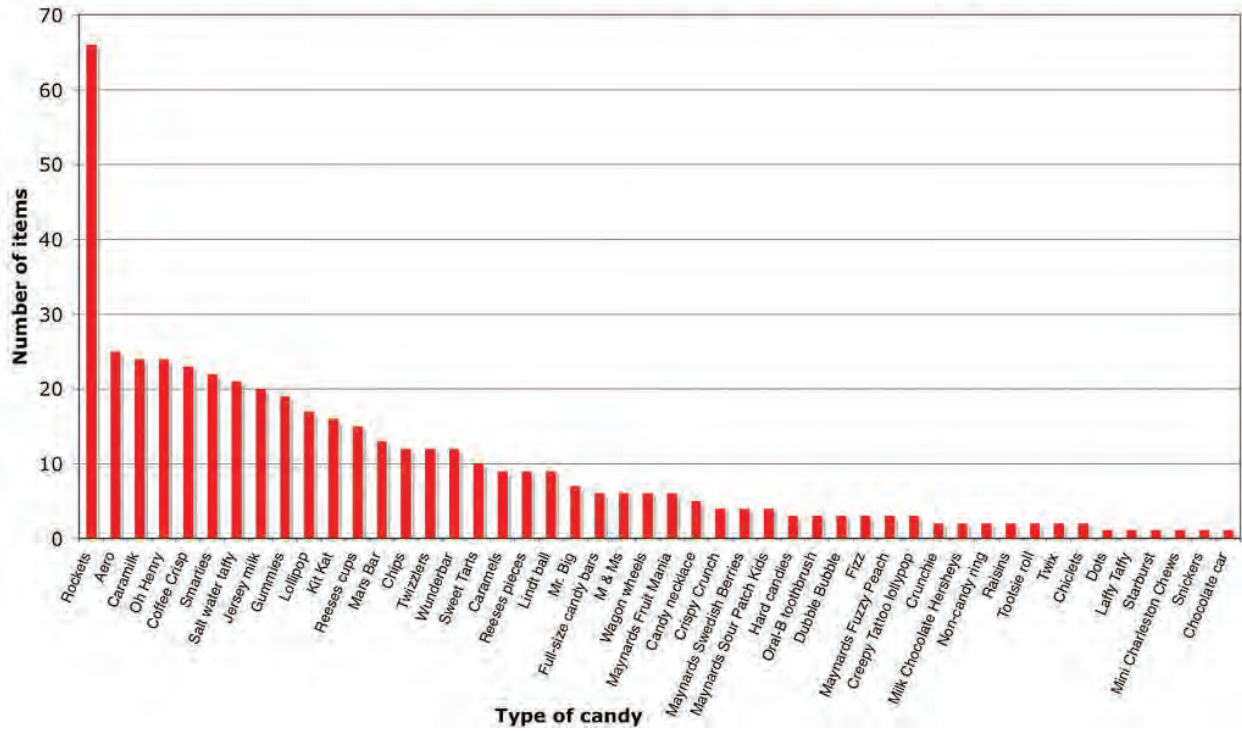
design

Have the students design a new invention on a sheet of paper. Explain that a design is a sketch or outline of plans. Are their designs feasible?



VOCABULARY PICTURES

Candy collected on Halloween 2008, by type of candy (n= 464)



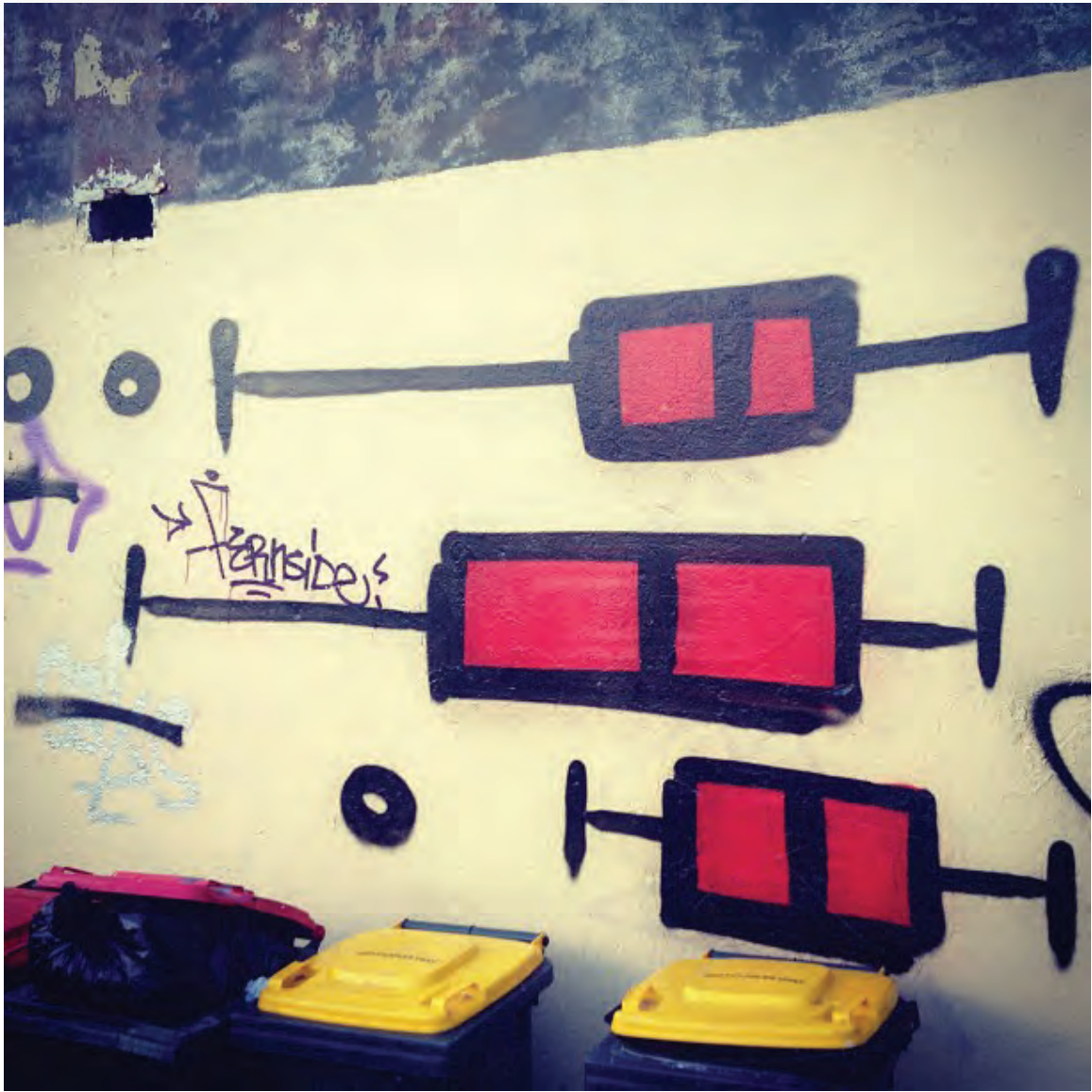


FREQUENCY DISTRIBUTION





CIRCLE GRAPH





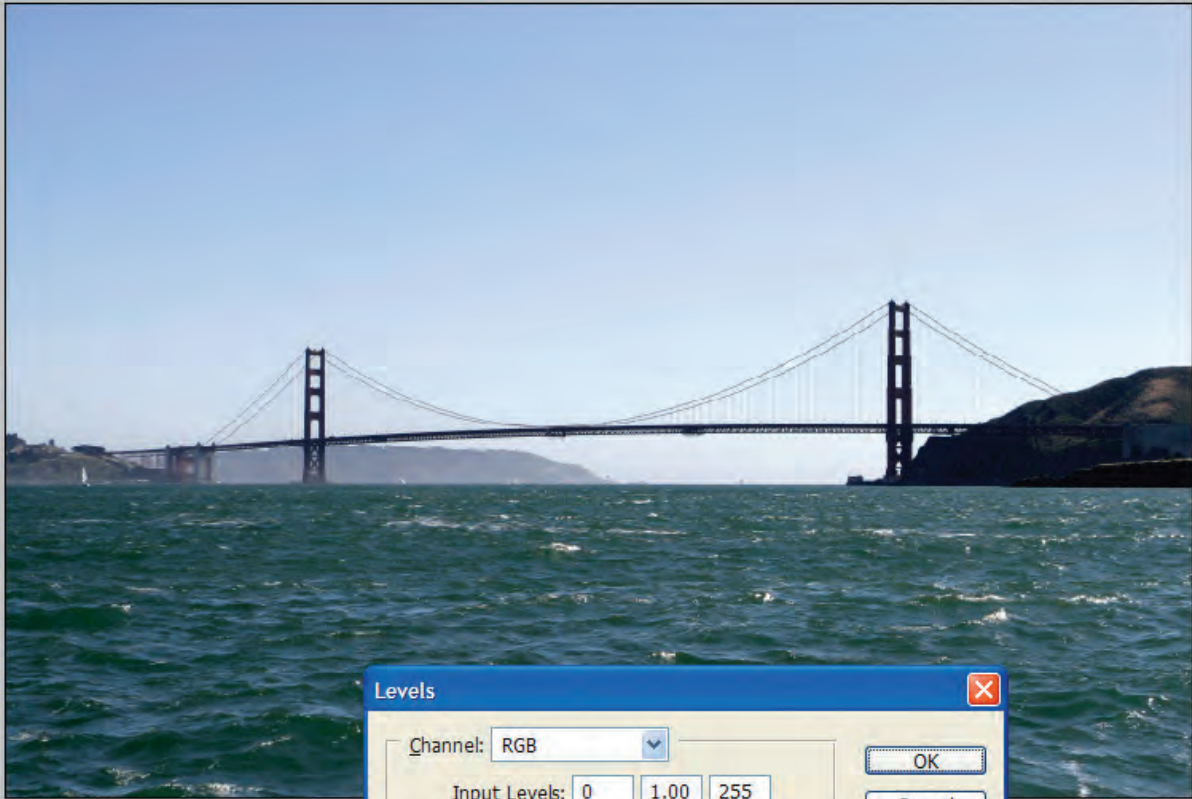
BOX AND WHISKER PLOT

1		(0)
2	2249	(4)
3	0245556888999	(13)
4	12233444589	(11)
5	26	(2)
6		(0)

5 | 2 means 52 mph



STEM AND LEAF PLOT



Levels

Channel: RGB

Input Levels: 0 1.00 255

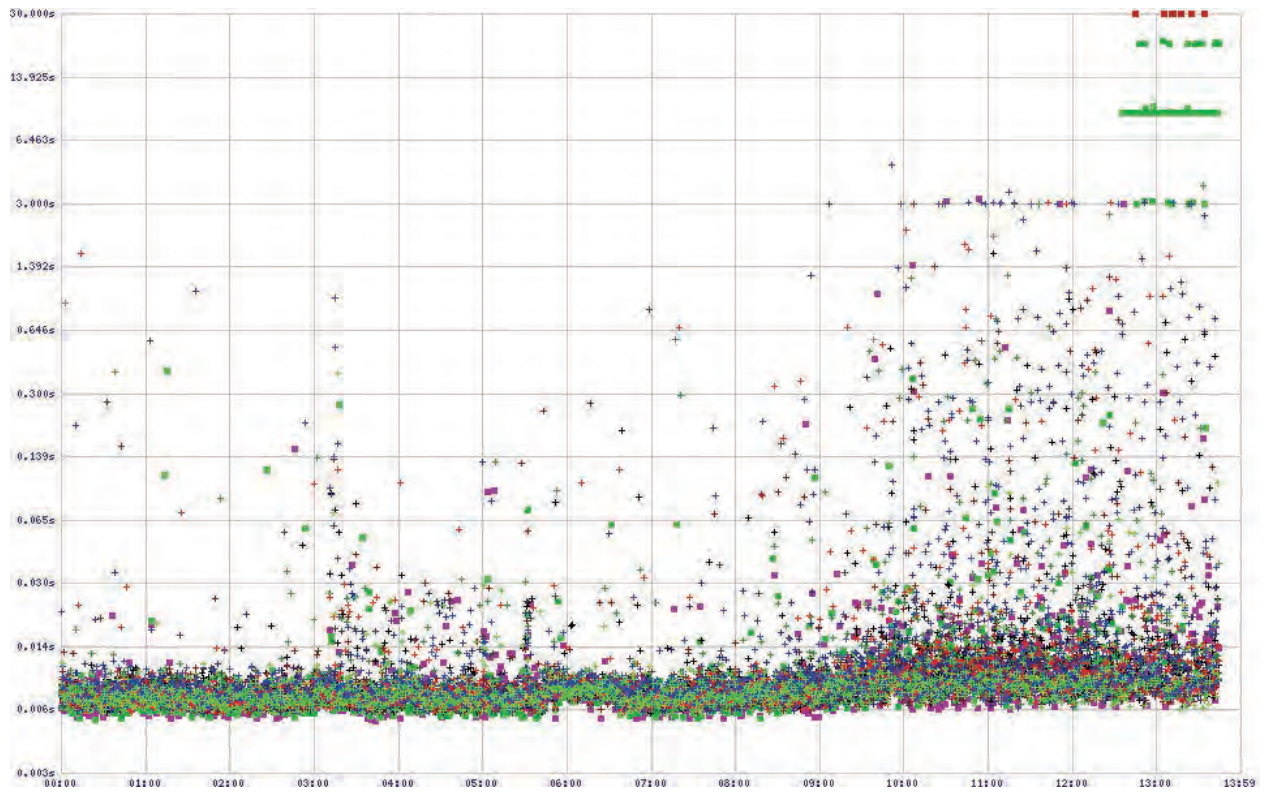
Output Levels: 0 255

OK
Cancel
Load...
Save...
Auto
Options...
 Preview

The 'Levels' dialog box is overlaid on the bottom right of the image. It features a histogram in the center showing the distribution of pixel intensities. The histogram has a peak on the left side, indicating a higher concentration of darker pixels. The dialog includes input and output level sliders, a 'Preview' checkbox, and several action buttons like 'OK', 'Cancel', 'Load...', 'Save...', 'Auto', and 'Options...'. The 'Channel' is set to 'RGB'.



HISTOGRAM





SCATTER PLOT





DESIGN



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.



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.

What's the Answer?

Before the activity begins, develop questions related to the concept being studied. For each question, prepare three answers—only one of which in each set is correct for the question asked. Ask the students the question and then read the three answers to them. The students should show you (using their fingers or prepared number cards) which answer is correct for the question asked. Repeat this process with other questions and answers.

Language and Skills Development

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 students have responded a number of times to the different vocabulary pictures.

Hand Tag

Group the students in a circle on the floor. Have the students place their hands on the floor, palms down. Stand in the center of the circle with the vocabulary picture and a flashlight. The object of the activity is to attempt to tag a student's hand or hands with the light of the flashlight. The students must pull their hands from the circle when they think they are about to be tagged. When you eventually tag a student's hand or hands, he/she must then say a complete sentence using the word for a vocabulary picture that you show. Repeat this process until many students have responded.

Language and Skills Development

READING

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



Sight Word Bingo

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 out the sight words. When the students have cut out their sight words, each student should lay all of the sight words, but one, face down on his/her desk. Show a vocabulary picture. Any student or students who have the sight word for that picture face-up on their desks should show the sight word to you. Then, those sight words should be placed to the side and other sight words turned over in their place. Continue in this way until a student or students have no sight words left on their desks.

Letter Encode

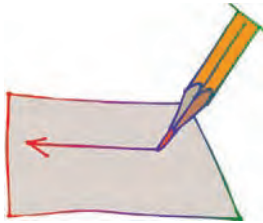
Prepare a page that contains large alphabet letters from A to Z. Make five copies for each student. The students should cut out their letters. When all of the letters have been cut out, show a vocabulary picture. The students should then use their letters to spell the word for that picture. Repeat, using the remaining pictures from this unit. Have the students store their cut out letters in individual envelopes.

Student Support Materials

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

Language and Skills Development

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.

Sentence Completion

Write a number of sentence halves on individual sentence strips. These should include both the beginning and ending halves of sentences. Mount the sentence halves on the board and number each one. Provide the students with writing paper and pencils/pens. Each student should then complete ONE of the sentence halves in his/her own words, writing his/her part of the sentence on the sheet of paper. When the students have completed their sentence halves, have a student read ONLY the sentence half he/she wrote. The other students must then attempt to identify the “other half” of the sentence on the board (by its number). Repeat until all of the students have shared their sentence halves in this way.

Student Support Materials

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



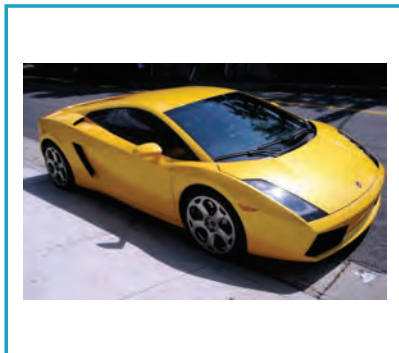
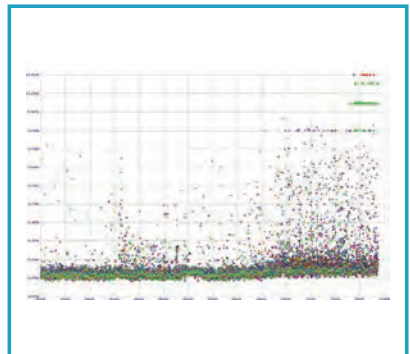
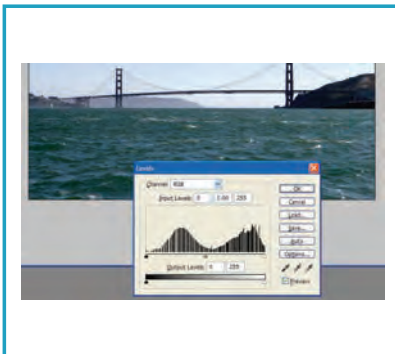
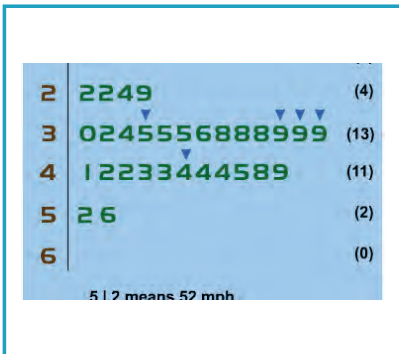
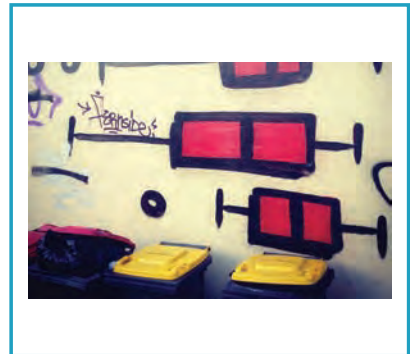
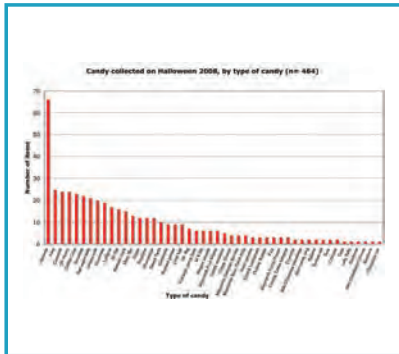
STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures



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





STUDENT SUPPORT MATERIALS

Sight Words

frequency distribution

circle graph

box and whisker plot



stem and leaf plot

histogram

scatter plot



design





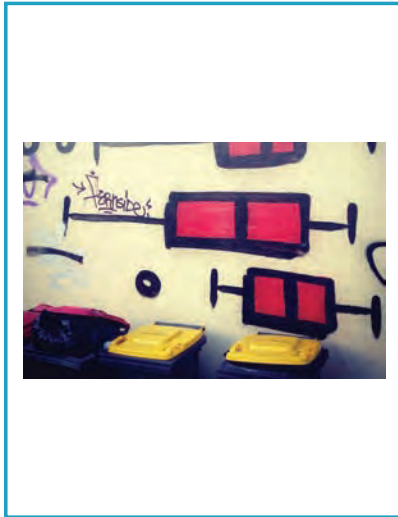
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

Sight Words Activity Page



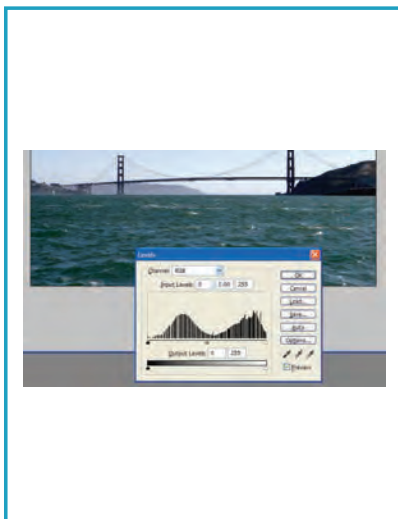
Have the students circle the word for each picture.



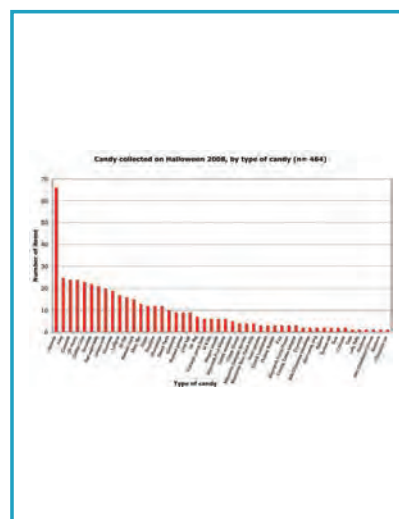
frequency distribution
circle graph
box and whisker plot
stem and leaf plot
histogram
scatter plot
design



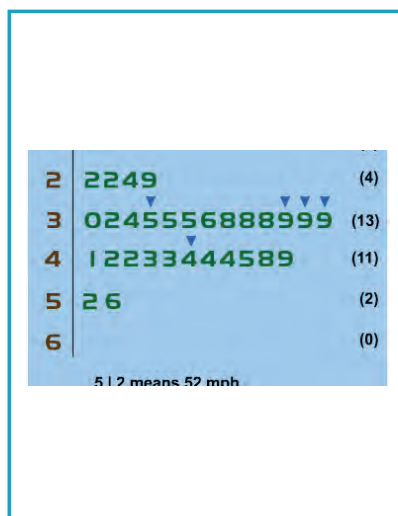
frequency distribution
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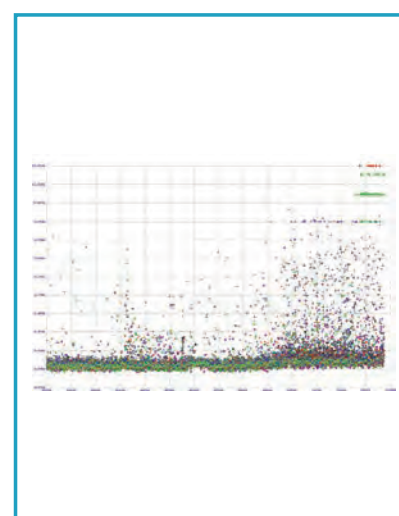
frequency distribution
circle graph
box and whisker plot
stem and leaf plot
histogram
scatter plot
design



frequency distribution
circle graph
box and whisker plot
stem and leaf plot
histogram
scatter plot
design

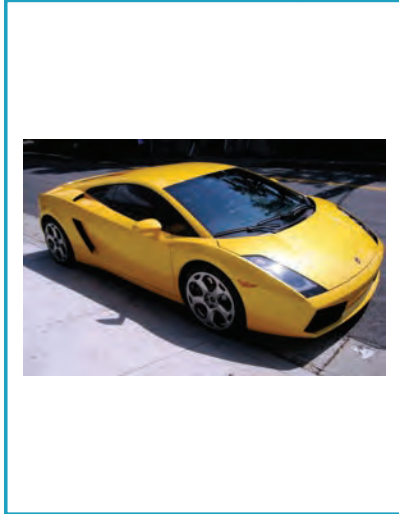


frequency distribution
circle graph
box and whisker plot
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scatter plot
design



frequency distribution
circle graph
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Sight Words Activity Page

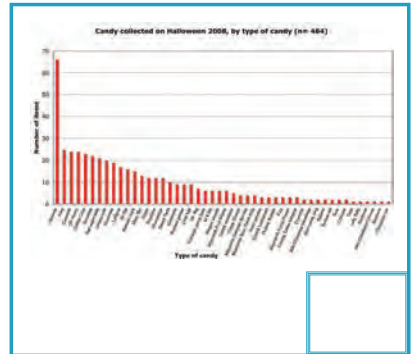
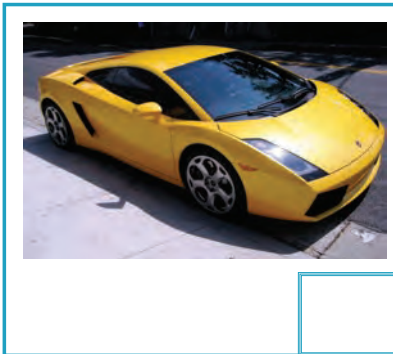
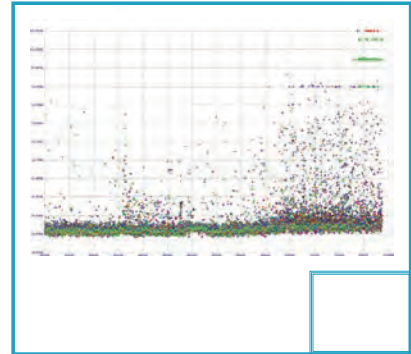
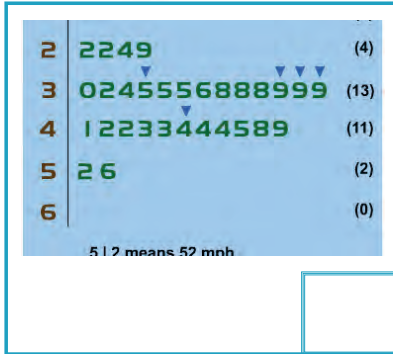


frequency
distribution
circle graph
box and whisker
plot
stem and leaf
plot
histogram
scatter plot
design

Sight Words Activity Page



Write the numbers on their correct vocabulary graphics.



1. frequency distribution
2. circle graph
3. box and whisker plot
4. stem and leaf plot
5. histogram
6. scatter plot
7. design

Sight Words Activity Page



Highlight or circle the words in this word find.

scatter plot
stem and leaf plot
box and whisker plot
circle graph

design
frequency distribution
histogram

t s c d r c r y n g p i u i l i a f i i e f s g i
e o t f r e q u e n c y d i s t r i b u t i o n d
s c a t t e r p l o t a h t c n i u u e s d u l n
k d r h o a s w a s g r l a n e o u m n e m s t r
t b r r r t k t b h u r a h e y s t c m d p l a r
a f a d c s t c t e i e x t p o i r o t s i e i s
s t e m a n d l e a f p l o t c i c r o b u e n p
a g c s d s t n c i r c l e g r a p h d h t t p m
r t r t r d n t d a t r p e a r o q e r e e l d c
h l c r s t o r k r s g r t l b l a e a t a c x d
e e g l r l a o l t k t f t n c s a i s e k c o t
h e l d q b i t m n o m o e n i n n s u n e c e d
s e p e m r p n d e s t i s e e p c g i e l o s c
d a d n h h a a u a d e s i g n r t t l n m d c m
c n d b r y k b b c l k r r s c a t t e r p l i e
i o s i e r r n s a e t l t b e p a o i p o m m l
p l o l x f r e q u e n c y d i s t r i b u t i e
g a n d m t i l t g g l s t p t d c r i d e d l w
t u x g n e n b b o x a n d w h i s k e r p l o t
f s s t e t m c e g n f e t o o e u c o q e e l r
i s s c g s r o e e e c i r c l e g r a p i d o n
g h e x x e e r w x a r n a n e s s s r e h k t e
r c d f t a e o s t e m a n d l e a f p t i t f o
r h i s t o g e n l t y n e t d h e o s t s i n c
n a e o r h s r e g t a a s c g h s m f n i n s c
r d o d s r n o m u h u l d n e s o l f i a a y i
s o h t c d e b o x a n d w h i s k e r p l s d r
f m h i s t o g r a m e i b b d n o i p s l x r k
c d n o h s l d a x r s a m t e i a d f r l s u l

Sight Words Activity Page

ANSWER KEY



scatter plot
stem and leaf plot
box and whisker plot
circle graph

design
frequency distribution
histogram

t s c d r c r y n g p i u i l i a f i i e f s g i
e o t **f r e q u e n c y d i s t r i b u t i o n** d
s c a t t e r p l o t a h t c n i u u e s d u l n
k d r h o a s w a s g r l a n e o u m n e m s t r
t b r r r t k t b h u r a h e y s t c m d p l a r
a f a d c s t c t e i e x t p o i r o t s i e i s
s t e m a n d l e a f p l o t c i c r o b u e n p
a g c s d s t n **c i r c l e g r a p h** d h t t p m
r t r t r d n t d a t r p e a r o q e r e e l d c
h l c r s t o r k r s g r t l b l a e a t a c x d
e e g l r l a o l t k t f t n c s a i s e k c o t
h e l d q b i t m n o m o e n i n n s u n e c e d
s e p e m r p n d e s t i s e e p c g i e l o s c
d a d n h h a a u a **d e s i g n** r t t l n m d c m
c n d b r y k b b c l k r s c a t t e r p l i e
i o s i e r r n s a e t l t b e p a o i p o m m l
p l o l x f r e q u e n c y d i s t r i b u t i e
g a n d m t i l t g g l s t p t d c r i d e d l w
t u x g n e n b **b o x a n d w h i s k e r p l o t**
f s s t e t m c e g n f e t o o e u c o q e e l r
i s s c g s r o e e e c i r c l e g r a p i d o n
g h e x x e e r w x a r n a n e s s s r e h k t e
r c d f t a e o s t e m a n d l e a f p t i t f o
r h i s t o g e n l t y n e t d h e o s t s i n c
n a e o r h s r e g t a a s c g h s m f n i n s c
r d o d s r n o m u h u l d n e s o l f i a a y i
s o h t c d e b o x a n d w h i s k e r p l s d r
f m **h i s t o g r a m** e i b b d n o i p s l x r k
c d n o h s l d a x r s a m t e i a d f r l s u l



STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

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



fre_____y distribution

circle g_____

box and w_____er plot

stem and _____ plot

h_____gram

hisk

quenc

leaf

esign

isto



Encoding Activity Page



s _____ r plot

d _____ n

raph	catte
------	-------

Encoding Activity Page



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

frequ

and leaf plot

circl

whisker plot

box and

e graph

stem

sign

hist

tter plot



Encoding Activity Page



sca

**ency
distribution**

de

ogram

Encoding Activity Page



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

cy || fre || quen

dis || tion || tri || bu

cle || cir || graph

Encoding Activity Page



and || box || plot || ker || whis

plot || stem || leaf || and

to || his || gram

Encoding Activity Page



ter || scat || plot

de || sign



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 A frequency distribution is a correspondence of a set of frequencies with a set of
 - Categories
 - Intervals
 - Values
 - All of the above

- ② In a circle graph, a circle representing a whole is:
 - Subdivided
 - Eliminated
 - Stretched
 - Duplicated

- ③ A box and whisker plot displays all but which of the following
 - Median
 - Interquartile Range
 - Mode
 - Range of Non-Outlier Data

- ④ Which part of a stem and leaf plot represents the ones digits?
 - Stem
 - Roots
 - Leaf
 - Fruit

- ⑤ In a histogram, each bar represents a _____ of values and the data are _____.
 - Range, Discontinuous
 - Median, Continuous
 - Median, Discontinuous
 - Range, Continuous

What's the Answer?



- ⑥ In a scatter plot, two _____ form an ordered pair that is graphed on a coordinate plane.
- Lines
 - Jets
 - Variables
 - Formulas
- ⑦ To design a totem is to work out its:
- Structure
 - Wood Type
 - Included Crests
 - All of the above

What's the Answer?

ANSWER KEY



- ① A frequency distribution is a correspondence of a set of frequencies with a set of
- Categories
 - Intervals
 - Values
 - All of the above
- ② In a circle graph, a circle representing a whole is:
- Subdivided
 - Eliminated
 - Stretched
 - Duplicated
- ③ A box and whisker plot displays all but which of the following
- Median
 - Interquartile Range
 - Mode
 - Range of Non-Outlier Data
- ④ Which part of a stem and leaf plot represents the ones digits?
- Stem
 - Roots
 - Leaf
 - Fruit
- ⑤ In a histogram, each bar represents a _____ of values and the data are _____.
- Range, Discontinuous
 - Median, Continuous
 - Median, Discontinuous
 - Range, Continuous

What's the Answer?



- ⑥ In a scatter plot, two _____ form an ordered pair that is graphed on a coordinate plane.
- Lines
 - Jets
 - Variables
 - Formulas
- ⑦ To design a totem is to work out its:
- Structure
 - Wood Type
 - Included Crests
 - All of the above

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.



- ① A frequency distribution is the correspondence of a set of frequencies with the set of
- ② A person's monthly budget can be viewed
- ③ The whiskers on a box and whisker plot
- ④ A stem and leaf plot is a way of showing the distribution of a set
- ⑤ A histogram is a type of statistical graph that uses bars, where each bar
- ⑥ A scatter plot displays ordered pairs on
- ⑦ To design a totem pole is to
- Ⓐ as a circle graph, showing each category of spending.
- Ⓑ categories, intervals or values into which a population is classified.
- Ⓒ of data along a vertical axis.
- Ⓓ represent the range of the non-outlier data.
- Ⓔ work out the structure and form of it.
- Ⓕ represents a range of values and the data are continuous.
- Ⓖ a coordinate plane and shows the relationship between two variables.

1→ _____ 2→ _____ 3→ _____ 4→ _____
5→ _____ 6→ _____ 7→ _____

Reading Comprehension Activity Page

ANSWER KEY



- 1 A frequency distribution is the correspondence of a set of frequencies with the set of
- 2 A person's monthly budget can be viewed
- 3 The whiskers on a box and whisker plot
- 4 A stem and leaf plot is a way of showing the distribution of a set
- 5 A histogram is a type of statistical graph that uses bars, where each bar
- 6 A scatter plot displays ordered pairs on
- 7 To design a totem pole is to
- A as a circle graph, showing each category of spending.
- B categories, intervals or values into which a population is classified.
- C of data along a vertical axis.
- D represent the range of the non-outlier data.
- E work out the structure and form of it.
- F represents a range of values and the data are continuous.
- G a coordinate plane and shows the relationship between two variables.

1 → B 2 → A 3 → D 4 → C
5 → F 6 → G 7 → E

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.



**Bars represent
a range of
discontinuous values**

**Sketch, Pattern or
Plans**

**Showing each of the
possible values of a
variable**

Subdivided Circle

10s stems 1s leaves

**Shows the
relationship between
two variables**

**Whiskers represent
range of non-outlier
data**

- frequency distribution
- circle graph
- box and whisker plot
- stem and leaf plot
- histogram
- scatter plot
- design



Reading Comprehension Activity Page

ANSWER KEY



Bars represent a range of discontinuous values

histogram

Sketch, Pattern or Plans

design

Showing each of the possible values of a variable

frequency distribution

Subdivided Circle

circle graph

10s stems 1s leaves

stem and leaf plot

Shows the relationship between two variables

scatter plot

Whiskers represent range of non-outlier data

box and whisker plot

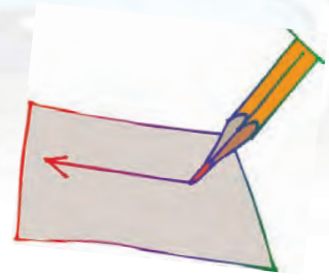


STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page

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



freq_____y dist_____ion

cir_____e gr_____

box _____d w_____er

st_____ and l_____ p_____t

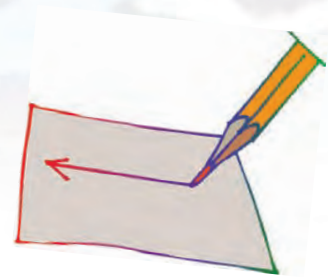
hi_____m

s_____er p_____

des_____

Writing Activity Page

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



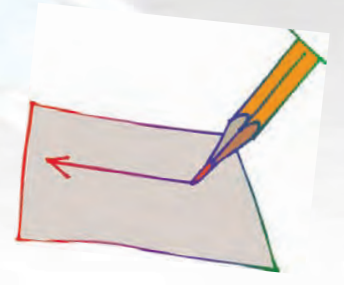
f _____ **y** **d** _____ **n**

c _____ **e** **g** _____ **h**

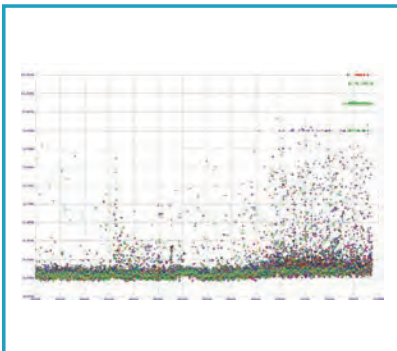
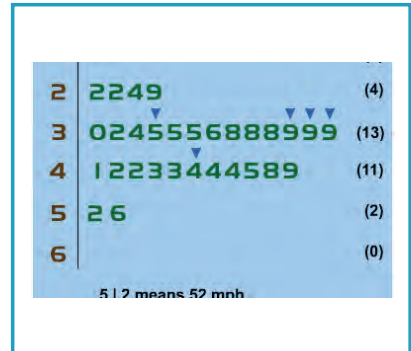
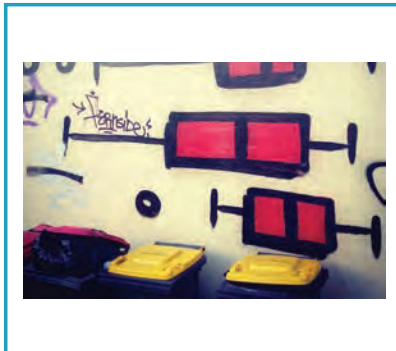
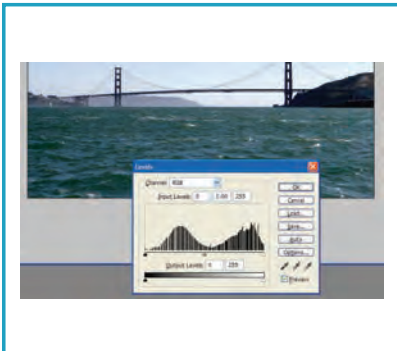
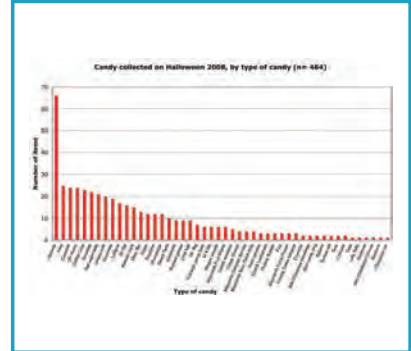
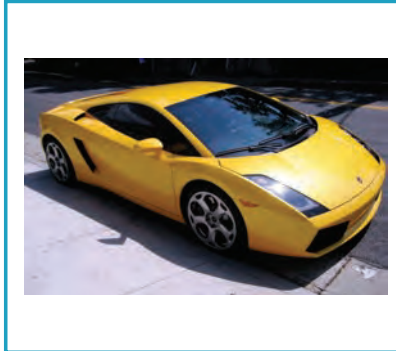
b **x** **a** **d** **w** _____ **r**

p _____ **t**

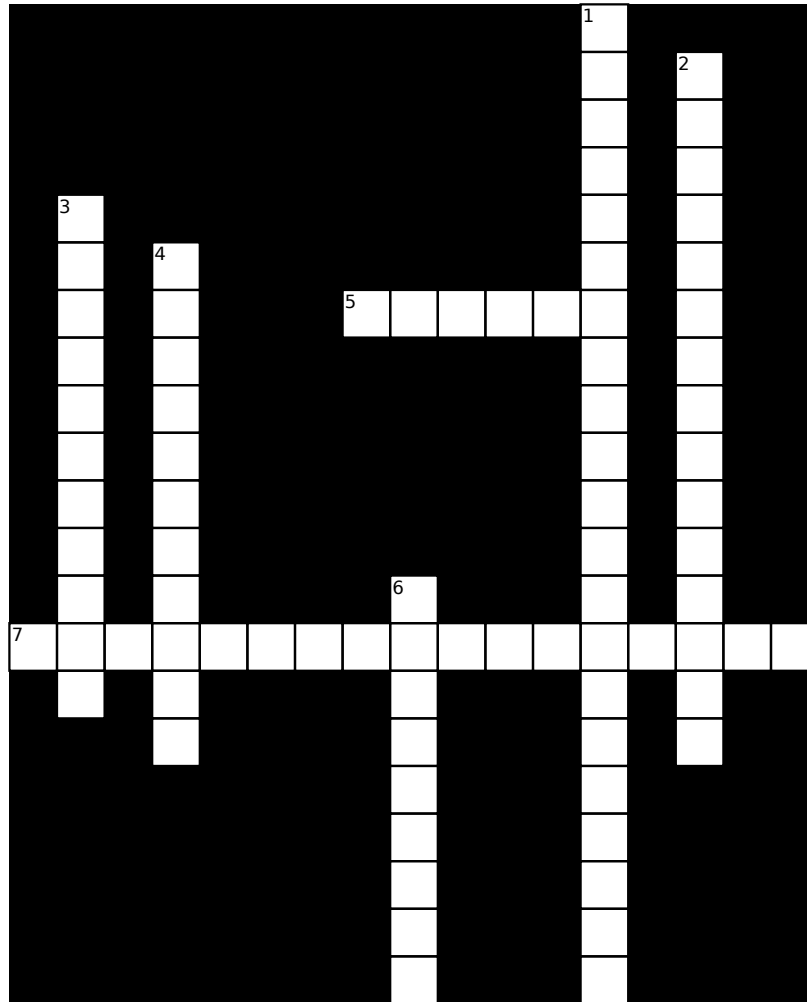
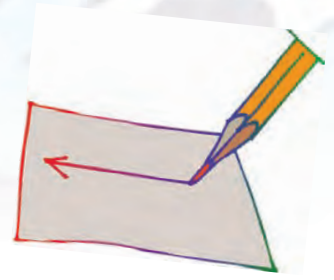
Basic Writing Activity Page



Have the students write the word for each picture.

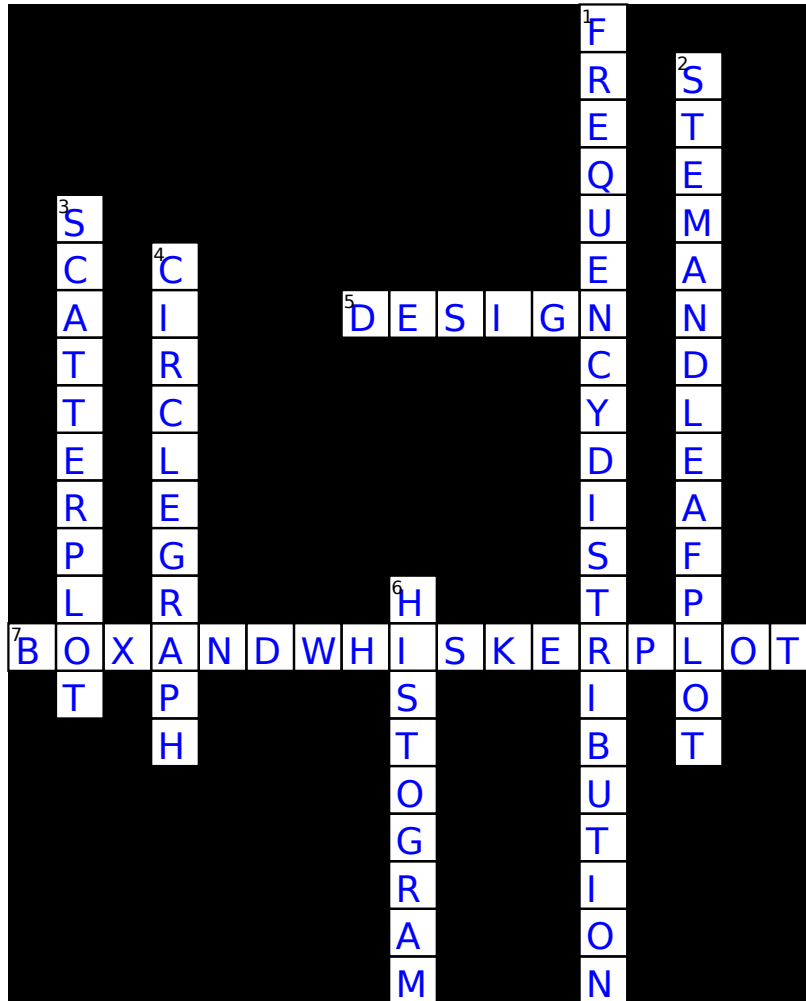


Crossword Puzzle



- | | |
|---|---|
| <p>5 Across
Sketch, pattern or plans</p> <p>7 Across
Whiskers represent range of non-outlier data (4 Words)</p> | <p>1 Down
Showing each of the possible values of a variable (2 Words)</p> <p>2 Down
10s stems 1s leaves (4 Words)</p> <p>3 Down
Shows the relationship between two variables (2 Words)</p> <p>4 Down
Subdivided circle (2 Words)</p> <p>6 Down
Bars represent a range of discontinuous values</p> |
|---|---|

Crossword Puzzle Answers



- Across
- 5 Sketch, pattern or plans
 - 7 Whiskers represent range of non-outlier data (4 Words)

- Down
- 1 Showing each of the possible values of a variable (2 Words)
 - 2 10s stems 1s leaves (4 Words)
 - 3 Shows the relationship between two variables (2 Words)
 - 4 Subdivided circle (2 Words)
 - 6 Bars represent a range of discontinuous values



UNIT ASSESSMENT



Data Display

Unit Assessment Teacher's Notes

Grade 8 • Unit 11

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 **FREQUENCY DISTRIBUTION**.
2. Write the number 2 by the picture for **CIRCLE GRAPH**.
3. Write the number 3 by the picture for **BOX AND WHISKER PLOT**.
4. Write the number 4 by the picture for **STEM AND LEAF PLOT**.
5. Write the number 5 by the picture for **HISTOGRAM**.
6. Write the number 6 by the picture for **SCATTER PLOT**.
7. Write the number 7 by the picture for **DESIGN**.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 3 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 4 in your test. Write each word under its definition.

Refer to Student Support Materials for answer key.

BASIC WRITING

Turn to page 5 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.



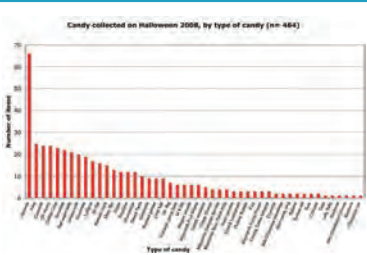
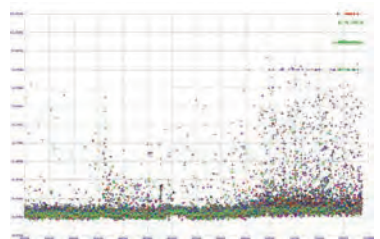
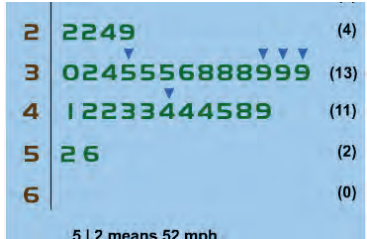
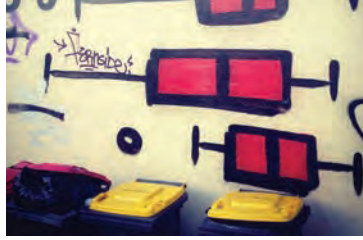


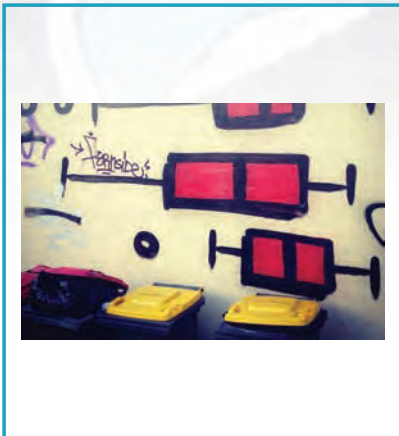
MATH PROGRAM

Unit Assessment Student Pages
Grade 8 • Unit 11

Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____

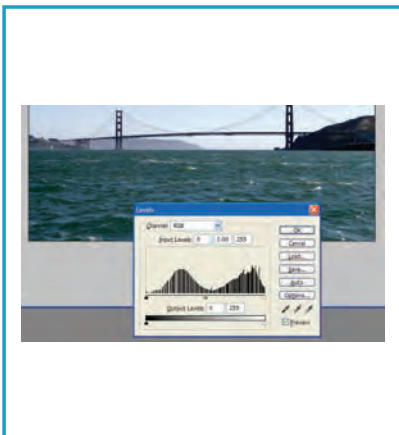




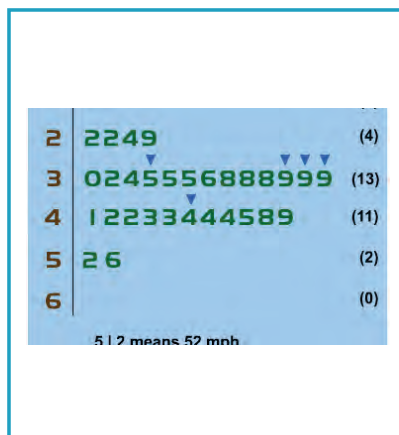
frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design



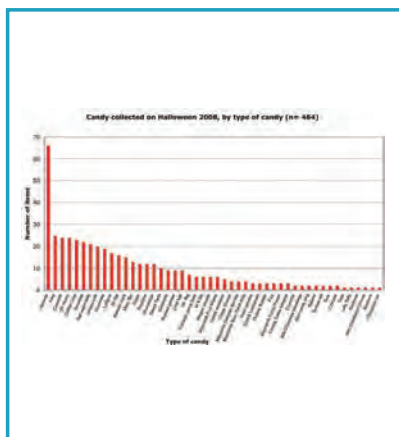
frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design



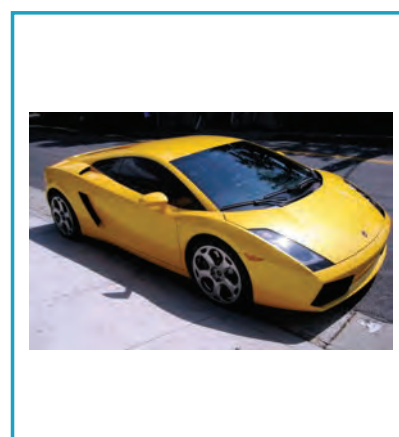
frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design



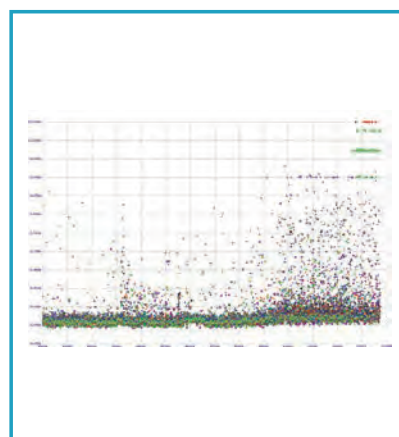
frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design



frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design



frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design



frequency distribution
 circle graph
 box and whisker plot
 stem and leaf plot
 histogram
 scatter plot
 design

frequ_____ **distribution**

anty
enty
inty
onty
unty
ancy
ency
incy
oncy

circle g_____

raf
ref
rif
rof
ruf
raph
reph
riph
roph

box and
whis_____ **plot**

car
cer
cir
cor
cur
kar
ker
kir
kor

stem and
_____ **plot**

laf
lef
lif
lof
luf
leaf
leef
leif
leof

histo_____

gran
gren
grin
gron
grun
gram
grem
grim
grom

sca_____ **plot**

ddar
dder
ddir
ddor
ddur
ttar
tter
ttir
ttor

de_____

sane
sene
sine
sone
sune
sagn
segn
sign
sogn

**Bars represent
a range of
discontinuous values**

**Sketch, Pattern or
Plans**

**Showing each of the
possible values of a
variable**

Subdivided Circle

10s stems 1s leaves

**Shows the
relationship between
two variables**

**Whiskers represent
range of non-outlier
data**

frequency
distribution

circle graph

box and whisker plot

stem and leaf plot

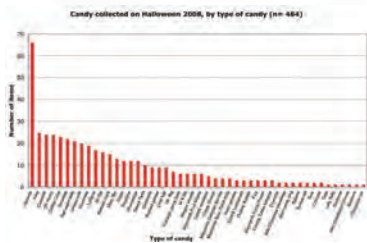
histogram

scatter plot

design



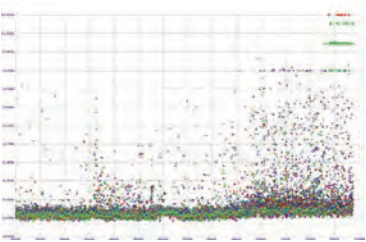
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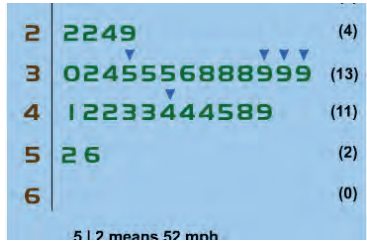
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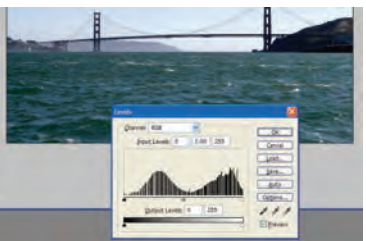
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Blank white box for notes.



Blank white box for notes.



Blank white box for notes.



UNIT 12:

Statistics & Probability

Analysis & Central Tendency

Note: All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.



INTRODUCTION OF MATH VOCABULARY

Process Skills

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.

interpretation

Show the students the picture of the Mona Lisa on page 875. How many students think that she is smiling? How many do not? Explain the definition of interpretation and that many things can be interpreted differently depending on the angle that it is viewed from.

trends

Trends occur all around us on a daily basis. From fashion to music to politics and hair styles, our lives are often in flux. What trends have the students recently seen? Perhaps in fishing success locally?

justify

Write on the board $2+2=5$. Ask the students if this is correct and when they say no, ask them to explain why. Tell them that they are justifying their objection to your conclusion!

Process Skills

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.

range

Write the students' ages on the board. What are the youngest and oldest ages in the class? Explain that these upper and lower limits define the range of ages.

median

Using a list of the students' ages in ascending order, explain the definition of the median number and have the students tell you what it is.

mean

Make a list on the board of how many pets each student has in their home. Ask them to find the mean or "average" number of pets.

Process Skills

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.

mode

Make a list on the board of how many fish each student has caught in the past two years. Explain that mode is the number that occurs most frequently in the list of numbers. What is the mode for fish caught?



VOCABULARY PICTURES

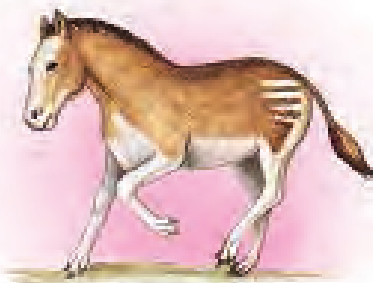




INTERPRETATION



Hyracotherium



Merychippus



Equus



TRENDS



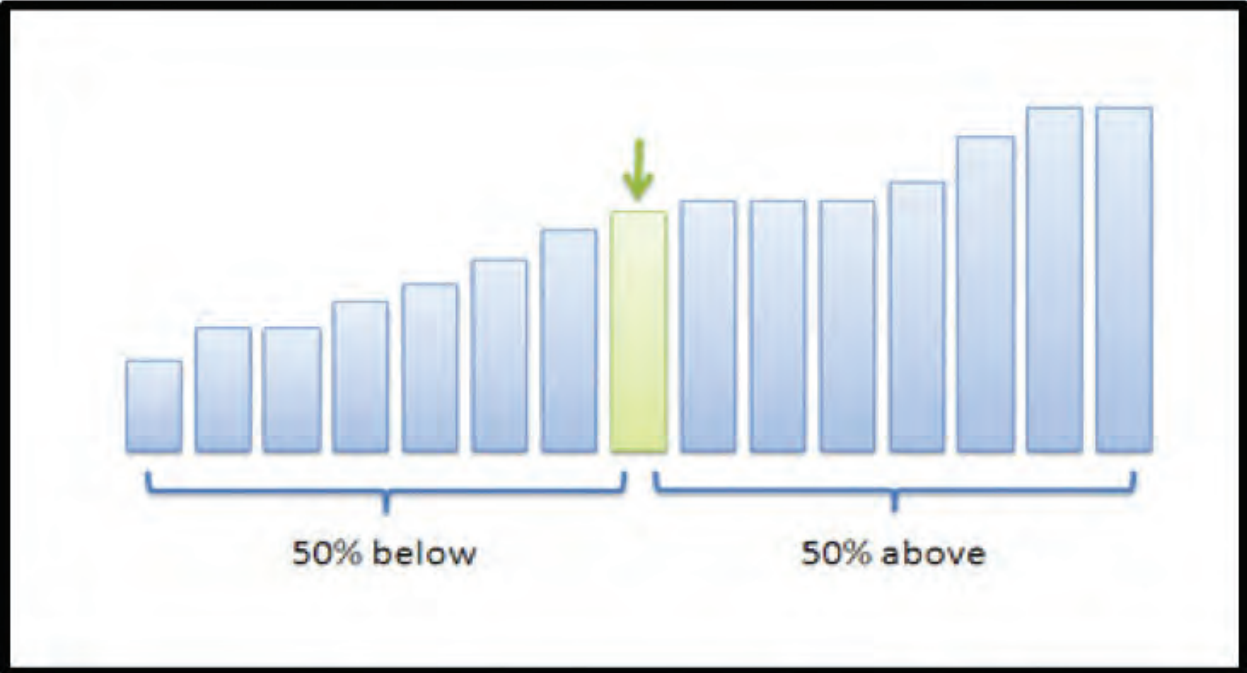


JUSTIFY





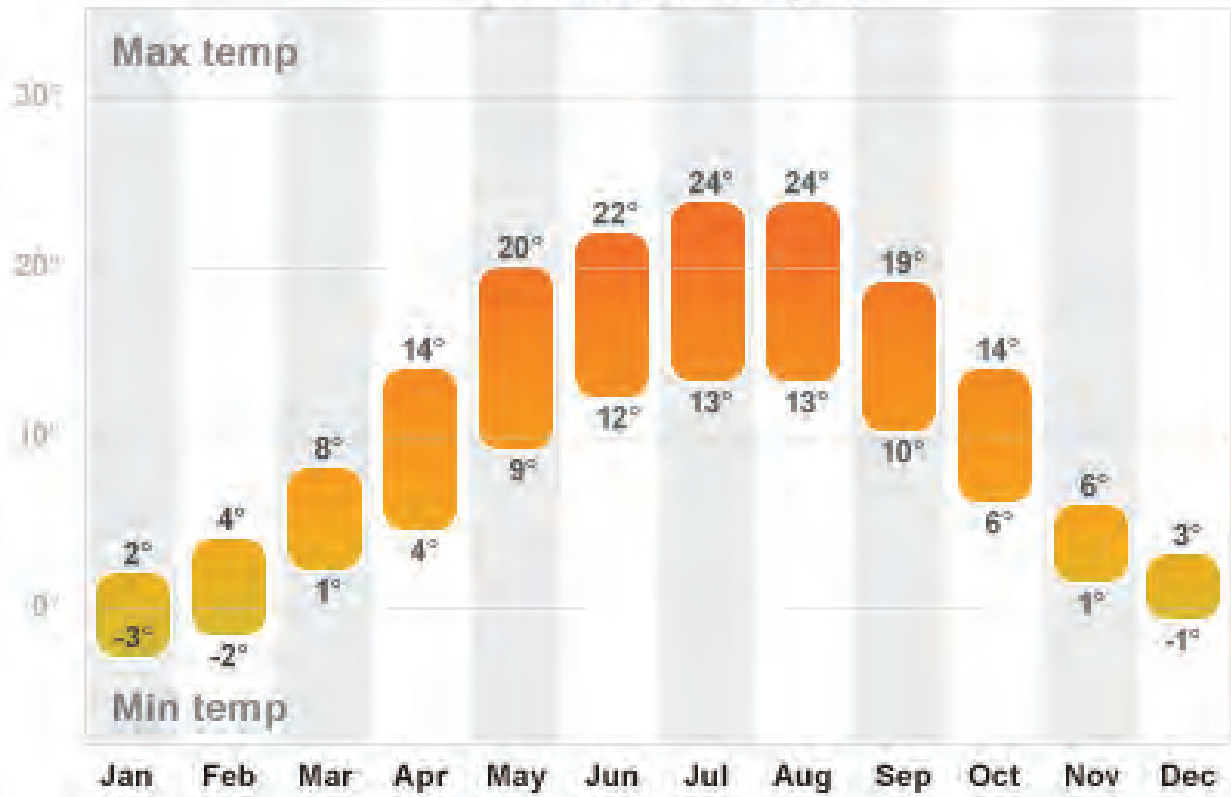
RANGE





MEDIAN

Climate Chart (°C)





MEAN

Wrangell
Hourly

55°

Day	Weather Icon	High	Low
SATURDAY	Clouds with rain	57°	54°
SUNDAY	Clouds with rain	57°	52°
MONDAY	Clouds with rain	59°	52°
TUESDAY	Sunny	66°	54°
WEDNESDAY	Sunny	64°	54°
THURSDAY	Sunny with rain	57°	52°

Updated 8/11/12 2:49 PM



MODE



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.



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.

Funnel Vision

Before the activity begins, collect a large funnel. Have a student stand at the front of the classroom with his/her back to the other students. Give the student the funnel. Give the vocabulary pictures to the other students in the class. The students should hold their pictures up, facing the front of the classroom. Say a vocabulary word. When you say “Go,” the student with the funnel should place the funnel over his/her eyes and turn to face the other students. The student must then look through the funnel to find the picture for the vocabulary word you said. This activity may be conducted with two players (each player having a funnel). The winner of each round is the student who locates the correct picture first. Have the students in the class exchange pictures for each new round of the activity. Repeat.

Student Support Materials

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

Language and Skills Development

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.

High Roller

Give a die to each of two students. When you say “Go,” the students should roll their dice. The student who rolls the highest number on his/her die must then say a complete sentence about a vocabulary picture that you show. Repeat this process until many students have responded with sentences of their own.

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.



Word Length

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

What’s Your Sequence?

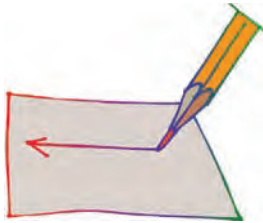
Provide each student with four blank flashcards. Write four sight words on the board. Each student should write the same sight words on each of his cards (one word per card). When the students’ cards are ready, have them arrange their sight word cards in a specific sequence on their desks (each student should determine his/her own sequence of words). Then, say a sequence of the four words. Any student or students who have their sight words in the same sequence as you said win the round. The winner or winners of this activity are those students who collect the greatest number of wins. The students may change the sequence of their sight word cards after each round of the activity.

Letter Encode

Prepare a page that contains large alphabet letters from A to Z. Make five copies for each student. The students should cut out their letters. When all of the letters have been cut out, show a vocabulary picture. The students should then use their letters to spell the word for that picture. Repeat, using the remaining pictures from this unit. Have the students store their cut out letters in individual envelopes.

Language and Skills Development

WRITING



Backwards Spell

Provide each student with writing paper and a pen. Spell one of the sight words, backwards. When you have completed the spelling of the word in this way, each student should then write the word you spelled on his/her sheet of paper, writing the letters of the word in their correct order. The students should not begin to write the word until AFTER you have completed the backwards spelling of the word. Repeat this process with other sight words. This activity may also be done in team form. In this case, group the students into two teams. Spell one of the sight words backwards. When you say “Go,” the first player from each team must rush to the chalkboard and write the word that you said - writing the letters of the word in their correct sequence. The first player to do this correctly wins the round. Repeat until all players have participated.

Sentence Completion

Write a number of sentence halves on individual sentence strips. These should include both the beginning and ending halves of sentences. Mount the sentence halves on the board and number each one. Provide the students with writing paper and pencils/pens. Each student should then complete ONE of the sentence halves in his/her own words, writing his/her part of the sentence on the sheet of paper. When the students have completed their sentence halves, have a student read ONLY the sentence half he/she wrote. The other students must then attempt to identify the “other half” of the sentence on the board (by its number). Repeat until all of the students have shared their sentence halves in this way.

Student Support Materials

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



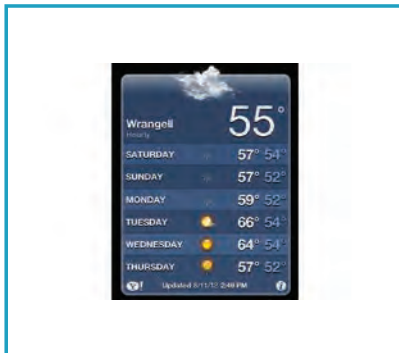
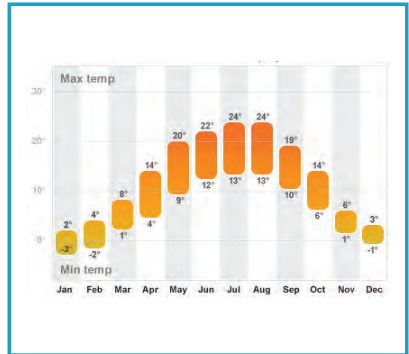
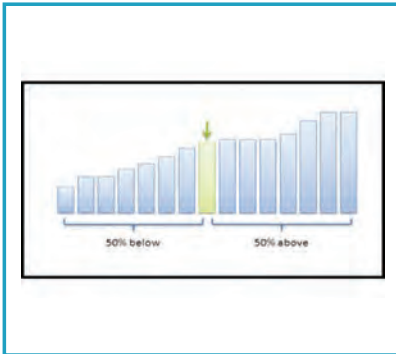
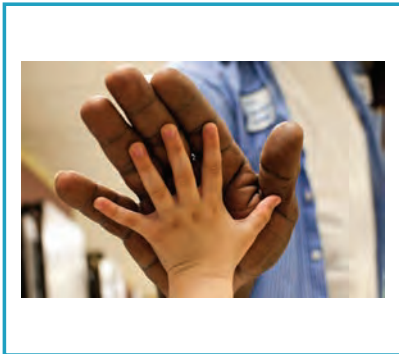
STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures



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





STUDENT SUPPORT MATERIALS

Sight Words

interpretation

trends

justify





range

median

mean



mode





STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

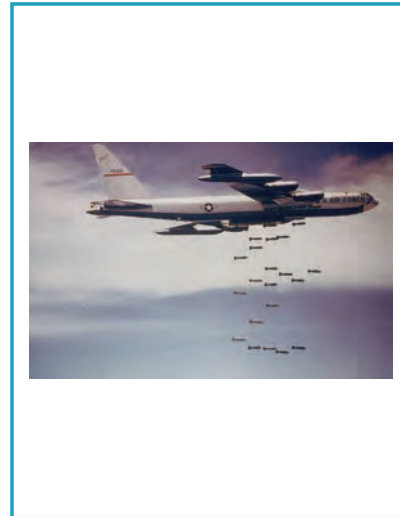
Sight Words Activity Page



Have the students circle the word for each picture.



interpretation
trends
justify
range
median
mean
mode



interpretation
trends
justify
range
median
mean
mode



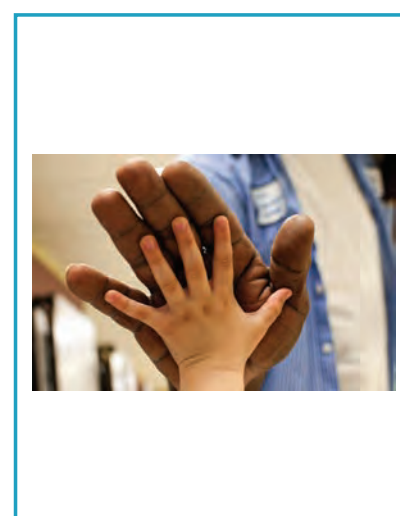
interpretation
trends
justify
range
median
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mode



interpretation
trends
justify
range
median
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mode

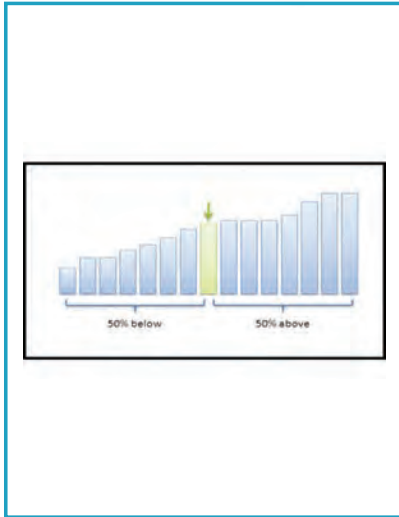


interpretation
trends
justify
range
median
mean
mode



interpretation
trends
justify
range
median
mean
mode

Sight Words Activity Page

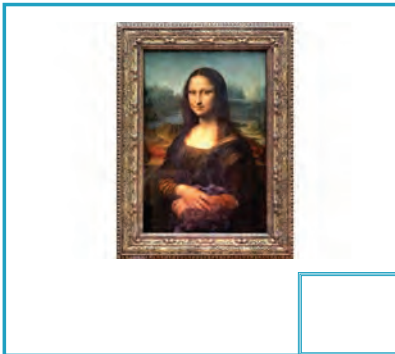
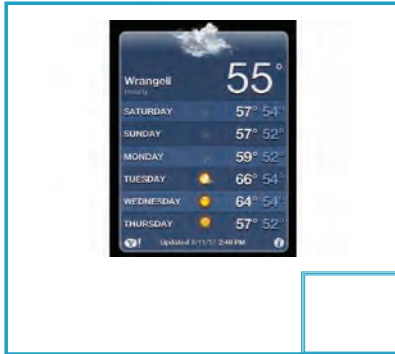
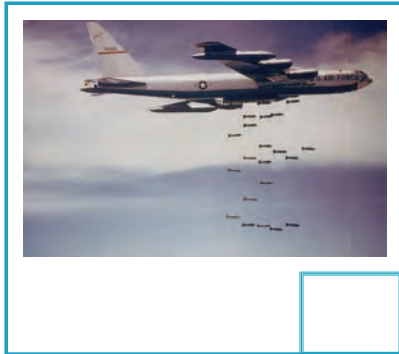


interpretation
trends
justify
range
median
mean
mode

Sight Words Activity Page



Write the numbers on their correct vocabulary graphics.



1. interpretation
2. trends
3. justify
4. range
5. median
6. mean
7. mode

Sight Words Activity Page



Highlight or circle the words in this word find.

trends
mean
justify

median
interpretation
mode

range

e y n m e d i a j t e s e d e i e n a t n n n n i
d g n e o n e a i u e m a s t u d e y r r a m e m
e o t i f n t i d t o a r d g r r i i t e n j t e
s t n e a r o d a e n a r o e e o e e y p d o a d
e u m a o u d r n a e o n r r e e e t e e o s t n
t n r e t o n j e i d s r i t n t e r y e n t t t
m e n s a n i r n j o m n t i t r e n d s m e i r
i n t e r p r e t a t i o n t t g o a m y o e a i
p n o e r t r s n i r i t a r n d d r a o n s d g
t f n r i y s a n n i f a n u e a n u d n e f t n
s t t e t r e n e m j u s t i i t s t t s d a e f
o p r y t n r p t n n m e t r r a r m n f n a n a
t u n r e n d t d m u t n m m e i r s n i r s i r
n d r e m n a a t i d j a a u s s m n m n u r o e
e t n y j t m n n i i n t e r p r e t a t i e e n
n r i e e d i t r r m u s n e i s a o e i n s a s
i m e d i a n n e d n s m f m a a j o t e u t r n
p i a i n n n d i r t p t u t o m y n a o s p a g
i t a u n a e s e f s i j u s t i f y n e r d m d
t j t m p i n n e n n r n a e n i y f e m m e a n
e n g e n n e m s e e i o r a e n d y i i d p d e
e i o t e r t t u m p t n r e a i r a n g e f d n
s d r r d d t n m a t t e d m e t n i o a t t t a
d d m e e o d n e p i j g n a t t n t a m e t t d
t d m n t n s t a n e n r e t d j n e n n f n n u
y a o o d t m o d e t d f n y r m n o g m t t r f
s n r n s r i a u a s a s a e m f m i m e n i r t
f e e s r e y a e n e r n n m r a a r n r r f o o
a d i n m n r m n p d p e e e o t n o u a t p m t
t m m s a m e n p s m j n e a i d d e d f m a m i

Sight Words Activity Page

ANSWER KEY



trends
mean
justify

median
interpretation
mode

range

e y n m e d i a j t e s e d e i e n a t n n n n i
d g n e o n e a i u e m a s t u d e y r r a m e m
e o t i f n t i d t o a r d g r r i i t e n j t e
s t n e a r o d a e n a r o e e o e e y p d o a d
e u m a o u d r n a e o n r r e e e t e e o s t n
t n r e t o n j e i d s r i t n t e r y e n t t t
m e n s a n i r n j o m n t i **t r e n d s** m e i r
i n t e r p r e t a t i o n t t g o a m y o e a i
p n o e r t r s n i r i t a r n d d r a o n s d g
t f n r i y s a n n i f a n u e a n u d n e f t n
s t t e t r e n e m j u s t i i t s t t s d a e f
o p r y t n r p t n n m e t r r a r m n f n a n a
t u n r e n d t d m u t n m m e i r s n i r s i r
n d r e m n a a t i d j a a u s s m n m n u r o e
e t n y j t m n n i i n t e r p r e t a t i e e n
n r i e e d i t r r m u s n e i s a o e i n s a s
i **m e d i a n** n e d n s m f m a a j o t e u t r n
p i a i n n n d i r t p t u t o m y n a o s p a g
i t a u n a e s e f s i **j u s t i f y** n e r d m d
t j t m p i n n e n n r n a e n i y f e m **m e a n**
e n g e n n e m s e e i o r a e n d y i i d p d e
e i o t e r t t u m p t n r e a i **r a n g e** f d n
s d r r d d t n m a t t e d m e t n i o a t t t a
d d m e e o d n e p i j g n a t t n t a m e t t d
t d m n t n s t a n e n r e t d j n e n n f n n u
y a o o d t **m o d e** t d f n y r m n o g m t t r f
s n r n s r i a u a s a s a e m f m i m e n i r t
f e e s r e y a e n e r n n m r a a r n r r f o o
a d i n m n r m n p d p e e e o t n o u a t p m t
t m m s a m e n p s m j n e a i d d e d f m a m i



STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

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



in _____ **tation**

t _____ **s**

j _____ **fy**

r _____

m _____ **n**

rend		ange		edia
-------------	--	-------------	--	-------------

ode		usti
------------	--	-------------



Encoding Activity Page



m _____

m _____

terpre	ean
--------	-----

Encoding Activity Page



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

inter

ends

tr

pretation

jus

nge

ra

de

med

an



Encoding Activity Page



me

ian

mo

tify

Encoding Activity Page



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

in || **ter** || **tion** || **ta** || **pre**

trends

fy || **ti** || **jus**

Encoding Activity Page



range

di an me

mean

mode



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 The justices of the Alaska Supreme Court sometimes have different _____ of the Alaska constitution.
- Visions
 - Interpretations
 - Versions
 - Authors
- ② Trends can occur in
- Mathematics
 - Cultures
 - Fashion
 - All of the above
- ③ Some people feel guilty when they make a large purchase and may feel the need to _____ that purchase.
- Continue
 - Justify
 - Fake
 - Increase
- ④ The extent of area that black bears occupy in North America refers to their _____.
- Range
 - Den
 - Population
 - All of the above
- ⑤ When values are listed in order of size, the _____ is in the middle.
- Median
 - Lines
 - Chickens
 - Range

What's the Answer?



- ⑥ The _____ number of clams collected in a day can be referred to as the mean.
- Gross
 - Greatest
 - Least
 - Average
- ⑦ The mode is the value that appears _____ frequently in a set of data.
- Least
 - Most
 - Never
 - Somewhat

What's the Answer?

ANSWER KEY



- ① The justices of the Alaska Supreme Court sometimes have different _____ of the Alaska constitution.
- Visions
 - Interpretations
 - Versions
 - Authors
- ② Trends can occur in
- Mathematics
 - Cultures
 - Fashion
 - All of the above
- ③ Some people feel guilty when they make a large purchase and may feel the need to _____ that purchase.
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 - Chickens
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- ⑥ The _____ number of clams collected in a day can be referred to as the mean.
- Gross
 - Greatest
 - Least
 - Average
- ⑦ The mode is the value that appears _____ frequently in a set of data.
- Least
 - Most
 - Never
 - Somewhat

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.



- | | |
|--|--|
| ① One interpretation of climate change data is that | ① can vary from very poor to very great. |
| ② During the 1980s, mullets and rat-tails | ② of central tendency. |
| ③ Susan felt that she needed to justify her purchase of cross-country skis | ③ were a fashion trend. |
| ④ The range of athletic ability in a group of people | ④ by vowing to use them at least four times per winter. |
| ⑤ The median of a dataset is the measure | ⑤ most frequently in a set of data. |
| ⑥ The mean number of children born to parents in the U.S. | ⑥ it has happened in the past, is normal, and there is nothing to worry about. |
| ⑦ The mode is the value that appears | ⑦ is about two. |

1 → _____ 2 → _____ 3 → _____ 4 → _____
5 → _____ 6 → _____ 7 → _____

Reading Comprehension Activity Page

ANSWER KEY



- ① One interpretation of climate change data is that
- ② During the 1980s, mullets and rat-tails
- ③ Susan felt that she needed to justify her purchase of cross-country skis
- ④ The range of athletic ability in a group of people
- ⑤ The median of a dataset is the measure
- ⑥ The mean number of children born to parents in the U.S.
- ⑦ The mode is the value that appears
- Ⓐ can vary from very poor to very great.
- Ⓑ of central tendency.
- Ⓒ were a fashion trend.
- Ⓓ by vowing to use them at least four times per winter.
- Ⓔ most frequently in a set of data.
- Ⓕ it has happened in the past, is normal, and there is nothing to worry about.
- Ⓖ is about two.

1→ F 2→ C 3→ D 4→ A
5→ B 6→ G 7→ E

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.



Explanation of results

Variation between upper and lower limits

Prove reasonable

Occurs most often

Average

Develop in a general direction

Situated in the middle

interpretation	trends	justify	range
median	mean	mode	



Reading Comprehension Activity Page

ANSWER KEY



Explanation of results

interpretation

Variation between upper and lower limits

range

Prove reasonable

justify

Occurs most often

mode

Average

mean

Develop in a general direction

trends

Situated in the middle

median

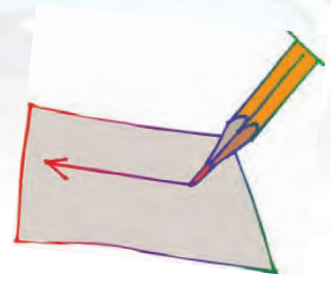


STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page

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



in _____ pretation

t _____ ds

j _____ tify

r _____ ge

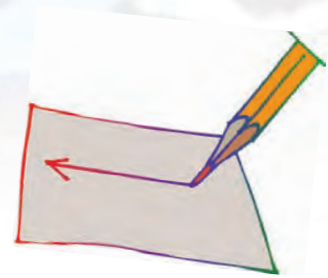
m _____ ian

me _____ n

mo _____ e

Writing Activity Page

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



i _____ **n**

t _____ **s**

j _____ **y**

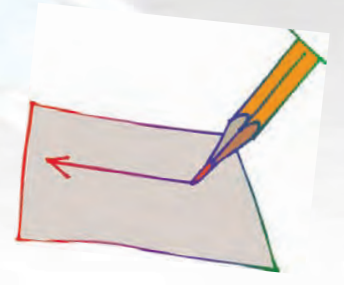
r _____ **e**

m _____ **d** _____ **n**

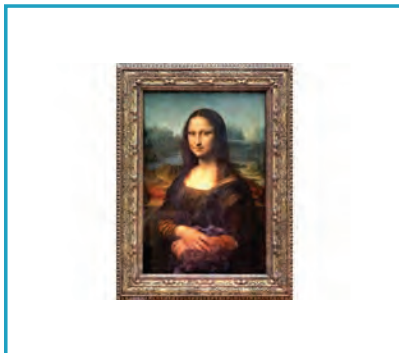
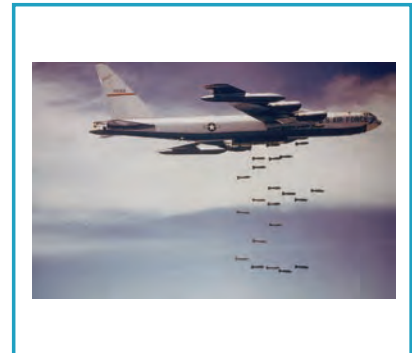
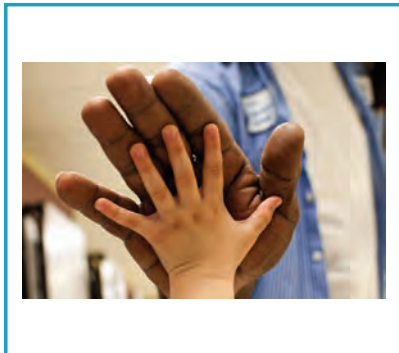
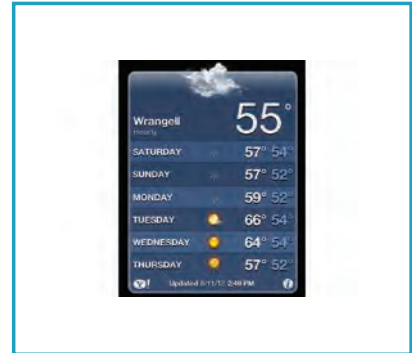
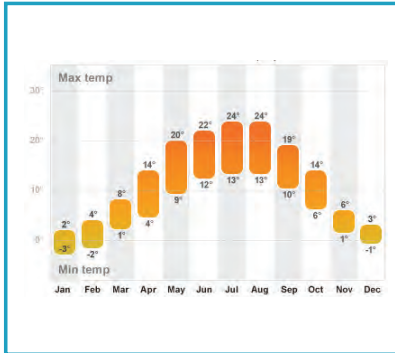
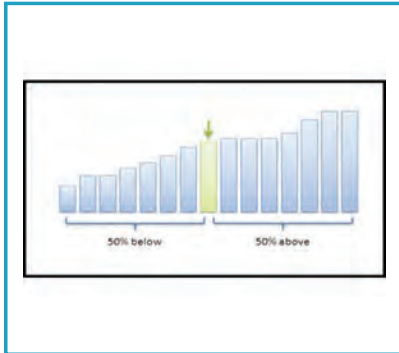
m _____ **n**

m _____ **e**

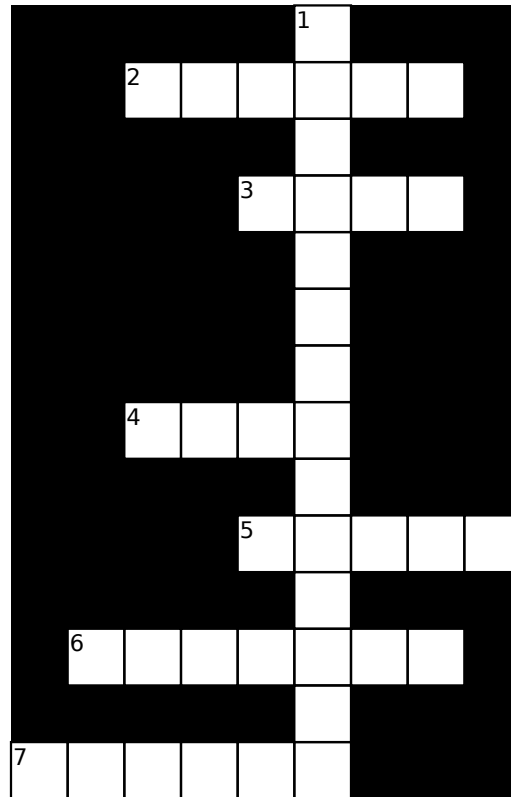
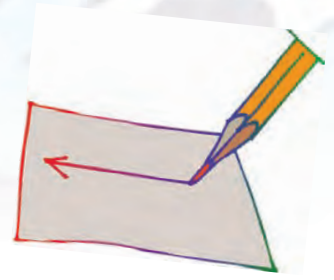
Basic Writing Activity Page



Have the students write the word for each picture.

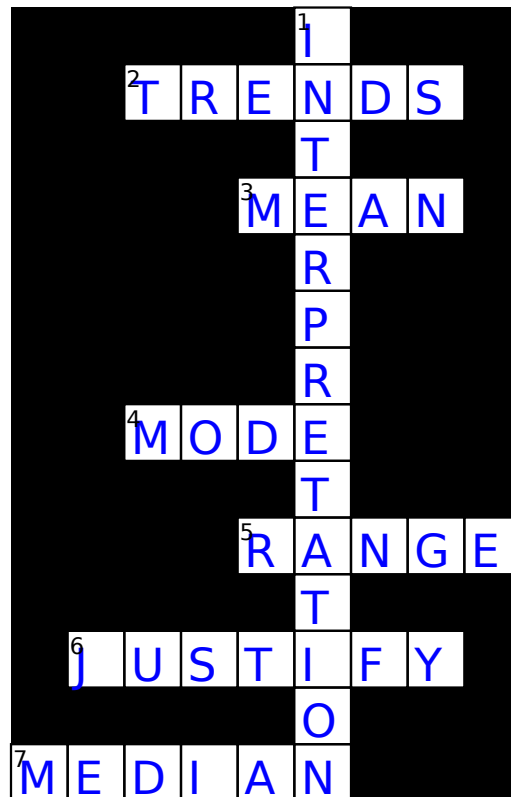


Crossword Puzzle



- | | Across | | Down |
|---|--|---|------------------------|
| 2 | Develop in a general direction | 1 | Explanation of results |
| 3 | Average | | |
| 4 | Occurs most often | | |
| 5 | Variation between upper and lower limits | | |
| 6 | Prove reasonable | | |
| 7 | Situated in the middle | | |

Crossword Puzzle Answers



- | | |
|--|--|
| <p>2 Across
Develop in a
general
direction</p> <p>3 Average</p> <p>4 Occurs most
often</p> <p>5 Variation
between upper
and lower limits</p> <p>6 Prove
reasonable</p> <p>7 Situated in the
middle</p> | <p>1 Down
Explanation of
results</p> |
|--|--|



UNIT ASSESSMENT



Analysis & Central Tendency

Unit Assessment Teacher's Notes

Grade 8 • Unit 12

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 **INTERPRETATION**.
2. Write the number 2 by the picture for **TRENDS**.
3. Write the number 3 by the picture for **JUSTIFY**.
4. Write the number 4 by the picture for **RANGE**.
5. Write the number 5 by the picture for **MEDIAN**.
6. Write the number 6 by the picture for **MEAN**.
7. Write the number 7 by the picture for **MODE**.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 3 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 4 in your test. Write each word under its definition.

Refer to Student Support Materials for answer key.

BASIC WRITING

Turn to page 5 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.



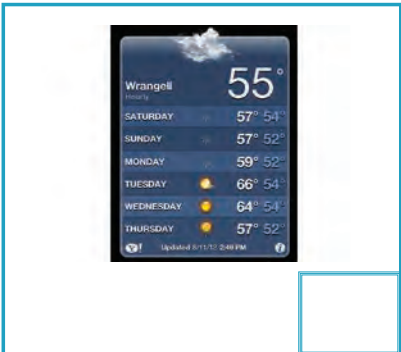
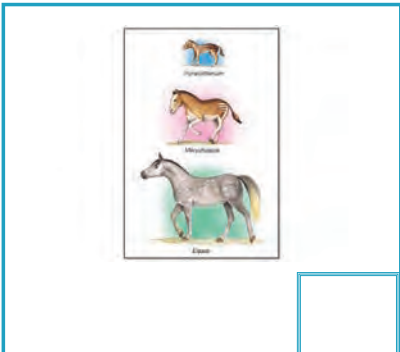
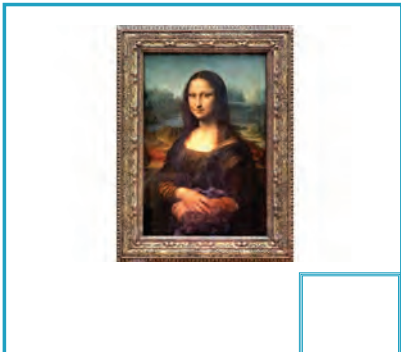
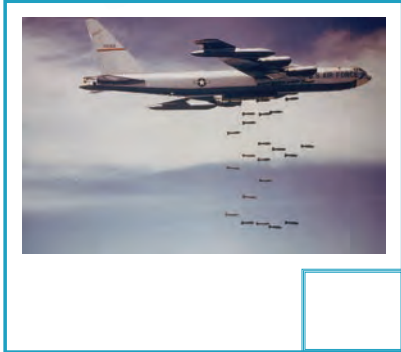
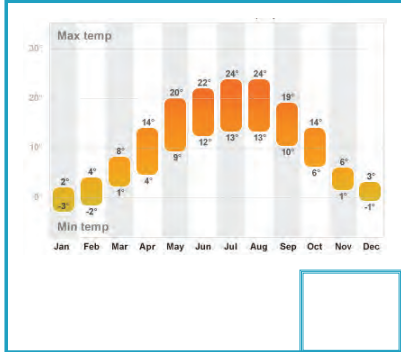


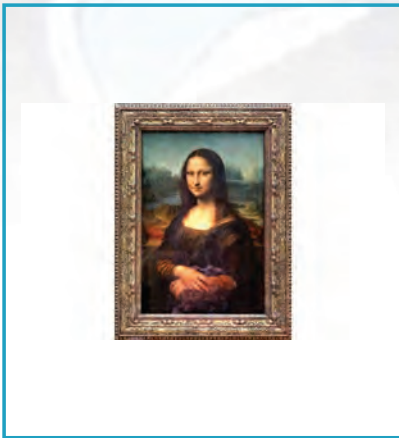
MATH PROGRAM

Unit Assessment Student Pages
Grade 8 • Unit 12

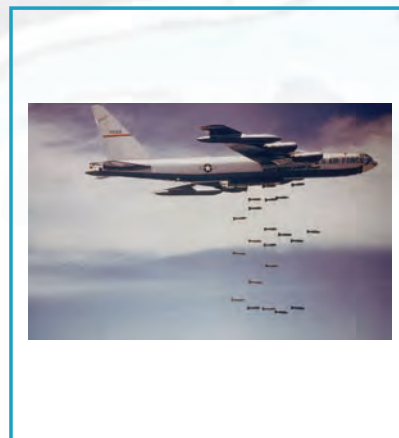
Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____

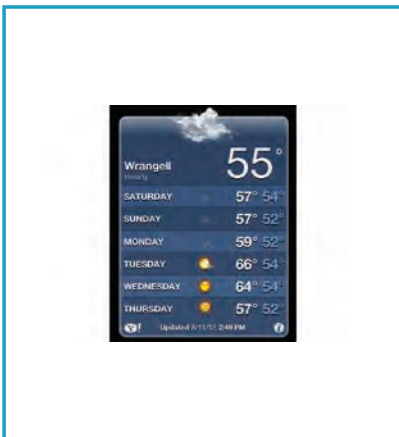




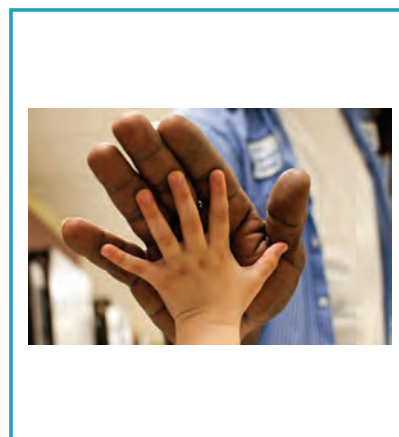
interpretation
 trends
 justify
 range
 median
 mean
 mode



interpretation
 trends
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 median
 mean
 mode



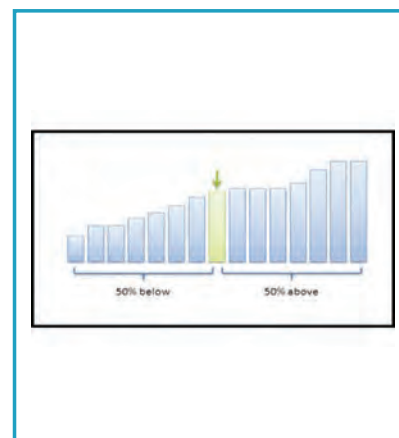
interpretation
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interpretation
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interpretation
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interpreta_____

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Explanation of results

Variation between upper and lower limits

Prove reasonable

Occurs most often

Average

Develop in a general direction

Situated in the middle

interpretation

trends

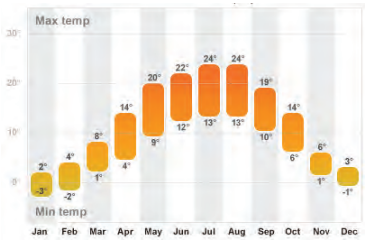
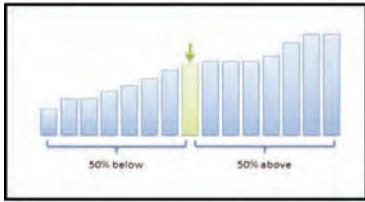
justify

range

median

mean

mode





UNIT 13:

Statistics & Probability

Probability

Note: All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.



INTRODUCTION OF MATH VOCABULARY

Process Skills

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.

probability

Draw a plant on the board and explain to the students that it only flowers every other year. You do not know when the last time it flowered is. What is the probability that it will flower this year? Explain to the students that it has a 50/50 chance of flowering!

experimental probability

Have the students tell you the probability that a coin will land on heads. Toss a coin ten times and record its disposition on the board. Explain that you conducted an experiment to determine the probability. Was this the same result as the students theorized?

theoretical probability

Ask the students how many of them have a twin and/or know of twins. Explain that the theoretical probability of having a twin is about 1 in 40. This may be more or less within a family or cultural group!

Process Skills

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.

systematic

Have the students explain the process of making a peanut butter and jelly sandwich to you and write each step on the board. Explain that though some people may have variations in how they make these, it is a rather systematic process! Now try to make all the foods for Thanksgiving at the same time!

simulation

Ask the students how many of them have played a video or computer game where a car had to be driven or a plane flown. Explain that this is a simulation of the real thing. Pilots and astronauts often train on simulators to keep them safe while they are learning!

prediction

Ask the students to make a prediction on how many people will sneeze in the next hour. Keep track and give an award to those who guessed correctly! Explain that many predictions are based on some knowledge of an event and rather than being a random guess, they are educated guesses.

Process Skills

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.

tree diagram

Draw a detailed flower on the board. Under the flower, draw lines to various characteristics that you have the students come up with. Gradually expand to smaller and smaller details. Explain that the diagram helps you to view all of the component parts of the flower. The same can be done to help understand concepts and formulas in math!

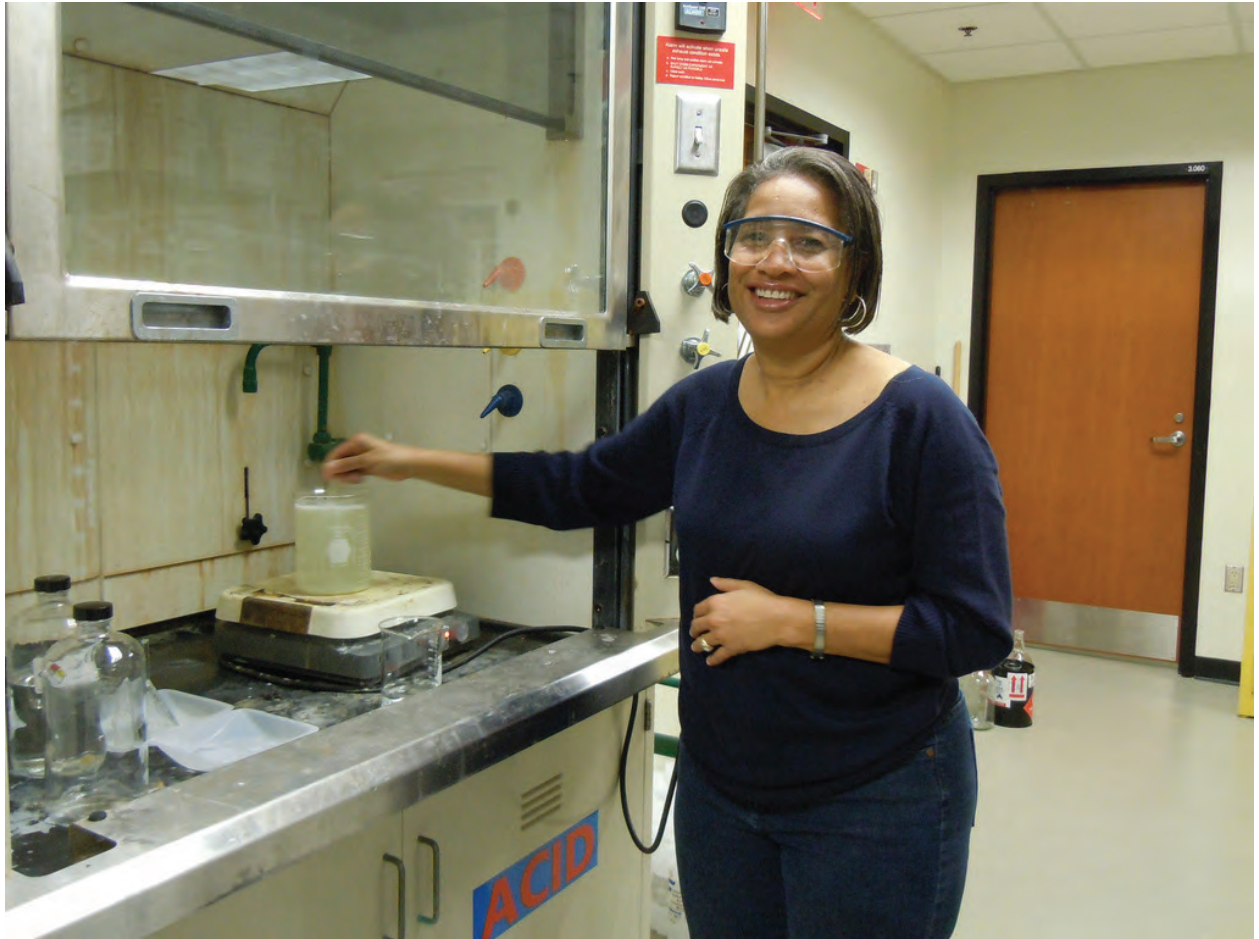


VOCABULARY PICTURES





PROBABILITY





EXPERIMENTAL PROBABILITY





THEORETICAL PROBABILITY





SYSTEMATIC



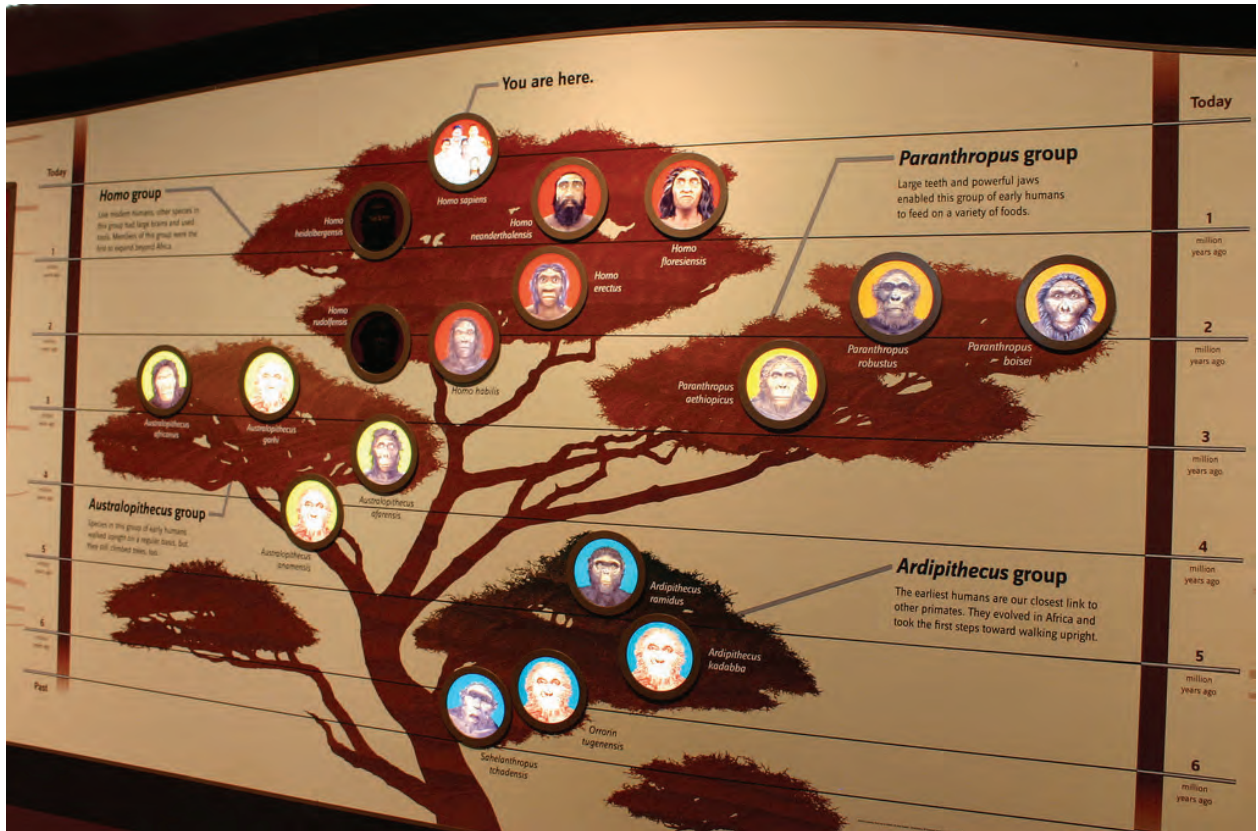


SIMULATION





PREDICTION





TREE DIAGRAM



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.



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.

Student Support Materials

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

Language and Skills Development

SPEAKING



Actions!

Group the students together in front of you. Perform an action which represents one of the key vocabulary words. The students should say the vocabulary word for the action you perform. Repeat, using a different action for each vocabulary word.

One to Six

Provide each student with two blank flashcards. Each student should then write a number between one and six on each of his flashcards (one number per card). When the students' number cards are ready, toss two dice and call the numbers showing. Any student or students who have those two numbers must then identify a vocabulary picture you show. The students may exchange number cards periodically during this activity.

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.

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.



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.

String Along

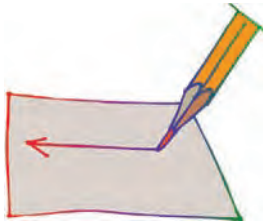
Join all of the students together with string (the students do not need to move from their seats). Before tying the ends of the string together, insert a roll of tape over one of the ends of the string. Tie the ends of the string together. Turn your back to the students. The students should pass the 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.

Letter Encode

Prepare a page that contains large alphabet letters from A to Z. Make five copies for each student. The students should cut out their letters. When all of the letters have been cut out, show a vocabulary picture. The students should then use their letters to spell the word for that picture. Repeat, using the remaining pictures from this unit. Have the students store their cut out letters in individual envelopes.

Language and Skills Development

WRITING



Let's Write

Provide the students with a copy of the creative writing page from the Student Support Materials. The students should write as much as they can about the graphic. Later, have each student read his/her writing to the class.

Flashlight Writing

If possible, darken the classroom. Give a student a flashlight. Say one of the vocabulary words and the student should write that word with the light of the flashlight on a wall or on the board. Repeat until many students have had a chance to participate. An alternative is to provide each student with writing paper and a pen. Darken the classroom, if possible. Use the light of a flashlight to write one of the sight words on the wall or board. When you have completed the writing of the word, each student should then write the same word on his/her sheet of paper. Repeat until all sight words have been written in this way.

This activity may also be done in team form. In this case, group the students into two teams. Darken the classroom. Use the light of a flashlight to write one of the sight words on the board. When you say "Go," the first player in each team should rush to the board and use chalk to write the same word on the board. The first player to do this correctly wins the round. Repeat until all players have played.

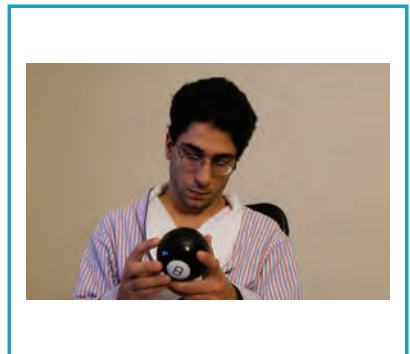
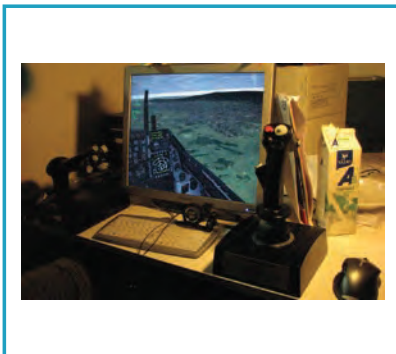
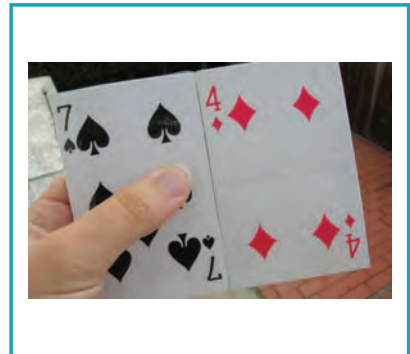
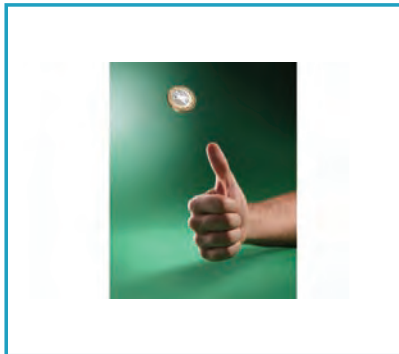


STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures

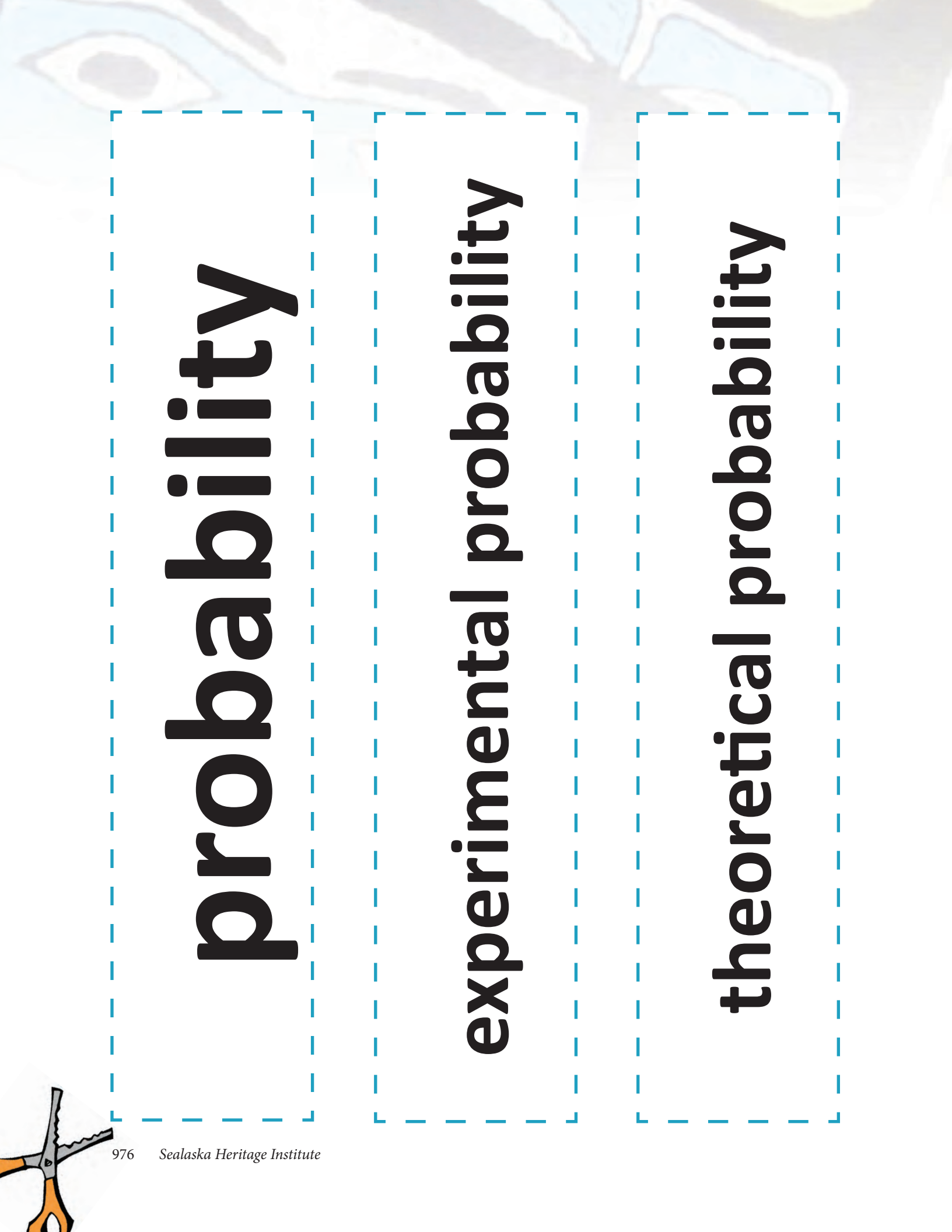
Have the students cut out the pictures. Say the key math words from this unit, and the students should hold up the pictures for them.





STUDENT SUPPORT MATERIALS

Sight Words



probability

experimental probability

theoretical probability





systematic

simulation

prediction



tree diagram





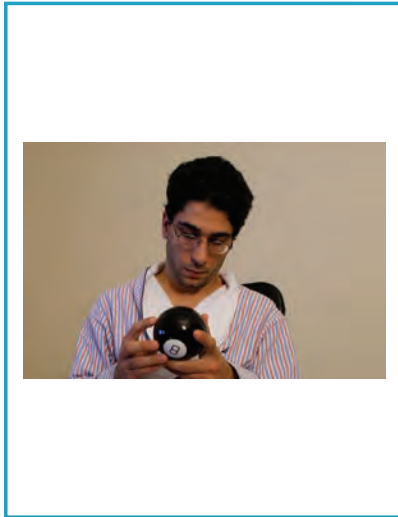
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

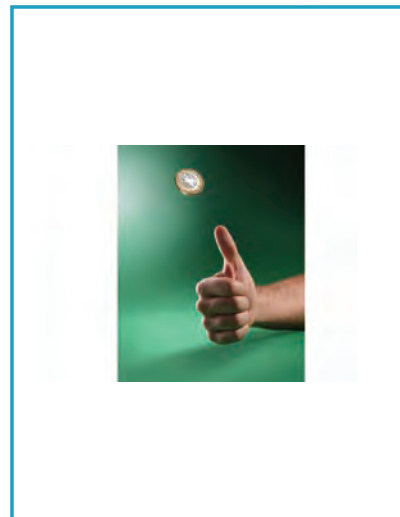
Sight Words Activity Page



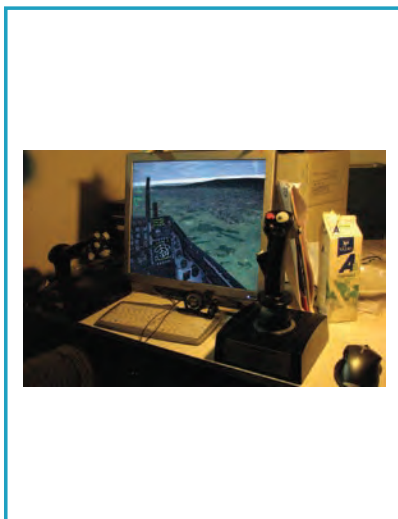
Have the students circle the word for each picture.



probability
experimental
probability
theoretical
probability
systematic
simulation
prediction
tree diagram



probability
experimental
probability
theoretical
probability
systematic
simulation
prediction
tree diagram



probability
experimental
probability
theoretical
probability
systematic
simulation
prediction
tree diagram



probability
experimental
probability
theoretical
probability
systematic
simulation
prediction
tree diagram



probability
experimental
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simulation
prediction
tree diagram



probability
experimental
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theoretical
probability
systematic
simulation
prediction
tree diagram

Sight Words Activity Page

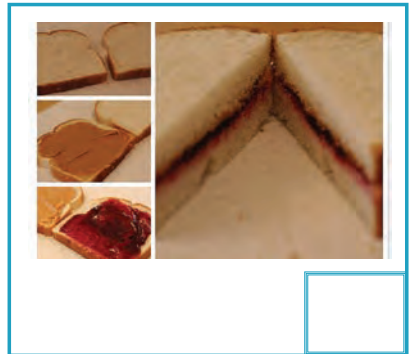
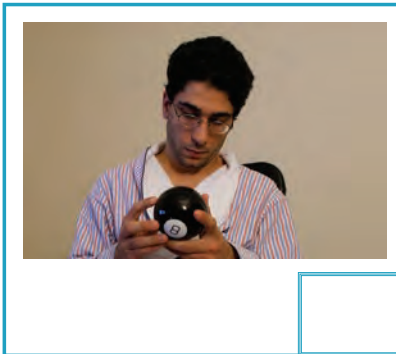
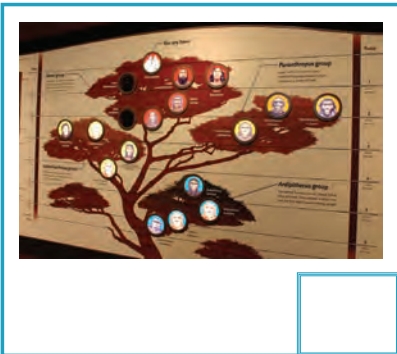
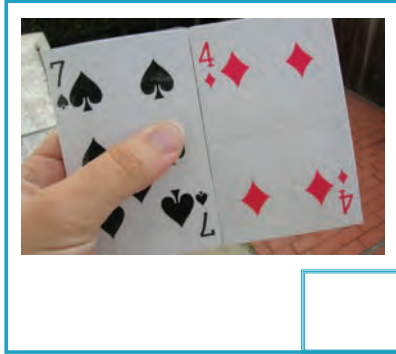
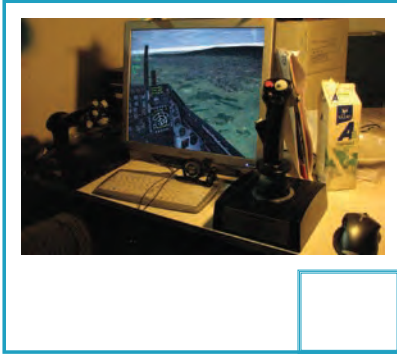


probability
experimental
probability
theoretical
probability
systematic
simulation
prediction
tree diagram

Sight Words Activity Page



Write the numbers on their correct vocabulary graphics.



1. probability
2. experimental probability
3. theoretical probability
4. systematic
5. simulation
6. prediction
7. tree diagram

Sight Words Activity Page



Highlight or circle the words in this word find.

theoretical probability
probability
experimental probability
prediction

simulation
systematic
tree diagram

I m e x p e r i m e n t a l p r o b a b i l i t y
t r e x p e r i m e n t a l p r o b a b i l n o o
t t r p t r t p r o b a b i l t l t t p e a y b s
d a t t i t c i x e a l p b p l i t l b t b d i y
i t i p r o b a b i l i t y b m t p d i e t b i b
l p t y r a b t r e e d i a g e t d p t e i n g i
i p t p t m p r e d i c t i o n n t r n r b l a b
t r p o b a s o t o i i d r a r t g o b i i r p a
x i i t h e o r e t i c a l p r o b a b i l i t b
d b t l i l s y s t e m a t i c r n n a b a t r l
t m a p e a l y b i a l r t s l t l o m n e e a i
o r g t c a i a a t r l g r c t p i a e i e o n r
p b o c l y r a r e h p e m g t b a p a t b m p i
r m e r r t b r o b l s i m u l a t i o n s e i g
t r t i t t t o b i n c i i a s b t r a a r r t o
e i t o e t i i e n t t r i d r l i l d i d l t i
m y i b s i m u l a t i i t o e i p t a o t t d a
y t t i c r r e i a c l i l t c r b s a a a t a t
c s t a r t b i s p r i m c l c a y i l e i e x m
o t h e o r e t i c a l p r o b a b i l i t y y b
c t o n t e l r s h t l r s h a e l r r o o l l b
l t b i m p l i s a e o h t b a l e p r e d i c t
o a i n x t r o i s y s t e m a t i m m u d e p p
t l u r b b o h t g l y o y l e i i l r e y a l l
h i l p m a i t p t t r e e d i a g r a m r a i p
e c a e i m i i r i p i i l a d a e e m r i e o r
p i s b a i p b y t l o a t t l m a t t t b a o a
l a i c t y l o e u n y u t i b t l d m n t p b o
e t r l o l o l o p l b i e d y b a e i s i b e m

Sight Words Activity Page

ANSWER KEY



theoretical probability
probability
experimental probability
prediction

simulation
systematic
tree diagram

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



STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

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



pro_____ity

ex_____ental probability

theor_____l probability

sys_____tic

s_____lation

perim	iagr	imu
-------	------	-----

etica	edict
-------	-------



Encoding Activity Page



pr_____ion

tree d____am

babil

tema

Encoding Activity Page



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

pro

lation

exper

imental probability

theore

bability

syst

ee diagram

simu

diction



Encoding Activity Page



pre

**tical
probability**

tr

ematic

Encoding Activity Page



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

ba || pro || bi || ty || li

ri || ex || pe || men || tal

bi || ba || ty || pro || li

Encoding Activity Page



o the ti re cal

ba bi pro ty li

te ma tic sys

Encoding Activity Page



la || si || mu || tion

dic || pre || tion

tree || ag || di || ram



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 We hope that the _____ of catching many fish this year is high!
 - Thought
 - Mood
 - Probability
 - Dream

- ② What type of probability is derived from many tests in a laboratory?
 - Theoretical
 - Elemental
 - Probably
 - Experimental

- ③ What type of probability is derived on the basis of reasoning and not experimentation?
 - Theoretical
 - Elemental
 - Probable
 - Experiential

- ④ A systematic method of picking salmonberries is one that is:
 - Random
 - Diverse
 - Methodical
 - Lame

- ⑤ A computer simulation of a float plane trip from Wrangell to Craig is an:
 - Imitation of the Real Thing
 - Disaster
 - Scary Prospect
 - Real Adventure

What's the Answer?



- ⑥ If someone makes a prediction about the weather next winter in Juneau, they are making a
- Model
 - Mistake
 - Wish
 - Forecast
- ⑦ For someone who has never butchered a deer, a _____ may be useful to visualize the process in increasing detail.
- Tree Stand
 - Tree Branch
 - Tree Diagram
 - Leaf bag

What's the Answer?

ANSWER KEY



- ① We hope that the _____ of catching many fish this year is high!
 - Thought
 - Mood
 - Probability
 - Dream

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 - Mistake
 - Wish
 - Forecast
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- Tree Stand
 - Tree Branch
 - Tree Diagram
 - Leaf bag

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.



- | | |
|--|-------------------------------------|
| ① The probability that you will win the lottery in your lifetime | ⑨ that a random disorderly process. |
| ② Experimental probability is determined through | ⑩ on the basis of a mere guess. |
| ③ Theoretical probability is determined on the basis of reasoning | ⑪ the lava flow from a volcano. |
| ④ A systematic process for filleting fish is likely more efficient | ⑫ and not through experimentation. |
| ⑤ Baking soda and vinegar can be used to simulate | ⑬ experiment. |
| ⑥ A prediction can be made using proven facts or | ⑭ a process in increasing detail. |
| ⑦ A tree diagram can be useful to break down the components of | ⑮ is extremely low. |

1→ _____ 2→ _____ 3→ _____ 4→ _____
5→ _____ 6→ _____ 7→ _____

Reading Comprehension Activity Page

ANSWER KEY



- | | |
|--|-------------------------------------|
| ① The probability that you will win the lottery in your lifetime | ⑨ that a random disorderly process. |
| ② Experimental probability is determined through | ⑩ on the basis of a mere guess. |
| ③ Theoretical probability is determined on the basis of reasoning | ⑪ the lava flow from a volcano. |
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| ⑥ A prediction can be made using proven facts or | ⑭ a process in increasing detail. |
| ⑦ A tree diagram can be useful to break down the components of | ⑮ is extremely low. |

1 → G 2 → E 3 → D 4 → A
5 → C 6 → B 7 → F

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.



**Determined by
Experimentation**

Forecast

Likelihood

**Graph with
increasing detail**

Imitation

Methodical

**Determined by
Reason**

- probability
- experimental probability
- theoretical probability
- systematic
- simulation
- prediction
- tree diagram



Reading Comprehension Activity Page

ANSWER KEY



**Determined by
Experimentation**

experimental
probability

Forecast

prediction

Likelihood

probability

**Graph with
increasing detail**

tree diagram

Imitation

simulation

Methodical

systematic

**Determined by
Reason**

theoretical
probability

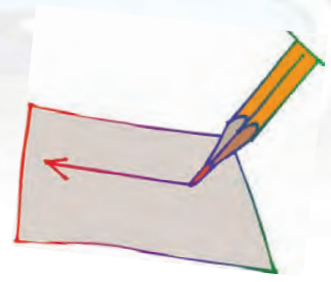


STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page

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



pro_____ility

ex_____imental pr_____ability

the_____tical prob_____lity

sys_____atic

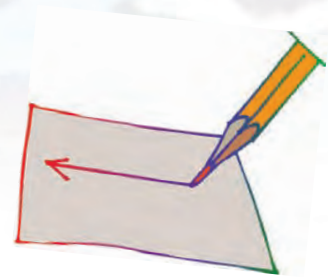
sim_____ion

pr_____tion

tr_____dia_____am

Writing Activity Page

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



p _____ **y**

e _____ **p** _____ **y**

t _____ **p** _____ **y**

s _____ **c**

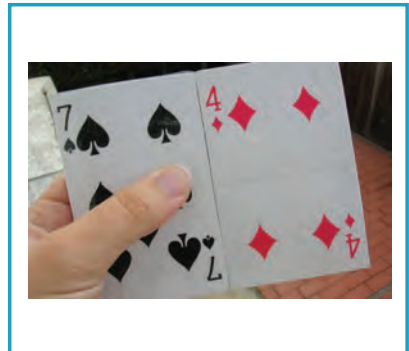
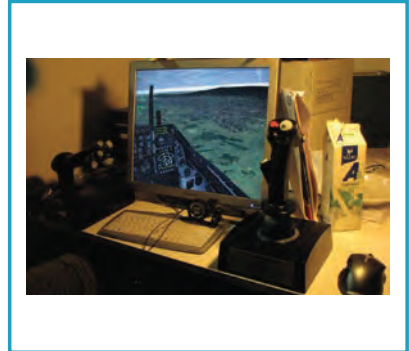
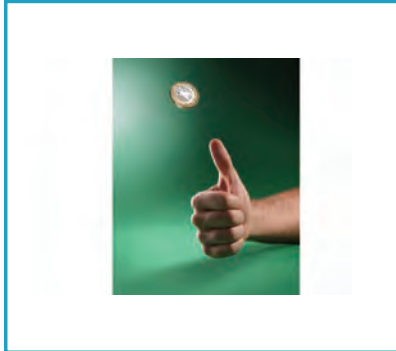
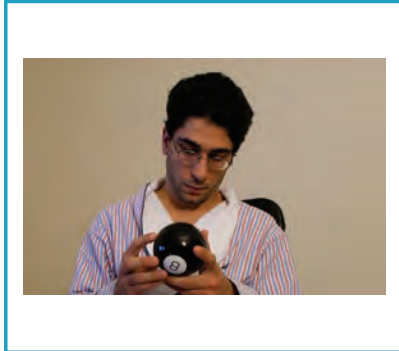
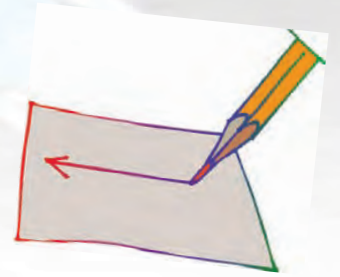
s _____ **n**

p _____ **n**

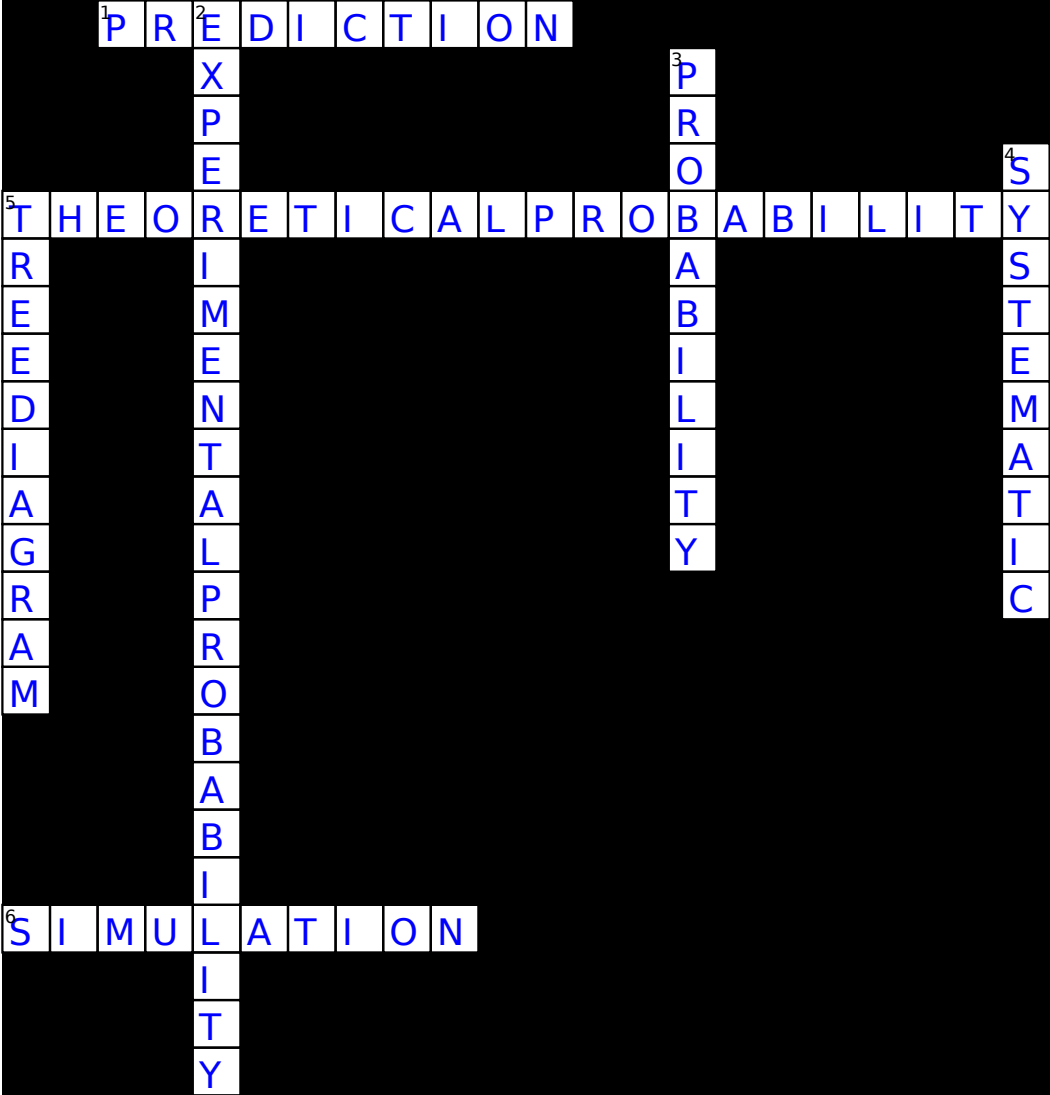
t _____ **d** _____ **m**

Basic Writing Activity Page

Have the students write the word for each picture.



Crossword Puzzle Answers



- | | |
|---|---|
| <p>1 Across
Forecast</p> <p>5 Determined by reason (2 Words)</p> <p>6 Imitation</p> | <p>2 Down
Determined by experimentation (2 Words)</p> <p>3 Likelihood</p> <p>4 Methodical</p> <p>5 Graph with increasing detail (2 Words)</p> |
|---|---|



UNIT ASSESSMENT



Probability

Unit Assessment Teacher's Notes

Grade 8 • Unit 13

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 **PROBABILITY**.
2. Write the number 2 by the picture for **EXPERIMENTAL PROBABILITY**.
3. Write the number 3 by the picture for **THEORETICAL PROBABILITY**.
4. Write the number 4 by the picture for **SYSTEMATIC**.
5. Write the number 5 by the picture for **SIMULATION**.
6. Write the number 6 by the picture for **PREDICTION**.
7. Write the number 7 by the picture for **TREE DIAGRAM**.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 3 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 4 in your test. Write each word under its definition.

Refer to Student Support Materials for answer key.

BASIC WRITING

Turn to page 5 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.



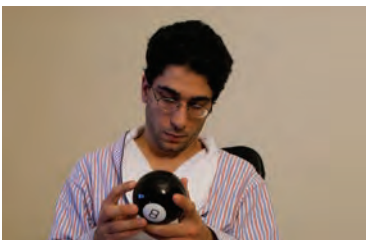
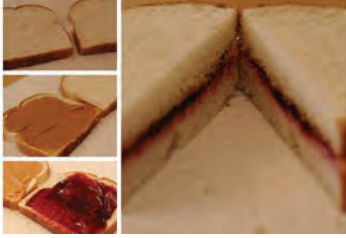


MATH PROGRAM

Unit Assessment Student Pages
Grade 8 • Unit 13

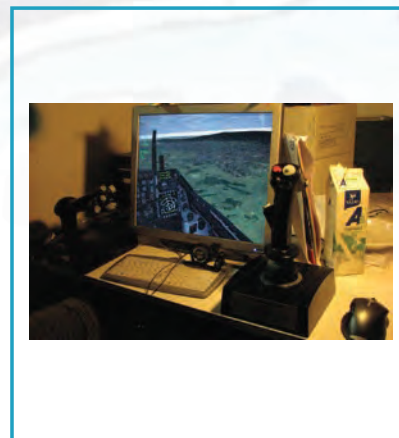
Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____

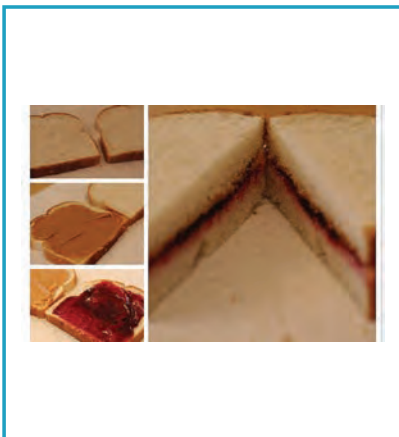




probability
 experimental
 probability
 theoretical
 probability
 systematic
 simulation
 prediction
 tree diagram



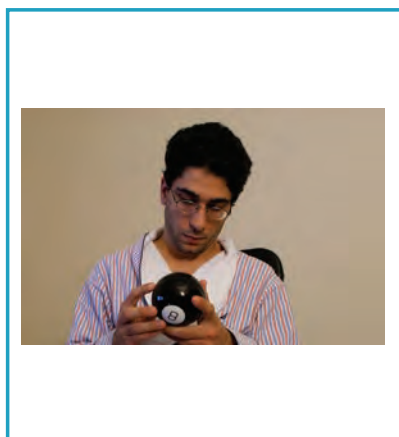
probability
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 systematic
 simulation
 prediction
 tree diagram



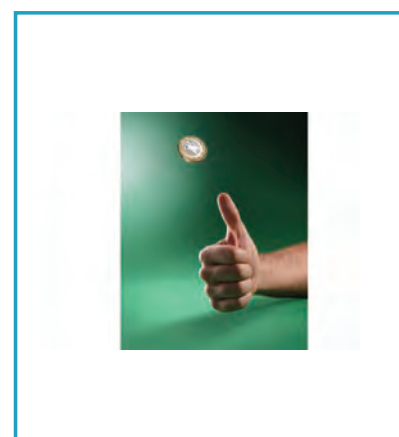
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 prediction
 tree diagram



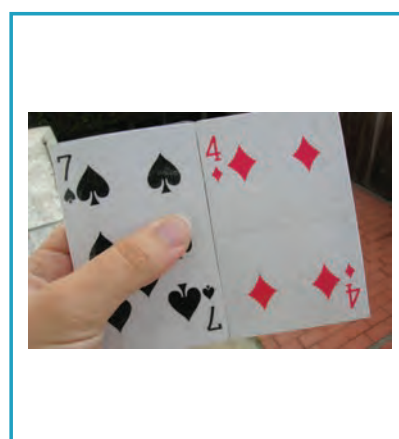
probability
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 tree diagram



probability
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 tree diagram



probability
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probability
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 tree diagram

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probability

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grun
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grem
grim
grom

system_____

adac
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**Determined by
Experimentation**

Forecast

Likelihood

**Graph with
increasing detail**

Imitation

Methodical

**Determined by
Reason**

probability

experimental
probability

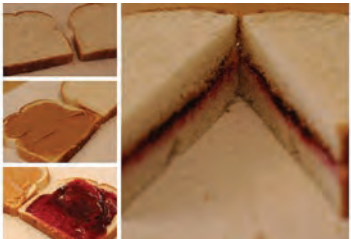
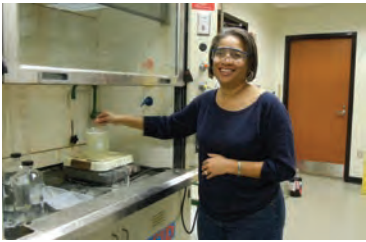
theoretical
probability

systematic

simulation

prediction

tree diagram





UNIT 14:

Process Skills & Abilities

Problem Solving & Communication

Note: All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.



INTRODUCTION OF MATH VOCABULARY

Process Skills

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.

inductive reasoning

Go around the room and ask students to write on the board their favorite flavor of ice cream. Explain that the flavor chosen the most helps you to generalize that students prefer it, perhaps more widely than your classroom alone? Many small data points helped you to come to this conclusion.

deductive reasoning

Ask the students if they've seen noticeable changes in deer populations near the community over time. Explain hypothetically that deer harvests have been low in recent years. Let them brainstorm what the reasons could be for this decline. Explain that they took a cause and worked backward to find an effect — deductive reasoning!

Venn diagram

Have three students list their three favorite holidays on the board. Then draw a Venn Diagram to show where the favorites overlap and where they are different. Do any of these students not overlap in their favorites?

Process Skills

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.

spreadsheet

Have a student give their favorite clothing brand, their height, birth place, favorite color, what they want to become, favorite sport and shoe size. Ask another student to quickly repeat all of these. Explain that a spreadsheet helps us to store, organize and analyze large (and small!) amounts of data.

numerical

Have the students write as many roman numerals as they are familiar with on a piece of paper. Explain that numerical refers to a number or series of numbers in a variety of formats. Did they know their roman numerals?

graphical

Sometimes a large set of data can be difficult to understand on paper and can be more easily understood on a graph. What types of data would students prefer to see on a graph? Why?

Process Skills

Concrete Introduction of Key Vocabulary

Note: A vocabulary graphic is provided in this unit for each of the key words.

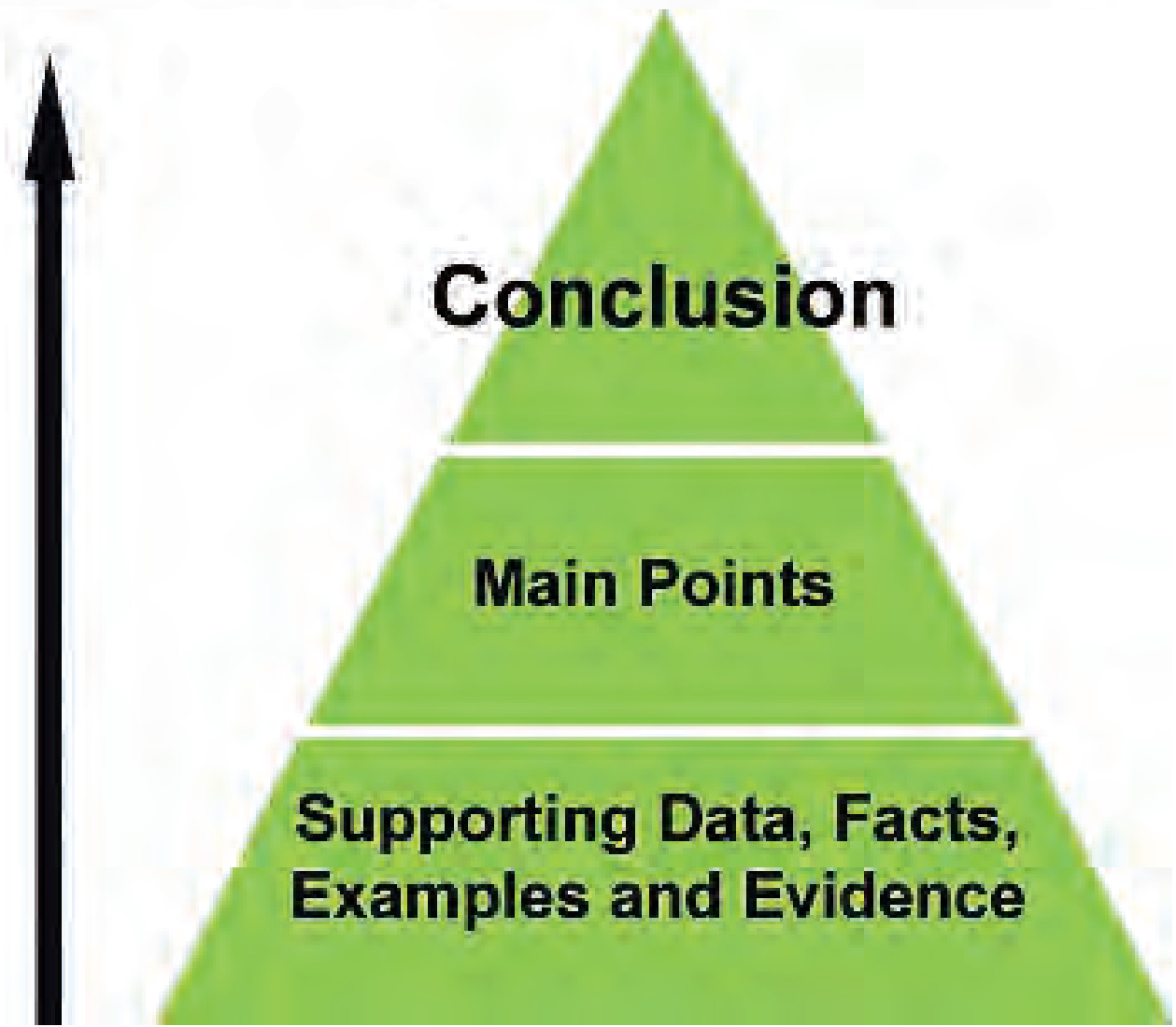
Definitions for all of the key words can be found in the glossary at the back of this program.

symbolic

Show the students the picture of the Bald Eagle on page 1043. Ask the students in the class to tell you what this animal reminds them of and make a list on the board. Explain that the Eagle is symbolic of many things, including—but not limited to—wilderness, patriotism, moieties and so on!



VOCABULARY PICTURES





INDUCTIVE REASONING





DEDUCTIVE REASONING





VENN DIAGRAM

Microsoft Excel - Demo - FairPoint

Home Insert Page Layout Data View

Microsoft Word 2003 Font Alignment Cell Type Sheet Editing

File Edit Format Tools Window Help

fx -D38+D51

	A	B	C	D	E	F	G	H	I	J	K	L
40	Artwork & Production											
41	Design (12 Ads)	\$21,000	\$0	\$10,500	\$0	\$12,500	\$0	\$0	\$0	\$0	\$0	\$0
42	Layout/DTP	\$2,800	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
43	Copywriting	\$1,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
44	Mechanical Artwork	\$500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
45	Typography	\$500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
46	Line	\$700	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
47	Separations (12 ads)	\$12,000	\$0	\$5,000	\$0	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0
48	Photography	\$4,800	\$0	\$0	\$2,500	\$0	\$0	\$2,500	\$0	\$0	\$0	\$0
49	Miscellaneous	\$10,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
50												
51	Total Artwork & Production	\$53,550	\$1,350	\$16,850	\$3,850	\$18,850	\$1,350	\$3,850	\$1,350	\$1,350	\$1,350	\$1,350
52												
53	Total Advertising	\$648,926	\$74,890	\$63,390	\$59,690	\$65,390	\$78,890	\$61,890	\$47,890	\$47,890	\$47,890	\$47,890
54	Percentage of Sales		14.6%	12.3%	11.6%	14.6%	16.9%	10.1%	8.0%	7.4%	6.5%	7.1%
55												
56	Catalog Budget											
57												
58		1994										
59	Catalog	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
60	Catalog 1	\$4,574	\$0	\$2,292	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
61	Catalog 2	\$20,480	\$7,470	\$0	\$6,000	\$0	\$0	\$0	\$6,700	\$0	\$6,700	\$0
62	Catalog 3	\$0	\$0	\$0	\$4,000	\$0	\$3,000	\$0	\$3,000	\$0	\$3,000	\$0
63	Catalog 4	\$74,528	\$12,996	\$6,243	\$12,996	\$6,243	\$6,243	\$6,243	\$0	\$6,243	\$6,243	\$12,996
64	Catalog 5	\$3,500	\$1,851	\$0	\$3,000	\$0	\$3,000	\$0	\$3,000	\$0	\$3,000	\$0

Ready

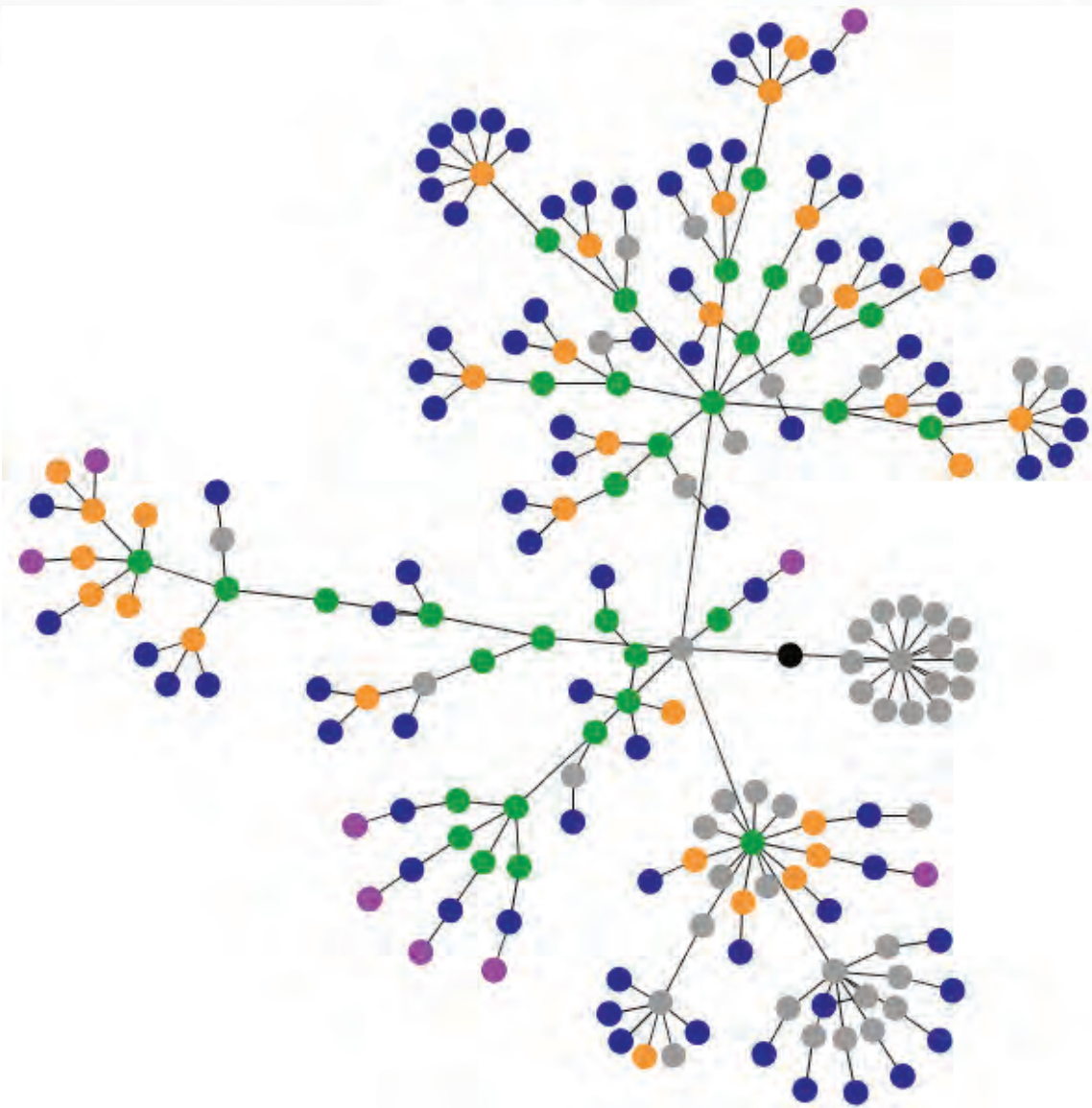


SPREADSHEET





NUMERICAL





GRAPHICAL





SYMBOLIC



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.



Change

Group the students in pairs. There should be one student without a partner to be “it” for the first round of the activity. Have the students in each pair stand back to back, with elbows interlocked. Tell the students to listen for a specific word, sequence of words, or sentence. When the students hear the word, sequence, or sentence you said at the beginning of the round, they should drop arms and quickly find new partners. However, “it” must also find a partner—thus producing a new “it” for the next round of the activity.

Wild Cars

Make two “roads” on the floor using masking tape. Be certain that there are a number of curves and circles in the roads. The roads should stretch for at least ten feet. If you have a floor rug, chalk may be used to fashion the roads. Place a toy car at the beginning of each road. Lay the vocabulary pictures at the end of the roads. Have a student sit beside each car. Name one of the vocabulary pictures and say “Go.” The two students should “drive” their cars along the roads as quickly as they can. The winner is the player who first parks his car on the picture for the vocabulary word you said.

Student Support Materials

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

Language and Skills Development

SPEAKING



Cat's Cradle

Group the students in a circle, sitting on the floor. Provide each student with a vocabulary picture (prepare extra pictures if necessary). The students should stand their vocabulary pictures on the floor, leaning against their legs. Give a student in the circle a ball of string. The student should hold the end of the ball of string and then say the name of a vocabulary picture that another student has. After identifying the picture, he/she should then toss the ball of string to the student who has that picture (being careful to hold tightly to his/her end of the string). The student who receives the ball of string must then repeat this process—tossing the ball of string to another student in the circle. The students should continue in this way until a “cat’s cradle” has been created with the string in the center of the circle. This activity may be repeated more than once by collecting and redistributing the pictures for each new round.

Roll ‘Em Again!

Mount the vocabulary pictures on the board. Number each picture from one to six (repeat a number as often as necessary). Then, group the students into two teams. Give the first player in each team a die. When you say “Go,” the first player in each team must roll his/her die. He/She should call the number showing on it and then say a complete sentence about a vocabulary picture on the board that has the same number. Repeat this process until all students have participated.

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.



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.

Letter Encode

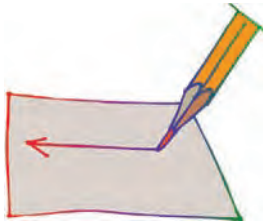
Prepare a page that contains large alphabet letters from A to Z. Make five copies for each student. The students should cut out their letters. When all of the letters have been cut out, show a vocabulary picture. The students should then use their letters to spell the word for that picture. Repeat, using the remaining pictures from this unit. Have the students store their cut out letters in individual envelopes.

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



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.

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.

Student Support Materials

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



STUDENT SUPPORT MATERIALS

Listening • Mini Pictures



STUDENT SUPPORT MATERIALS

Sight Words

inductive reasoning

deductive reasoning

Venn diagram





spreadsheets

numerical

graphical



symbolic





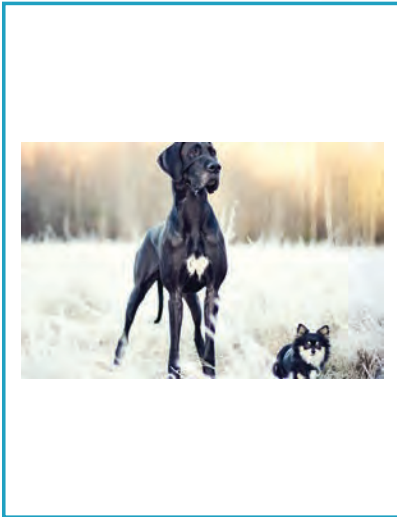
STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

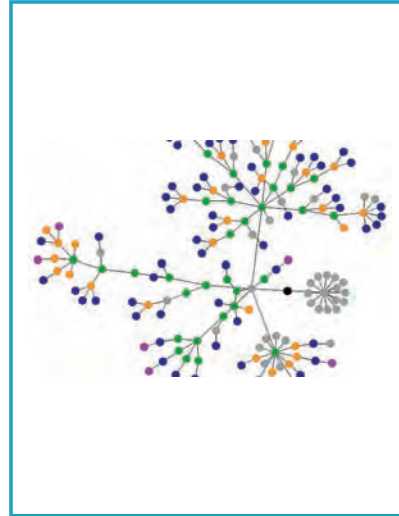
Sight Words Activity Page



Have the students circle the word for each picture.



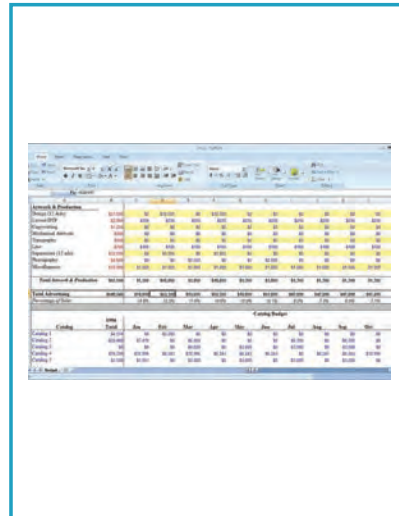
inductive reasoning
deductive reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic



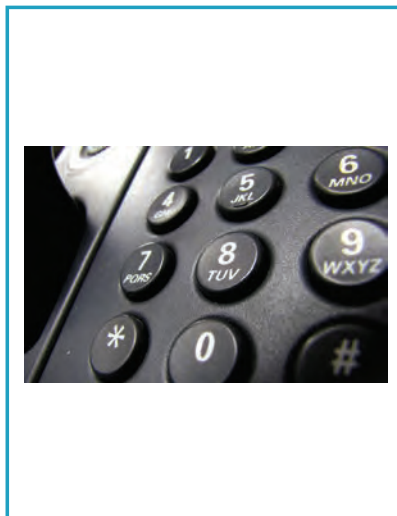
inductive reasoning
deductive reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic



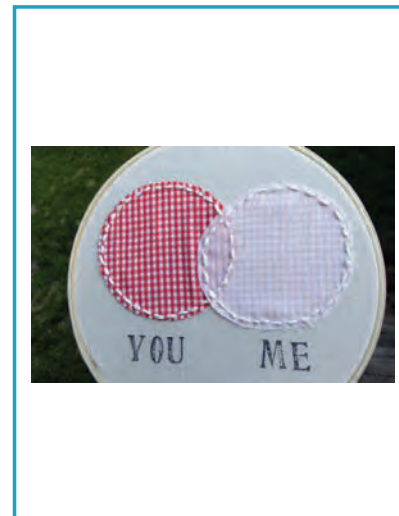
inductive reasoning
deductive reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic



inductive reasoning
deductive reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic

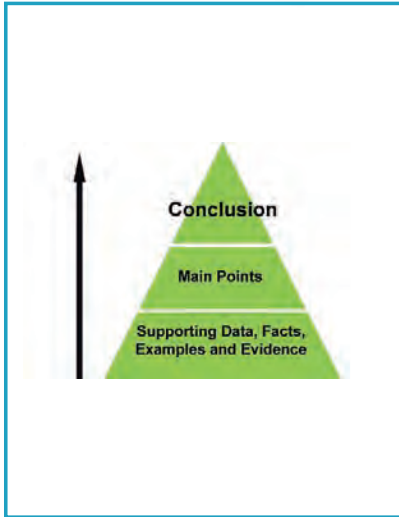


inductive reasoning
deductive reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic



inductive reasoning
deductive reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic

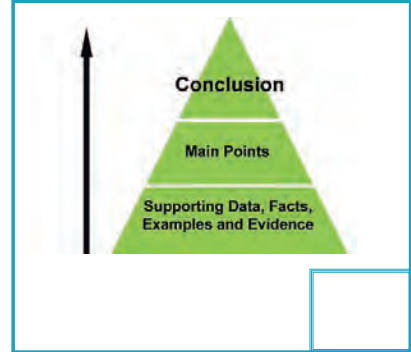
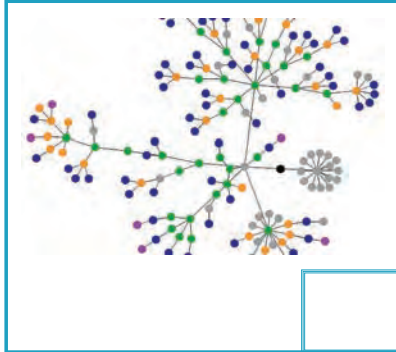
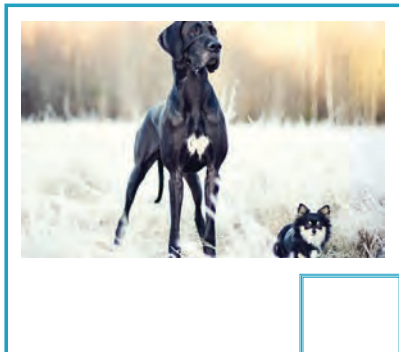
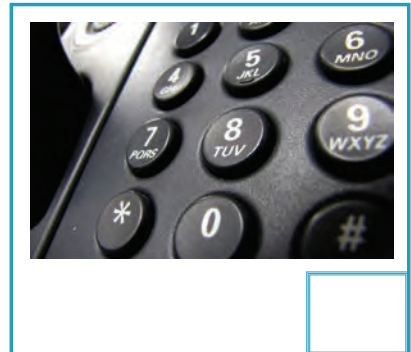
Sight Words Activity Page



inductive
reasoning
deductive
reasoning
Venn diagram
spreadsheet
numerical
graphical
symbolic

Sight Words Activity Page

Write the numbers on their correct vocabulary graphics.

1. inductive reasoning
2. deductive reasoning
3. Venn diagram
4. spreadsheet
5. numerical
6. graphical
7. symbolic

Sight Words Activity Page



Highlight or circle the words in this word find.

spreadsheet
symbolic
venn diagram
deductive reasoning

graphical
inductive reasoning
numerical

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

Sight Words Activity Page

ANSWER KEY



spreadsheet
symbolic
venn diagram
deductive reasoning

graphical
inductive reasoning
numerical

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



STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

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



i _____ **tive reasoning**

de _____ **ve reasoning**

V _____ **diagram**

s _____ **sheet**

nu _____ **al**

mboli	nduc	enn
--------------	-------------	------------

raph	pread
-------------	--------------



Encoding Activity Page



g_____ical

sy_____c

ducti	meric
-------	-------

Encoding Activity Page



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

induc

easoning

deductive r

bolic

Ve

sheet

spread

phical

num

tive reasoning



Encoding Activity Page



gra

erical

sym

nn diagram

Encoding Activity Page



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

tive || in || duc

rea || ning || so

duc || de || tive

so || ning || rea

Encoding Activity Page



di Venn ram ag

sheet spread

ri nu me cal

Encoding Activity Page



gra || cal || phi

bo || lic || sym



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 You have seen many early blooms on cloud berries and you predict that it will be a good year for them in general. What type of reasoning is this?
 - Inductive
 - Deductive
 - Insane
 - Wishful

- ② You have seen spruce-bark beetles increasing in number and you believe this will be devastating to timber stands. What type of reasoning is this?
 - Inductive
 - Deductive
 - Resourceful
 - Uninformed

- ③ A Venn Diagram is often depicted using overlapping:
 - Circles
 - Squares
 - Triangles
 - Octagons

- ④ A list of cannery employees and their contact information may best be organized digitally on a:
 - Video Game
 - Website
 - Spreadsheet
 - DVD

- ⑤ Something that is numerical is of or relating to:
 - Numbers
 - Musicals
 - Graphs
 - Presentations

What's the Answer?



- ⑥ A _____ representation of gumboot harvest data may be useful to researchers.
- Silly
 - Erroneous
 - Limited
 - Graphical
- ⑦ In Tlingit and Haida culture, an Eagle is symbolic of a:
- Moiety
 - Miner
 - Small Plant
 - Shellfish

What's the Answer?



ANSWER KEY

- ① You have seen many early blooms on cloud berries and you predict that it will be a good year for them in general. What type of reasoning is this?
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 - Graphical
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- Moiety
 - Miner
 - Small Plant
 - Shellfish

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.



- | | |
|---|---|
| ① Inductive reasoning is a type of logic in which generalizations | ① it easier to understand and visualize. |
| ② Deductive reasoning is from general to the particular or | ② the wrath of a higher power. |
| ③ A Venn Diagram is useful to show areas | ③ are based on a large number of specific observations. |
| ④ Organizing, storing, and analyzing data can be made easier | ④ from cause to effect. |
| ⑤ Something that is of or related to numbers | ⑤ of overlap. |
| ⑥ Displaying data in a graphical manner can make | ⑥ if the data is entered into a spreadsheet. |
| ⑦ To some people, natural disasters are symbolic of | ⑦ is considered numerical. |

1→ _____ 2→ _____ 3→ _____ 4→ _____
5→ _____ 6→ _____ 7→ _____

Reading Comprehension Activity Page

ANSWER KEY



- | | |
|---|---|
| ① Inductive reasoning is a type of logic in which generalizations | ① it easier to understand and visualize. |
| ② Deductive reasoning is from general to the particular or | ② the wrath of a higher power. |
| ③ A Venn Diagram is useful to show areas | ③ are based on a large number of specific observations. |
| ④ Organizing, storing, and analyzing data can be made easier | ④ from cause to effect. |
| ⑤ Something that is of or related to numbers | ⑤ of overlap. |
| ⑥ Displaying data in a graphical manner can make | ⑥ if the data is entered into a spreadsheet. |
| ⑦ To some people, natural disasters are symbolic of | ⑦ is considered numerical. |

1 → C 2 → D 3 → E 4 → F
5 → G 6 → A 7 → B

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.



**Reasoning from
general to particular**

Related to numbers

**Generalizations
based on
observations**

Serving as a symbol

**Represented as a
diagram**

Overlapping circles

**A grid that organizes
data**

**inductive
reasoning**

**deductive
reasoning**

Venn diagram

spreadsheet

numerical

graphical

symbolic



Reading Comprehension Activity Page

ANSWER KEY



**Reasoning from
general to particular**

deductive reasoning

Related to numbers

numerical

**Generalizations
based on
observations**

inductive reasoning

Serving as a symbol

symbolic

**Represented as a
diagram**

graphical

Overlapping circles

Venn diagram

**A grid that organizes
data**

spreadsheet

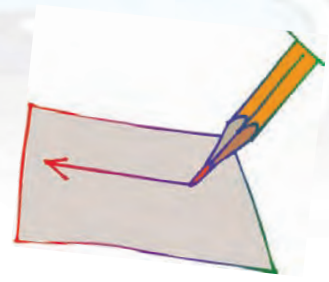


STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page

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



in _____ tive rea _____ ing

ded _____ ive re _____ ning

V _____ n di _____ am

sp _____ sh _____ t

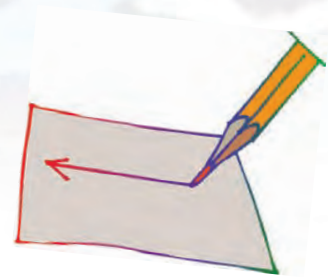
n _____ erical

gra _____ cal

s _____ bolic

Writing Activity Page

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



i _____ **r** _____ **g**

d _____ **r** _____ **g**

V _____ **d** _____ **m**

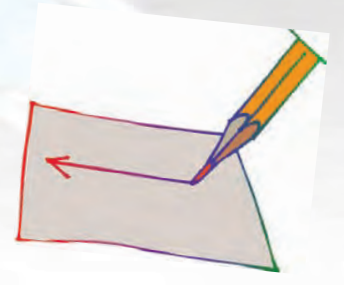
s _____ **t**

n _____ **l**

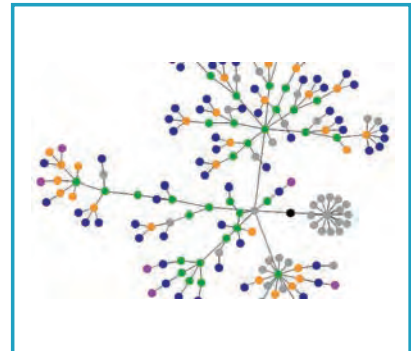
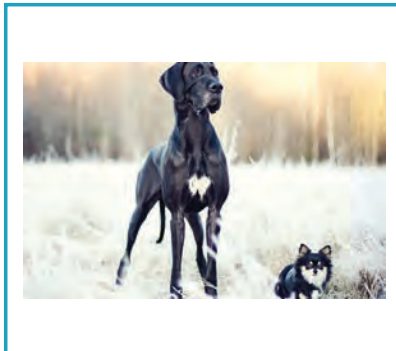
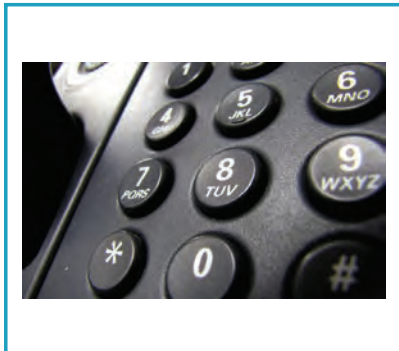
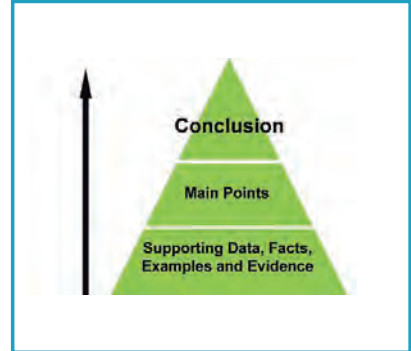
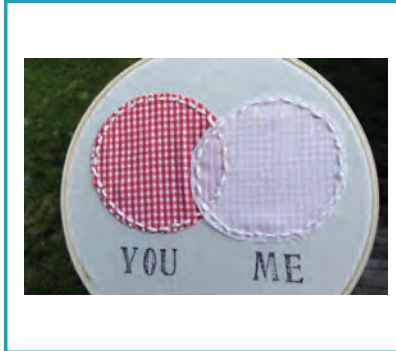
g _____ **l**

s _____ **c**

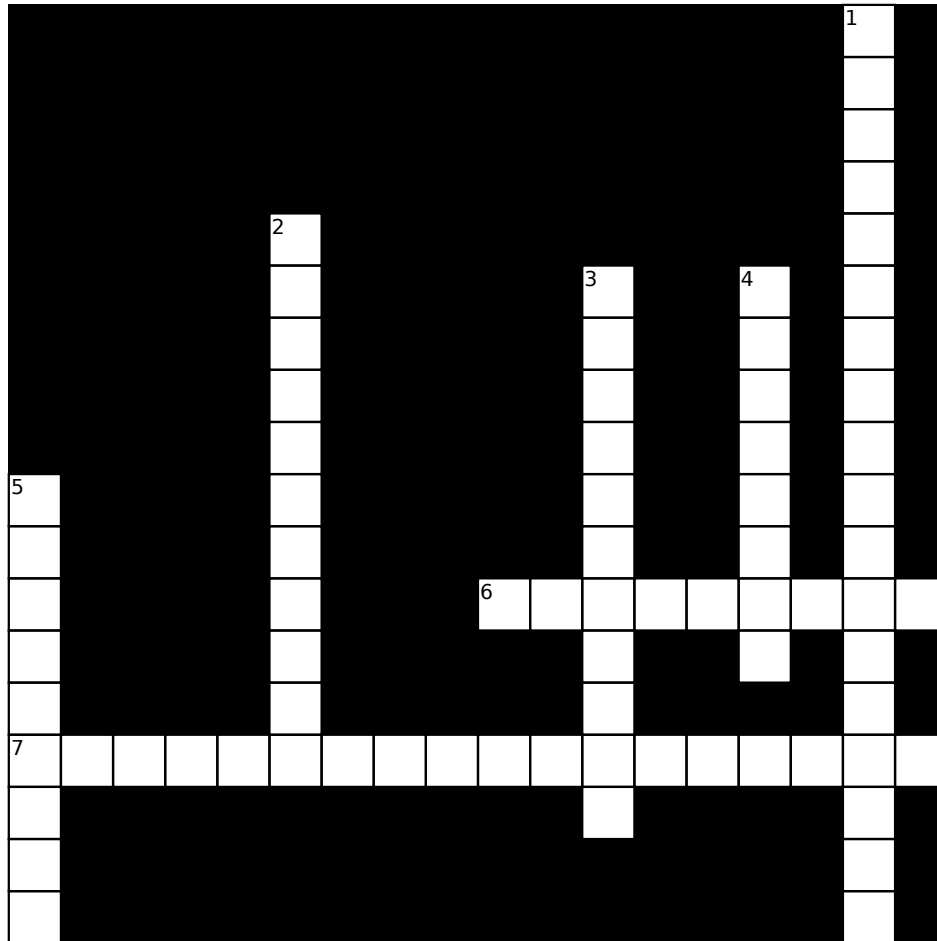
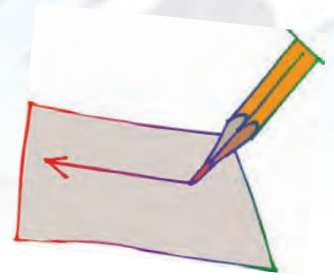
Basic Writing Activity Page



Have the students write the word for each picture.

A screenshot of a Microsoft Excel spreadsheet. The spreadsheet contains several tables of financial data, including columns for months (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec) and rows for various categories like "Revenue", "Expenses", and "Profit". The data is presented in a grid format with alternating row colors.

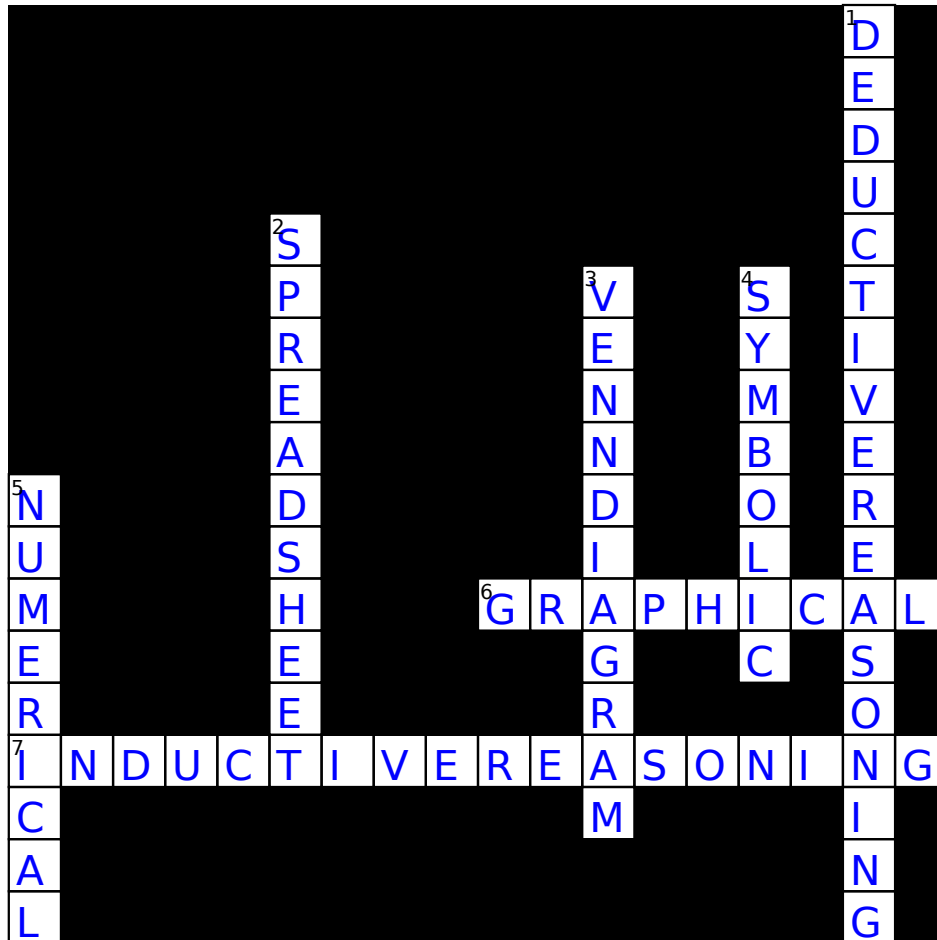
Crossword Puzzle



- Across
- 6 Represented as a diagram
 - 7 Generalizations based on observations (2 Words)

- Down
- 1 Reasoning from general to particular (2 Words)
 - 2 A grid that organizes data
 - 3 Overlapping circles (2 Words)
 - 4 Serving as a symbol
 - 5 Related to numbers

Crossword Puzzle Answers



- Across
- 6 Represented as a diagram
 - 7 Generalizations based on observations (2 Words)

- Down
- 1 Reasoning from general to particular (2 Words)
 - 2 A grid that organizes data
 - 3 Overlapping circles (2 Words)
 - 4 Serving as a symbol
 - 5 Related to numbers



UNIT ASSESSMENT



Problem Solving & Communication

Unit Assessment Teacher's Notes

Grade 8 • Unit 14

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 **PINDUCTIVE REASONING**.
2. Write the number 2 by the picture for **DEDUCTIVE REASONING**.
3. Write the number 3 by the picture for **VENN DIAGRAM**.
4. Write the number 4 by the picture for **SPREADSHEET**.
5. Write the number 5 by the picture for **NUMERICAL**.
6. Write the number 6 by the picture for **GRAPHICAL**.
7. Write the number 7 by the picture for **SYMBOLIC**.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 3 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 4 in your test. Write each word under its definition.

Refer to Student Support Materials for answer key.

BASIC WRITING

Turn to page 5 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.



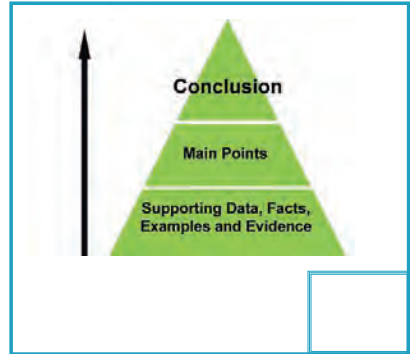
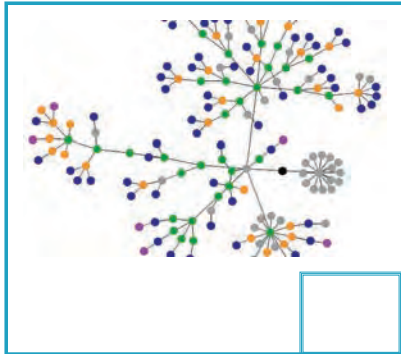


MATH PROGRAM

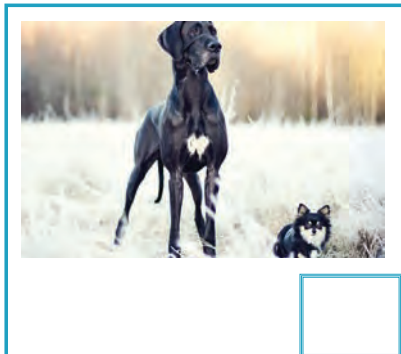
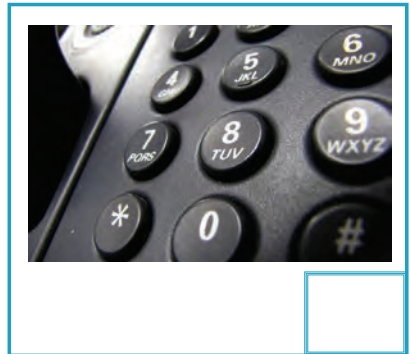
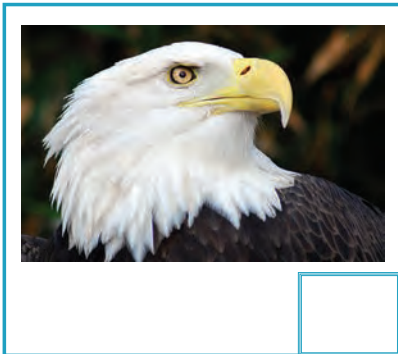
Unit Assessment Student Pages
Grade 8 • Unit 14

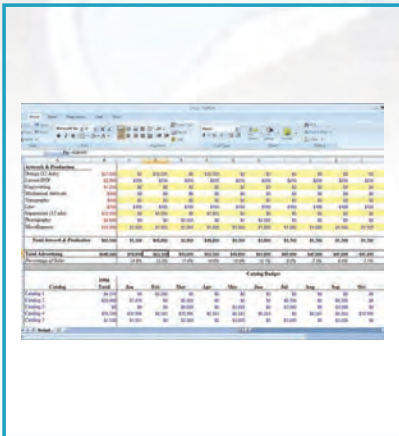
Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____

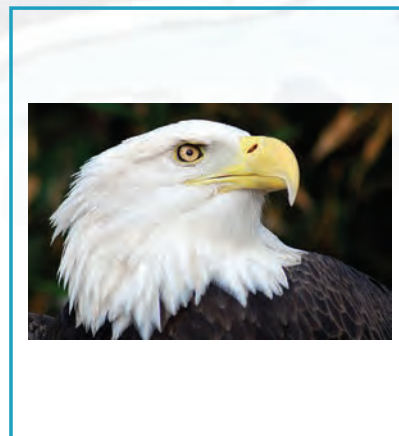


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Revenue	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
Expenses	800	850	900	950	1000	1050	1100	1150	1200	1250
Profit	200	250	300	350	400	450	500	550	600	650

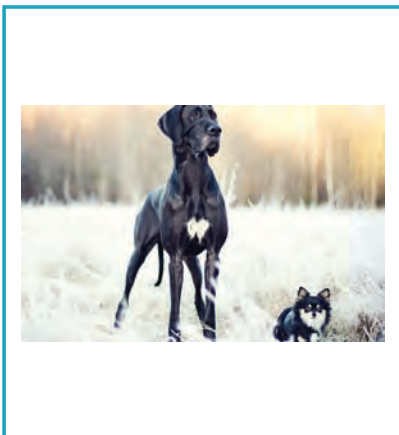




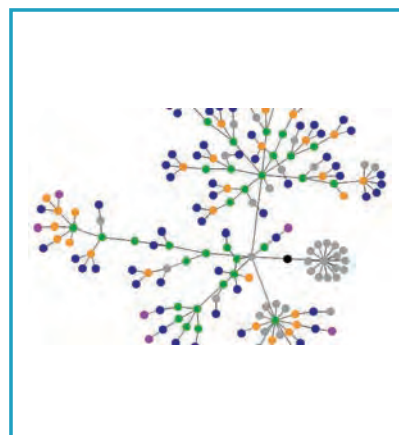
inductive reasoning
 deductive reasoning
 Venn diagram
 spreadsheet
 numerical
 graphical
 symbolic



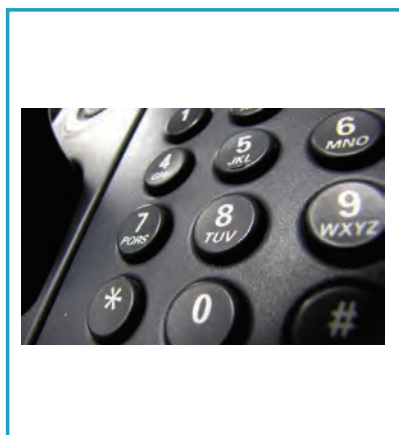
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 Venn diagram
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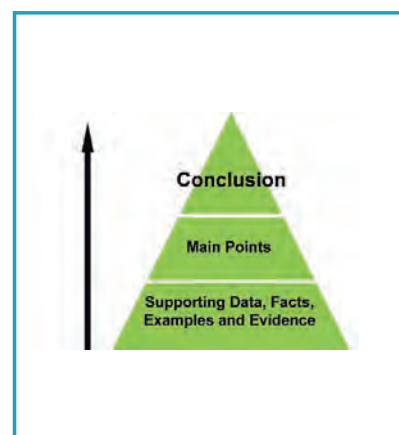
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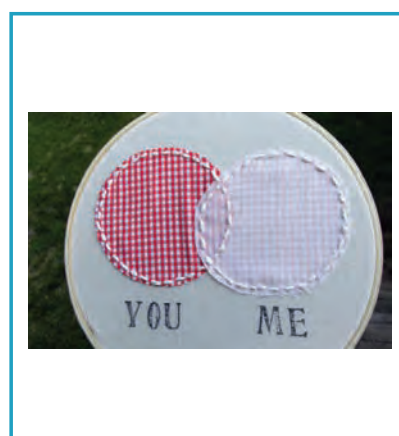
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**Reasoning from
general to particular**

Related to numbers

**Generalizations
based on
observations**

Serving as a symbol

**Represented as a
diagram**

Overlapping circles

**A grid that organizes
data**

**inductive
reasoning**

**deductive
reasoning**

Venn diagram

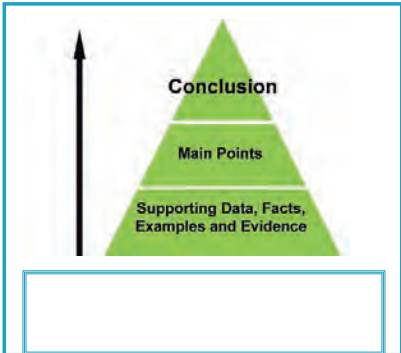
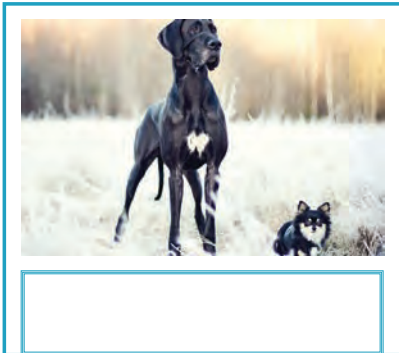
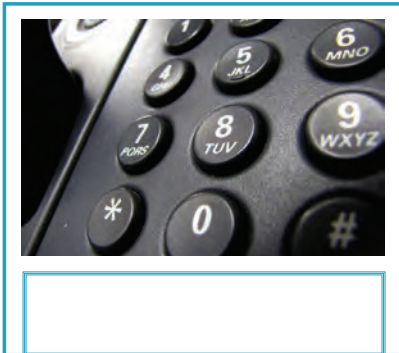
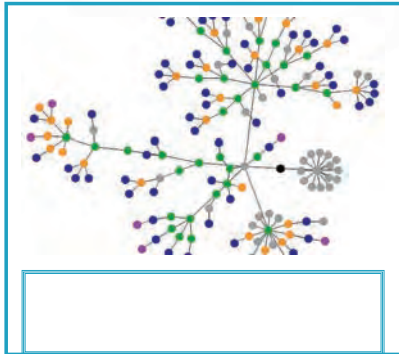
spreadsheet

numerical

graphical

symbolic

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Network & Position	10,000	12,000	15,000	18,000	20,000	22,000	25,000	28,000	30,000	32,000	35,000	38,000	300,000
Category 2	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	16,000	120,000
Category 3	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	90,000
Category 4	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	60,000
Category 5	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	30,000
Category 6	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	6,000	15,000
Category 7	250	500	750	1,000	1,250	1,500	1,750	2,000	2,250	2,500	2,750	3,000	7,500
Category 8	125	250	375	500	625	750	875	1,000	1,125	1,250	1,375	1,500	3,750
Category 9	62.5	125	187.5	250	312.5	375	437.5	500	562.5	625	687.5	750	1,875
Category 10	31.25	62.5	93.75	125	156.25	187.5	218.75	250	281.25	312.5	343.75	375	937.5
Category 11	15.625	31.25	46.875	62.5	78.125	93.75	109.375	125	140.625	156.25	171.875	187.5	468.75
Category 12	7.8125	15.625	23.4375	31.25	39.0625	46.875	54.6875	62.5	70.3125	78.125	85.9375	93.75	234.375
Category 13	3.90625	7.8125	11.71875	15.625	19.53125	23.4375	27.34375	31.25	35.15625	39.0625	42.96875	46.875	117.1875
Category 14	1.953125	3.90625	5.859375	7.8125	9.765625	11.71875	13.671875	15.625	17.578125	19.53125	21.484375	23.4375	58.59375
Category 15	0.9765625	1.953125	2.9296875	3.90625	4.8828125	5.859375	6.8359375	7.8125	8.7890625	9.765625	10.7421875	11.71875	29.296875
Category 16	0.48828125	0.9765625	1.46484375	1.953125	2.44140625	2.9296875	3.41796875	3.90625	4.39453125	4.8828125	5.37109375	5.859375	14.6484375
Category 17	0.244140625	0.48828125	0.732421875	0.9765625	1.220703125	1.46484375	1.708984375	1.953125	2.197265625	2.44140625	2.685546875	2.9296875	7.32421875
Category 18	0.1220703125	0.244140625	0.3662109375	0.48828125	0.6103515625	0.732421875	0.8544921875	0.9765625	1.0986328125	1.220703125	1.3427734375	1.46484375	3.662109375
Category 19	0.06103515625	0.1220703125	0.18310546875	0.244140625	0.30517578125	0.3662109375	0.42724609375	0.48828125	0.54931640625	0.6103515625	0.67138671875	0.732421875	1.8310546875
Category 20	0.030517578125	0.06103515625	0.091552734375	0.1220703125	0.152587890625	0.18310546875	0.213623046875	0.244140625	0.274658203125	0.30517578125	0.335693359375	0.3662109375	0.91552734375
Category 21	0.0152587890625	0.030517578125	0.0457763671875	0.06103515625	0.0762939453125	0.091552734375	0.1068115234375	0.1220703125	0.1373291015625	0.152587890625	0.1678466796875	0.18310546875	0.457763671875
Category 22	0.00762939453125	0.0152587890625	0.02288818125	0.030517578125	0.0381469703125	0.0457763671875	0.053405764375	0.06103515625	0.0686645546875	0.0762939453125	0.0839233375	0.091552734375	0.2288818125
Category 23	0.00381469703125	0.00762939453125	0.011444090625	0.0152587890625	0.01907348125	0.02288818125	0.026702879375	0.030517578125	0.0343322764375	0.0381469703125	0.04196166875	0.0457763671875	0.11444090625
Category 24	0.001907348125	0.00381469703125	0.0057220453125	0.00762939453125	0.009536790625	0.011444090625	0.0133513875	0.0152587890625	0.0171661853125	0.01907348125	0.0209807784375	0.02288818125	0.057220453125
Category 25	0.0009536790625	0.001907348125	0.00286102265625	0.00381469703125	0.00476837140625	0.0057220453125	0.006675719703125	0.00762939453125	0.00858306890625	0.009536790625	0.0104904653125	0.011444090625	0.0286102265625
Category 26	0.000476837140625	0.0009536790625	0.0014305165625	0.001907348125	0.0023841875	0.00286102265625	0.00333785703125	0.00381469703125	0.00429153140625	0.00476837140625	0.00524520578125	0.0057220453125	0.014305165625
Category 27	0.00023841875	0.000476837140625	0.0007152578125	0.0009536790625	0.0011920984375	0.0014305165625	0.0016689359375	0.001907348125	0.0021457675	0.0023841875	0.002622606875	0.00286102265625	0.007152578125
Category 28	0.00011920984375	0.00023841875	0.00035762890625	0.000476837140625	0.0005960471875	0.0007152578125	0.00083446796875	0.0009536790625	0.00107288915625	0.0011920984375	0.00131130853125	0.0014305165625	0.0035762890625
Category 29	5.9604921875e-05	0.00011920984375	0.0001788134375	0.00023841875	0.00029802234375	0.00035762890625	0.0004172325	0.000476837140625	0.000536440703125	0.0005960471875	0.00065565075	0.0007152578125	0.001788134375
Category 30	2.98024609375e-05	5.9604921875e-05	8.94073634375e-05	0.00011920984375	0.00014876453125	0.0001788134375	0.000208368125	0.00023841875	0.0002679734375	0.00029802234375	0.00032807125	0.00035762890625	0.000894073634375





UNIT 15:

Process Skills & Abilities

Reasoning and Connections

Note: All key terms are based on the Math Standards for Alaska and reflect terms vital to academic achievement in math.



INTRODUCTION OF MATH VOCABULARY

Process Skills

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.

concrete context

Show the students a brick. Explain that it is hard, heavy, red (or whatever color it is), rough, small... It is easy for them to talk about because it is concrete, there in front of their eyes and real. This is a concrete context.

abstract context

Ask the students to try to imagine extraterrestrial beings and what they might look like. Ask volunteers to draw some of these on the board. Explain that it is not proven or disproven that life exists on other planets but the topic is abstract, not tangible. Who had the best alien?!?

strategy

Show the students the football playbook strategy picture on page 1113. What are their dream careers and what strategy do they have for reaching those goals?

Process Skills

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.

validity

Ask the students how many of them believe that bigfoot exists. How have people tried to verify that it does? Is validity important?

verification

Ask a student how old he or she is. Tell them that you don't believe them and ask them to verify it. What types of documentation would suffice?

humanities

Show the students the picture of the Thinking Man on page 1119. What do they "think" about this art form? Explain that subjects related to human thoughts and culture are considered the humanities. Do any of them want to pursue a career in the humanities?

Process Skills

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.

career

Ask the students how many of them have had to do a job from time to time. Did they enjoy this? Would they like to do it throughout their lives? Explain that many careers require special training and that there is a whole world of options out there!

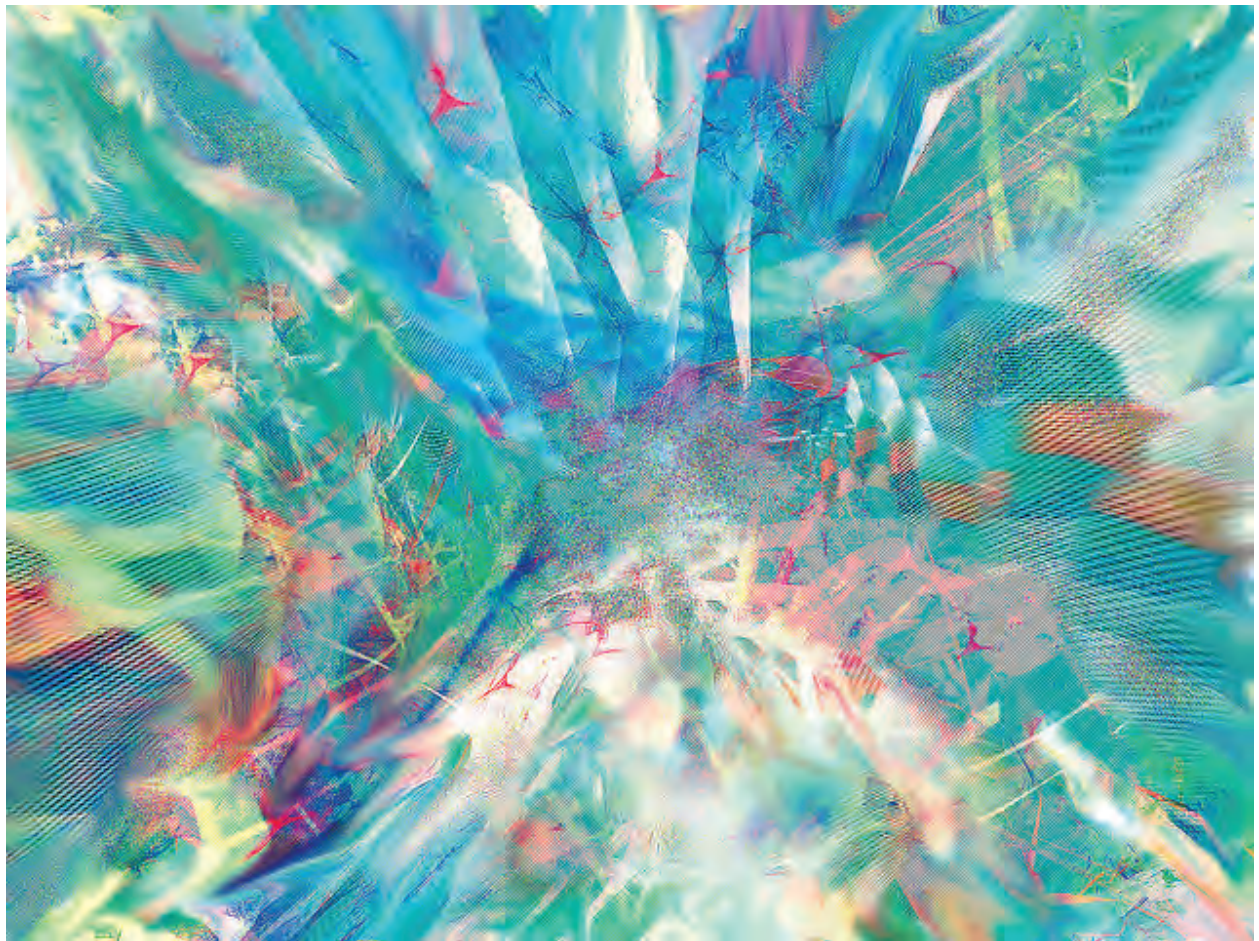


VOCABULARY PICTURES





CONCRETE CONTEXT





ABSTRACT CONTEXT





STRATEGY





VALIDITY





VERIFICATION





HUMANITIES





CAREER



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.



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.

Student Support Materials

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

Language and Skills Development

SPEAKING



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.

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.

Roll ‘Em Again!

Mount the vocabulary pictures on the board. Number each picture from one to six (repeat a number as often as necessary). Then, group the students into two teams. Give the first player in each team a die. When you say “Go,” the first player in each team must roll his/her die. He/She should call the number showing on it and then say a complete sentence about a vocabulary picture on the board that has the same number. Repeat this process until all students have participated.

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.



Deal

Before the activity begins, obtain two decks of playing cards. Give all of the cards from one deck to the students (if possible, arrange it so that all students have the same number of cards). Mount the sight words on the board. Hold a playing card from the other deck of cards against one of the sight words on the board. The student who has the matching playing card must identify the sight word. When the student has done this correctly, he/she should place that playing card to the side. Continue in this way until a student or students have no playing cards left in their hands.

Letter Encode

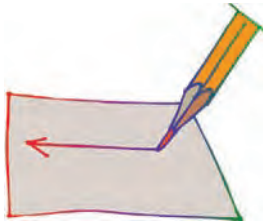
Prepare a page that contains large alphabet letters from A to Z. Make five copies for each student. The students should cut out their letters. When all of the letters have been cut out, show a vocabulary picture. The students should then use their letters to spell the word for that picture. Repeat, using the remaining pictures from this unit. Have the students store their cut out letters in individual envelopes.

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



Mirror Writing

Group the students into two teams. Have the first player from each team stand in front of the board. Give each of the two players a small, unbreakable mirror. Stand some distance behind the two players with pictures for the sight words. Hold up one of the pictures. When you say “Go,” the players must use the mirrors to look over their shoulders to see the picture you are holding. When a player sees the picture, he/she must write the sight word for that picture on the board. The first player to do this correctly wins the round. Repeat this process until all players in each team have had an opportunity to respond.

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).

Student Support Materials

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

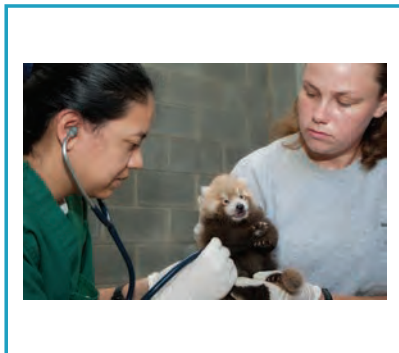
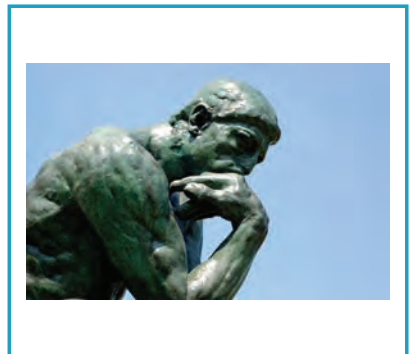
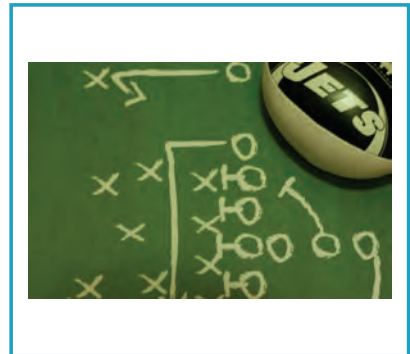


STUDENT SUPPORT MATERIALS

Listening • Mini Pictures

Listening: Mini Pictures

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





STUDENT SUPPORT MATERIALS

Sight Words

concrete context

abstract context

strategy





validity

verification

humanities



career





STUDENT SUPPORT MATERIALS

Reading • Sight Recognition

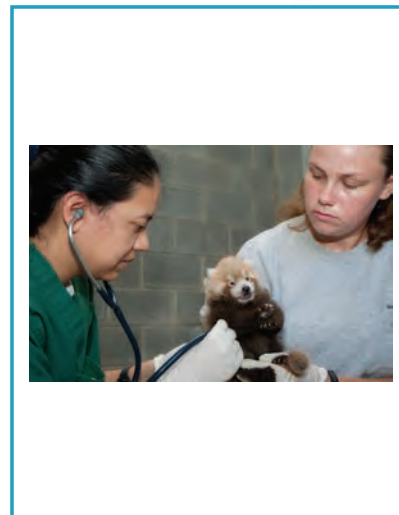
Sight Words Activity Page



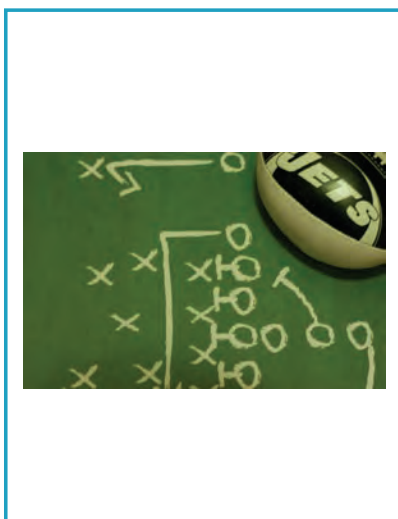
Have the students circle the word for each picture.



concrete context
abstract context
strategy
validity
verification
humanities
career



concrete context
abstract context
strategy
validity
verification
humanities
career



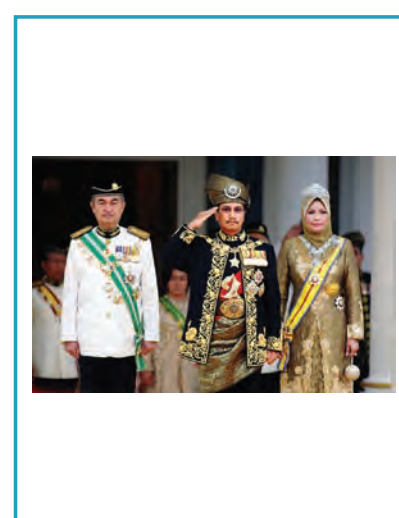
concrete context
abstract context
strategy
validity
verification
humanities
career



concrete context
abstract context
strategy
validity
verification
humanities
career



concrete context
abstract context
strategy
validity
verification
humanities
career



concrete context
abstract context
strategy
validity
verification
humanities
career

Sight Words Activity Page



concrete context

abstract context

strategy

validity

verification

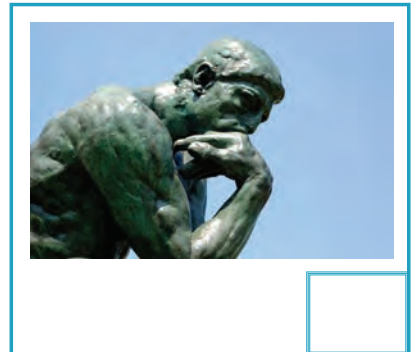
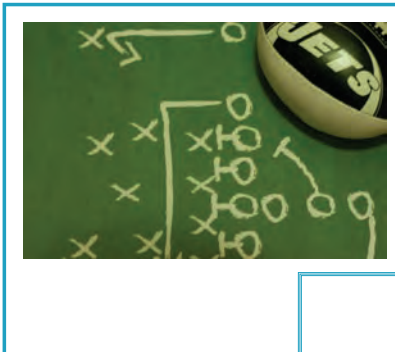
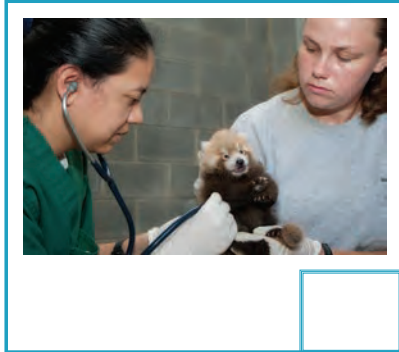
humanities

career

Sight Words Activity Page



Write the numbers on their correct vocabulary graphics.



1. concrete context
2. abstract context
3. strategy
4. validity
5. verification
6. humanities
7. career

Sight Words Activity Page



Highlight or circle the words in this word find.

verification
abstract context
concrete context

humanities
career
validity

strategy

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

Sight Words Activity Page

ANSWER KEY



verification
abstract context
concrete context

humanities
career
validity

strategy

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



STUDENT SUPPORT MATERIALS

Reading • Encoding

Encoding Activity Page

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



con_____e context

a_____ct context

st_____gy

va_____y

ver_____ation

bstra	cret	lidit
-------	------	-------

reer	uman
------	------



Encoding Activity Page



h _____ **ities**

ca _____

ific	rate
-------------	-------------

Encoding Activity Page



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

con

ategy

abstract con

text

str

ities

val

eer

verif

ication



Encoding Activity Page



human

idity

car

crete context

Encoding Activity Page



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

con || con || crete || text

text || con || ab || stract

gy || te || stra

Encoding Activity Page



di || va || li || ty

ri || fi || ve || tion || ca

hu || ties || ni || ma

Encoding Activity Page



reer || ca



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 Describing a halibut hook in terms of its dimensions and material is explaining it in a:
 - Abstract Context
 - Concrete Context
 - Ignorant Context
 - Limited Context

- ② Describing a halibut hook in terms of a carved crest's ability to aid in the capture of fish is explaining it in a
 - Abstract Context
 - Concrete Context
 - Ignorant Context
 - Limited Context

- ③ Elizabeth Peratrovich's _____ for promoting civil rights for Alaska Natives was peaceful and political.
 - Spare Time
 - Reason
 - Lesson
 - Strategy

- ④ The _____ of a congressional election is sometimes called into question when the vote counts are very close.
 - Strength
 - Support
 - Cost
 - Validity

- ⑤ Some tribes require member _____ to vote in tribal elections.
 - Assistance
 - Advancement
 - Verification
 - Dancing

What's the Answer?



- ⑥ The study of human thought and culture is part of the
- Landscape
 - Biology
 - Aroma
 - Humanities
- ⑦ Which of the following is NOT a career?
- Sleeping
 - Veterinarian
 - Fisherman
 - Politician

What's the Answer?



ANSWER KEY

- ① Describing a halibut hook in terms of its dimensions and material is explaining it in a:
 - Abstract Context
 - Concrete Context
 - Ignorant Context
 - Limited Context

- ② Describing a halibut hook in terms of a carved crest's ability to aid in the capture of fish is explaining it in a
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 - Spare Time
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 - Strategy

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 - Cost
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 - Advancement
 - Verification
 - Dancing

What's the Answer?



- ⑥ The study of human thought and culture is part of the
- Landscape
 - Biology
 - Aroma
 - Humanities
- ⑦ Which of the following is NOT a career?
- Sleeping
 - Veterinarian
 - Fisherman
 - Politician

Reading Comprehension Activity Page

Write the numbers/letters for sentence halves that match.



- | | |
|---|---|
| ① Describing the importance of culture in one's own life is putting the | ① is putting the concept in an abstract context. |
| ② Describing the importance of another culture to another group of people | ② can be called into question if both parties did not sign. |
| ③ One strategy for getting better grades | ③ if one wants to order an alcoholic beverage. |
| ④ The validity of a contract | ④ make their desired careers a reality. |
| ⑤ Many restaurants and bars need verification of age | ⑤ is to spend more time studying at home. |
| ⑥ The study of human thought and culture is a part | ⑥ concept in a concrete context. |
| ⑦ Doctors and lawyers had to study hard to | ⑦ of the humanities. |

1 → _____ 2 → _____ 3 → _____ 4 → _____
5 → _____ 6 → _____ 7 → _____

Reading Comprehension Activity Page

ANSWER KEY



- | | |
|---|---|
| ① Describing the importance of culture in one's own life is putting the | ① is putting the concept in an abstract context. |
| ② Describing the importance of another culture to another group of people | ② can be called into question if both parties did not sign. |
| ③ One strategy for getting better grades | ③ if one wants to order an alcoholic beverage. |
| ④ The validity of a contract | ④ make their desired careers a reality. |
| ⑤ Many restaurants and bars need verification of age | ⑤ is to spend more time studying at home. |
| ⑥ The study of human thought and culture is a part | ⑥ concept in a concrete context. |
| ⑦ Doctors and lawyers had to study hard to | ⑦ of the humanities. |

1 → F 2 → A 3 → E 4 → B
5 → C 6 → G 7 → D

Reading Comprehension Activity Page

Cut out the words and glue them under their definitions.



Process of establishing truth

Soundness

Representing an actual substance or thing

Occupation or profession

Human thought and culture

Apart from concrete realities

Plan of action

concrete context	abstract context	strategy	validity
verification	humanities	career	



Reading Comprehension Activity Page

ANSWER KEY



Process of establishing truth

verification

Soundness

validity

Representing an actual substance or thing

concrete context

Occupation or profession

career

Human thought and culture

humanities

Apart from concrete realities

abstract context

Plan of action

strategy

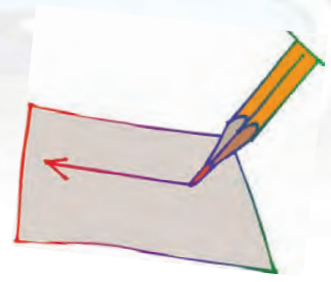


STUDENT SUPPORT MATERIALS

Writing

Writing Activity Page

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



con_____te con_____t

ab_____act c_____text

str_____y

v_____dity

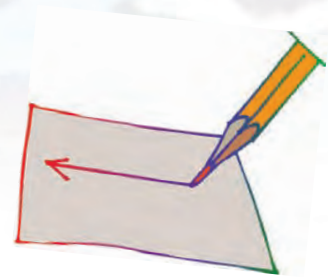
ver_____ation

hu_____ities

c_____re_____r

Writing Activity Page

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



c _____ **c** _____ **t**

a _____ **c** _____ **t**

s _____ **y**

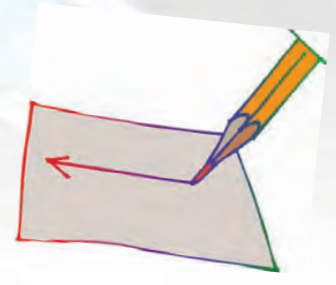
v _____ **y**

v _____ **n**

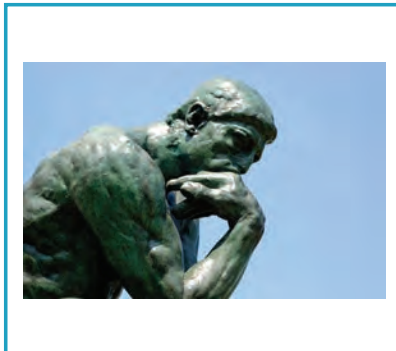
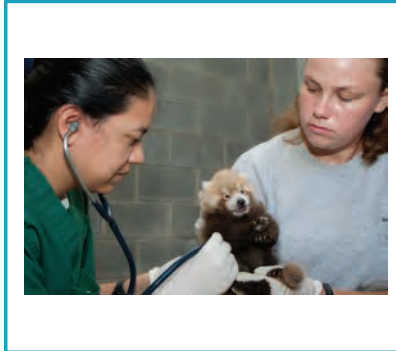
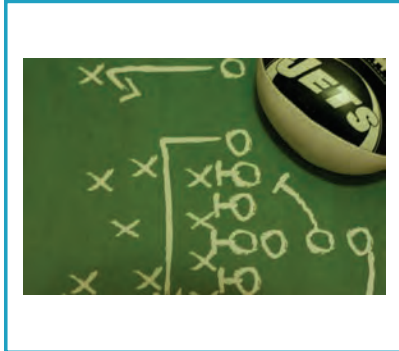
h _____ **s**

c _____ **r**

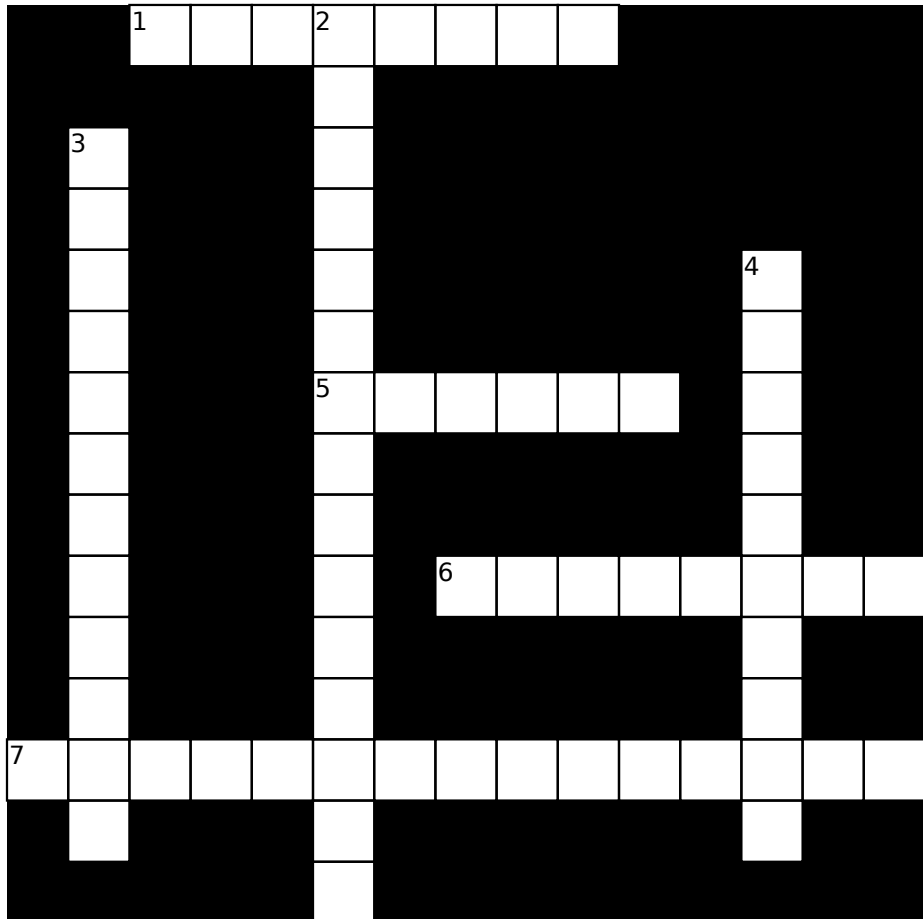
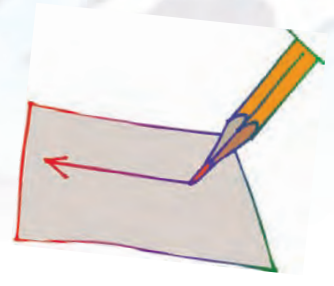
Basic Writing Activity Page



Have the students write the word for each picture.



Crossword Puzzle



- Across**
- 1 Plan of action
 - 5 Occupation or profession
 - 6 Soundness
 - 7 Representing an actual substance or thing (2 Words)

- Down**
- 2 Apart from concrete realities (2 Words)
 - 3 Process of establishing truth
 - 4 Human thought and culture

Crossword Puzzle Answers



- | Across | | Down | |
|--------|---|------|---|
| 1 | Plan of action | 2 | Apart from concrete realities (2 Words) |
| 5 | Occupation or profession | 3 | Process of establishing truth |
| 6 | Soundness | 4 | Human thought and culture |
| 7 | Representing an actual substance or thing (2 Words) | | |



UNIT ASSESSMENT



Reasoning and Connections

Unit Assessment Teacher's Notes

Grade 8 • Unit 15

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 **CONCRETE CONTEXT**.
2. Write the number 2 by the picture for **ABSTRACT CONTEXT**.
3. Write the number 3 by the picture for **STRATEGY**.
4. Write the number 4 by the picture for **VALIDITY**.
5. Write the number 5 by the picture for **VERIFICATION**.
6. Write the number 6 by the picture for **HUMANITIES**.
7. Write the number 7 by the picture for **CAREER**.

SIGHT RECOGNITION

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

DECODING/ENCODING

Turn to page 3 in your test. Look at the word parts in the boxes. Circle the other half or part of each word.

READING COMPREHENSION

Turn to page 4 in your test. Write each word under its definition.

Refer to Student Support Materials for answer key.

BASIC WRITING

Turn to page 5 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 8 • Unit 15

Date: _____ Student's Name: _____

Number Correct: _____ Percent Correct: _____

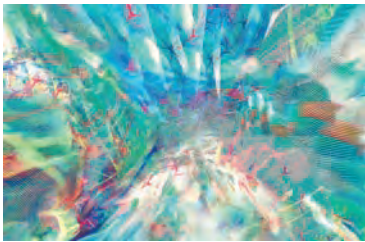




concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career



concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career



concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career



concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career



concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career



concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career



concrete context
 abstract context
 strategy
 validity
 verification
 humanities
 career

conc____
context

ate
ete
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rate
rete
rite
rote

abst____
context

rakt
rekt
rikt
rokt
rukt
ract
rect
rikt
roct

stra_____

dagy
degy
digy
dogy
dugy
tagy
tegy
tigy
togy

vali_____

dady
dedy
didy
dody
dudy
daty
dety
dity
doty

verifica_____

chin
chen
chan
chon
chun
tian
tien
tion
tiun

humani_____

taas
tees
tiis
toos
tuus
tias
ties
tiis
tios

ca_____

rare
rere
rire
rore
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rear
reer
reir
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**Process of
establishing truth**

Soundness

**Representing an
actual substance or
thing**

**Occupation or
profession**

**Human thought and
culture**

**Apart from concrete
realities**

Plan of action

concrete context

abstract context

strategy

validity

verification

humanities

career

