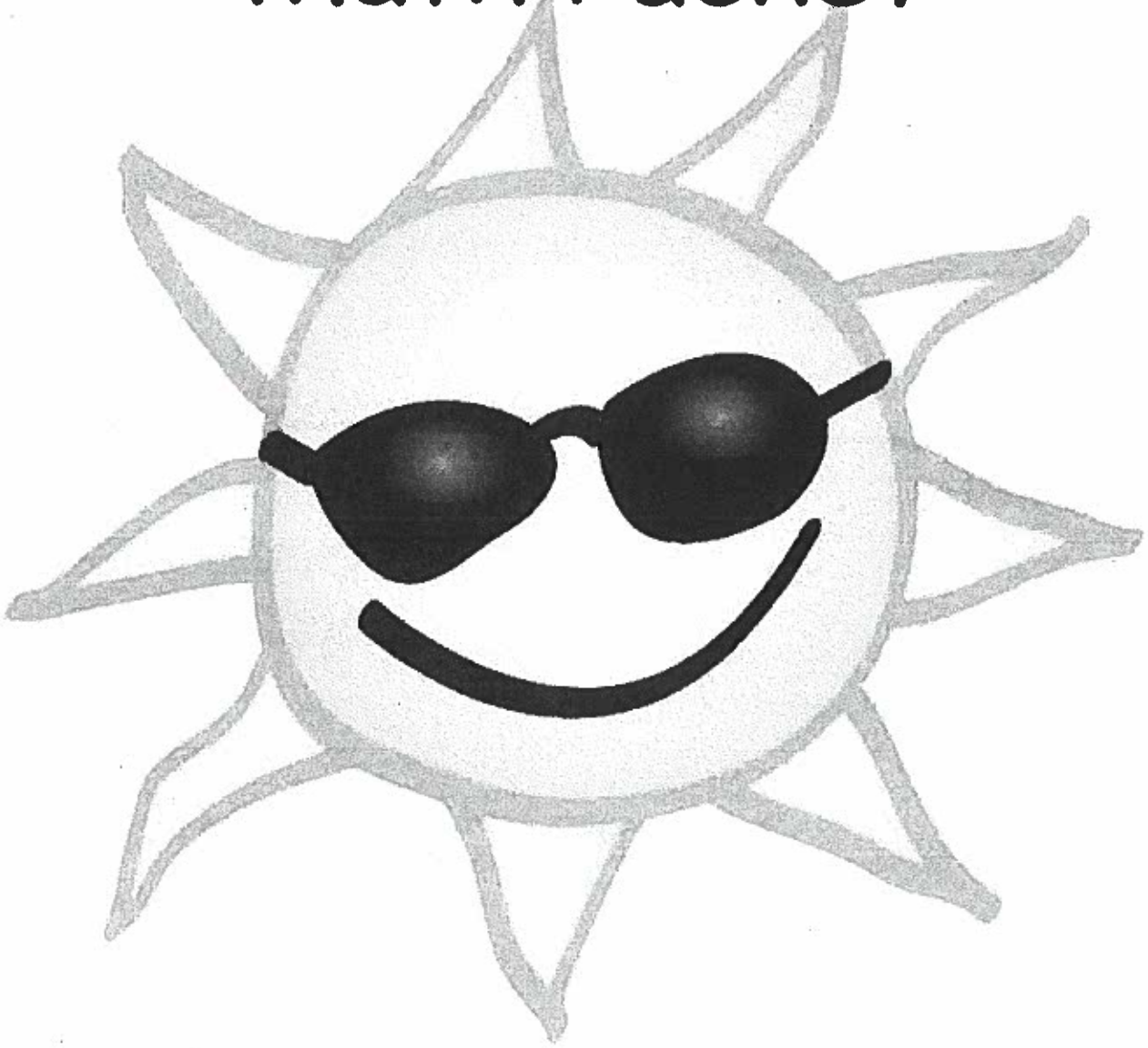
Summer

Math Packet



For students entering:

Incoming Math 8

Name: _____

FRACTIONS: Solve the following problems with fractions. Calculators are not permitted. SHOW YOUR WORK!

1) $\frac{7}{10} + \frac{1}{10}$

2) $\frac{5}{6} - \frac{1}{6}$

3) $3\frac{1}{4} + 1\frac{3}{4}$

5) $1\frac{2}{5} + 6\frac{8}{15}$

6) $5\frac{1}{9} - 2\frac{5}{6}$

7) $\frac{1}{3} \times \frac{4}{5}$

8) $12 \times \frac{3}{4}$

9) $5\frac{3}{4} \times 10\frac{2}{3}$

10) $\frac{3}{4} \div \frac{5}{8}$

11) $9 \div 4\frac{2}{3}$

12) $4\frac{1}{6} \div 3\frac{2}{5}$

SIMPLIFYING EXPRESSIONS – combine like terms.

1) $3x + 2x + 7x$

2) $5x + 2b + 3x + 5b$

3) $3 + 2x + 4 + 2x$

4) $6y + 5 - y$

5) $8a + 4 - 4a$

6) $15 + 4x - 7$

7) $6x + 2 + 3x + 4$

8) $2n + 12 + 3n - 3$

9) $3(x + 4) + 2$

Dear Parents,

The attached packet provides a range of activities that review and expand on the math concepts your child has learned in school this past year. It is designed to be worked on for 15 to 30 minutes a day throughout the summer, rather than completed in just a few days at the beginning or end of summer. The goal is to keep skills sharp to be ready to move forward into the next school year.

Students will be asked to hand in their completed work the first week of school.

Have a great summer!

EQUATIONS: Solve for x. Show your work!

1) $x - 8 = 24$

2) $x + 4 = 38$

3) $x - 16 = -24$

7) $3x = 39$

8) $9x = 117$

9) $-2x = -400$

10) $\frac{x}{3} = 20$

11) $\frac{x}{4} = 15$

12) $\frac{x}{-5} = -14$

13) $8 = -5r + 18$

14) $3x + 14 = -1$

16) $-3x + 1 = -5$

FRACTIONS, DECIMALS, PERCENTS

FRACTION	= DECIMAL	= PERCENT
$\frac{1}{4}$		
		45%
$\frac{3}{10}$		
	0.4	
		80%
	0.5	

The Distributive Property

Simplify each expression. (Expand)

EX:

1) $6(1 - 5m)$

2) $-2(1 - 5v)$

$-2 \cdot 1 - (-2 \cdot 5v)$

$-2 - (-10v)$

$\boxed{-2 + 10v}$

3) $3(4 + 3r)$

4) $3(6r + 8)$

5) $4(8n + 2)$

6) $-(-2 - n)$

7) $-6(7k + 11)$

8) $-3(7n + 1)$

9) $-6(1 + 11b)$

10) $-10(a - 5)$

11) $-3(1 + 2v)$

12) $-4(3x + 2)$

13) $(3 - 7k) \cdot -2$

14) $-20(8x + 20)$

15) $(7 + 19b) \cdot -15$

16) $(x + 1) \cdot 14$

Combining Like Terms

Simplify each expression.

1) $-6k + 7k$

2) $12r - 8 - 12$

3) $n - 10 + 9n - 3$

4) $-4x - 10x$

5) $-r - 10r$

6) $-2x + 11 + 6x$

7) $11r - 12r$

8) $-v + 12v$

9) $-8x - 11x$

10) $4p + 2p$

11) $5n + 11n$

12) $n + 4 - 9 - 5n$

13) $12r + 5 + 3r - 5$

14) $-5 + 9n + 6$

Two-Step Equations With Integers

Solve each equation.

1) $\frac{r}{10} + 4 = 5$

2) $\frac{n}{2} + 5 = 3$

3) $3p - 2 = -29$

4) $1 - r = -5$

5) $\frac{k - 10}{2} = -7$

6) $\frac{n - 5}{2} = 5$

7) $-9 + \frac{n}{4} = -7$

8) $\frac{9 + m}{3} = 2$

9) $\frac{-5 + x}{22} = -1$

10) $4n - 9 = -9$

11) $\frac{x + 9}{2} = 3$

12) $\frac{-12 + x}{11} = -3$

13) $\frac{-4 + x}{2} = 6$

14) $-5 + \frac{n}{3} = 0$

Multi-Step Equations

Solve each equation.

1) $6a + 5a = -11$

2) $-6n - 2n = 16$

3) $4x + 6 + 3 = 17$

4) $0 = -5n - 2n$

5) $6r - 1 + 6r = 11$

6) $r + 11 + 8r = 29$

7) $-10 = -14v + 14v$

8) $-10p + 9p = 12$

9) $42 = 8m + 13m$

10) $a - 2 + 3 = -2$

istribute FIRST!

11) $18 = 3(3x - 6)$

12) $30 = -5(6n + 6)$

Kuta Software - Infinite Pre-Algebra

Name_____

Evaluating Variable Expressions

Date_____ Period____

Evaluate each using the values given.

1) $n^2 - m$; use $m = 7$, and $n = 8$

Ex. $n^2 - m$

$(8^2) - 7$

$64 - 7$

$\boxed{57}$

2) $8(x - y)$; use $x = 5$, and $y = 2$

3) $yx \div 2$; use $x = 7$, and $y = 2$

4) $m - n \div 4$; use $m = 5$, and $n = 8$

5) $x - y + 6$; use $x = 6$, and $y = 1$

6) $z + x^3$; use $x = 1$, and $z = 19$

7) $y + yx$; use $x = 15$, and $y = 8$

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

9) $x + 8 - y$; use $x = 20$, and $y = 17$

10) $15 - (m + p)$; use $m = 3$, and $p = 10$

11) $10 - x + y \div 2$; use $x = 5$, and $y = 2$

12) $p - 2 + qp$; use $p = 7$, and $q = 4$

Name : _____ Score : _____

Teacher : _____ Date : _____

Translate Algebraic Expressions

Words and Phrases to Math Symbols

1) 2 times the sum of m and 3

2) Two-fifths of the sum of n and 8

3) z cubed minus the product of 6 and w plus 4

4) Two-fifths of g is added to the product of 8 and z

5) Add five-sixths to 8 times f

6) Two-thirds of p is subtracted from 7

7) One-fifth of the sum of w and 2 minus the product of 7 and s

8) Three-fifths of k is added to 5

9) Add 8 to 7 times b

0) The sum of one-fourth of y, one-fifth of c, and 9

Addition

Plus
And
Total of
Altogether Increased By
Combined Add Sum
Together More Than
Added To
In All
Make

Subtraction

Subtract Gave Take Away
Decrease By Fewer Minus
Shared Fewer Than Less Than
Difference Less

Multiplication

Times Triple
Double Product
Multiplied By
OF
Increased By a Factor
Twice Multiple

Division

Quotient of Per Ratio of
Divided By Half Divisor
Divided Into Percent Split Up

Equals

Is Are Were Was

Will Be Yields Sold For

Parenthesis Words

The Quantity of
Twice the sum of
Times the sum of
Times the difference of
Plus the difference of

Translating Phrases

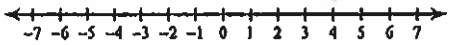
Translate each verbal phrase into an algebraic expression : (inequality)

1)	5 is not more than x _____	2)	Value of x is greater than or equal to 14 _____
3)	x is greater than or equal to 12 _____	4)	6 is not less than x _____
5)	Value of x is greater than 7 _____	6)	x is greater than 15 _____
7)	x is not more than 13 _____	8)	9 is less than or equal to x _____
9)	Value of x is atleast 1 _____	10)	Value of x is less than 14 _____
11)	Value of x is less than or equal to 10 _____	12)	x is more than 3 _____
13)	16 is less than x _____	14)	Value of x is atmost 8 _____
15)	Value of x is not greater than 18 _____	16)	2 is more than x _____

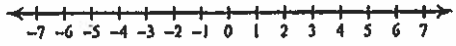
Graphing Inequalities

Draw a graph for each inequality.

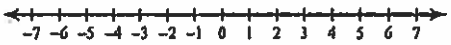
1) $n \leq -5$



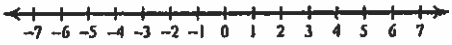
2) $n \leq 5$



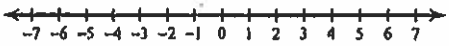
3) $x < 1$



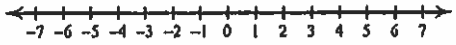
4) $r > 2$



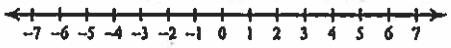
5) $n > 5$



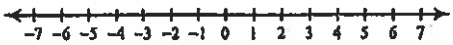
6) $r \leq -2$



7) $k \leq -2$



8) $m < -5$



>	≥	<	≤
Is more than Is greater than Is larger than above	minimum at least Is not less than not smaller than	Is smaller than Is less than below	maximum at most not more than Is not greater than
			

INTEGERS: All students should be able to add, subtract, multiply, and divide integers. Calculators are not permitted.

1) $-10 + (-10)$ 2) $-6 + (-10)$ 3) $-8 + 15$ 4) $-13 + (-3) + 2$

5) $-3 - 6$ 6) $-2 - (-9)$ 7) $13 - 19$ 8) $-14 - 16 + 4$

9) 4×-4 10) -15×-2 11) -12×-7 12) $-4 \times -3 \times -6$

13) $-15 \div -3$ 14) $25 \div 5$ 15) $-56 \div 7$ 16) $-100 \div -5$

EXPONENTS - evaluate

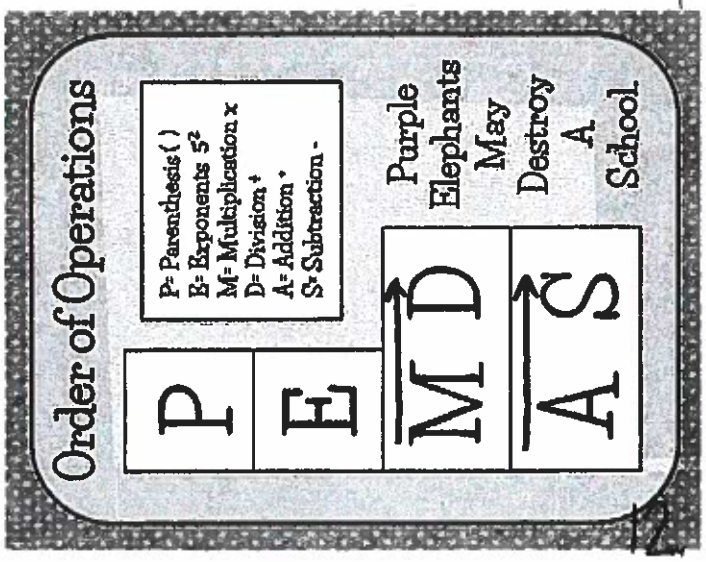
1) 3^2 2) 5^3 3) 1^7 4) 0^8 5) 8^4

ORDER OF OPERATIONS: Simplify the following expressions using the order of operations. SHOW YOUR WORK!

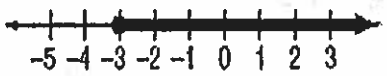
1) $7 \bullet 4 \div 2$ 2) $2^2 \bullet 8 - 10$ 3) $(5+4) \bullet 7$

4) $(5+3)^2 - 4$ 5) $36 - 5^2 + 7$ 6) $4 + 6(5-2) \div 3$

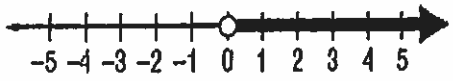
7) $\dfrac{15-7}{3+1}$ 8) $\dfrac{9+3}{3+3^2}$



1.) Write an inequality for the graph.



2.) Write an inequality for the graph.

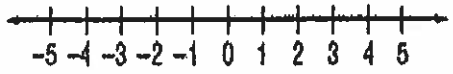


3.) Graph the inequality.

$b \geq -1$

4.) Graph the inequality.

$z < 3$

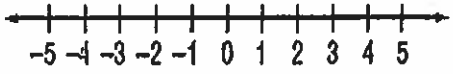


5.) Solve the inequality, then graph it on the number line.

$y + 9 \leq 13$

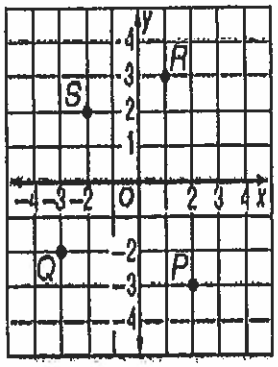
6.) Solve the inequality, then graph it on the number line.

$4x - 6 > -10$



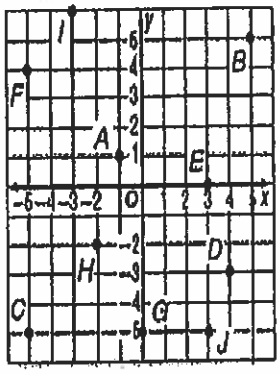
1.) Name the ordered pair for each point graphed at the right. Then identify the quadrant in which each point lies.

	Coordinates	Quadrant
P	(___, ___)	___
Q	(___, ___)	___
R	(___, ___)	___
S	(___, ___)	___



2.) Find each of the points below on the coordinate plane. Then identify the quadrant in which each point lies.

	Coordinates	Quadrant
A	(___, ___)	___
J	(___, ___)	___
B	(___, ___)	___
H	(___, ___)	___



3.) Graph and label each point on the coordinate plane.

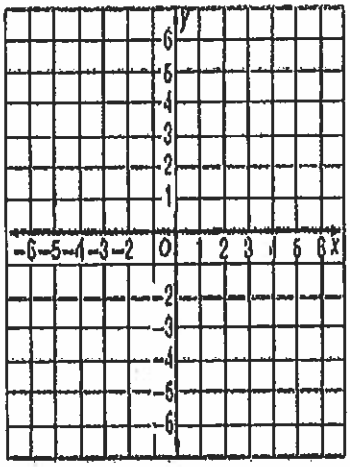
N (3, -1)

P (-2, 4)

Q (-3, -4)

R (0, 0)

S (-5, 0)



4.) Graph and label each point on the coordinate plane.

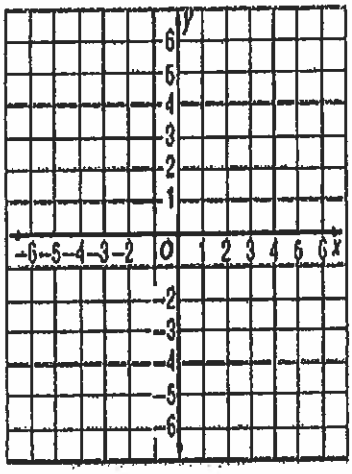
D (0, 4)

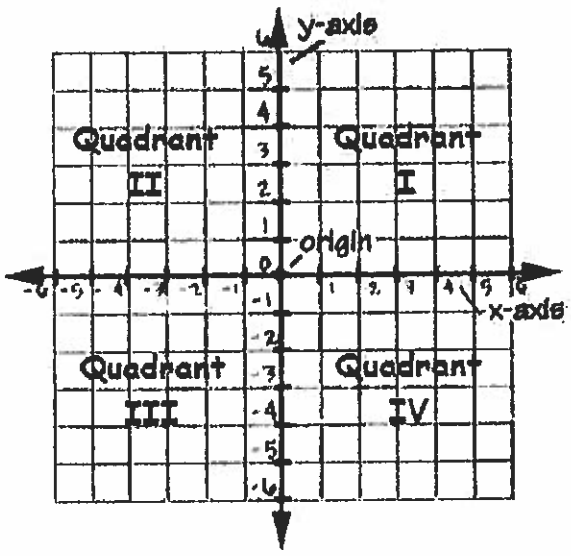
E (5, 5)

G (-3, 0)

H (-6, -2)

J (0, -2)





1.) Write 15^4 as a product of the same factor.	2.) Write 2^7 as a product of the same factor.
3.) Evaluate 7^3.	4.) Evaluate 8^4.
5.) Write $9 \cdot 9 \cdot 9 \cdot 9 \cdot 9$ in exponential form.	6.) Write $12 \cdot 12 \cdot 12$ in exponential form.

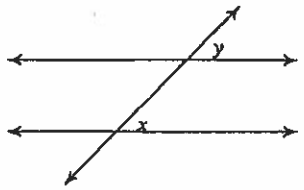
1.) Evaluate: $13^2 =$	2.) Evaluate: $\sqrt{81} =$
3.) Evaluate: $(-4)^3 =$	4.) Evaluate: $\sqrt{100} =$
5.) Evaluate: $(-2)^2 =$	6.) Evaluate: $\sqrt{36}$

Parallel Lines and Transversals

Identify each pair of angles as corresponding, alternate interior, alternate exterior, or consecutive interior.

same-side interior

1)



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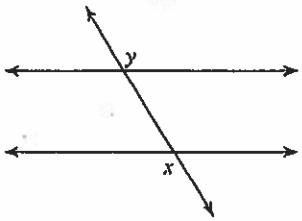

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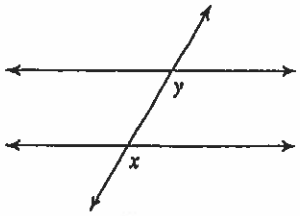

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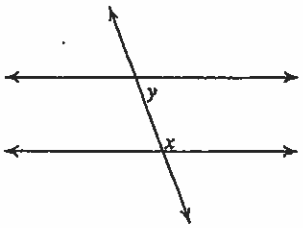

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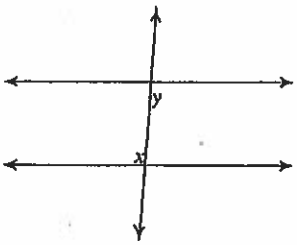

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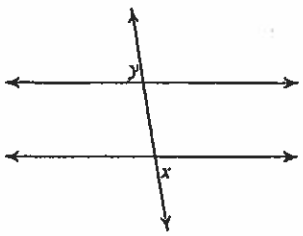

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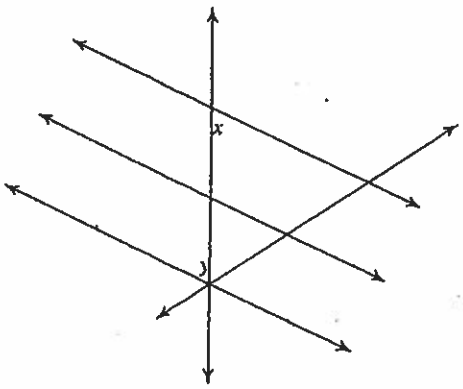

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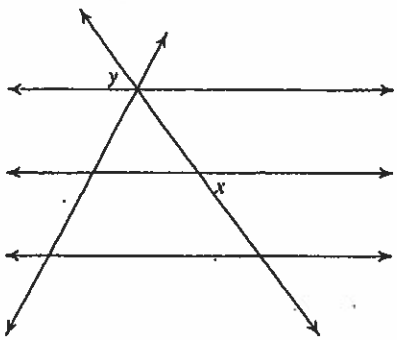

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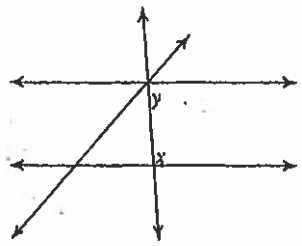

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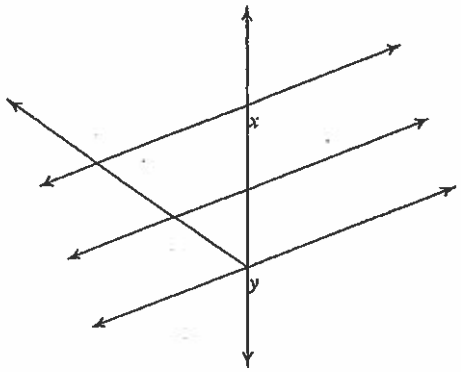
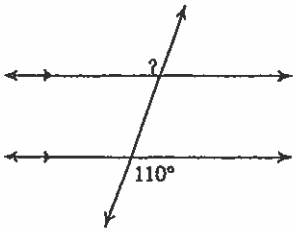


Find the measure of each angle indicated.

11)



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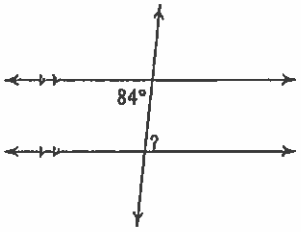

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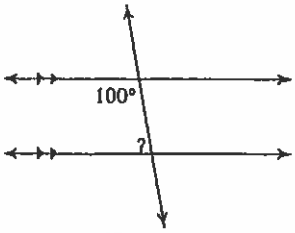

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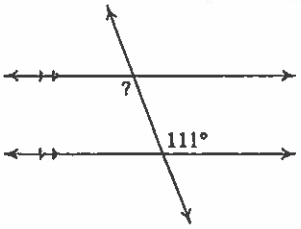
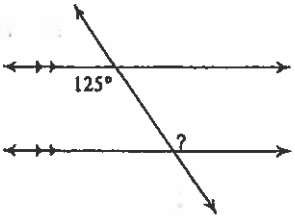


15)



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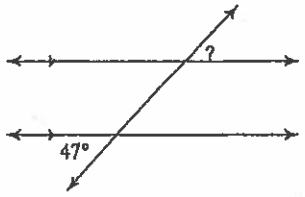

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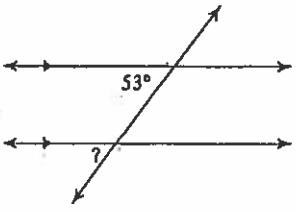

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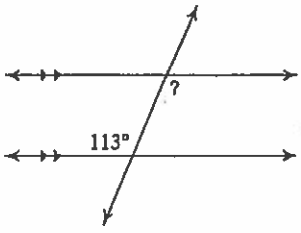


NAME: _____ 8th Grade Vocabulary

Use a dictionary or www.dictionary.com to write the definitions of each vocabulary word. Please use a separate sheet of paper to write them down.

These are vocabulary words that you will be learning about in the 8th grade.

1. Acid
2. Adaptation
3. Allele
4. Atom
5. Autotroph
6. Bacteria
7. Biotic
8. Calorie
9. Catalyst
10. Cell
11. Chemical bond
12. Chlorophyll
13. Chromosome
14. Climate
15. Cloning
16. Community
17. Compound
18. Conduction
19. Consumer
20. Control group
21. Data
22. Decomposer
23. Density
24. Digestion
25. Ecosystem
26. Electric current
27. Electromagnet
28. Element
29. Embryo
30. Energy pyramid
31. Enzyme
32. Evaporation
33. Evolution
34. Experiment
35. Fertilization
36. Force
37. Fossil fuel
38. Frequency

39. Fusion
40. Gene
41. Genetics
42. Geologic time scale
43. Global warming
44. Gravity
45. Herbivore
46. Heterotroph
47. Homeostasis
48. Hypothesis
49. Inertia
50. Inference
51. Infrared radiation
52. Insulator
53. Ion
54. Isotope
55. Kingdom
56. Law of conservation of energy
57. Light year
58. Mass
59. Matter
60. Molecule
61. Motion
62. Mutation
63. Natural selection
64. Neutron
65. Nucleus
66. Omnivore
67. Organ
68. Osmosis
69. pH
70. Photosynthesis
71. Physical change
72. Planetary motion
73. Plate tectonics
74. Polymer
75. Potential energy
76. Precipitation
77. Producer
78. Proton
79. Punnett square
80. Radioactive decay

NAME:_____ 8th Grade Vocabulary

81. Reflection
82. Refraction
83. Reproduction
84. Respiration
85. Revolution
86. RNA
87. Rock cycle
88. Scientific method
89. Sedimentary rock
90. Sexual reproduction
91. Solar energy
92. Solution
93. Species
94. Speed
95. Static electricity
96. Stimulus
97. Sublimation
98. Succession
99. Surface tension
100. Suspension
101. Symbiosis
102. Temperature
103. Theory
104. Thermal energy
105. Thermometer
106. Transpiration
107. Tropism
108. Unbalanced forces
109. Valence electron
110. Velocity
111. Viscosity
112. Volume
113. Wavelength
114. Weathering
115. Work
116. X-ray
117. Absorption
118. Acid rain
119. Air pollution
120. Antibiotic
121. Aquifer
122. Atmosphere

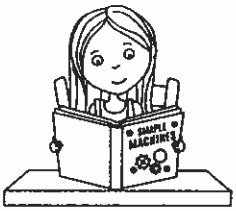
123. Balanced ecosystem
124. Bioaccumulation
125. Carbon cycle
126. Chlorofluorocarbon (CFC)
127. Composting
128. Deforestation
129. Doppler effect
130. Endangered species
131. Extinction
132. Fertilizer
133. Genetic engineering
134. Greenhouse effect
135. Hibernation
136. Landfill
137. Ozone layer
138. Photosynthetic organism
139. Radioactive waste
140. Renewable energy

Name: _____

Engineering Design Process

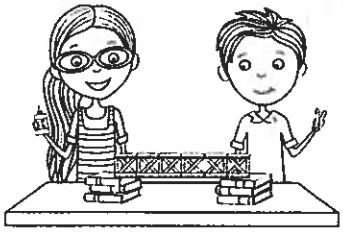
Directions: Read the informational text and answer the questions on the following page.

The engineering design process is a series of steps that engineers use to find a solution to a problem. Everyday people working on everyday problems use this process. Students in the classroom use these basic steps to write a paper and to complete other assignments.



People in the workplace also use this to develop solutions to problems in the work environment. We also use these steps when trying to plan a meal. The steps in the design process are the following: ask, research, plan, build, test, and share.

Let's put this concept into action. 1) Ask - How do you make a peanut butter and jelly sandwich? 2) Explore - Find and read recipes. Ask an adult to make the sandwich and observe the process. 3) Plan - Make a list of ingredients and write the directions. 4) Build - make the sandwich. 5) Test - Eat the sandwich. Does it taste good? Is there something you want to change in the recipe? Leave the recipe as is or implement the changes you wish to make. 6) Share - Share your recipe with your friends and explain how you created the recipe.



Engineers use this process in the same way we do, but the problems they are trying to solve might be more complex. By now you've probably realized that you use the engineering design process in a lot of your everyday tasks. From things like brushing your teeth to making your bed.

Now you know this process isn't just for engineers. We all benefit by using this process.

Engineering Design Process Reading Comprehension Name:_____

Direction: Read all of the questions and circle the answer.

Multiple Choice

1. **True or False:** The engineering design process can be used for everyday problems.
   a. True
   b. False

2. What is the engineering design process used for?
   a. Building a structure
   b. Finding solutions to all kinds of problems
   c. Solving problems at school
   d. Making a design

3. What does the word 'process' mean?
   a. Failure
   b. To stop
   c. Steps
   d. Problem

4. According to the text, which step should you do after testing?
   a. Plan
   b. Share
   c. Ask
   d. Build

Engineering Design Process Reading Comprehension Name:_____

Direction: Respond to the questions in complete sentences.

Free Response

Why do you think the engineering design process steps need to be done in order? Explain.

In your opinion, which step in the engineering design process is most important? Why?

MIDDLE SCHOOL SUMMER READING BOOK REPORT

HANDWRITTEN REPORT

Reports should be written in cursive that is neat and legible. Both the left and right margins should be observed and all paragraphs should be indented. You should skip a line in-between paragraphs. Use both sides of the paper.

COVER PAGE

Each report should have a separate cover page that contains your name, the date (month, year) and the following information:

- Title of Book
- Author
- Genre
- Publisher
- Copyright Year
- Number of Pages

INTRO PARAGRAPH

The introductory paragraph should focus on the author and include information such as personal background and awards or nominations. Avoid statements such as "This book report is about . . ." or "I am writing about . . ."

SUMMARY

The next one to two paragraphs should be a brief summary of the plot. You should state the book's title, and then describe the setting, main characters, and basic action of the book. DO NOT reveal the book's ending.

ANALYSIS

The next three to four paragraphs should be an analysis of the book. Consider discussing some of these questions:

- Which character did you like the best or least and why do you think that?
- What is the best or worst part of the book and why do you think that?
- What is the author trying to teach and how was this accomplished?
- How does this book compare to similar books or books by the same author?

Remember, each paragraph should focus on only one idea.

CONCLUSION

Your closing paragraph should state whether or not you recommend this book to others. Be sure to explain why you feel the way that you do. The conclusion could also include reviews of the book. For example, you may write "The New York Times calls this the year's best book." This shows that many other people enjoyed the book, too.

BOOK REPORT RUBRIC

Category: Handwriting and Formatting

Neatness and legibility of cursive writing:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Consistency of left and right margins:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Indentation of paragraphs:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Proper line spacing:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Cover Page

Inclusion of all required information:	[ ] Yes [ ] No
Accuracy of information provided:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Introductory Paragraph

Introduction of the author's personal background:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Avoidance of generic statements:	[ ] Yes [ ] No

Category: Summary

Inclusion of book's title:	[ ] Yes [ ] No
Description of setting, main characters, and basic action:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Analysis

Inclusion of analysis paragraphs:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Focus on one idea per paragraph:	[ ] Yes [ ] No
Answers of the analysis questions:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Conclusion

Clear statement of recommendation:	[ ] Yes [ ] No
Explanation of reasoning for the recommendation:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Overall Assessment:

Content organization and structure:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Grammar, spelling, and punctuation:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Depth of analysis and critical thinking:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Clarity and coherence of writing:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

ELA VOCABULARY

Write the definition AND an example for each of the following words. ***Handwrite*** *the definition and example. Please remember that you are looking up the literary definition for these words. For example, one dictionary definition for setting is "the articles of tableware for setting a place at a table", that answer would be incorrect! The literary definition for setting is "the location and time frame in which the action of the of a story takes place."*

Example:

Alliteration:
Definition: the use of words that begin with the same sound near one another
Example: wild and wolly or *a babbling brook*

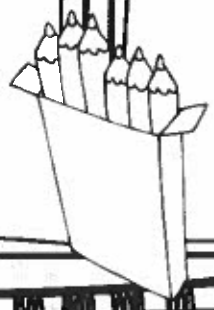
1. Alliteration
2. Analogy
3. Annotation
4. Argument
5. Assonance
6. Audience
7. Author's purpose
8. Bias
9. Characterization
10. Climax
11. Compare and contrast
12. Conflict
13. Connotation
14. Consonance
15. Dialogue
16. Diction
17. Figurative language
18. Flashback
19. Foreshadowing
20. Genre
21. Hyperbole
22. Imagery
23. Inference
24. Dramatic Irony
25. Metaphor
26. Mood
27. Onomatopoeia
28. Personification
29. Plot
30. Point of view
31. Prefix
32. Protagonist
33. Repetition
34. Resolution
35. Setting
36. Simile
37. Stanza
38. Symbolism
39. Synonym
40. Theme
41. Thesis
42. Tone
43. Verbal irony
44. Writing process (include description of all 5 steps)

Common Noun

Name:

What is a common noun? Explain in your own words.

Illustrate and label 2 common nouns.

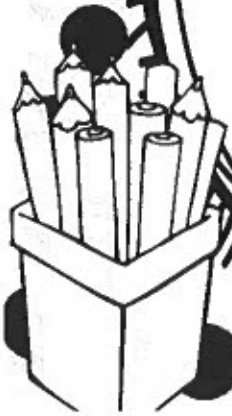


Write one sentence and one question each containing at least two common nouns. Underline the nouns.

Fill this box with as many common nouns as you can think of.

Can you write a sentence without a common noun? EXplain

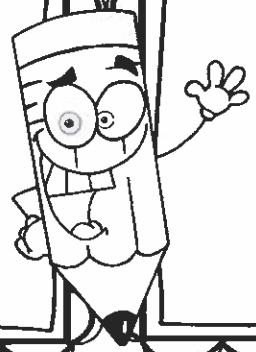
Create a memory technique (mnemonic device) that will help you identify a common noun.



Proper Noun

Name:

What is a proper noun? Explain using your own words.



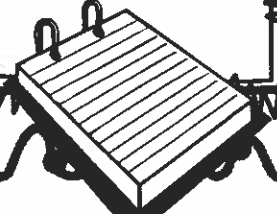
Illustrate and label 2 proper nouns.

Write one sentence and one question each containing at least two proper nouns. Underline the nouns.

Fill this box with as many proper nouns as you can think of.

Can you write a sentence without a proper noun? Explain.

Create a memory technique (mnemonic device) that will help you identify a proper noun.



Abstract Noun

Name:

What is an abstract noun? Explain using your own words.

Illustrate and label 2 abstract nouns.

Write one sentence and one question each containing at least one abstract noun. Underline the nouns.

Fill this box with as many abstract nouns as you can think of.

Can you write a sentence without an abstract noun? Explain.

Create a memory technique (mnemonic device) that will help you identify an abstract noun.

Plural Noun

Name:

What is a plural noun? Explain using your own words.

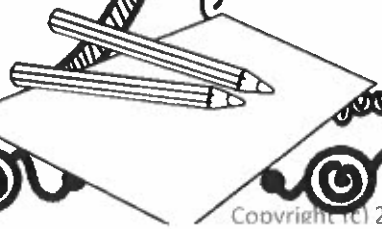
Illustrate and label 2 plural nouns.

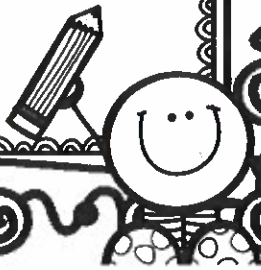
Write one sentence and one question each containing at least two plural nouns. Underline the nouns.

Fill this box with as many plural nouns as you can think of.

Can you write a sentence with a singular and plural noun? Explain

How do you change a singular noun to a plural noun? Explain, using at least 3 different examples.





possessive noun

Name:

What is a possessive noun? Explain using your own words.

Illustrate and label 2 possessive nouns.

Write one sentence and one question each containing at least one possessive noun. Underline the nouns.

Fill this box with as many possessive nouns as you can think of.

Can you write a sentence with a plural and a possessive noun? EXplain.

Can a noun be both plural and possessive? Explain, using a sentence as proof.

Pronoun

Name:

What is a pronoun? Explain using your own words.

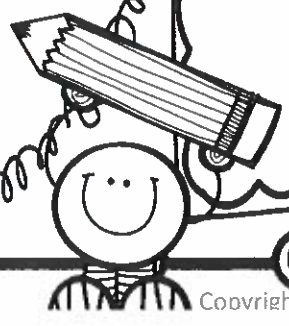
Illustrate and label 2 pronouns.

Write one sentence and one question each containing at least two pronouns. Underline the pronouns.

Fill this box with as many pronouns as you can think of.

Can you write a sentence with a proper noun and a pronoun? Explain.

Write a sentence that uses two proper nouns. Then, write a second sentence where you replace those nouns with their pronouns.



Verb

Name:

What is a verb? Explain using your own words.

Illustrate and label 2 verbs.

Write one sentence and one question each containing at least two verbs. Underline the verbs.

Fill this box with as many verbs as you can think of.

Can you write a sentence without a verb? Explain

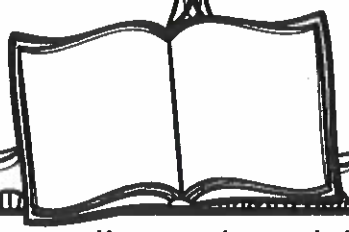
Write one sentence that uses two verbs that are the opposite of each other.

Adjective

Name:

What is an adjective? Explain using your own words.

Illustrate and label 2 adjectives.



Write one sentence and one question each containing at least two adjectives. Underline the adjectives.

Fill this box with as many adjectives as you can think of.

Can you write a sentence without an adjective? Explain

Write one sentence that uses two adjectives that are the opposite of each other.

Adverb

Name:

What is an adverb? Explain using your own words.

Illustrate and label 2 adverbs.

Write one sentence and one question each containing at least two adverbs. Underline the adverbs.

Fill this box with as many adverbs as you can think of.

Can you write a sentence with an adjective and an adverb? Explain.

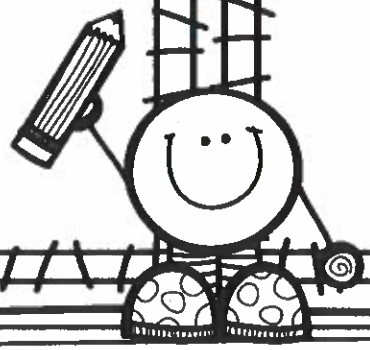
Write one sentence that uses two adverbs that are the opposite of each other.

Conjunction

Name:

What is a conjunction? Explain using your own words.

How could you illustrate a conjunction?



Write one sentence and one question each containing a conjunction. Underline the conjunctions.

Fill this box with as many conjunctions as you can think of.

Can you write a compound sentence without a conjunction? Explain.

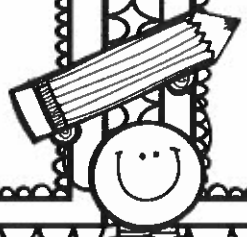
Write two simple sentences. Then, combine the sentences using a conjunction.

Interjection

Name:

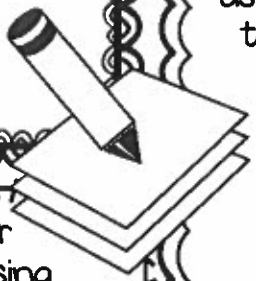
What is an interjection? Explain using your own words.

How could you illustrate an interjection?



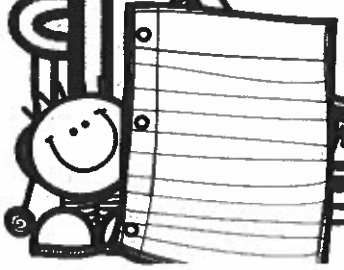
Write one sentence and one question each containing an interjection. Underline the interjections.

Fill this box with as many interjections as you can think of.



How do you punctuate a sentence with an interjection? Explain.

Write two similar sentences – one using an interjection and one without.



Preposition

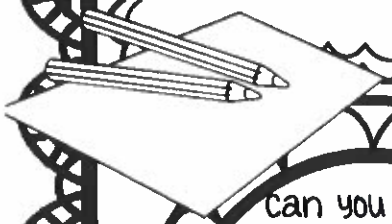
Name:

What is a preposition? Explain using your own words.

How could you illustrate a preposition?

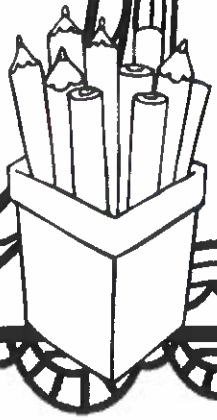
Write one sentence and one question each containing two prepositions. Underline the prepositions.

Fill this box with as many prepositions as you can think of.



Can you give directions to a place without using a preposition? Explain.

Write two similar sentences – one using a preposition and one without.

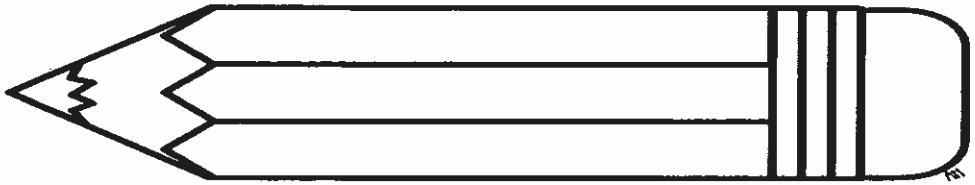


Parts of Speech Concept Poster
Self-Assessment Checklist

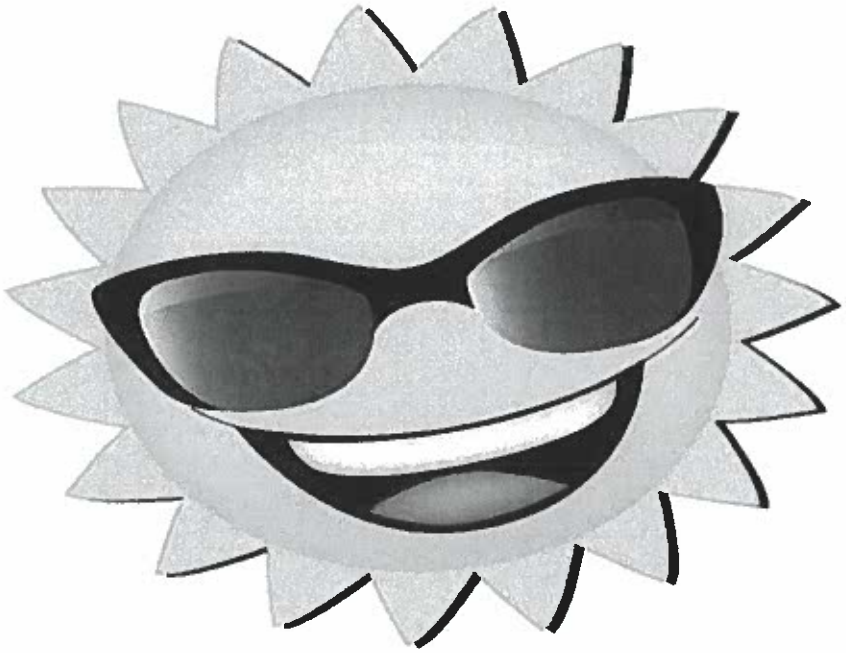
Name:_____ Concept:_____

Read the criteria given. For each category, place a checkmark in the appropriate box. If you have rated yourself a "sometimes" or "never" in a particular category, go back and make the necessary improvements on your poster before handing in.

Criteria	Always	Sometimes	Never
1. My answers were correct. I know this because I did work to ensure I knew the answer; and asked for help if I did not.			
2. I used proper grammar when answering all questions.			
3. My pictures and illustrations were well-drawn and I explained what was in each picture.			
4. My explanations were clear and easy to understand.			
5. I proofread all of my answers to check for proper spelling and punctuation so my explanations were clear.			
6. I was neat and took care to add visual appeal to my poster.			
7. I went back to my poster and made improvements where I thought I could do better.			



Summer Math Packet



For Students entering:

Algebra I

incoming 8 →

Name: _____

5

Name: _____

Algebra I – Summer Review Packet

About Algebra I:

Algebra I require students to think, reason, and communicate mathematically. The skills learned during the Algebra I curriculum will be used as a foundation in all subsequent math classes, such as geometry and Algebra II.

Packet Expectations:

The summer packet contains material learned during the Pre-Algebra curriculum. Students are expected to show their work for each problem of this review packet. Each problem should be worked through to its entirety, and correctly; not just attempted. Each student should be prepared to have the summer packet completed and ready to be checked during the first day of school. Over the course of the first few weeks of the beginning of the school year, the packet will be reviewed, and a final packet assessment will be given as the first test grade of the new school year.

CONTENTS:

Order of Operations

To avoid having different results for the same problem, mathematicians have agreed on an order of operations when simplifying expressions that contain multiple operations.

1. Perform any operation(s) inside grouping symbols. (Parentheses, brackets above or below a fraction bar)
2. Simplify any term with exponents.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.

One easy way to remember the order of operations process is to remember the acronym PEMDAS or the old saying, **"Please Excuse My Dear Aunt Sally."**

P - Perform operations in grouping symbols
E - Simplify exponents
M - Perform multiplication and division in order from left to right
D
A - Perform addition and subtraction in order from left to right
S

Example 1

$2 - 3^2 + (6 + 3 \times 2)$
$2 - 3^2 + (6 + 6)$
$2 - 3^2 + 12$
$2 - 9 + 12$
$-7 + 12$
$= 5$

Example 2

$-7 + 4 + (2^3 - 8 \div -4)$
$-7 + 4 + (8 - 8 \div -4)$
$-7 + 4 + (8 - -2)$
$-7 + 4 + 10$
$-3 + 10$
$= 7$

Order of Operations

Evaluate each expression. Remember your order of operations process (PEMDAS).

1. $6 + 4 - 2 \cdot 3 =$

2. $(-2) \cdot 3 + 5 - 7 =$

3. $15 \div 3 \cdot 5 - 4 =$

4. $29 - 3 \cdot 9 + 4 =$

5. $20 - 7 \cdot 4 =$

6. $4 \cdot 9 - 9 + 7 =$

7. $50 - (17 + 8) =$

8. $(12 - 4) - 8 =$

9. $12 \cdot 5 + 6 \div 6 =$

10. $18 - 4^2 + 7 =$

11. $3(2 + 7) - 9 \cdot 7 =$

12. $3 + 8 \cdot 2^2 - 4 =$

13. $16 \div 2 \cdot 5 \cdot 3 \div 6 =$

14. $12 \div 3 \cdot 6 \cdot 2 - 8 \div 4 =$

15. $10 \cdot (3 - 6^2) + 8 - 2 =$

16. $6.9 - 3.2 \cdot (10 \div 5) =$

17. $32 \div [16 \div (8 - 2)] =$

18. $[10 + (2 \cdot 8)] - 2 =$

19. $180 - [2 + (12 \div 3)] =$

20. $\frac{1}{4}(3 \cdot 8) + 2 \cdot (-12) =$

21. $\dfrac{5 + [30 - (8 - 1)^2]}{11 - 2^2} =$

22. $\dfrac{3[10 - (27 - 9)]}{4 - 7} =$

23. $5(14 - 39 - 3) + 4 \cdot 1/4 =$

24. $[8 \cdot 2 - (3 + 9)] + [8 - 2 \cdot 3] =$

25. $162 - [6(7 - 4)^2] \div 3 =$

Operations with Signed Numbers

Adding and Subtracting Signed Numbers

Adding Signed Numbers

Like Signs		Different Signs	
Add the numbers & carry the sign		Subtract the numbers & carry the sign of the larger number	
(+) + (+) = +	(+3) + (+4) = +7	(+) + (–) = ?	(+3) + (–2) = +1
(–) + (–) = –	(– 2) + (– 3) = (– 5)	(–) + (+) = ?	(–5) + (+ 3) = –2

Subtracting Signed Numbers

Don't subtract! Change the problem to **addition** and change the sign of the **second** number. Then use the addition rules.

(+9) – (+12) = (+9) + (– 12)	(+4) – (–3) = (+4) + (+3)
(– 5) – (+3) = (– 5) + (– 3)	(–1) – (– 5) = (–1) + (+5)

Simplify. ***Do not use a calculator for this section.***

1. 9 + -4 =
2. -8 + 7 =
3. -14 – 6 =
4. -30 + -9 =
5. 14 – 20 =
6. -2 + 11 =
7. 20 – - 6 =
8. 7 – 10 =
9. -6 – -7 =
10. 5 – 9 =
11. -8 – 7 =
12. 1 – -12 =

Multiplying and Dividing Signed Numbers

If the signs are the same, the answer is *positive*

If the signs are different, the answer is *negative*

Like Signs		Different Signs	
(+)(+) = +	(+3)(+4) = +12	(+)(–) = –	(+2)(–3) = –6
(–)(–) = +	(–5)(–3) = +15	(–)(+) = –	(–7)(+1) = –7
(+)/(+) = +	(+3)/(+4) = +12	(+)/(–) = –	(+2)/(–3) = –6
(+)/(+) = +	(+3)/(+4) = +12	(–)/(+) = –	(–7)/(+1) = –7

Simplify. ***Do not use a calculator for this section.***

1. (-5)(-3) =

2. $\frac{-6}{2}$ =

3. (2)(4) =

4. $\frac{-12}{-4}$ =

5. (-1)(-5) =

6. $\frac{-16}{8}$ =

7. $\frac{-7}{-1}$ =

8. (3)(-4) =

9. $\frac{8}{-4}$ =

10. (-2)(7) =

11. $\frac{-20}{-1}$ =

12. (2)(-5) =

Rounding Numbers

Step 1: Underline the place value in which you want to round.

Step 2: Look at the number to the right of that place value you want to round.

Step 3: If the number to the right of the place value you want to round is less than 5, keep the number the same and drop all other numbers.

If the number to the right of the place value you want to round is 5 or more, round up and drop the rest of the numbers.

Example: Round the following numbers to the tenths place.

Tenths

1. 23.1246 — 2 is less than 5 so keep the 1 the same — 23.1

2. 64.2685 — 6 is greater than 5 so add one to the 2 — 64.3

3. 83.9721 — 7 is greater than 5 so add one to the 9

$$\begin{array}{r} {\scriptstyle 1} \\ 83.9721 \\ +\ \ 1 \\ \hline 84.0 \end{array}$$

84

Round the following numbers to the **tenths** place.

1. 18.6231 _____
2. 25.0543 _____
3. 3.9215 _____
4. 36.9913 _____
5. 15.9199 _____
6. 0.2658 _____
7. 100.9158 _____
8. 19.9816 _____
9. 17.1083 _____
10. 0. 6701 _____

Evaluating Expressions

Example
Evaluate the following expression when x = 5

Rewrite the expression substituting 5 for the x and simplify.

a. 5x = 5(5)= 25
b. -2x = -2(5) = -10
c. x + 25 = 5 + 25 = 30
d. 5x - 15 = 5(5) – 15 = 25 – 15 = 10
e. 3x + 4 = 3(5) + 4 = 19

Evaluate each expression given that: x = 5 y = -4 z = 6

1. 3x

2. $2x^2$

3. $3x^2 + y$

4. 2 (x + z) – y

5. y + 4

6. 5z – 6

7. xy + z

8. 2x + 3y – z

Evaluate each expression given that: $x = 5$ $y = -4$ $z = 6$

9. $5x - (y + 2z)$

10. $\frac{xy}{2}$

11. $x^2 + y^2 + z^2$

12. $2x(y + z)$

13. $5z + (y - x)$

14. $2x^2 + 3$

15. $4x + 2y - z$

16. $\frac{yz}{2}$

Combining Like Terms

What is a ***term***? The parts of an algebraic expression that are separated by an addition or subtraction sign are called ***terms***.
The expression $4x + 2y - 3$ has 3 terms.

What are ***like terms***? Terms with the same variable factors are called ***like terms***.
$2n$ and $3n$ are **like terms**, but $4x$ and $3y$ are not like terms because their variable factors x and y are different.

To simplify an expression, you must combine the like terms.

Examples: Simplify

1. $5x + 8x$
   $5x + 8x = (5 + 8)x = 13x$

2. $3y - 6y$
   $3y - 6y = (3 - 6)y = -3y$

3. $3x + 4 - 2x + 3$
   $3x - 2x + 4 + 3 = (3 - 2)x + 4 + 3 = x + 7$

4. $2b + 5c + 3b - 6c$
   $2b + 3b + 5c - 6c = (2+3)b + (5 - 6)c = 5b - c$

Practice: Simplify each expression

1. $6n + 5n$

2. $25b + 15b$

3. $37z + 4z$

4. $x - 5x$

6. $3n + 1 - 2n + 8$

6. $4f + 5f - 6 + 8$

7. $7t + 9 - 4t + 3$

8. $2k + 4 - 8k - 1$

9. $4r + 3r + 6y - 2y$

10. $8g + 9h - 4g - 5h$

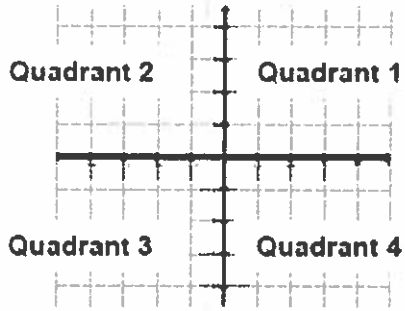
11. $2m + 3n - 4m + 5n$

12. $a + 5b - 2a + 9b$

Graphing

Points in a plane are named using 2 numbers, called a coordinate pair. The first number is called the x-coordinate. The x-coordinate is positive if the point is to the right of the origin and negative if the point is to the left of the origin. The second number is called the y-coordinate. The y-coordinate is positive if the point is above the origin and negative if the point is below the origin.

The x-y plane is divided into 4 quadrants (4 sections) as described below

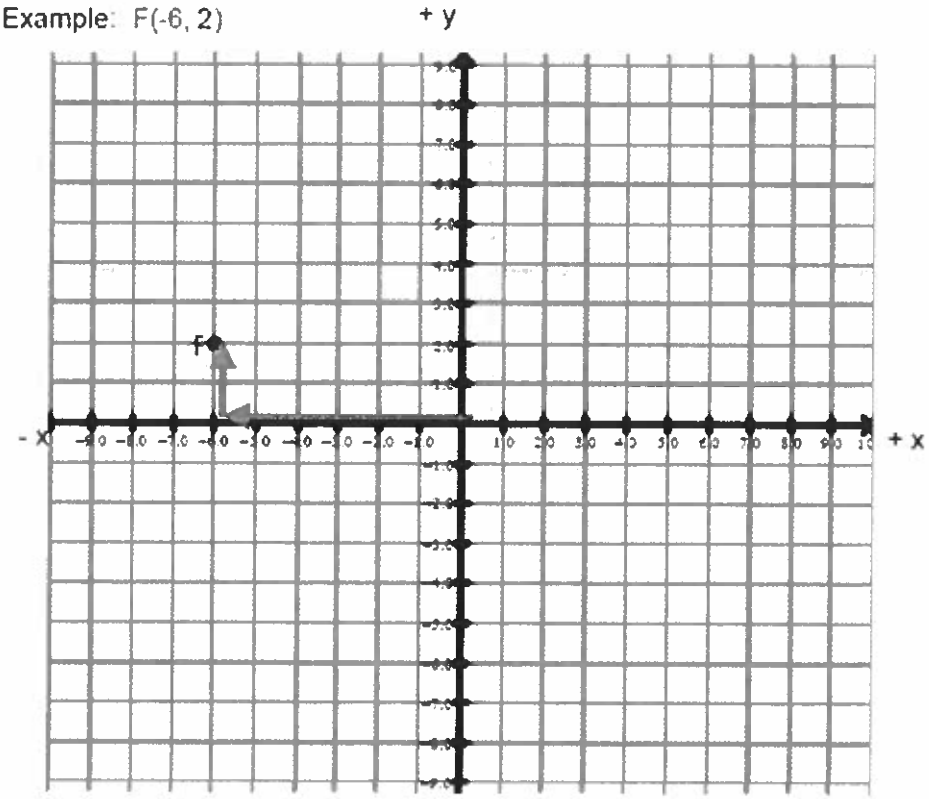


All points in Quadrant 1 has a **positive** x-coordinate and a **positive** y-coordinate (+ x, + y)
All points in Quadrant 2 has a **negative** x-coordinate and a **positive** y-coordinate (- x, + y)
All points in Quadrant 3 has a **negative** x-coordinate and a **negative** y-coordinate (- x, - y).
All points in Quadrant 4 has a **positive** x-coordinate and a **negative** y-coordinate (+ x, - y).

Plot each point on the graph below. Remember, coordinate pairs are labeled (x, y). Label each point on the graph with the letter given.

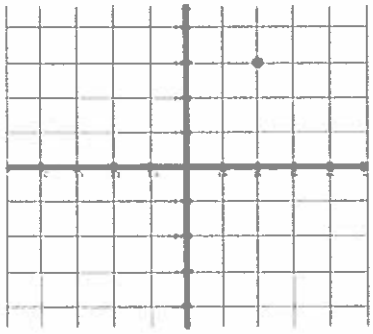
1. A(3, 4) 2. B(4, 0) 3. C(-4, 2) 4. D(-3, -1) 5. E(0, 7)

Example: F(-6, 2)

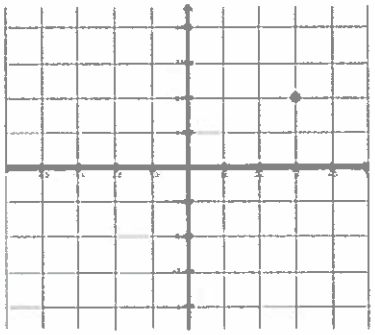


Determine the coordinates for each point below:

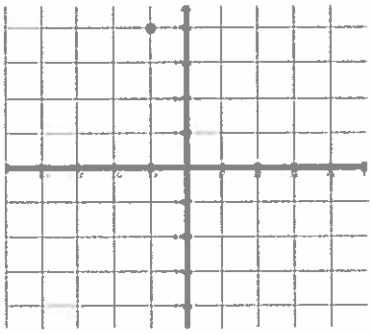
Example. (2 , 3)



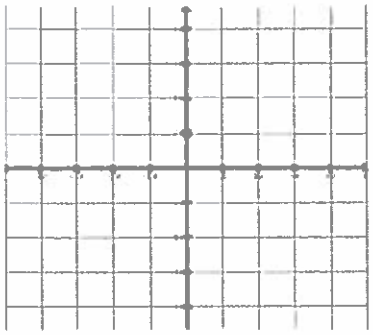
6. (____, ____)



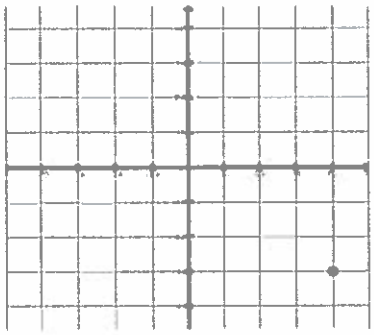
7. (____, ____)



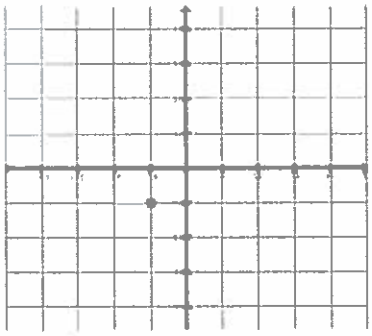
8. (____, ____)



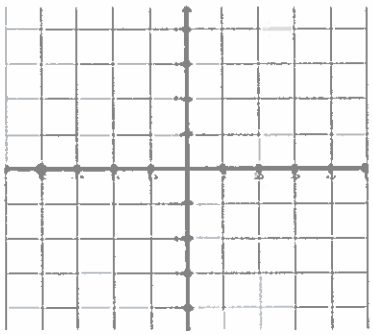
9. (____, ____)



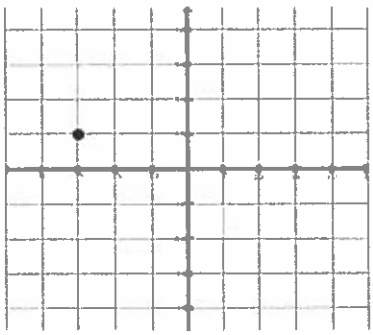
10. (____, ____)



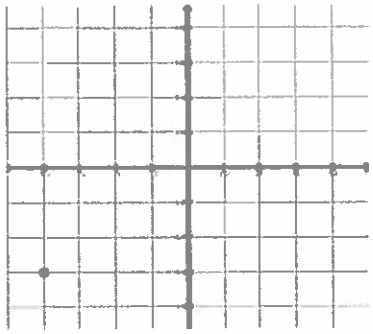
11. (____, ____)



12. (____, ____)



13. (____, ____)



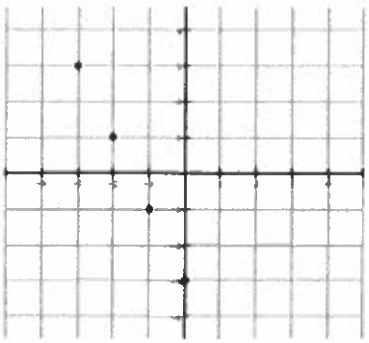
Complete the following tables. Then graph the data on the grid provided.

Example: y = -2x - 3

X	Y
-3	3
-2	1
-1	-1
0	-3

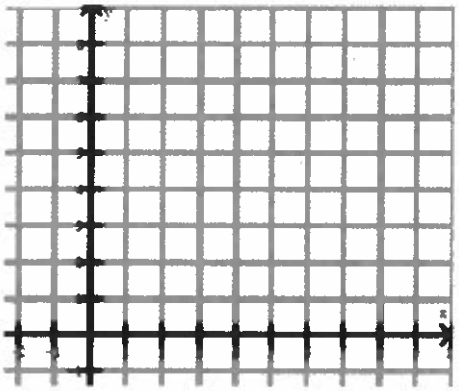
Work:

x = -3
y = -2(-3) - 3 = 6 - 3 = 3
Therefore (x, y) = (-3, 3)
x = -2
y = -2(-2) - 3 = 4 - 3 = 1
Therefore (x, y) = (-2, 1)
x = -1
y = -2(-1) - 3 = 2 - 3 = -1
Therefore (x, y) = (-1, -1)
x = 0
y = -2(0) - 3 = 0 - 3 = -3
Therefore (x, y) = (0, -3)



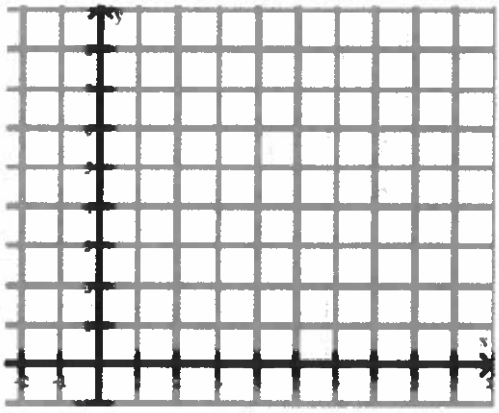
14. y = x + 2

X	Y
0	
1	
2	



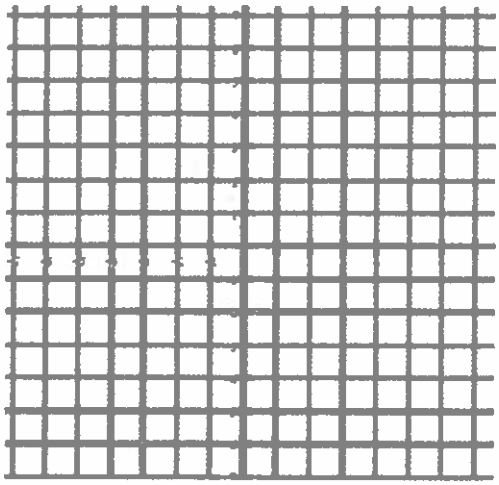
15. y = 2x

X	Y
0	
1	
2	
3	



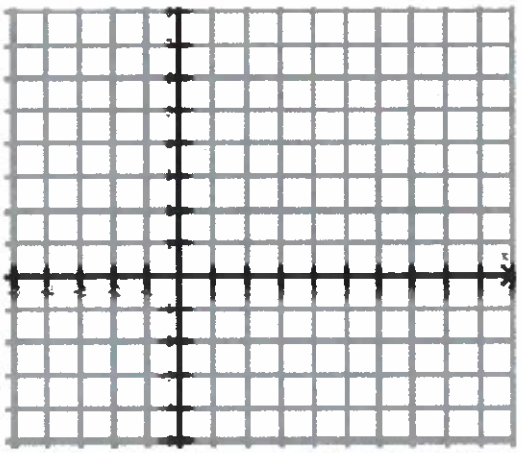
16. y = -x

X	Y
-3	
-1	
1	
3	



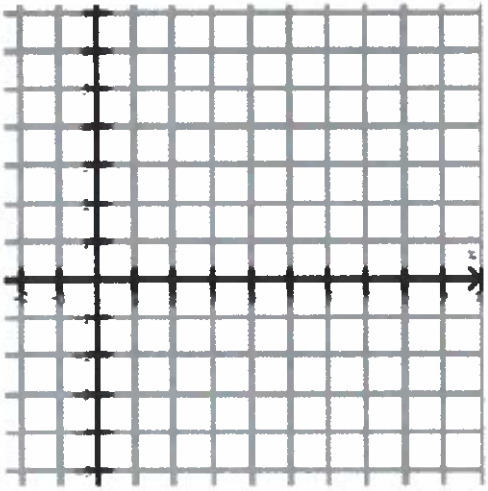
17. $y = 2x - 3$

X	Y
0	
1	
2	
3	



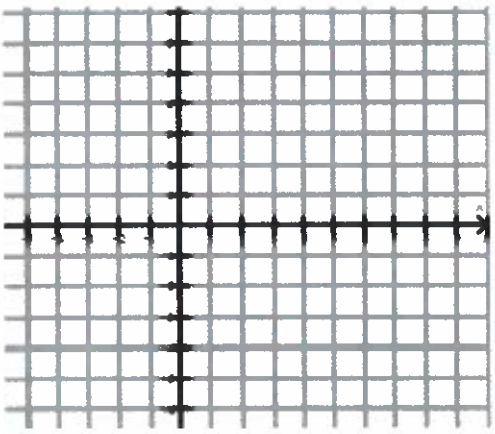
18. $y = \frac{1}{2}x + 1$

X	Y
0	
2	
4	
6	



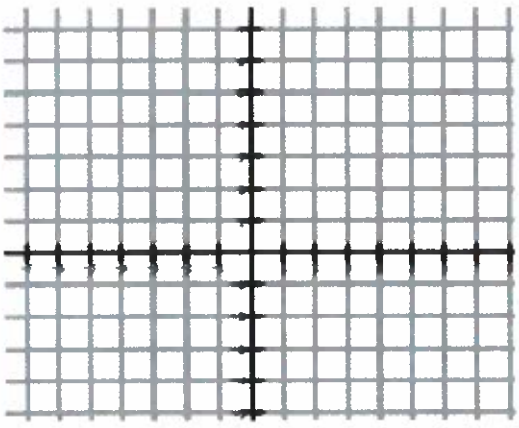
19. $y = \frac{3}{2}x - 1$

X	Y
-2	
0	
2	



20. $y = -\frac{2}{3}x + 1$

X	Y
-3	
0	
3	



Solving Equations

To solve an equation means to ***find the value*** of the variable. We solve equations by isolating the variable using opposite operations.

Opposite Operations:
Addition (+) & Subtraction (–)
Multiplication (x) & Division (÷)

Example:

Solve.

$3x - 2 = 10$
$+2 \quad +2$ — Isolate 3x by adding 2 to each side.

$\frac{3x}{3} = \frac{12}{3}$ — Simplify; Isolate x by dividing each side by 3.

$x = 4$ — Simplify

Please remember...
to do the same step on each side of the equation.

Always check your work by substitution!

Check your answer.

$3(4) - 2 = 10$ — Substitute the value in for the variable.
$12 - 2 = 10$ — Simplify
$10 = 10$ — Is the equation true? If yes, you solved it correctly!

Try These:

Solve each equation below.

1. $x + 3 = 5$

2. $w - 4 = 10$

3. $c - 5 = -8$

4. $3p = 9$

5. $-7k = 14$

6. $-x = -17$

7. $\frac{h}{3} = 5$

8. $\frac{m}{8} = 7$

9. $\frac{4}{5}d = 12$

10. $\frac{3}{8}j = 6$

11. $2x - 5 = 11$

12. $4n + 1 = 9$

13. $5j - 3 = 12$

14 $2x + 11 = 9$

15. $-3x + 4 = -8$

16. $-6x + 3 = -9$

17. $\frac{f}{3} + 10 = 15$

18. $\frac{a}{7} - 4 = 2$

19. $\frac{b+4}{2} = 5$

20. $\frac{x-6}{5} = -3$

Use substitution to determine whether the solution is correct.

21. $4x - 5 = 7$ $x = 3$

22. $-2x + 5 = 13$ $x = 4$

23. $6 - x = 8$ $x = 2$

24. $1 - x = 9$ $x = -8$

Inequalities

An inequality is a statement containing one of the following symbols:

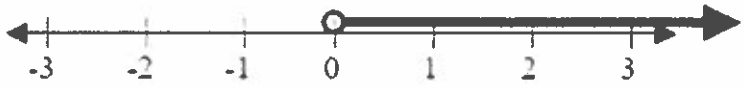
$<$ is less than $>$ is greater than $\leq$ is less than or equal to $\geq$ is greater than or equal to

An inequality has many solutions, and we can represent the solutions of an inequality by a set of numbers on a number line.

When graphing an inequality, $<$ and $>$ use an open circle ○ $\leq$ and $\geq$ use a closed circle ●

Examples:

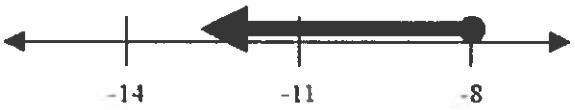
$x > 0$



$x < 0$

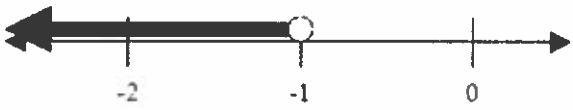
$x \geq -8$

$x \leq -8$



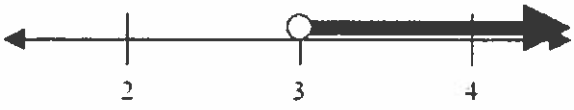
Practice: Write an inequality to represent the solution set that is shown in the graph.

1.



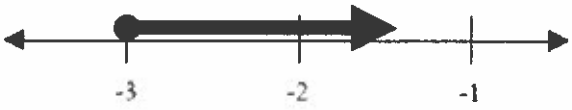
_____

2.



_____

3.



_____

4.

_____

Graph each of the following inequalities on a number line.

1. $x > 4$

2. $k \leq -6$

3. $5 > y$

4. $j < -\frac{1}{2}$

5. $-2 \leq t$

6. $w \leq 15$

Algebraic Translations • Translating from English to Mathematics

Key Words for Translations:

Add	Subtract	Multiply	Divide	Inequalities	Variable	=
Plus Sum Longer Than Greater Than Together Total Increased More Than In all And	Decreased Smaller Less than Difference Reduced Differ Fewer Shorter Than Minus Diminished	Per For Every For each Triple Multiplied Of Times Twice Double	One-third Quotient Divided by Each part Half as much Spilt equally	< is less than > is greater than ≤ is less than or equal to ≥ is greater than or equal to	a number some number quantity	Same as Equals Is Total Was Result Outcome Answer

Examples:

A) Translate into a mathematical expression: 3 less than 5 times some number

3 **less than** 5 **times** **some number**

to subtract from	multiply	use a variable

Translation: $5n - 3$

B) Translate into a mathematical statement: 3 less than 5 times some number is 22

3 **less than** 5 **times** **some number** **is** 22

to subtract from	multiply	use a variable	=

Translation: $5n - 3 = 22$

C) Translate into a mathematical statement: the quotient of a number and –4, less 8 is -42

The quotient of a **number** and -4, **less** 8 **is** -42

Divide a variable and a number	subtract	=

Translation: $\frac{n}{-4} - 8 = -42$

D) Translate into a mathematical statement: four plus three times a number is less than or equal to 18

four **plus** three **times** **a number** **is less than or equal to** 18

add	multiply	use a variable	≤

Translation: $4 + 3n \leq 18$

Practice: Translate each phrase into a mathematical statement

1. Seven plus five times a number is greater than or equal to -9

2. Eight times a number increased by 6 is 62

3. One half of a number is equal to 14

4. 6 less than 8 times some number

5. a number divided by 9

6. p decreased by 5

7. twice a number decreased by 15 is equal to -27

8. 9 less than 7 times some number is -6

9. the sum of a number and eight is less than 2

10. eleven increased by a number is -12

Matching – Put the letter of the algebraic expression that best matches the phrase.

_____ 1. two more than a number	a. $2x$
_____ 2. two less than a number	b. $x + 2$
_____ 3. half of a number	c. $2 - x$
_____ 4. twice a number	d. $x - 2$
_____ 5. two decreased by a number	e. $\frac{x}{2}$

Careful! Pay attention to subtraction. The order makes a difference. Translate to an algebraic expression, then reread to check!

Word Problems

Translate each word problem into an algebraic equation, using x for the unknown, and solve. Write a **"let x ="** for each unknown; write an equation; solve the equation; substitute the value for x into the let statements(s) to answer the question.

For Example:

Kara is going to Maui on vacation. She paid $325 for her plane ticket and is spending $125 each night for the hotel. How many nights can she stay in Maui if she has $1200?

Step 1: What are you asked to fine? Let variables represent what you are asked to find.

How many nights can Kara stay in Maui?

Let x = The number of nights Kara can stay in Maui

Step 2: Write an equation to represent the relationship in the problem.

$325 + 125x = 1200$

Step 3: Solve the equation for the unknown

$$\begin{aligned} 325 + 125x &= 1200 \\ -325 \quad & \quad -325 \\ 125x &= 875 \\ x &= 7 \end{aligned}$$

Kara can spend 7 nights in Maui

Word Problem Practice Set

1. A video store charges a one-time membership fee of $12.00 plus $1.50 per video rental. How many videos can Stewart rent if he spends $21?

2. Bicycle city makes custom bicycles. They charge $160 plus $80 for each day that it takes to build the bicycle. If you have $480 to spend on your new bicycle, how many days can it take Bicycle City to build the bike?

3. Darel went to the mall and spent $41. He bought several t-shirts that each cost $12 and he bought 1 pair of socks for $5. How many t-shirts did Darel buy?

4. Janet weights 20 pounds more than Anna. If the sum of their weights is 250 pounds, how much does each girl weigh?

5. Three-fourths of the student body attended the pep rally. If there were 1230 students at the pep rally, how many students are there in all?

6. Two-thirds of the Algebra students took the H S A the first time. If 60 students took the algebra H S A how many algebra students are there in all?

7. The current price of a school t-shirt is $10.58. Next year the cost of a t-shirt will be $15.35. How much will the tee shirt increase next year?

8. The school lunch prices are changing next year. The cost of a hot lunch will increase $0.45 from the current price. If the next year's price is $2.60, what did a hot lunch cost this year?

9. Next year the cost of gasoline will increase $1.25 from the current price. If the cost of a gallon of gasoline next year will be $4.50, what is the current price of gasoline?

10. Sarah drove 3 hours more than Michael on their trip to Texas. If the trip took 37 hours, how long did Sarah and Michael each drive?

Name: _____ Date: _____

Moon

Directions: Read the following nonfiction text on the moon. Then answer the questions that follow.

Vocabulary:
Satellite: an object that orbits another
Collide: crash into
Habitable: be able to live on
Orbit: a repeating path that one object in space rotates around another

The Moon.

Scientists believe that the moon was formed 4.5 billion years ago when a piece of rock collided with Earth. A piece of Earth broke off and along with others that were orbiting the moon, came together by melting and cooling to eventually form the moon. Rocks continued to collide with the surface of the moon for the next 500 million years. Scientists know this by looking at the surface of the moon. The surface of the moon can easily be seen using binoculars or a telescope. When observing the surface, it is easy to see the craters from the rocks hitting its surface. The moon lights up our night sky because of the sun. The sun's light reflects off of the moon giving us light at night.

How did the moon form?

What does the moon look like?

The moon is earth's only satellite. A satellite is something that orbits a planet. The moon is about the quarter of the size of earth with a diameter of 2,149 miles (3,475 kilometers). From the night sky, the moon looks like a white circle depending on its phase. Taking a closer look at the moon with a telescope, you can see craters. These craters have not eroded over time because the moon does not have an atmosphere or weather conditions. Without atmosphere or weather conditions, everything has remained untouched. Dark areas of the moon are known as seas, but they aren't really seas. They are huge areas of dark lava.

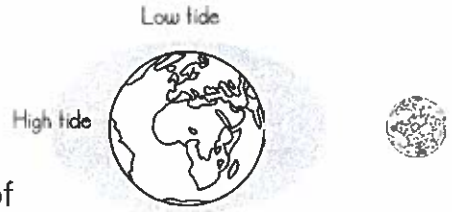
Describe what the moon looks like.

What is it like on the moon?

The moon is different from earth. The moon does not have an atmosphere, weather or oceans. Scientists do not believe it is habitable for human beings to live on the moon. Since the moon does not have an atmosphere, there are tremendous temperature swings from day to night with a daytime average of 253°F (123°C) and a nighttime temperature of minus 387° F (-233°C) at night. To put this into perspective, water boils at 212°F and freezes at temperatures below 32°F. These vast changes would make it very difficult for human beings to live. Other factors that would make it difficult are lighter gravity and lack of oxygen. The moon has approximately 1/6 the gravity that is on earth. That makes everything on the moon appear to be lighter. This would make walking on the moon very difficult. Human beings need oxygen to breathe. Without it, we would die. Lack of oxygen on the moon means that we would need to wear a special helmet or other device that would allow our lungs to constantly breathe in oxygen.

How is the moon different from earth?

What does the moon do?



The moon is a natural satellite that orbits earth. As the moon orbits, it is also rotating, because of this, the same side of the moon is always facing us. The orbiting moon does have an effect on earth. Tides are caused by gravitational forces between the moon and sun. Despite the sun being much bigger than the moon, because of its distance, the moon has a greater impact on tides. As the moon faces earth, it pulls on that side creating a high tide. The high tide can also be felt on the opposite side of earth. The levels of the tides depend on the phase of the moon. Without the moon, we would also lack light at night and the rotation of the earth would be much more wobbly.

How does the moon affect earth?

Name: _____ Date: _____

Moon Phases

Directions: Read the following nonfiction text on the moon. Then answer the questions that follow.

What is a lunar cycle?

The moon is always reflecting the sun's light from one half of it. Moon phases are the amount of light that we can see on earth from the sun's reflection off of the moon. There are eight different phases the moon goes through in one lunar cycle. A lunar cycle takes 29.5 days to change from New Moon to New Moon. Where the moon is in this cycle depends on how much light we will see on earth.

What is a lunar cycle?

What are moon phases?

The moon phases are the different ways the moon looks from earth over the course of a lunar cycle. As the moon orbits the earth, the side facing the earth is lit up from the sun. Depending on where the moon is in its orbit will determine the shape that is lit and what can be seen from earth.

In addition to the different shapes that can be seen throughout the lunar cycle, the moon also has times when it rises and sets, similar to the sun. The moon rise and set times correspond with the phase that it is in. You may have noticed that the moon is sometimes visible in the daytime. Using the chart below will help you to determine which phase the moon is in.

Phase	Moonrise	Moonset
New moon	Sunrise	Sunset
First quarter	Noon	Midnight
Full moon	Sunset	Sunrise
Last quarter	Midnight	Noon

What are the eight moon phases?

1) **New Moon**: The moon is directly between the sun and the earth. The side of the moon facing the earth is not illuminated so it cannot be seen. The moon rises at sunrise and sets at sunset.

2) **Waxing Crescent**: Waxing means that the moon is increasing the amount of light it is showing. The moon appears in the shape of a crescent and usually best seen in the west.

3) **First Quarter**: Sometimes called a half moon because half of the moon is visible in the night sky. The moon has completed a quarter or 25% of its lunar cycle. The moon rises at noon and sets at midnight.

4) **Waxing Gibbous**: A majority of the moon is lit with the shape increasing in size each night. The moon can be seen for a majority of the night.

5) **Full Moon**: The entire face of the moon can be seen from earth. It rises at sunset and sets at sunrise. The moon is halfway through the lunar cycle.

6) **Waning Gibbous**: The moon starts to lose some of its' light. The shape is similar to the Waxing Gibbous phase except the moon is losing light instead of gaining it.

7) **Last Quarter**: Also referred to as third quarter or half moon, this phase is similar to the first quarter except the opposite half of the moon is lit.

8) **Waning Crescent**: The moon is in the shape of a crescent and the crescent shape wanes or decreases in size until the moon enters the new moon phase. The lunar cycle then starts all over again.

To the naked eye, each phase appears to last about three days. Scientists can pinpoint when the exact full moon is. Looking at it closely, after that time, the moon will gradually get smaller as it enters into the waning gibbous phase.

What is the difference between the waxing and waning phases of the moon?

NAME: _____ 8th Grade Vocabulary

Use a dictionary or www.dictionary.com to write the definitions of each vocabulary word. Please use a separate sheet of paper to write them down.

These are vocabulary words that you will be learning about in the 8th grade.

1. Acid
2. Adaptation
3. Allele
4. Atom
5. Autotroph
6. Bacteria
7. Biotic
8. Calorie
9. Catalyst
10. Cell
11. Chemical bond
12. Chlorophyll
13. Chromosome
14. Climate
15. Cloning
16. Community
17. Compound
18. Conduction
19. Consumer
20. Control group
21. Data
22. Decomposer
23. Density
24. Digestion
25. Ecosystem
26. Electric current
27. Electromagnet
28. Element
29. Embryo
30. Energy pyramid
31. Enzyme
32. Evaporation
33. Evolution
34. Experiment
35. Fertilization
36. Force
37. Fossil fuel
38. Frequency

7th

NAME: _____ 8th Grade Vocabulary

39. Fusion
40. Gene
41. Genetics
42. Geologic time scale
43. Global warming
44. Gravity
45. Herbivore
46. Heterotroph
47. Homeostasis
48. Hypothesis
49. Inertia
50. Inference
51. Infrared radiation
52. Insulator
53. Ion
54. Isotope
55. Kingdom
56. Law of conservation of energy
57. Light year
58. Mass
59. Matter
60. Molecule
61. Motion
62. Mutation
63. Natural selection
64. Neutron
65. Nucleus
66. Omnivore
67. Organ
68. Osmosis
69. pH
70. Photosynthesis
71. Physical change
72. Planetary motion
73. Plate tectonics
74. Polymer
75. Potential energy
76. Precipitation
77. Producer
78. Proton
79. Punnett square
80. Radioactive decay

NAME:_____ 8th Grade Vocabulary

81. Reflection
82. Refraction
83. Reproduction
84. Respiration
85. Revolution
86. RNA
87. Rock cycle
88. Scientific method
89. Sedimentary rock
90. Sexual reproduction
91. Solar energy
92. Solution
93. Species
94. Speed
95. Static electricity
96. Stimulus
97. Sublimation
98. Succession
99. Surface tension
100. Suspension
101. Symbiosis
102. Temperature
103. Theory
104. Thermal energy
105. Thermometer
106. Transpiration
107. Tropism
108. Unbalanced forces
109. Valence electron
110. Velocity
111. Viscosity
112. Volume
113. Wavelength
114. Weathering
115. Work
116. X-ray
117. Absorption
118. Acid rain
119. Air pollution
120. Antibiotic
121. Aquifer
122. Atmosphere

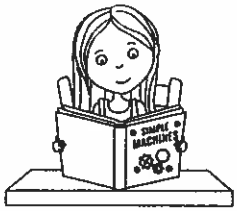
123. Balanced ecosystem
124. Bioaccumulation
125. Carbon cycle
126. Chlorofluorocarbon (CFC)
127. Composting
128. Deforestation
129. Doppler effect
130. Endangered species
131. Extinction
132. Fertilizer
133. Genetic engineering
134. Greenhouse effect
135. Hibernation
136. Landfill
137. Ozone layer
138. Photosynthetic organism
139. Radioactive waste
140. Renewable energy

Name: _____

Engineering Design Process

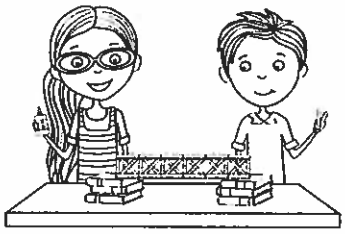
Directions: Read the informational text and answer the questions on the following page.

The engineering design process is a series of steps that engineers use to find a solution to a problem. Everyday people working on everyday problems use this process. Students in the classroom use these basic steps to write a paper and to complete other assignments.



People in the workplace also use this to develop solutions to problems in the work environment. We also use these steps when trying to plan a meal. The steps in the design process are the following: ask, research, plan, build, test, and share.

Let's put this concept into action. 1) Ask - How do you make a peanut butter and jelly sandwich? 2) Explore - Find and read recipes. Ask an adult to make the sandwich and observe the process. 3) Plan - Make a list of ingredients and write the directions. 4) Build - make the sandwich. 5) Test - Eat the sandwich. Does it taste good? Is there something you want to change in the recipe? Leave the recipe as is or implement the changes you wish to make. 6) Share - Share your recipe with your friends and explain how you created the recipe.



Engineers use this process in the same way we do, but the problems they are trying to solve might be more complex. By now you've probably realized that you use the engineering design process in a lot of your everyday tasks. From things like brushing your teeth to making your bed.

Now you know this process isn't just for engineers. We all benefit by using this process.

Engineering Design Process Reading Comprehension Name:_____

Direction: Read all of the questions and circle the answer.

Multiple Choice

1. **True or False:** The engineering design process can be used for everyday problems.
   a. True
   b. False

2. What is the engineering design process used for?
   a. Building a structure
   b. Finding solutions to all kinds of problems
   c. Solving problems at school
   d. Making a design

3. What does the word 'process' mean?
   a. Failure
   b. To stop
   c. Steps
   d. Problem

4. According to the text, which step should you do after testing?
   a. Plan
   b. Share
   c. Ask
   d. Build

Engineering Design Process Reading Comprehension Name:_____

Direction: Respond to the questions in complete sentences.

Free Response

Why do you think the engineering design process steps need to be done in order? Explain.

In your opinion, which step in the engineering design process is most important? Why?

MIDDLE SCHOOL SUMMER READING BOOK REPORT

HANDWRITTEN REPORT

Reports should be written in cursive that is neat and legible. Both the left and right margins should be observed and all paragraphs should be indented. You should skip a line in-between paragraphs. Use both sides of the paper.

COVER PAGE

Each report should have a separate cover page that contains your name, the date (month, year) and the following information:

- Title of Book
- Author
- Genre
- Publisher
- Copyright Year
- Number of Pages

INTRO PARAGRAPH

The introductory paragraph should focus on the author and include information such as personal background and awards or nominations. Avoid statements such as "This book report is about . . ." or "I am writing about . . ."

SUMMARY

The next one to two paragraphs should be a brief summary of the plot. You should state the book's title, and then describe the setting, main characters, and basic action of the book. DO NOT reveal the book's ending.

ANALYSIS

The next three to four paragraphs should be an analysis of the book. Consider discussing some of these questions:

- Which character did you like the best or least and why do you think that?
- What is the best or worst part of the book and why do you think that?
- What is the author trying to teach and how was this accomplished?
- How does this book compare to similar books or books by the same author?

Remember, each paragraph should focus on only one idea.

CONCLUSION

Your closing paragraph should state whether or not you recommend this book to others. Be sure to explain why you feel the way that you do. The conclusion could also include reviews of the book. For example, you may write "The New York Times calls this the year's best book." This shows that many other people enjoyed the book, too.

BOOK REPORT RUBRIC

Category: Handwriting and Formatting

Neatness and legibility of cursive writing:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Consistency of left and right margins:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Indentation of paragraphs:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Proper line spacing:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Cover Page

Inclusion of all required information:	[ ] Yes [ ] No
Accuracy of information provided:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Introductory Paragraph

Introduction of the author's personal background:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Avoidance of generic statements:	[ ] Yes [ ] No

Category: Summary

Inclusion of book's title:	[ ] Yes [ ] No
Description of setting, main characters, and basic action:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Analysis

Inclusion of analysis paragraphs:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Focus on one idea per paragraph:	[ ] Yes [ ] No
Answers of the analysis questions:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Category: Conclusion

Clear statement of recommendation:	[ ] Yes [ ] No
Explanation of reasoning for the recommendation:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

Overall Assessment:

Content organization and structure:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Grammar, spelling, and punctuation:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Depth of analysis and critical thinking:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor
Clarity and coherence of writing:	[ ] Excellent [ ] Good [ ] Fair [ ] Poor

ELA VOCABULARY

Write the definition AND an example for each of the following words. ***Handwrite*** *the definition and example. Please remember that you are looking up the literary definition for these words. For example, one dictionary definition for setting is "the articles of tableware for setting a place at a table", that answer would be incorrect! The literary definition for setting is "the location and time frame in which the action of the of a story takes place."*

Example:

Alliteration:
Definition: the use of words that begin with the same sound near one another
Example: wild and wolly or *a babbling brook*

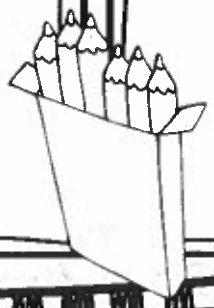
1. Alliteration
2. Analogy
3. Annotation
4. Argument
5. Assonance
6. Audience
7. Author's purpose
8. Bias
9. Characterization
10. Climax
11. Compare and contrast
12. Conflict
13. Connotation
14. Consonance
15. Dialogue
16. Diction
17. Figurative language
18. Flashback
19. Foreshadowing
20. Genre
21. Hyperbole
22. Imagery
23. Inference
24. Dramatic Irony
25. Metaphor
26. Mood
27. Onomatopoeia
28. Personification
29. Plot
30. Point of view
31. Prefix
32. Protagonist
33. Repetition
34. Resolution
35. Setting
36. Simile
37. Stanza
38. Symbolism
39. Synonym
40. Theme
41. Thesis
42. Tone
43. Verbal irony
44. Writing process (include description of all 5 steps)

Common Noun

Name:

What is a common noun? Explain in your own words.

Illustrate and label 2 common nouns.

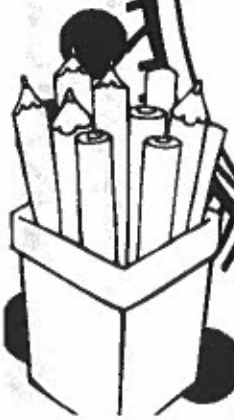


Write one sentence and one question each containing at least two common nouns. Underline the nouns.

Fill this box with as many common nouns as you can think of.

Can you write a sentence without a common noun? EXplain

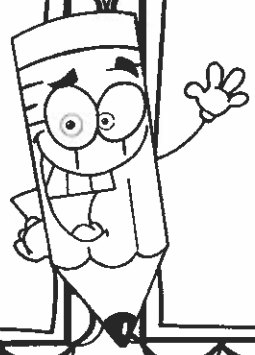
Create a memory technique (mnemonic device) that will help you identify a common noun.



Proper Noun

Name:

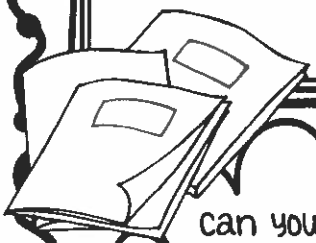
What is a proper noun? Explain using your own words.



Illustrate and label 2 proper nouns.

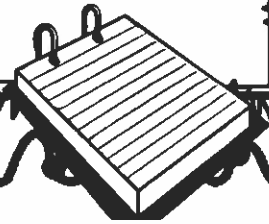
Write one sentence and one question each containing at least two proper nouns. Underline the nouns.

Fill this box with as many proper nouns as you can think of.



Can you write a sentence without a proper noun? Explain.

Create a memory technique (mnemonic device) that will help you identify a proper noun.



Abstract Noun

Name:

What is an abstract noun? Explain using your own words.

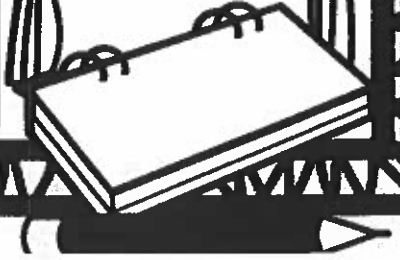
Illustrate and label 2 abstract nouns.

Write one sentence and one question each containing at least one abstract noun. Underline the nouns.

Fill this box with as many abstract nouns as you can think of.

Can you write a sentence without an abstract noun? EXplain.

Create a memory technique (mnemonic device) that will help you identify an abstract noun.



Plural Noun

Name:

What is a plural noun? Explain using your own words.

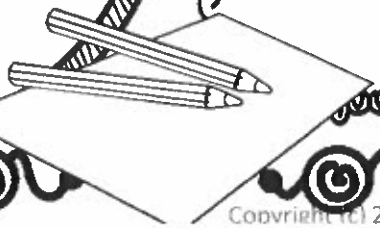
Illustrate and label 2 plural nouns.

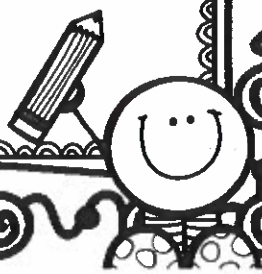
Write one sentence and one question each containing at least two plural nouns. Underline the nouns.

Fill this box with as many plural nouns as you can think of.

Can you write a sentence with a singular and plural noun? Explain

How do you change a singular noun to a plural noun? Explain, using at least 3 different examples.





possessive noun

Name:

What is a possessive noun? Explain using your own words.

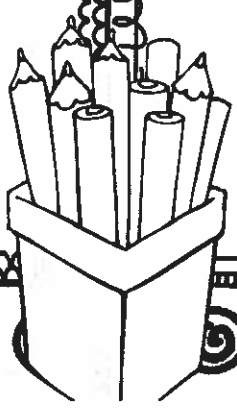
Illustrate and label 2 possessive nouns.

Write one sentence and one question each containing at least one possessive noun. Underline the nouns.

Fill this box with as many possessive nouns as you can think of.

Can you write a sentence with a plural and a possessive noun? EXplain.

Can a noun be both plural and possessive? Explain, using a sentence as proof.



Pronoun

Name:

What is a pronoun? Explain using your own words.

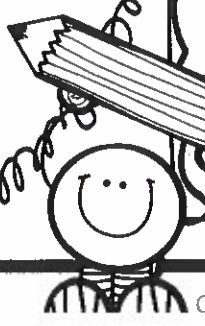
Illustrate and label 2 pronouns.

Write one sentence and one question each containing at least two pronouns. Underline the pronouns.

Fill this box with as many pronouns as you can think of.

Can you write a sentence with a proper noun and a pronoun? Explain

Write a sentence that uses two proper nouns. Then, write a second sentence where you replace those nouns with their pronouns.

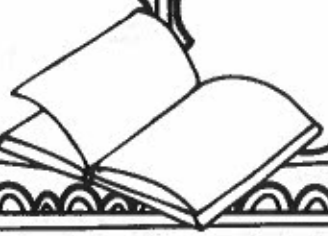


Verb

Name:

What is a verb? Explain using your own words.

Illustrate and label 2 verbs.



Write one sentence and one question each containing at least two verbs. Underline the verbs.

Fill this box with as many verbs as you can think of.

Can you write a sentence without a verb? Explain

Write one sentence that uses two verbs that are the opposite of each other.

Adjective

Name:

What is an adjective? Explain using your own words.

Illustrate and label 2 adjectives.

Write one sentence and one question each containing at least two adjectives. Underline the adjectives.

Fill this box with as many adjectives as you can think of.

Can you write a sentence without an adjective? Explain.

Write one sentence that uses two adjectives that are the opposite of each other.

Adverb

Name:

What is an adverb? Explain using your own words.

Illustrate and label 2 adverbs.

Write one sentence and one question each containing at least two adverbs. Underline the adverbs.

Fill this box with as many adverbs as you can think of.

Can you write a sentence with an adjective and an adverb? Explain

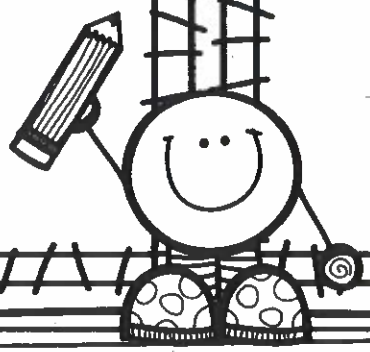
Write one sentence that uses two adverbs that are the opposite of each other.

Conjunction

Name:

What is a conjunction? Explain using your own words.

How could you illustrate a conjunction?



Write one sentence and one question each containing a conjunction. Underline the conjunctions.

Fill this box with as many conjunctions as you can think of.

Can you write a compound sentence without a conjunction? Explain.

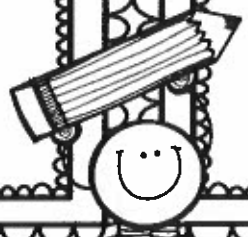
Write two simple sentences. Then, combine the sentences using a conjunction.

Interjection

Name:

What is an interjection? Explain using your own words.

How could you illustrate an interjection?



Write one sentence and one question each containing an interjection. Underline the interjections.

Fill this box with as many interjections as you can think of.

How do you punctuate a sentence with an interjection? Explain

Write two similar sentences – one using an interjection and one without.

Preposition

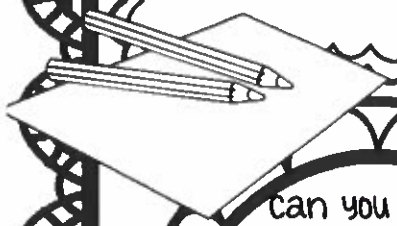
Name:

What is a preposition? Explain using your own words.

How could you illustrate a preposition?

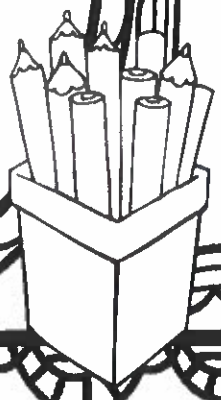
Write one sentence and one question each containing two prepositions. Underline the prepositions.

Fill this box with as many prepositions as you can think of.



Can you give directions to a place without using a preposition? Explain

Write two similar sentences – one using a preposition and one without.



Parts of Speech Concept Poster
Self-Assessment Checklist

Name:_____ Concept:_____

Read the criteria given. For each category, place a checkmark in the appropriate box. If you have rated yourself a "sometimes" or "never" in a particular category, go back and make the necessary improvements on your poster before handing in.

Criteria	Always	Sometimes	Never
1. My answers were correct. I know this because I did work to ensure I knew the answer; and asked for help if I did not.			
2. I used proper grammar when answering all questions.			
3. My pictures and illustrations were well-drawn and I explained what was in each picture.			
4. My explanations were clear and easy to understand.			
5. I proofread all of my answers to check for proper spelling and punctuation so my explanations were clear.			
6. I was neat and took care to add visual appeal to my poster.			
7. I went back to my poster and made improvements where I thought I could do better.