DynaNotes Grade 6 Math Eligible TEKS Review & Intervention Program
Student Activity Book (includes 106 activities) – *Four Sample Answer Key Pages*

C1, Factors, Expressions, and Equations
Skill Builder

Name _____ Date _____

Activity 20 – Prime Factorization and Order of Operations

Complete each factor tree. Express the prime factorization of the number without and with exponents.

1. 180 → 10, 18 → 2, 5, 2, 9 → 3, 3

2. 375 → 5, 75 → 3, 25 → 5, 5

3. 96 → 32, 3 → 5, 3

Factor trees may vary. Results do not vary.

Prime Factorization:
(without exponents)
$180 = 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5$
(with exponents)
$180 = 2^2 \cdot 3^2 \cdot 5$

Prime Factorization:
(without exponents)
$375 = 3 \cdot 5 \cdot 5 \cdot 5$
(with exponents)
$375 = 3 \cdot 5^3$

Prime Factorization:
(without exponents)
$96 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$
(with exponents)
$96 = 2^5 \cdot 3$

Generate equivalent expressions by completing all operations in the correct order (GEMDAS).

4. $4 - 2 \div 6 \cdot 6 \cdot 3$
$4 - 2 + 1 \cdot 3$
$4 - 2 + 3$
$2 + 3$
5

5. $(2)5^2 - (\frac{1}{2} + \frac{1}{2})$
$(2)5^2 - 1$
$(2)(25) - 1$
$50 - 1$
49

6. $3 - 5 + \frac{(2+8)}{(1+4)}$
$3 - 5 + \frac{(2+8)}{(1+4)}$
$3 - 5 + \frac{10}{5}$
$3 - 5 + 2$
$-2 + 2$
0

7. $[4 + 3(3-3)] - 10 \div 2$
$[4 + 3(0)] - 10 \div 2$
$[4 + 0] - 10 \div 2$
$4 - 10 \div 2$
$4 - 5$
-1

Match each integer at left with its prime factorization at right by writing one letter on each blank. *Hint: Create and use factor trees as needed.*

	Number:		Prime Factorization:
C	**8.** 396	A.	$2^2 \cdot 3 \cdot 5^2$
B	**9.** 1,500	B.	$2^2 \times 3 \times 5^3$
F	**10.** 290	C.	$2^2 \cdot 3^2 \cdot 11$
A	**11.** 300	D.	$3^2 \cdot 5^2 \cdot 7$
E	**12.** 126	E.	$2 \times 3^2 \times 7$
D	**13.** 1,575	F.	$2 \cdot 5 \cdot 29$

Match each expression at left with its equivalent value at right by writing one letter on each blank. *Hint: Use the correct order of operations.*

	Expression:		Result:
B	**14.** $3 + 8 \div 4 \cdot 3 - 1$	A.	24
D	**15.** $7^3(10 - 11 + 1) - (4 - 2)$	B.	8
F	**16.** $4(6 - 1) - 2^2(5 - 3)$	C.	26
A	**17.** $2[10 - (8 - 2) + 2^3]$	D.	–2
C	**18.** $[3(6 - 2) - 4] + 3 \cdot 6$	E.	–10
E	**19.** $2 \cdot (5 + 6) - 2^5$	F.	12

C2, Positive and Negative Integer Operations
Skill Developer

Name _____ Date _____

Activity 31 – Integer Operations Word Problems

Solve each of the following real-world problems. *Hint: An "algorithm" is a mathematical process. For example, to add two negative numbers (or to subtract a positive value from a negative value), you would add the absolute values of both numbers together and write the result with a negative sign. If you cannot recall the algorithm to solve a problem, sketch a quick number line and think about what makes sense. You might change the numbers in the problem to easier ones, such as ±2 and ±3, to help determine the correct algorithm.*

1. On Monday, Tuesday, Wednesday, and Thursday, the Taco Hut had the same amount of profit, which is defined as revenue minus costs. On Monday, the Taco Hut collected $245 in revenue and had costs totalling $262. What was the Taco Hut's total profit for Monday through Thursday?

Monday's profit:
$245 - 262 = -(262 - 245) = -\$17$
$\begin{array}{r} 262 \\ -245 \\ \hline 17 \end{array}$

Total profit:
$(-17)(4) = -\$68$
$\begin{array}{r} 17 \\ \times 4 \\ \hline 68 \end{array}$

2. Jaime has $1,050. He pays $35 each for 2 violin lessons and earns $15 for babysitting and $20 in allowance for doing his chores at home. How much money does Jaime have now?

$1,050 - 2(35) + 15 + 20 =$
$1,050 - 70 + 15 + 20 =$
$980 + 15 + 20 =$
$995 + 20 = \$1,015$

3. Paulina, Gabby, and Eryck are scuba diving. Their dive computers record their maximum depths. Paulina's maximum depth was –6 meters. Gabby dove 3 times as deep as Eryck dove. Eryck dove half as deep as Paulina dove. How deep did Gabby dive?

Eryck: $-6 \div 2 = -3$ meters
Gabby: $(-3)(3) = -9$ meters

4. Mary recorded the following temperatures one day when a cold front blew in from the north. What is the range (maximum temperature minus minimum temperature) of her data set?

Time	6 a.m.	noon	6 p.m.	midnight
Temperature (°F)	25	–5	–8	–12

Maximum temperature: 25 °F
Minimum temperature: –12 °F
Range = Maximum – Minimum
$25 - (-12) = 25 + 12 = 37$ °F

5. Bell City records the number of residents who move in and out of the city each year. Find the change in the total number of residents in Bell City each year to complete the table.

Year	2014	2015	2016
Moved In	1,350	925	1,009
Moved Out	1,100	2,350	2,011
Change (In – Out)	250	–1,425	–1,002

If Bell City had 73,599 residents at the beginning of 2014, how many residents lived in Bell City at the end of 2016?

$73,599 + 250 - 1,425 - 1,002 =$
$73,849 - 1,425 - 1,002 =$
$73,849 - (1,425 + 1,002) =$
$73,849 - 2,427 =$
$71,422$

C2, Understanding Equations, Inequalities
Skill Extender

Name _____ Date _____

Activity 56 – Equalities and Inequalities Folded Paper Project

Follow the instructions below to create a folded paper project that explores equations and inequalities.

Student Instructions for "Equations and Inequalities" Folded Paper Project:

- Use five colors: one for each symbol: $<, \le, =, \ge, >$.
- Take a blank sheet of paper and fold it long-ways to ~1.5" short of the bottom. Write the title "Equations & Inequalities" in the bottom space as indicated in the example at right.
- Cut the top folded portion into five equal parts. Use the sections to represent each symbol in order from left to right.
- At the top (with the flaps still folded), write each symbol and its definition.
- Unfold each section.
- In the top portion of each unfolded flap, write one of the following statements which relate to temperature, T. Represent all solutions using a number line (these phrases are given out of order):
  T is warmer than –1°F. T is –1°F. T is at least –1°F. T is –1°F or colder. T is colder than –1°F.
- In the bottom portion of each unfolded flap, write an equation or inequality showing whether –2°F, –1°F, and 0°F are or are not solutions to the equation or inequality.
- Write your name on the back of your folded paper project.

Find a partner who has also completed his/her project. Compare your work to be sure your representations are correct.

Game: Make up an inequality that is much more complex, such as $-18x \div 5 < 10 + 2x$ (limit total number of terms to 5 maximum). Show the inequality to your partner and give your partner 5 seconds to make a guess at a solution. Determine together whether the guess is or is not a solution. If the guess is correct, your partner gets a point. If not, you do. Take turns creating complex inequalities, making fast guesses, checking guesses, and earning points until your teacher says the time is up. The student with the most points wins.

Answers will vary.

Example (Three sections are shown unfolded and two sections are shown folded.)

T is colder than –1°F.
–4 0 4

–2°F is a solution. –1°F and 0°F are **not** solutions.

$\le$ less than or equal to

{phrase and number line for "=" here}

{state whether –2, -1, and 0 are solutions or not}

{phrase and number line for ">" here}

$\ge$

{define symbol}

{state whether –2, -1, and 0 are solutions or not}

Equations & Inequalities

C3 Unit Conversions
Skill Checker

Name _____ Date _____

Activity 65 – Unit Conversions Checkup

1. Juan wants to convert 20 gallons into quarts. Which of the following is NOT an appropriate method to convert this volume?

A $20 \text{ gal} \cdot \frac{4 \text{ qt}}{1 \text{ gal}}$
B $\frac{20 \text{ gal}}{x \text{ qt}} = \frac{1 \text{ gal}}{4 \text{ qt}}$
Ⓒ $\frac{20 \text{ gal}}{4 \text{ qt}} = \frac{1 \text{ gal}}{x \text{ qt}}$
D All of the above are appropriate.

2. Victor measures his mass on a digital scale in kilograms. What unit rate can he multiply his mass by to convert it from kilograms to grams?

Ⓐ $\frac{1,000 \text{ g}}{1 \text{ kg}}$
B $\frac{1,000 \text{ kg}}{1 \text{ g}}$
C $\frac{1 \text{ kg}}{1,000 \text{ g}}$
D $\frac{100 \text{ g}}{1 \text{ kg}}$

3. One metal beam weighs 7,000 pounds. What is the total weight of 3 metal beams in tons?

A 42,000,000 T
B 21,000 T
Ⓒ 10.5 T
D 3.5 T

4. Toni drives 2.5 miles each day from her office to the gym where she boxes. How far is the gym from the office in yards? Record your answer and fill in the bubbles. Use the correct place value and sign.

4 4 0 0 .

5. Who has the most paint left in his/her paint can?

Ⓐ Mindy
B Ann
C Tomas
D Freddy

Paint Remaining

Name	Volume
Mindy	$1\frac{1}{2}$ pt
Ann	$\frac{1}{4}$ qt
Tomas	2 c
Freddy	$\frac{1}{8}$ gal

6. Rachel cuts 2.54 centimeters of length from Mick's hair. How many millimeters did she cut?

A 0.254 mm
B 2.54 mm
Ⓒ 25.4 mm
D 254 mm

7. Mr. Ward has 260 fluid ounces of soup. He has containers that can hold up to 4 cups each. What is the minimum number of containers he will need to hold all the soup?

A 8
Ⓑ 9
C 33
D 520

8. Find the total volume of the ingredients shown in the table in pints. Record your answer and fill in the bubbles. Use the correct place value and sign.

7 . 5

milk	1 qt
cream	3 c
water	4 pt

Grade 6 Math Program Materials: 1 Teacher CD (Lessons/Warm-ups, Explicit Instruction, TEKS Alignment, Answer Key) + 30 Student Course Notes + 1 Reproducible Activity Book[1]

Student Activity Books
(for program users only)

Order Code, Price: 06MESRIP, $278.50[2]	**Subscriber Code, Price:** 06MESRIPs, $100.00[3]
06MESRIP-AB	$9.50