lesson one - student resource sheet

Lesson Objective: Add and subtract integers.

Vocabulary Box

integers — The set of numbers containing 0, the natural numbers, and all the negatives of the natural numbers. Examples: –7, 0, and 4.

opposites — Two numbers that lie the same distance from 0 on the number line. Examples: 6 and –6, –13 and 13, and $\frac{2}{3}$ and $-\frac{2}{3}$.

additive inverse — For any number *x,* the number that, when added to *x,* equals 0. Examples: The additive inverse of 5 is –5, of –11 is 11, of 4.3 is –4.3, and of 0 is 0.

additive identity — The number 0, because the sum of 0 and any number is that number. Examples: 2 + 0 = 2; –9 + 0 = –9.

Guided Practice

You will complete the following practice problems with your partner. Then your teacher will review the answers. Make sure you show all your work.

I. Directions: Use your two-color counters. Find each sum.

1. 4 + 8 = _____

2. –2 + (–5) = _____

3. –8 + 6 = _____

4. –4 + 11 = _____

II. Directions: Rewrite each difference as an equivalent sum by adding the opposite of the subtracted number. Then find each answer.

Example: $2 - (-10) =$ ____2 + 10_____ = __12___

1. $5 - (-12) =$ _____ = _____

2. $1 - 17 =$ _____ = _____

3. $-6 - 4 =$ _____ = _____

4. $-12 - (-7) =$ _____ = _____

Summary/Closure

A. Vocabulary Words

Directions: Unscramble each vocabulary word. Then write the definition in your own words, and give an example.

diieadtv ietdtniy —

adtveiid iersnev —

rsegenti —

tesosiopp —

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B. Summarize What We Learned Today

Directions: Write three sample addition problems and six sample subtraction problems and solve them. Then explain in words how to add and subtract integers. You will use this explanation as a personal reminder.

lesson two - student resource sheet

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additive identity — The number 0, because the sum of 0 and any number is that number. Examples: 2 + 0 = 2; –9 + 0 = –9.

Independent Practice

Please complete the following practice problems on your own. Your teacher will review the answers. Make sure you show all your work.

I. Directions: Find the following sums.

1. 5 + (–9) = _____
2. –8 + (–6) = _____
3. –7 + 11 = _____
4. 4 + (–4) = _____
5. –18 + 0 = _____
6. –47 + (–63) = _____
7. –105 + 267 = _____

II. Directions: Change each subtraction problem into an equivalent addition problem. Then find the answer.

1. 9 – (–6) = _____ = _____
2. –4 – 7 = _____ = _____
3. –8 – (–17) = _____ = _____
4. 1 – 5 = _____ = _____
5. 32 – (–12) = _____ = _____
6. –16 – 11 = _____ = _____
7. –20 – (–5) = _____ = _____
8. 177 – 241 = _____ = _____

III. Directions: Draw lines to connect the problems that have the same answer.

A. 4 + 7	B. 4 + (–7)	C. –4 + (–7)
D. –4 + 7	E. 7+ (–4)	F. –4 – (–7)
G. 4 – 7	H. 7 – (–4)	I. –7 – (–4)
J. –4 – 7	K. –7 – 4	L. 4 – (–7)

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1. Add: $-3\frac{3}{8}+\left(-1\frac{3}{4}\right)$

2. Subtract: $-2\frac{2}{5}-\left(-7\frac{1}{5}\right)$

Problem Solving

1. In Ohio, the residents have experienced some extreme weather in the past 150 years. On July 21, 1934, the temperature rose to a record 113°F in Gallipollis (sounds like *galla-police).* The residents of Milligan braved temperatures of –39°F on February 10, 1899.

   Find the difference between Ohio's record high temperature and its record low temperature.

2. One share of stock for the Diamond Trading Card Company cost $2.50 when the stock market opened on Monday morning. At noon the price of a share had decreased by $1\frac{1}{4}$ dollars. At 2:00 pm the stock rose $3\frac{1}{2}$ dollars, and at the close of the market it was down again by $1\frac{3}{4}$ dollars. What was the final cost of a share of stock on Monday?

1. –8 + 13 = _____

2. 12 – (–9) is equal to which of the following? _____

   A) 12 – 9
   B) 12 + 9
   C) 12 + (–9)
   D) –12 + 9

3. –43 – 27 = _____

lesson three - student resource sheet

Lesson Objective: Multiply integers with like and unlike signs.

Vocabulary Box

product — The result when two or more numbers are multiplied. Example: In the problem 12 x 3 = 36, 36 is the product.

like signs — Signs that are the same. Examples: Positive-positive or negative-negative.

unlike signs — Signs that are different. Examples: Positive-negative or negative-positive.

Integer Rules for Multiplication

Multiplying Integers with the ***Same Sign***

If the signs are the same, the product is positive.

4 x 3 = 12	–4 x (–3) = 12

Multiplying Integers with ***Different Signs***

If the signs are different, the product is negative.

–2 x (10) = –20	2 x (–10) = –20

Multiplying Integers ***by Zero***

The product of any number and 0 is 0.

0 x 9 = 0	(–12) x 0 = 0

Guided Practice

Please complete the following practice problems. Then your teacher will review the answers. Make sure you show all your work.

I. Find each product.

1. 6 x 4 = _____
2. 5 x (–2) = _____
3. –3 x 7 = _____
4. –9 x (–1) = _____
5. 13 x 0 = _____
6. –8 x (–2) = _____

II. Evaluate 3*n* for each value of *n*. (Remember "3*n*" means 3 times *n.)*

1. *n* = 3
2. *n* = –2
3. *n* = 11
4. *n* = –8
5. *n* = –12
6. *n* = 6

Summary/Closure

A. Vocabulary Words

Directions: Each sentence is a **false** statement. Rewrite the sentence to make the statement true.

1. A product is the result when one number is divided by another number.

_____

_____

2. When integers are multiplied, if the signs are different, the product is positive.

_____

_____

3. When integers are multiplied, if the signs are the same, the product is negative.

_____

_____

4. The product of any number and 0 is 1.

_____

_____

5. Zero is a positive number.

_____

_____

B. Summarize What We Learned Today

Directions: Write three sample problems and solve them. Then explain in words or symbols how to multiply integers. You will use these problems as a study guide and as helpful hints.