

Warm-Up

To your friend who was absent yesterday, how would you explain how to do the following problem:

$$|12| - |-3|$$

Zero Pair/Additive Inverse (TOC 4)

Zero Pair (or Additive Inverse)→

A number and its opposite
added to equal zero

- ex: 7 & -7; -23 & 23
- Write the definition of **additive inverse**

Adding Integers with 2-Color Counters

2-Colored Counters

Yellow → Positive 1

Red → Negative 1

- Write how to create a **zero pair** with 2-color counters in your own words.

How would you create a zero pair with 2-colored counters?

WHEN IS THE SUM
OF 2 INTEGERS
NEGATIVE???

Adding Integers: Inquiry Lab Pg 15

Football In football, forward progress is represented by a positive integer. Losing yardage is represented by a negative integer. On the first play, a team lost 5 yards. On the second play, the team lost 2 yards. What was the team's total yardage on the two plays? Find out in Investigation 1.

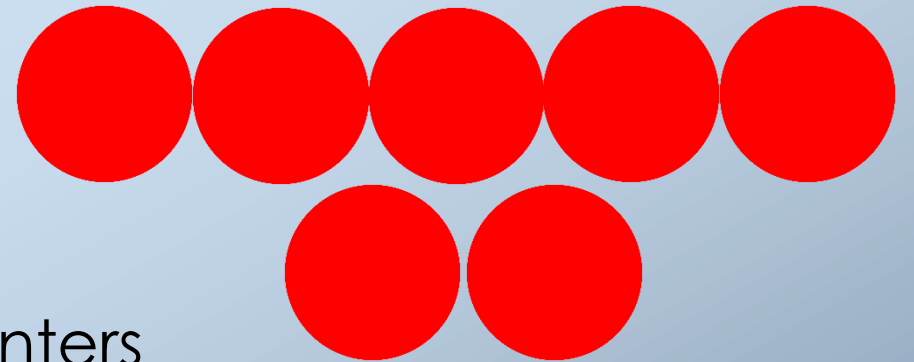
Expression: $-5 + (-2) = -7$

Represent with 2-Color Counters:

1st: add 5 negative (red) counters

2nd: add 2 negative (red) counters

3rd: Take out zero pairs and total the counters



The team lost 7 yards.

Adding Integers: Inquiry Lab Pg 16 (5 min)

- Do investigation 2 with your elbow partner.
- Questions on investigation 2?
- Be sure to model it out with your counters.

Adding Integers: Inquiry Lab Pg 17-18

- **Do 1-7 odd on pg 17**
 - Be sure to draw out your 2-colored counters
 - Once done check your answers with the key.
- **Do 9-13 & 18 on pg 18**
 - What patterns do you notice?
 - When is the sum of 2 integers negative? Positive?

Finished? Work on your homework (Pg. 22 #1-5; Pg.23 #7-10)



Collaborate

1-8. See students' work for diagrams.

Work with a partner. Find each sum. Show your work using drawings.

1. $5 + 6 = 11$ _____



2. $-3 + (-5) = -8$ _____



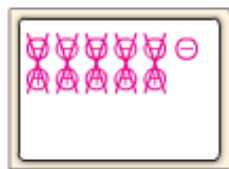
3. $-5 + (-4) = -9$ _____



4. $7 + 3 = 10$ _____



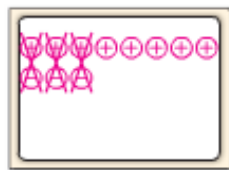
5. $-6 + 5 = -1$ _____



6. $-2 + 7 = 5$ _____



7. $8 + (-3) = 5$ _____



8. $3 + (-6) = -3$ _____





Analyze

Work with a partner to complete the table. The first one is done for you.

	Addition Expression	Sum	Sign of Addend with Greater Absolute Value	Sign of Sum
	$5 + (-2)$	3	Positive	Positive
9.	$-6 + 2$	-4	Negative	Negative
10.	$7 + (-12)$	-5	Negative	Negative
11.	$-4 + 9$	5	Positive	Positive
12.	$-12 + 20$	8	Positive	Positive
13.	$15 + (-18)$	-3	Negative	Negative

14. **Identify Structure** Write two addition sentences where the sum is positive. In each sentence, one addend should be positive and the other negative.

Sample answer: $6 + (-5) = 1$, $-10 + 18 = 8$

15. Write two addition sentences where the sum is negative. In each sentence, one addend should be positive and the other negative.

Sample answer: $-8 + 5 = -3$, $2 + (-6) = -4$

16. Write two addition sentences where the sum is zero. Describe the numbers.

Sample answer: $3 + (-3) = 0$, $-17 + 17 = 0$; In each addition sentence, the numbers have the same absolute value but different signs.



Reflect

17. **Justify Conclusions** A contestant scores -100 points in the first round, -250 points in the second round, and 500 points in the third round. Find the contestant's total number of points. Explain your reasoning.

150; Sample answer: Find the sum of -100 and -250 . Then add 500 to this value.

18. **WHEN** is the sum of two integers a negative number?

Sample answer: The sum is negative if both integers are negative or if the addend with the greater absolute value is negative.

Closing

WHEN IS THE SUM OF 2
INTEGERS NEGATIVE???