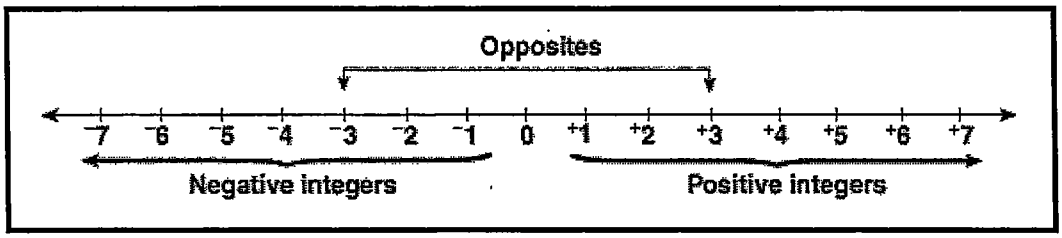
Activity 2-1: **Introduction to Integers** Name:

We are about to take a trip. We are now leaving the land of positive numbers. Not for good, but we want to become world travelers and so we are going to pack our bags and go to the land of Negative Numbers! Come join us on this magical journey.

The number line can be used to represent the set of integers. Look carefully at the number line below and the definitions that follow.



Definitions

- **The number line goes on forever in both directions.** This is indicated by the arrows.
- Whole numbers greater than zero are called **positive integers.** These numbers are to the right of zero on the number line.
- Whole numbers less than zero are called **negative integers.** These numbers are to the left of zero on the number line.
- The integer **zero is neutral.** It is neither positive nor negative.
- The **sign** of an integer is either positive (+) or negative (-), except zero, which has no sign.
- Two integers are **opposites** if they are each the same distance away from zero, but on opposite sides of the number line. One will have a positive sign, the other a negative sign. In the number line above, $^{+}3$ and $^{-}3$ are labeled as opposites.

Activity 2-2: **Introduction to Integers** Name:

Integers – the whole numbers and their opposites (positive counting numbers, negative counting numbers, and zero)	5, 7, 0, –5, –7, –200
Opposite of a number – a number and its opposite are the same distance from zero on the number line	–7 and 7 are opposites
Absolute value – the number of units a number is from zero on the number line without regard to the direction	The absolute value of –6 is 6. The sign for absolute value is two parallel lines: $\lvert -6 \rvert = 6$

1-10. Place the correct letter corresponding to each integer on the number line below.

-10 0 +10

A. –5	B. +2	C. –7	D. 4	E. –9
F. –1	G. +6	H. –3	I. 0	J. –6

Write an integer to represent each situation.

11.	lost $72		12.	gained 8 yards		13.	fell 16 degrees	

Name the opposite of each integer.

14.	26		15.	–83		16.	+100	

Compare the following integers. Write <, >, or =.

17.	–5 ___ 8	18.	12 ___ –13	19.	–10 ___ –21	20.	–7 ___ –11

Find the absolute value of the following numbers.

21.	$\lvert +11 \rvert$		22.	$\lvert -6 \rvert$		23.	$\lvert -55 \rvert$		24.	$\lvert 0 \rvert$	
25.	$\lvert 28 \rvert$		26.	$\lvert -203 \rvert$		27.	$\lvert +75 \rvert$		28.	$\lvert -3 \rvert$	

Write true or false.

29.	$-3 > -7$		30.	$9 > -1$		31.	$-6 > -2$	
32.	$\lvert -5 \rvert < -5$		33.	$\lvert -8 \rvert = \lvert 8 \rvert$		34.	$-5 < -6$	

Activity 2-3: **Introduction to Integers** Name:

1. List the following temperatures from greatest to least.

A	The temperature was 25 degrees Fahrenheit below zero.	
B	The pool temperature was 78 degrees Fahrenheit.	
C	Water freezes at 32 degrees Fahrenheit.	
D	The low temperature in December is -3 degrees Fahrenheit.	
E	The temperature in the refrigerator was 34 degrees Fahrenheit.	

Think of the days of the week as integers. Let today be 0, and let days in the past be negative and days in the future be positive.

2.	If today is Tuesday, what integer stands for last Sunday?	
3.	If today is Wednesday, what integer stands for next Saturday?	
4.	If today is Friday, what integer stands for last Saturday?	
5.	If today is Monday, what integer stands for next Monday?	

Write an integer to represent each situation.

6.	moving backwards 4 spaces on a game board	
7.	going up 3 flights in an elevator	
8.	a 5-point penalty in a game	
9.	a $1 increase in your allowance	

Order from least to greatest.

10.	$\{6,-3,1,-1,-5,7,0,9\}$	
11.	$\{2,-1,3,4,-6,13,-8,2\}$	

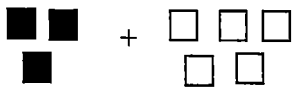
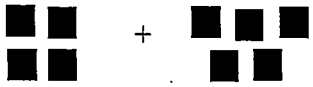
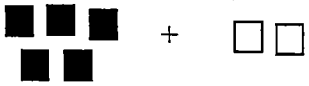
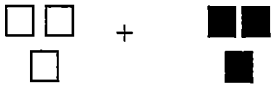
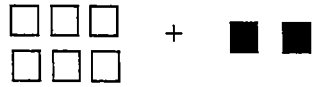
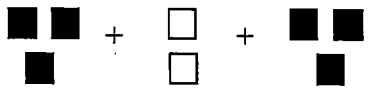
Absolute Value: Pick seven students to the front of the class each holding a number from -3 to $+3$. Look at how far away the students are away from person zero.

Activity 2-4: **Adding Integers with Chips** Name:

Write a numerical expression for each model. Find the sum.

■ = **one positive**

□ = **one negative**

1. 	2. 	3. 
4. 	5. 	6. 

Draw a model of the following problems using chips similar to the pictures above. Then solve. Use a separate sheet of paper.

7.	−2+−8		8.	8+−4		9.	−6+3	
10.	6+−4		11.	−1+7		12.	−8+3	
13.	−2+−6		14.	6+−9		15.	−5+−7	
16.	−7+4		17.	4+8		18.	−3+10	
19.	2+−1+−3		20.	0+−5		21.	3+2+−1	
22.	−5+5		23.	−6+1		24.	6+−1	

25.	If the low temperature one day was −8° and the midpoint temperature that day was 5°, what was the high temperature that day?	