

# Assignment #6: Develop a unit: Lessons

## Adding and Subtracting Integers

### 7th Grade math

#### Lesson 1: Absolute Value

- The "size" of a number, or how far it is from zero

Standard:

#### **CCSS.MATH.CONTENT.6.NS.C.7C**

Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of  $-30$  dollars, write  $|-30| = 30$  to describe the size of the debt in dollars.*

#### **CCSS.MATH.CONTENT.7.NS.A.1C**

Understand subtraction of rational numbers as adding the additive inverse,  $p - q = p + (-q)$ . Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

#### Description of lesson:

Students will learn and apply the meaning of the absolute value. They will learn the concept by watching a video and completing practice problems as homework. (flipped classroom concept) When they come to class they will demonstrate their understanding through activities to demonstrate their understanding. Completing the class with 10 exit problems to show mastery of the concept of absolute value.

#### Activities:

- Night before homework - Students need to watch the following video and complete the practice problems on absolute value.

# Assignment #6: Develop a unit: Lessons

URL link to website: School Yourself

Video: <https://schoolyourself.org/learn/algebra/absolute-value>

Review Problems: [https://schoolyourself.org/learn/review?m=algebra/absolute\\_value](https://schoolyourself.org/learn/review?m=algebra/absolute_value)

- Classroom Activity 1:

As each student enters the classroom hand each student a number. Each student needs to place their number on the number line that is drawn on the board and write the absolute value of the number above it. Once all the students have placed their number open a discussion on how they knew where to locate their number and how they determined the absolute value of their number. Have the students recall the information from the video they watched the night before on absolute value in a whole group discussion

- Classroom Assignment: Punchline 25

Students need to work in partners to complete the practice activity Punchline 25 to demonstrate understanding of absolute value. When they complete Punchline 25 students need to check it with the teacher. After understanding has been demonstrated the teacher will direct the students to their exit ticket assignment.

- Exit Ticket:

Students will complete 10 problems on thatquiz.org to demonstrate mastery of the concept absolute value.

- Students go to [thatquiz.org](https://thatquiz.org)
- Enter Code: 38CVEBU8
- Complete: Exit Ticket - Absolute Value

- Homework Assignment:

# Assignment #6: Develop a unit: Lessons

Students need to watch the following video and complete the practice problems on adding integers.

**URL link to website:** School Yourself

Video: <https://schoolyourself.org/learn/algebra/adding-negatives>

Review Problems: [https://schoolyourself.org/learn/review?m=algebra/adding\\_negatives](https://schoolyourself.org/learn/review?m=algebra/adding_negatives)

**Expected student outcome :**

Student should be able to communicate and demonstrate the understanding of absolute value.

**Method of assessment:**

Students will be assessed by Punchline 25 and the 10 problem exit ticket to determine if they have mastery level of absolute value.

**Follow-up learning:**

Student will take their understanding of absolute value and apply it to adding integers.

# Assignment #6: Develop a unit: Lessons

## Lesson 2: Adding Integers

What happens when you add negative numbers?

Standard:

### **CCSS.MATH.CONTENT.7.NS.A.1C**

Understand subtraction of rational numbers as adding the additive inverse,  $p - q = p + (-q)$ . Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

### **CCSS.MATH.CONTENT.7.NS.A.1**

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

### Description of lesson:

Students will learn and demonstrate the concept of the adding integers. They will be introduced to the concept by watching a video and completing practice problems as homework. Links to this video and review problems are in the previous lesson. (flipped classroom concept) When they come to class they will demonstrate their understanding through group activities and practice problems.

### Activities:

#### Day 1:

- Classroom Activity: Adding Integers Dot Game

Students will play adding integers number line game for 10 minutes at the beginning of class. Walk around and monitor groups to observe understanding of the concept of adding integers. After 10 minutes have a discussion on what they have discovered when adding integers. After discussion, add notes into interactive notebook.

# Assignment #6: Develop a unit: Lessons

After notes have been completed direct students to the computers to complete 20 adding integer problems. This will allow the teacher to determine the level of understanding and can pinpoint student levels.

- Exit Ticket:

Students will complete 20 problems on [thatquiz.org](http://thatquiz.org) to demonstrate level of understanding of the concept adding integers.

- Students go to [thatquiz.org](http://thatquiz.org)
- Enter Code: LC5KC1XX
- Complete: Exit Ticket - Adding Integers

## Day 2:

- Classroom Assignment:

After analyzing the information from the exit ticket from the day before group students into their level of understanding.

Proficient: Students that demonstrated proficiency with adding integers will be grouped to play Adding Integers “Dot” Game.

Nearing Proficient: Students will be grouped and work together to complete Punchline 25.

Novice: Students will be grouped and work with the teacher to get more support on adding integers.

# Assignment #6: Develop a unit: Lessons

## Day 3:

- Classroom Assignment:

Students will work independently on practice problems. Those students that were at proficient level will work on challenge practice problems and the proficient / nearing proficient students will work on on-level practice problems.

## Expected student outcome :

Students will be able to communicate and demonstrate the understanding of adding integers at mastery level.

## Method of assessment:

Students will complete a quiz demonstrating the understanding of adding integers.

## Follow-up learning:

Students will take their understanding of adding integers and applying it to subtracting integers.

## Lesson 3: Subtracting Integers

# Assignment #6: Develop a unit: Lessons

Turns out it's addition!

Standard:

**CCSS.MATH.CONTENT.7.NS.A.1**

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

- Night before homework - Students need to watch the following video and complete the practice problems on subtracting integers.

**URL link to:** SchoolYourself

Video: <https://schoolyourself.org/learn/algebra/subtracting-negatives>

Review Problems:

[https://schoolyourself.org/learn/review?m=algebra/subtracting\\_negatives](https://schoolyourself.org/learn/review?m=algebra/subtracting_negatives)

**Description of lesson:**

Students will learn and demonstrate the concept of the subtracting integers. They will be introduced to the concept by watching a video and completing practice problems as homework. Links to this video and review problems are provided above. (flipped classroom concept) When they come to class they will demonstrate their understanding through group activities and practice problems.

**Activities:**

**Day 1:**

- Classroom Activity:

Pair up students at the beginning of class and have them play subtracting integers challenge. Walk around and monitor students level of understanding on the concept of subtracting integers. At the end of the activity, lead a class discussion on what happens when subtracting integers. After the discussion put notes into interactive notebooks.

# Assignment #6: Develop a unit: Lessons

After notes have been completed direct students to the computers to complete 10 subtracting integer problems. This will allow the teacher to determine the level of understanding and can pinpoint student levels.

- Exit Ticket:

Students will complete 10 problems on [thatquiz.org](http://thatquiz.org) to demonstrate level of understanding of the concept adding integers.

- Students go to [thatquiz.org](http://thatquiz.org)
- Enter Code: 4C2KDVFEM
- Complete: Exit Ticket - Subtracting Integers

## Day 2:

- Classroom Assignment:

After analyzing the information from the exit ticket from the day before group students into their level of understanding.

Proficient: Students that demonstrated proficiency with subtracting integers will be grouped to work on mixed review practice problems of adding and subtracting integers.

Nearing Proficient: Students will be grouped and work together to complete Punchline 27.

Novice: Students will be grouped and work with the teacher to get more support on subtracting integers.

## Day 3:



# Assignment #6: Develop a unit: Lessons

- Classroom Assignment:

Students will work independently on practice problems. Those students that were at proficient level will work on challenge practice problems and the proficient / nearing proficient students will work on on-level practice problems.

## Expected student outcome :

Students will be able to communicate and demonstrate the understanding of subtracting integers at mastery level.

## Method of assessment:

Students will complete a quiz demonstrating the understanding of adding integers.

## Follow-up learning:

Students will continue to practice and demonstrate adding and subtracting integers to continue with multiplying and dividing integers.