

Accelerated Math 7/8

7th Grade

Week 3 Lesson (April 20 - 24, 2020)

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Transforming between Standard Form and Slope-Intercept
Form

Standards Addressed

8.EE.C.8c - Solve mathematical problems and problems in real-world context leading to two linear equations in two variables.

Materials Needed

iPad or printed copy of the Google Slides

Procedures

Read each slide carefully, making sure you understand what is being presented. Follow the directions and learn something! We wish we could be with you.

What You Are Learning in This Lesson

In this lesson, you will learn how to transform an equation written in **standard form** into **slope-intercept form**. You use the same properties of equality that you would use solving an equation. However, in this lesson we will be learning how to isolate y on one side of the equation.

Standard Form

$$6x + 2y = 24$$



Slope-Intercept Form

$$y = -3x + 12$$

How You Will Know You Are Successful

- I can identify standard form and slope-intercept form.
- I can use properties of equality to isolate specific variables.
- I can transform an equation in slope-intercept form into standard form.
- I can transform an equation in standard form into slope-intercept form.

Standard Form and Slope-Intercept Form

Standard Form

$$6x + 2y = 24$$



Slope-Intercept Form

$$y = -3x + 12$$

- When an equation is written in standard form, it is written $Ax + By = C$, where A , B , and C are numbers. There are more rules about that you will learn in Algebra. In standard form, you are **not** able to identify the slope or the y-intercept.
- When an equation is written in slope-intercept form, it is written $y = mx + b$, where m is the slope and b is the y-intercept.
- Let's learn how to transform one to the other.

Transforming from Standard to Slope-Intercept Form



- This one has been done for you, but we will show you the steps.

$$6x + 2y = 24$$

$$2y = -6x + 24$$

$$y = (-6x)/2 + 24/2$$

$$y = -3x + 12$$

Step 1: subtract the $6x$ from both sides (make sure to write the negative $6x$ before the $+ 24$ to match $y = mx + b$ form)

Step 2: divide both sides by 2

Step 3: now you have slope intercept form

Transforming from Slope-Intercept to Standard Form

Slope-Intercept Form

$$y = -3x + 12$$



Standard Form

$$6x + 2y = 24$$

- Let's go the other way!

$$y = -3x + 12$$

$$3x + y = 12$$

$$6x + 2y = 24$$

Step 1: add $3x$ to both sides to establish the standard form format.

Step 2: multiply the entire equation by 2 to show the original example. $3x + y = 12$ and $6x + 2y = 24$ are equivalent.

Step 3: now you have standard form

Practice to Share #1

Write each equation in slope-intercept form.

1) $3x + 4y = 8$

2) $9x + 35 = -5y$

3) $2y - 6 = -6x$

4) $-11x - 7y = -56$

Practice to Share #2

Rewrite the following in standard form.

5) $y = -2x + 7$

6) $y = 6x - 12$

7) $y = 4x + 32$

8) $y = -\frac{1}{2}x + 14$

Presentation Opportunity Options for Your Solutions

*This is just a **suggested** list. All of this is optional.*

- Take a picture/screenshot and post to Google Classroom
- Make a video about your steps and post to Google Classroom
- Present to an adult or sibling
- Practice Khan Academy assignment(s)
- If you have another idea of how to present, try it and share with us!

Self-Assessment of Your Learning

Look at the Success Criteria and self-assess your learning. Rate yourself 1-4 on where you are in these statements. You can do this by marking on the paper or use the markup tool on your iPad.

_____ I can identify standard form and slope-intercept form.

_____ I can use properties of equality to isolate specific variables.

_____ I can transform an equation in slope-intercept form into standard form.

_____ I can transform an equation in standard form into slope-intercept form.