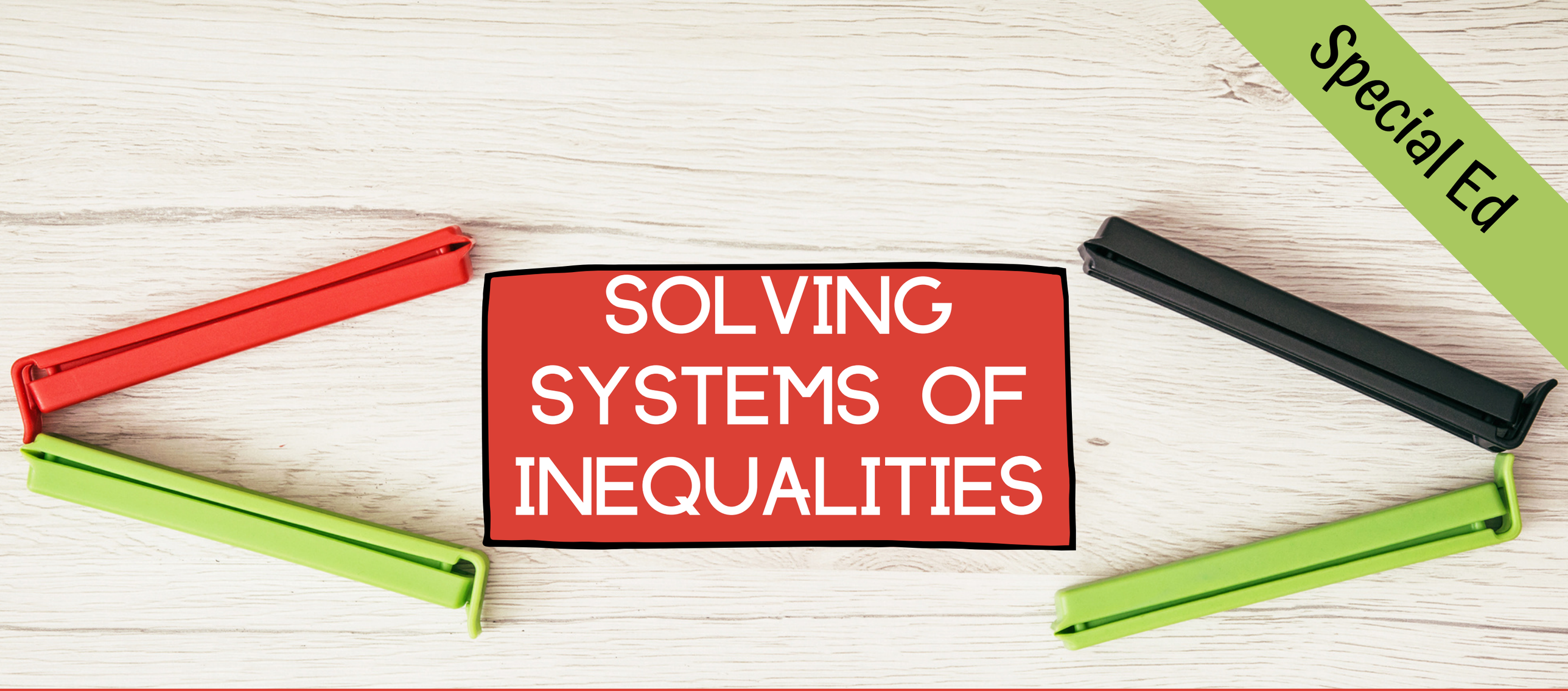

ALSO INCLUDES GOOGLE SLIDES

This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader and lacks many pre-requisite math skills needed for high school math. With some support, he is able to do this unit and enjoys the challenge. He is my tester!!

Table of Contents

Also included with this unit you will separate pdfs with:

- Lesson plans
- Links and directions to digital activities (includes narrated version of book with animation)

Christa Joy, Special Needs for Special Kids
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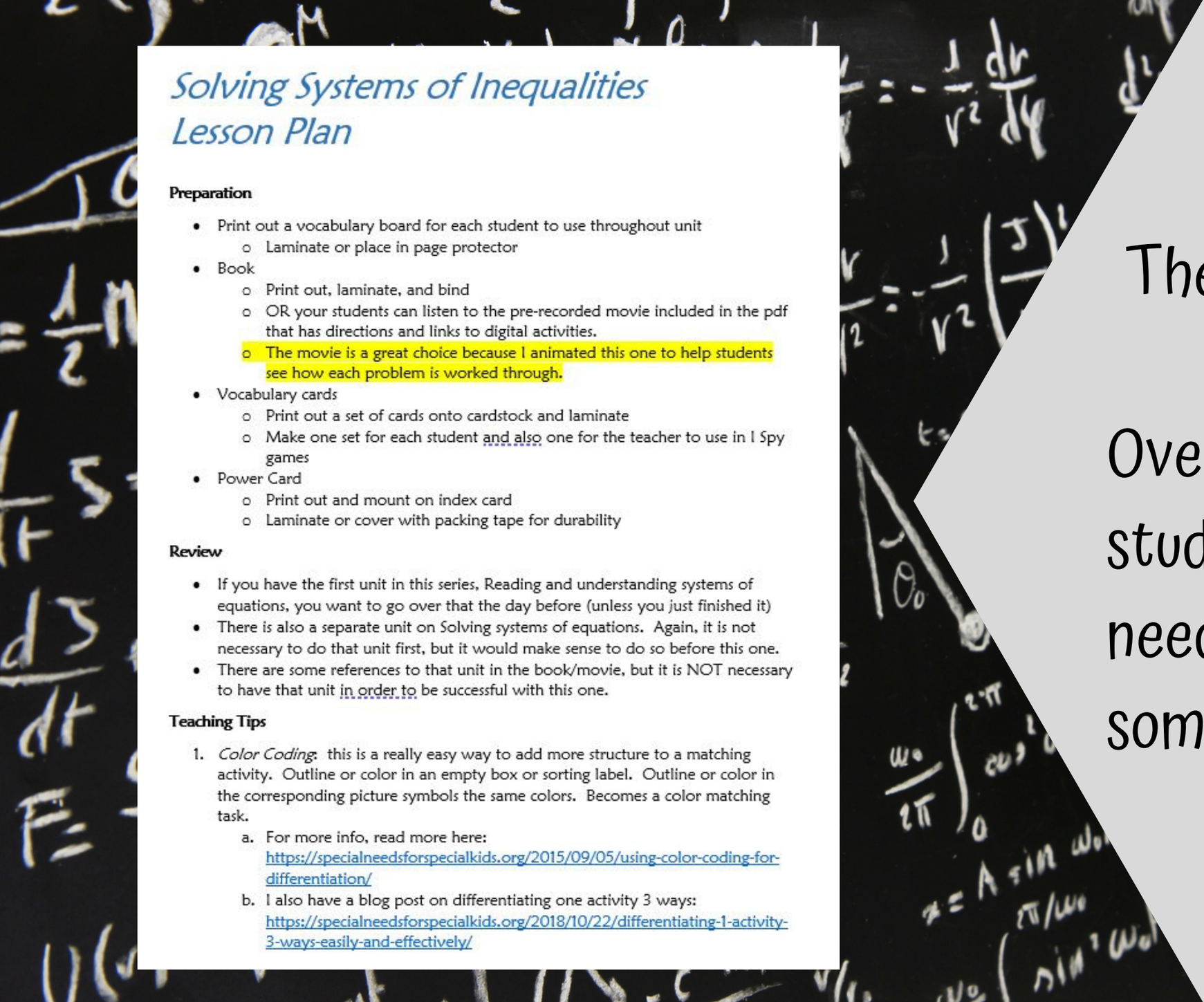
This unit contains over 120 pages of material. But, don't worry!! I have included a 15 day lesson plan to help you make the most of everything packed in this unit.



Solving Systems of Inequalities Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
  - Laminate or place in page protector
- Book
  - Print out, laminate, and bind
  - OR your students can listen to the pre-recorded movie included in the pdf that has directions and links to digital activities.
  - The movie is a great choice because I animated this one to help students see how each problem is worked through.
- Vocabulary cards
  - Print out a set of cards onto cardstock and laminate
  - Make one set for each student and also one for the teacher to use in I Spy games
- Power Card
  - Print out and mount on index card
  - Laminate or cover with packing tape for durability

Review

- If you have the first unit in this series, Reading and understanding systems of equations, you want to go over that the day before (unless you just finished it)
- There is also a separate unit on Solving systems of equations. Again, it is not necessary to do that unit first, but it would make sense to do so before this one.
- There are some references to that unit in the book/movie, but it is NOT necessary to have that unit in order to be successful with this one.

Teaching Tips

1. *Color Coding*: this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
   a. For more info, read more here: https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/
   b. I also have a blog post on differentiating one activity 3 ways: https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/

The lesson plans contain:

Overall tips for teaching students with significant needs and who may lack some pre-requisite skills.

Quick Look

Day	Activity	Day	Activity	Day	Activity
1	• Book/movie • Vocabulary and power card introduction • Plotting lines using slope intercept form	7	• Book/movie • Power card review • Checking test points	13	• Book/movie • Power card review • Practice problems (all steps)
2	• Book/movie • Vocabulary and power card review • Plotting lines using slope intercept form	8	• Book/movie • Power card review • Checking test points	14	• Book/movie • Power card review • Practice problems (all steps)
3	• Book/movie • Vocabulary and power card review • Plotting lines using slope intercept form	9	• Book/movie • Power card review • Checking test points	15	• Book/movie • Vocab cards cut & paste
4	• Book/movie • Vocabulary and power card review • Shading in graphs	10	• Book/movie • Power card review • Practice problems (all steps)		
5	• Book/movie • Vocabulary and power card review • Shading in graphs	11	• Book/movie • Power card review • Practice problems (all steps)		
6	• Book/movie • Power card review • Shading in graphs	12	• Book/movie • Power card review • Practice problems (all steps)		

The lesson plans contain:

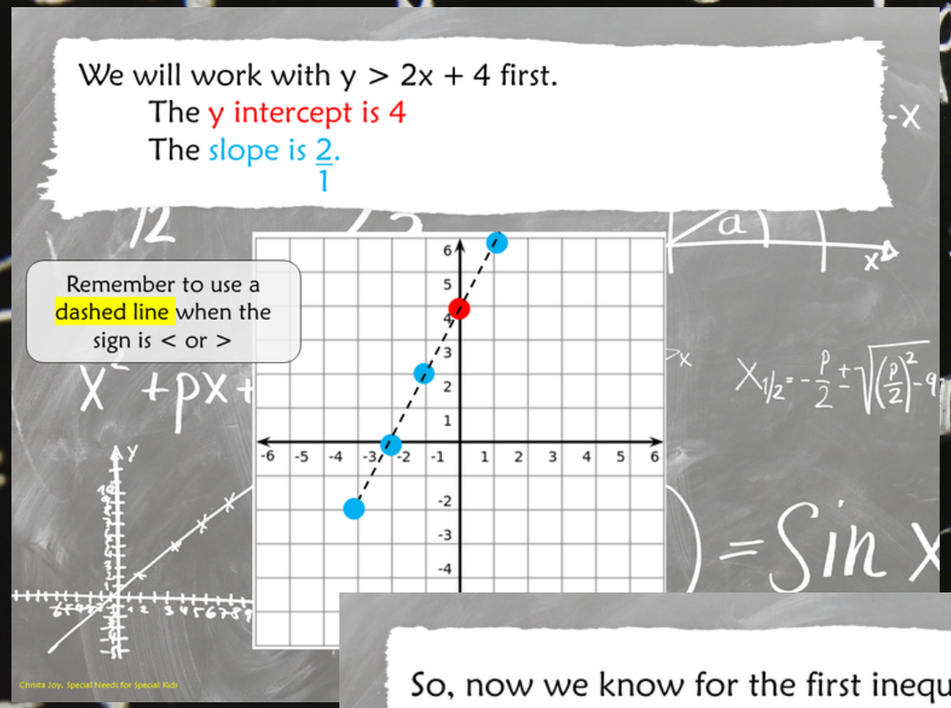
A quick look at what you will do each day.

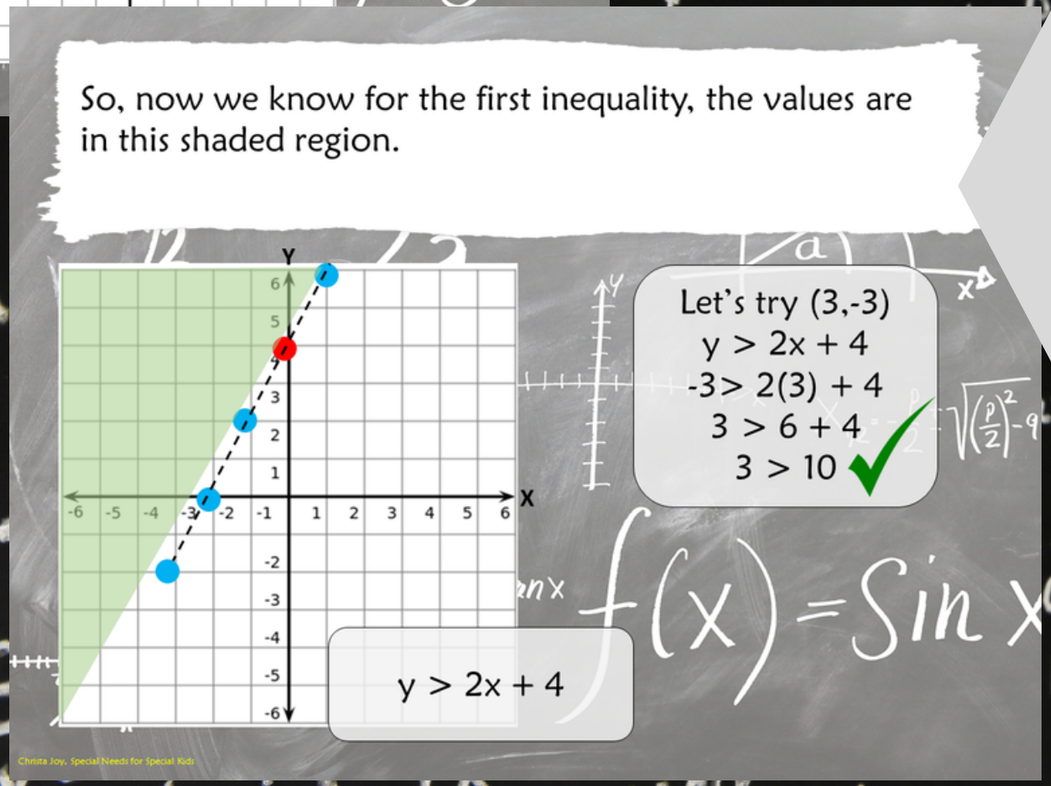
Day 6

Activity	Notes	Materials
Read or listen movie version of the book (10 minutes)	• Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board	• Book • Vocabulary board
Power cards review (5 minutes)	• Quick review. • Identify step working on today.	• Substitution power card
Shading in graphs review (5 minutes)	• Review the graphs done yesterday	• Worksheet from yesterday
Shading in graphs (20 minutes)	• Students will work through 1-2 problems • Students will be working with one inequality already graphed for them. • Students will choose two test points to plug into the inequality, one above and one below the line. • Students will shade in the region of the graph with the test point that results in a true statement when plugged into the inequality. • Refer to power card for practice	• Power card • Worksheet • Pencil • Crayons or other coloring tools
Sharing (10 minutes)	• Each student shares one of their finished problems with the group using the communication method of their choice	• Completed worksheets • Communication devices

The lesson plans contain:

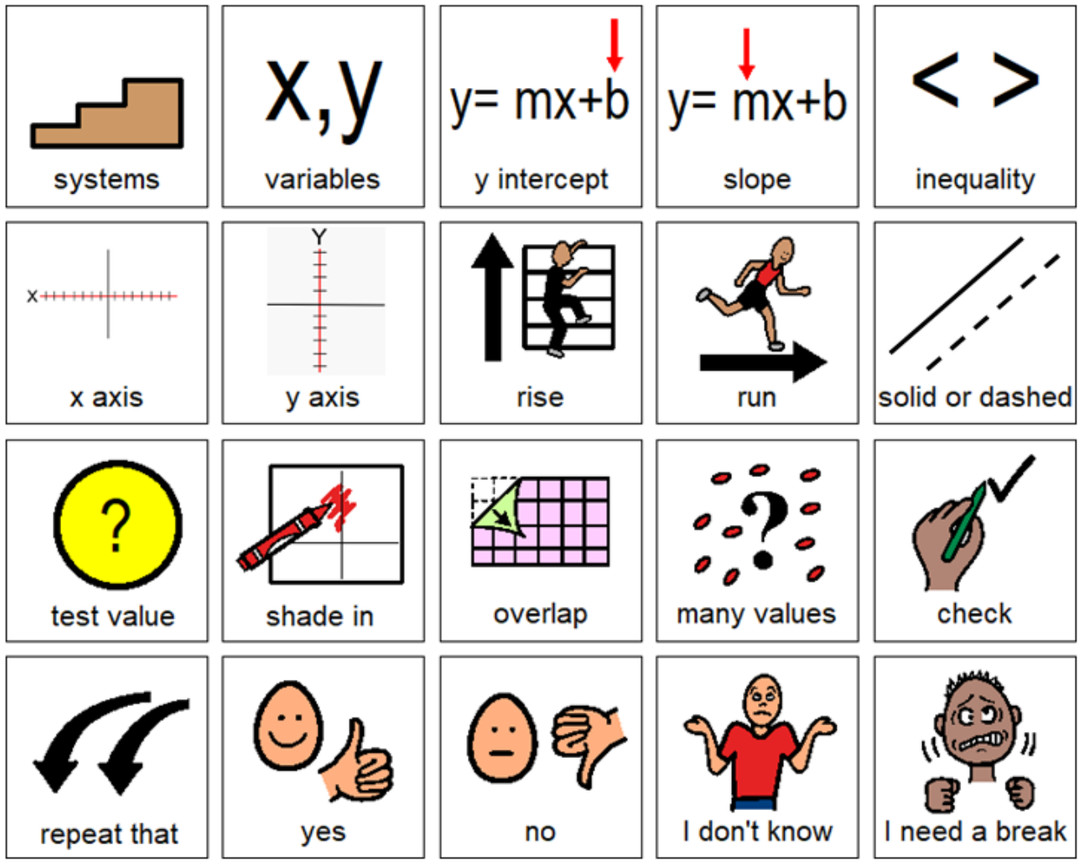
Detailed instructions on how that day's lesson should run including group and individual activities.





This unit contains a book that is 40 pages and covers how to solve systems of inequalities using graphing.

It comes in a pdf version as well as an mp4 version that is animated and narrated.



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This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!

variable

An unknown quantity in an inequality represented by a letter.

X, Y

inequality

Compares two values, showing if one is less than, greater than or sometimes equal.

$< > \leq \geq$

system

Two of more problems that are related and have the same variables.

slope

The steepness of a line. Determined by the rise/run or m in this formula.

$Y = mx + b$

Y intercept

Where a line crosses the y axis. Determined by the value b in this formula.

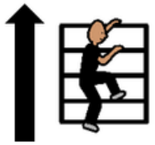
$Y = mx + b$

run

How far across the graph fr
to another.

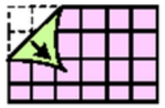
rise

How far up or down you go from one point to another.



overlap

Where the two shaped regions of possible values are the same in two graphs from a system of inequalities.



This unit comes with 8 vocabulary cards.

The first week students will do a group activity using these cards to get more familiar with words that are likely new to them.

variable

An unknown quantity in an inequality represented by a letter.

inequality

Compares two values, showing if one is less than, greater than or sometimes equal.

system

Two of more problems that are related and have the same variables.

slope

The steepness of a line. Determined by the rise/run or m in this formula.

Y intercept

$Y = mx + b$

run

rise

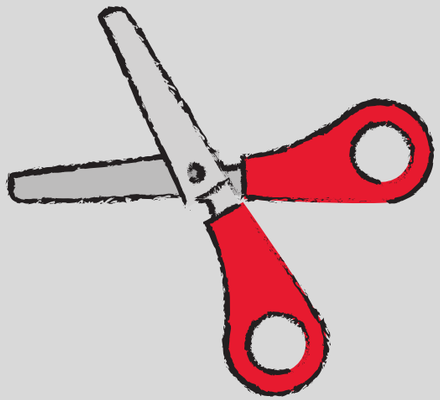
overlap

and match pictures with definition.

	x,y	y= mx+b	y= mx+b
	< > < >		

Where a line crosses the y axis. Determined by the value b in this formula.	
Two of more problems that are related and have the same variables.	pos... graph...
Compares two values, showing if one is less than, greater than or sometimes equal.	How far across...
How far up or down you go from one point to another.	The steepness of a line. ... the rise/run or m in t...

Students will also test their knowledge of these new words and symbols with a cut and paste activity on the last day.



Step by step cards for solving systems of inequalities. Made to fit on 4x6 index card.

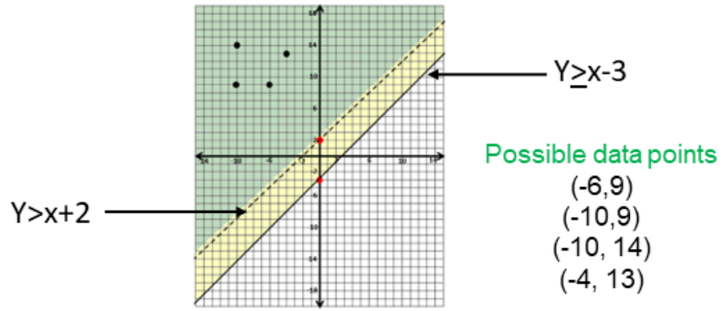
- Print on cardstock and laminate
- Glue together back-to-back

Systems of Inequalities

1. Make sure each inequality is in the form y </> mx + b
2. Find the y intercept and draw a line for each inequality using the slope. Use a solid line for < or > and a dashed line for ≤ or ≥
3. Test out data points to find the area to shade.
4. Possible values for x and y will be in shaded areas.
5. Where the shaded areas overlap (in green below), choose 2-3 data points to check your answers.

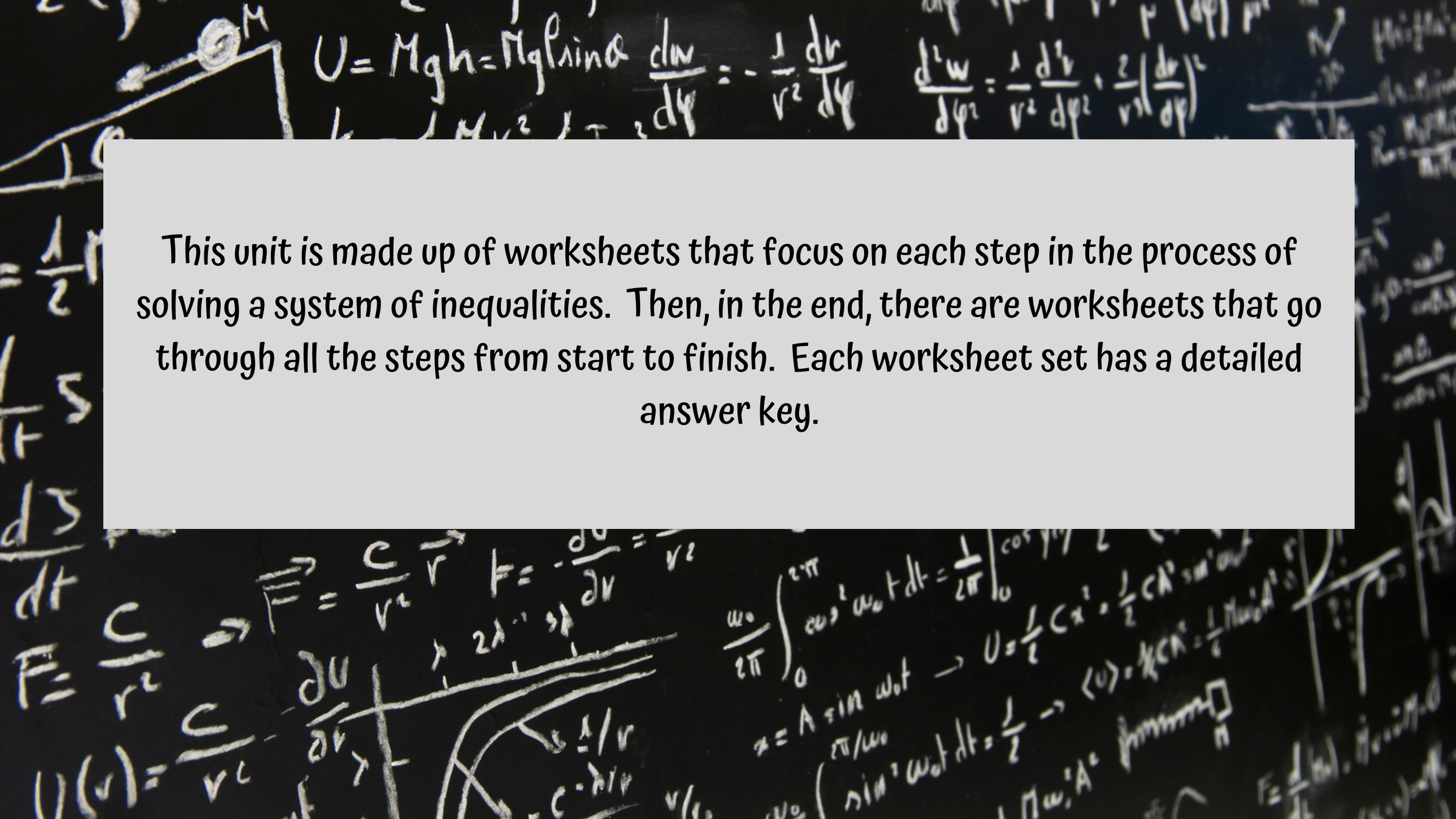
Sample: y > x + 2 and y ≥ x -3

1. Y intercepts are +2 and -3
2. Slopes are both 1/1



Possible data points
(-6,9)
(-10,9)
(-10, 14)
(-4, 13)

There is a power card that outlines the steps of solving a system of inequalities using graphing which students can use when working through problems.

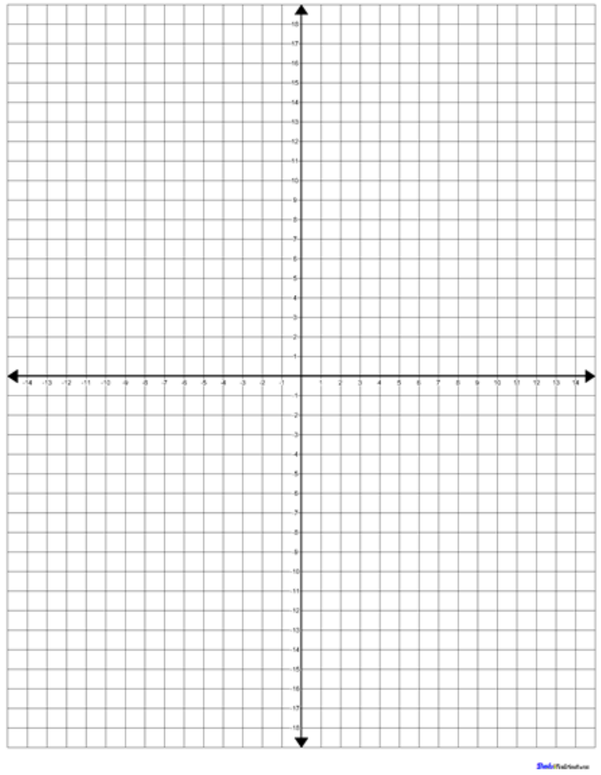


This unit is made up of worksheets that focus on each step in the process of solving a system of inequalities. Then, in the end, there are worksheets that go through all the steps from start to finish. Each worksheet set has a detailed answer key.

1. Circle y intercept
2. Draw y-intercept on graph
3. Write the slope in the empty box
4. Plot dots on graph based on slope
5. Draw a line connecting dots

slope

$y > 4x + 4$ | ——



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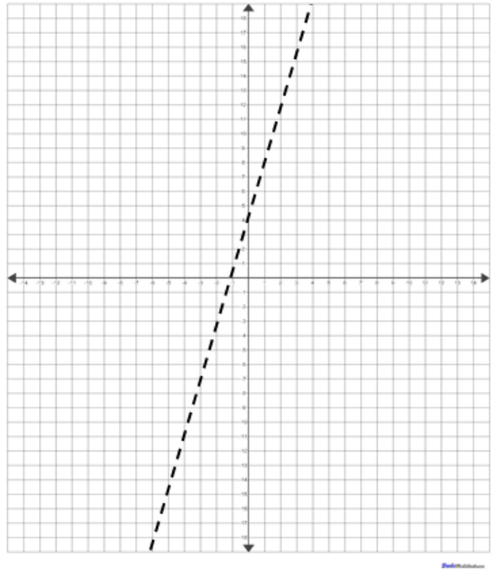
There are 10 worksheets that practice finding the y-intercept and drawing a line using the slope.

1. Choose a test point on the graph. Color it in yellow.
2. Write the coordinates in the top of the empty box.
3. Substitute those values into the inequality.
4. If the solution is true, then shade the area with your test point.
5. If it is false, try another test point, using a different color and on the opposite side of the line.

$y > 4x + 4$



Test point 1

_____ , _____

$y > 4x + 4$

Test point 2 (if needed)

_____ , _____

$y > 4x + 4$

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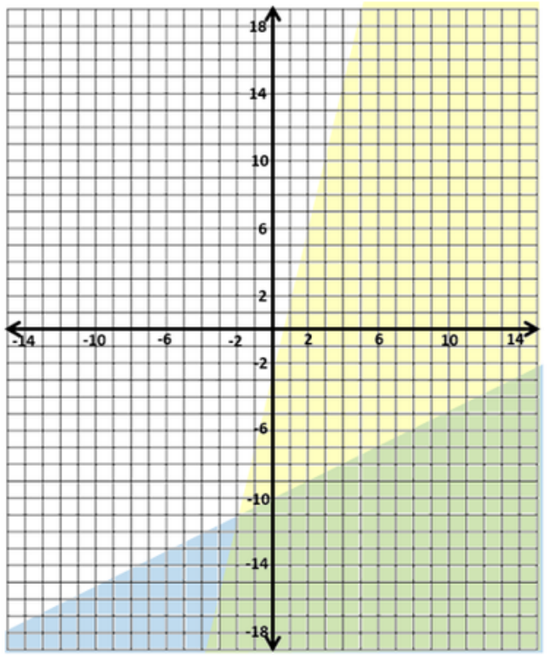
There are 10 worksheets that practice shading in the correct area of the graph that would contain possible values of x and y in the inequality.

1. Look at the area where the two graphs overlap (the area in green)
2. Draw 3 possible data points in the overlapping region.
3. Plug those values into both inequalities to test they are true.



$y < \frac{1}{2}x - 10$

$y \leq 4x - 2$

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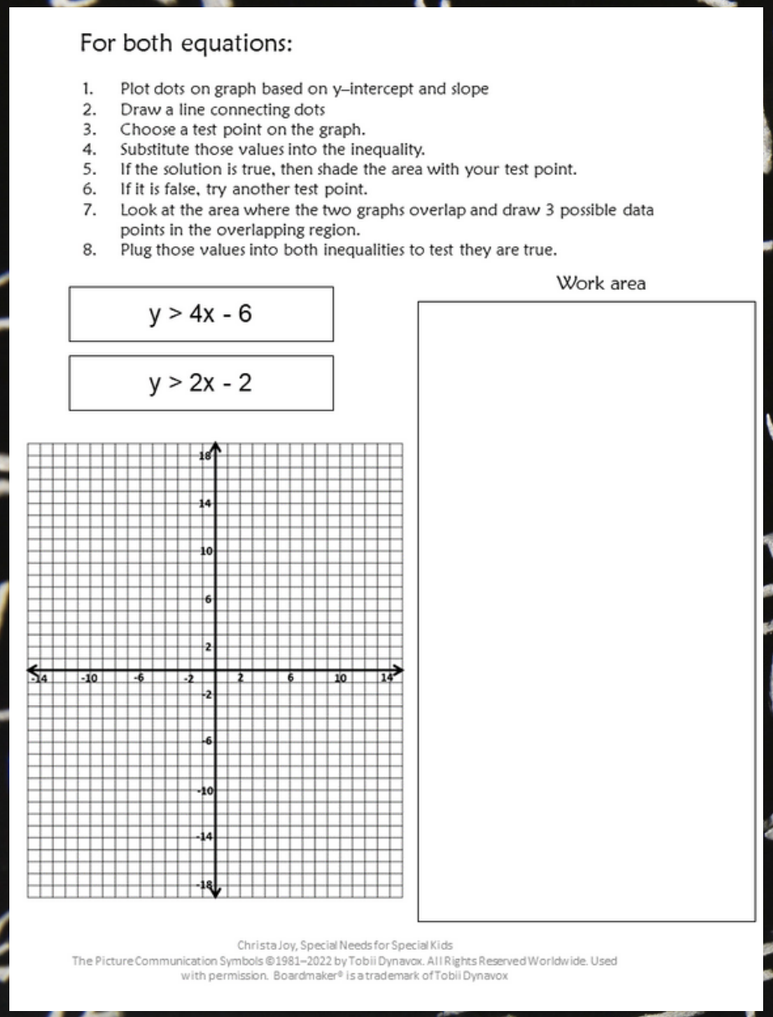
There are 10 worksheets that practice testing values in the overlapped region to make sure the inequalities are still true.



For both equations:

1. Plot dots on graph based on y–intercept and slope
2. Draw a line connecting dots
3. Choose a test point on the graph.
4. Substitute those values into the inequality.
5. If the solution is true, then shade the area with your test point.
6. If it is false, try another test point.
7. Look at the area where the two graphs overlap and draw 3 possible data points in the overlapping region.
8. Plug those values into both inequalities to test they are true.

Work area

$y > 4x - 6$

$y > 2x - 2$

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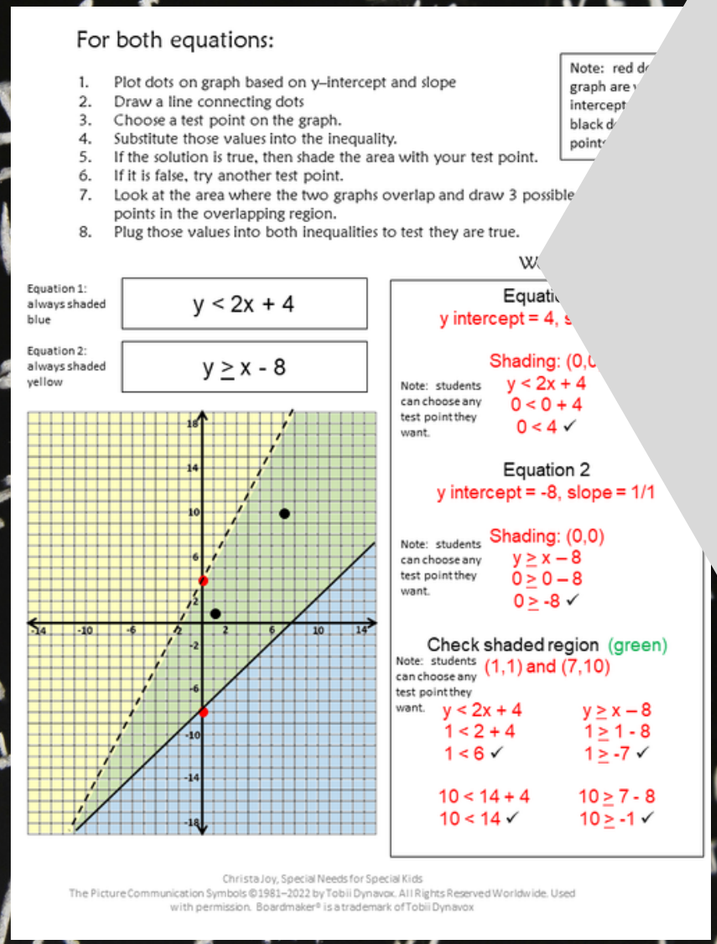

For both equations:

1. Plot dots on graph based on y–intercept and slope
2. Draw a line connecting dots
3. Choose a test point on the graph.
4. Substitute those values into the inequality.
5. If the solution is true, then shade the area with your test point.
6. If it is false, try another test point.
7. Look at the area where the two graphs overlap and draw 3 possible points in the overlapping region.
8. Plug those values into both inequalities to test they are true.

Equation 1: always shaded blue — $y < 2x + 4$

Equation 2: always shaded yellow — $y \geq x - 8$

Equation 1
y intercept = 4, slope = 2/1

Shading: (0,0)
Note: students can choose any test point they want.
$y < 2x + 4$
$0 < 0 + 4$
$0 < 4$ ✓

Equation 2
y intercept = -8, slope = 1/1

Shading: (0,0)
Note: students can choose any test point they want.
$y \geq x - 8$
$0 \geq 0 - 8$
$0 \geq -8$ ✓

Check shaded region (green)
Note: students can choose any test point they want. (1,1) and (7,10)

$y < 2x + 4$
$1 < 2 + 4$
$1 < 6$ ✓

$y \geq x - 8$
$1 \geq 1 - 8$
$1 \geq -7$ ✓

$10 < 14 + 4$
$10 < 14$ ✓

$10 \geq 7 - 8$
$10 \geq -1$ ✓

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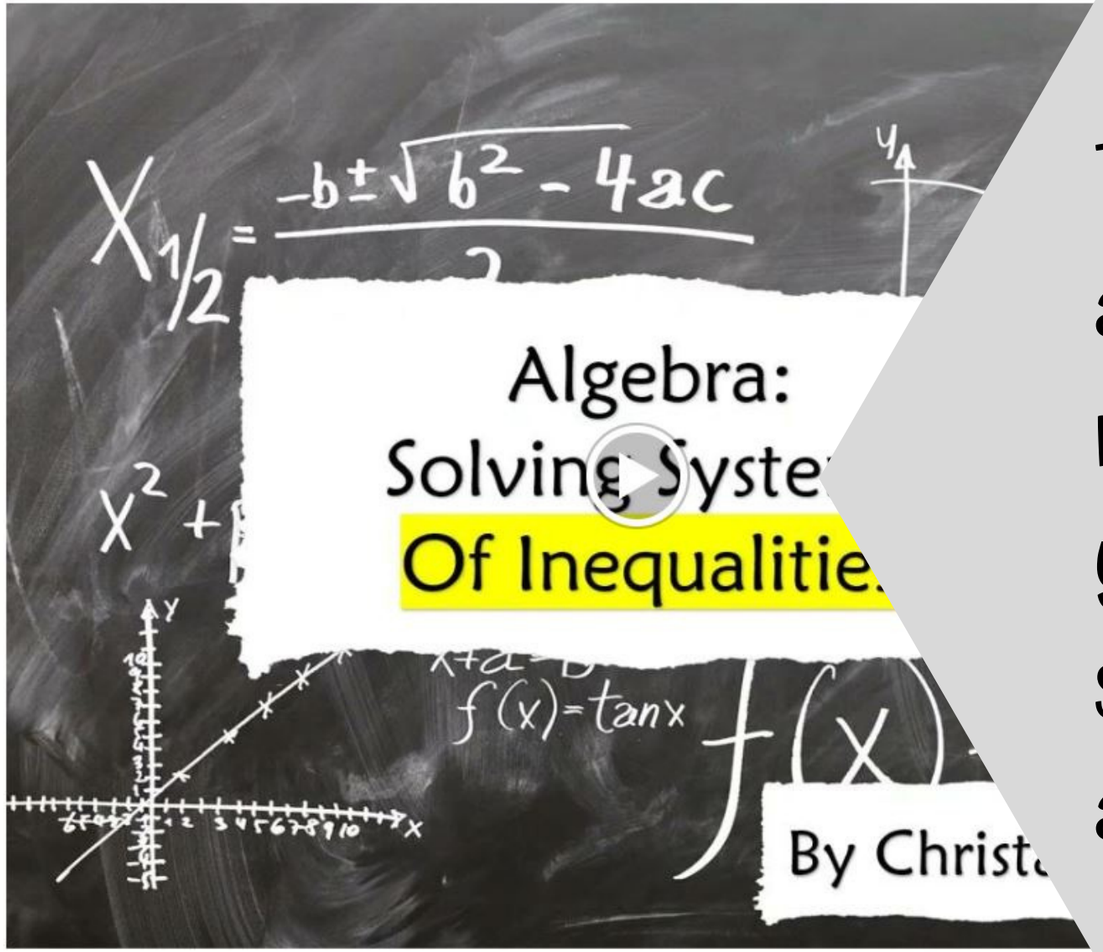
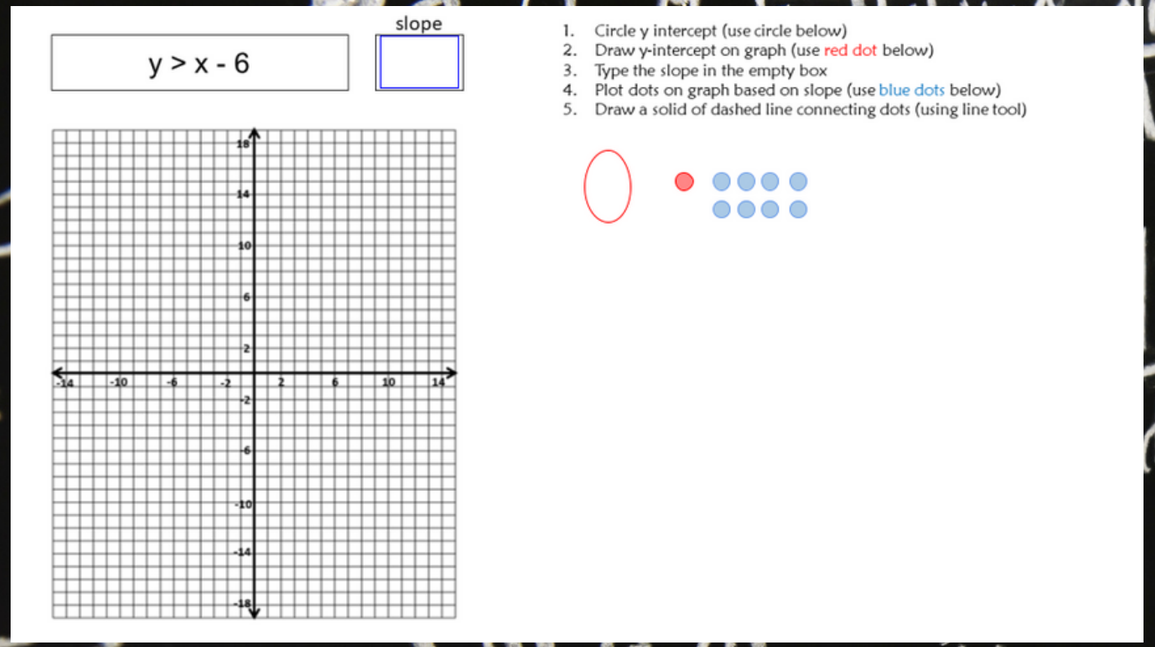
There are 10 worksheets that practice solving the system of inequalities from start to finish using all the steps previously practiced. There are detailed answer keys for each worksheet set.

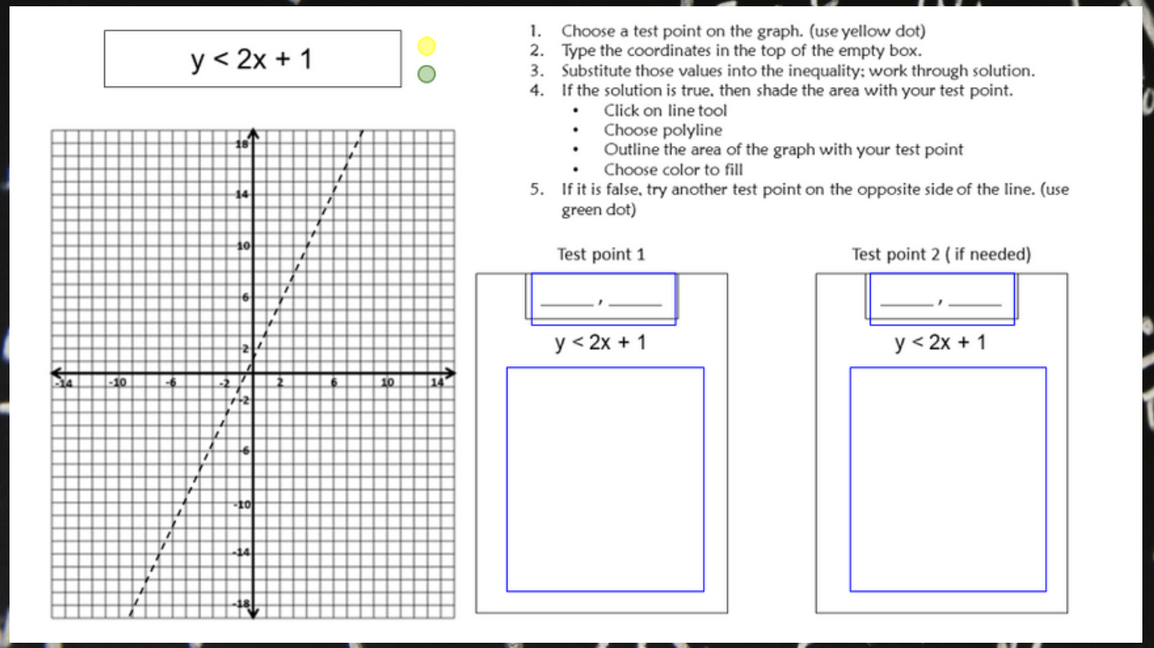
Please note, that this unit does not include a formal assessment or fill-in-the-blank worksheets often found in my other units.

Watch the movie about solving systems of inequalities

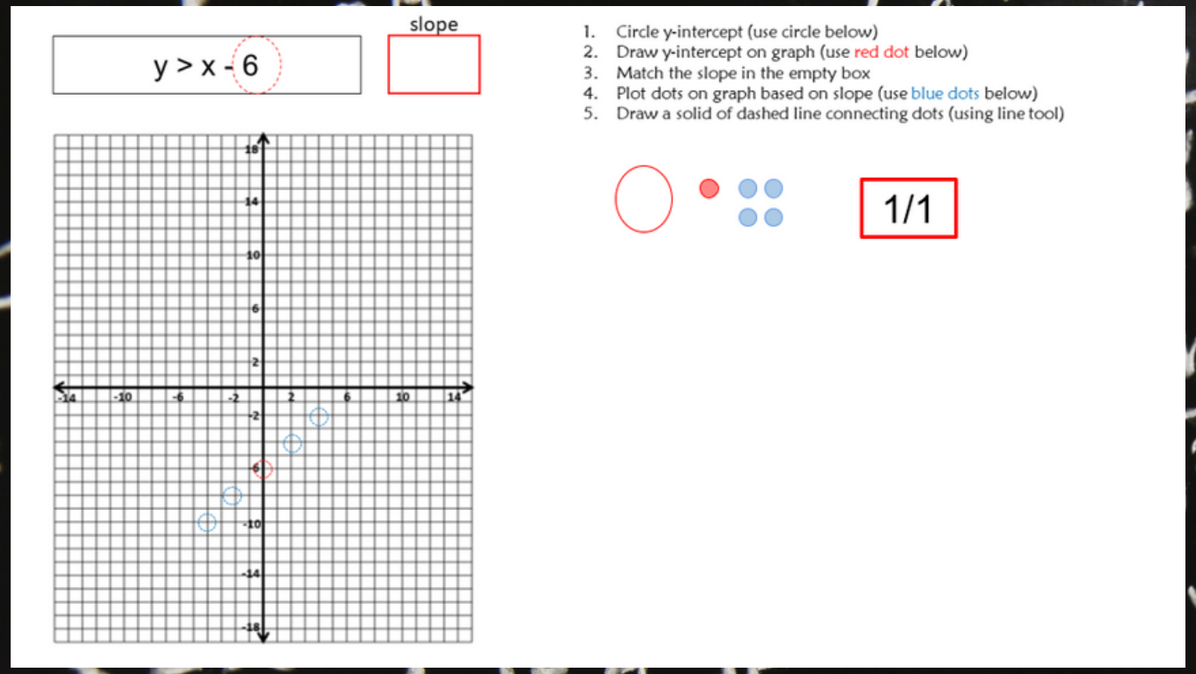


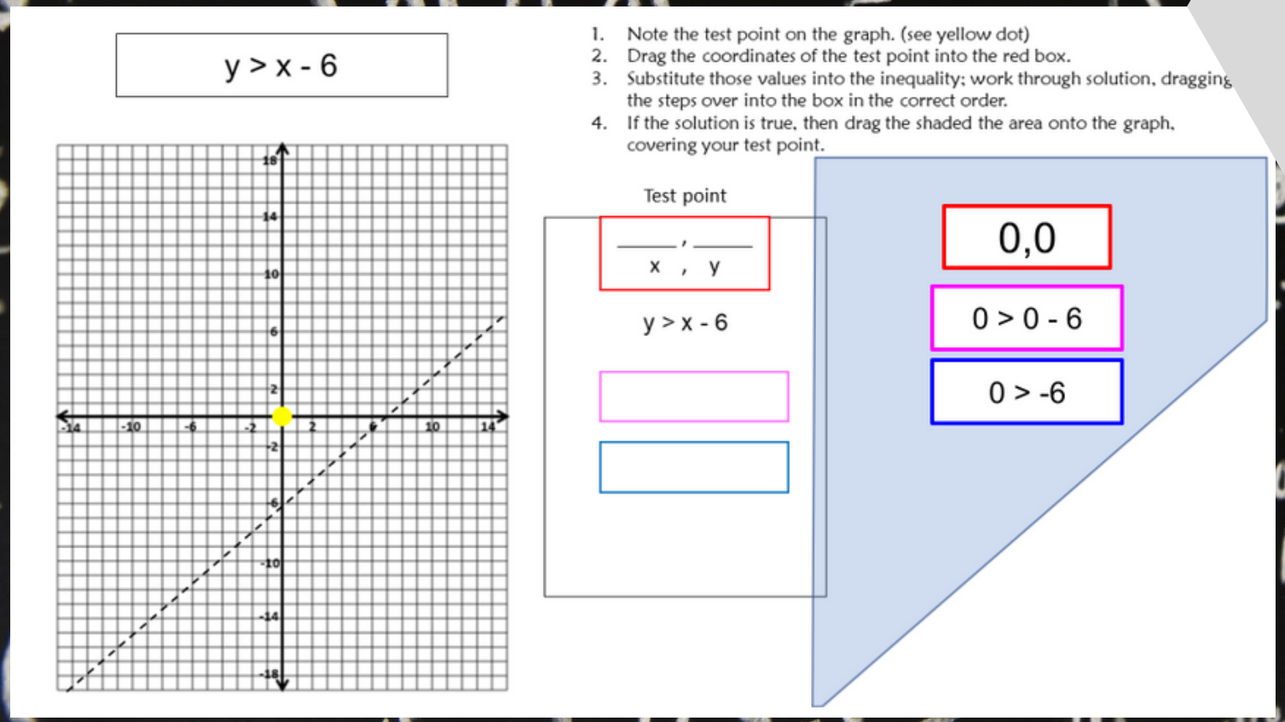
This unit includes digital activities. Part of that is a movie version of the book you can play in a google slide. This movie is animated and narrated.



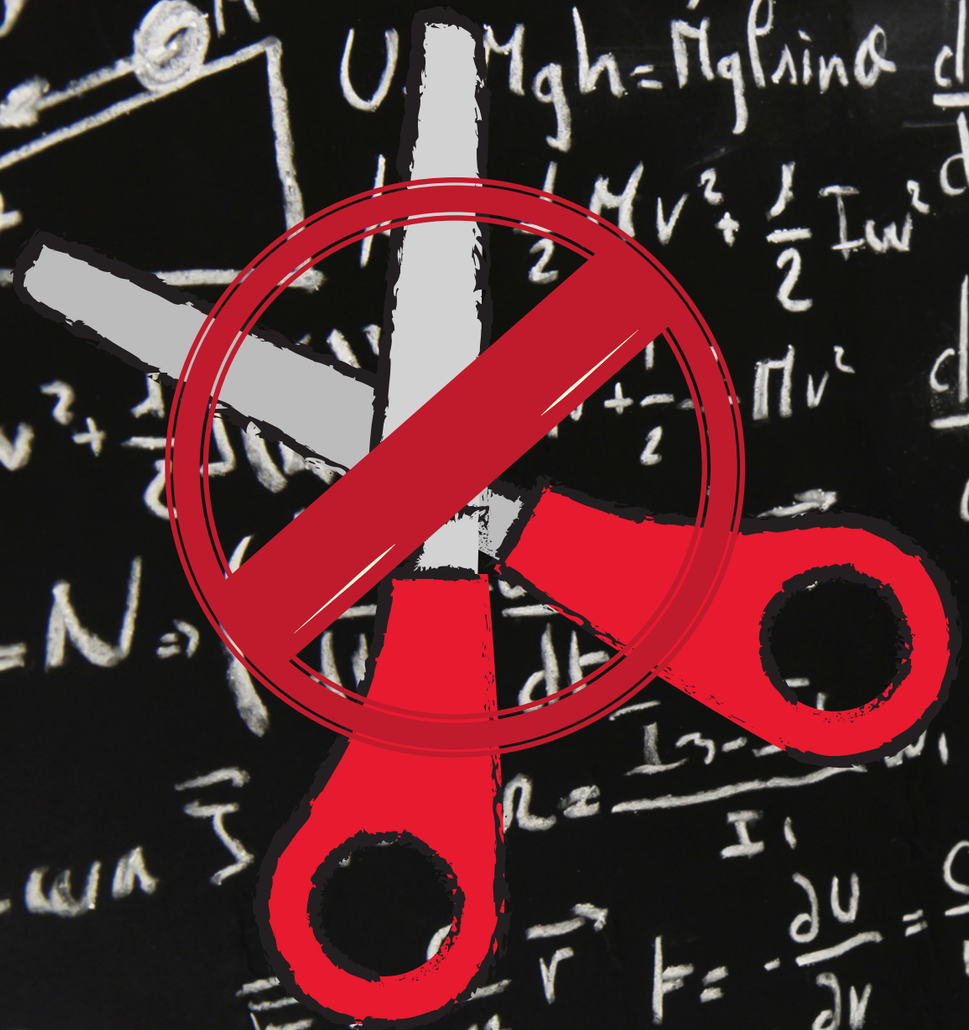


There are 2 sets of google slides that include half of each set of worksheets in the unit. Students can type in the answers.





One set is differentiated with color for students who need more support. In this set, students are NOT typing but clicking and dragging over their answers. There is the need to use the line tool however in a few of the google slides.



I realize there will be some students out there unable to do cutting activities. I have a blog post with ways to complete activities without a pair of scissors!!

Click Here to read more!!