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How to Use This Addendum

Make sure you're ready to teach by noting the **Necessary Materials and Pre-Lesson Prep** you will need to gather or complete prior to the lesson

Find high-leverage instructional moves in the **Lesson Look Fors**. This is what leaders should see when observing your instruction

Note how your lesson objective ties to your state **Standards**

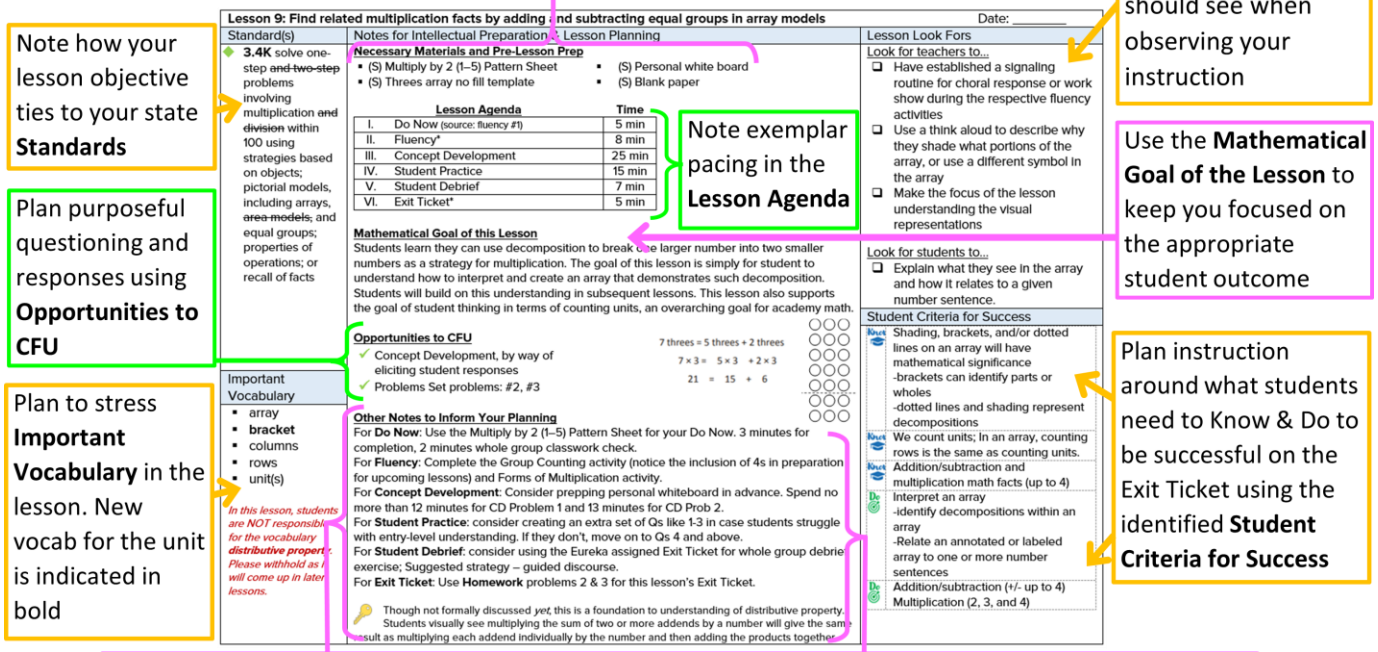
Note exemplar pacing in the **Lesson Agenda**

Use the **Mathematical Goal of the Lesson** to keep you focused on the appropriate student outcome

Plan purposeful questioning and responses using **Opportunities to CFU**

Plan instruction around what students need to Know & Do to be successful on the Exit Ticket using the identified **Student Criteria for Success**

Plan to stress **Important Vocabulary** in the lesson. New vocab for the unit is indicated in bold



Find recommended lesson modifications, content knowledge boosters, and/or high-leverage instructional moves that may not be in your Teacher Edition located in **Other Notes to Inform Your Planning**

UNIT SYNOPSIS

In this unit, students apply everything they learned in Unit 1 to solve one-variable inequalities. They continue to practice working with variables on both sides of the inequality symbol, combining like terms, and using the distributive property. They get to review why the inequality symbol "flips" when both sides are multiplied or divided by a negative value. Last, they are briefly introduced to compound inequalities so that when they learn about domain and range in Unit 3, they understand how to use inequality notation to accurately represent a function's domain and range.

CONTENT STANDARDS

Below are the standards addressed in this unit.

Readiness Standards	Supporting Standards
There are no Readiness Standards in Unit 2.	**A.5(B)** solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides.

Focus on Disciplinary Literacy 	Mathematical Process Standard (F) – analyze mathematical relationships to connect and communicate mathematical ideas
	Mathematical Process Standard (G) – display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

LEARNING SUPPORTS BY LESSON

There is a checkmark for the math support if the lesson	Lessons → / Math Supports	L1	L2	L3	L4
makes a connection to prior content or from a previous unit or academic year	Access Prior Knowledge		✓	✓	✓
uses familiar contexts or experiences to make the learning relevant to students	Real-World Connections	✓		✓	
makes use of graphic organizers	Graphic Organizers				
includes tools like rulers, protractors, patty paper, algebra tiles, etc.	Tools or Manipulatives		✓		
incorporates tables, reference charts, displays, pictures, or models, or color-coding	Visual Aids			✓	✓
includes definitions, examples vs. nonexamples, cognates, etc.	Vocabulary Supports	✓			✓
includes strategies that support language development	Language Supports	✓	✓		✓
asks students to discuss with their partner to prepare for whole class discussion	- Turn and Talk	✓	✓		✓
teacher facilitates a whole class discussion to debrief key learnings	- Guided Discussion	✓		✓	
asks students to think independently, test their idea with a partner, and share whole group	- Think, Pair, Share				
includes sentence stems to support students with explanations	- Sentence Stems				
provides opportunities for students to work with a partner or a group	Peer Collaboration	✓	✓	✓	✓
uses mnemonics such as SohCahToa	Mnemonics				
includes websites or equipment that enhances the lesson	Technological Support				
content can be presented in different forms	Different Modalities				
uses hands-on tools or manipulatives to represent the math	- Concrete				
uses drawings to represent the math	- Pictorial		✓	✓	✓
uses numbers and number sentences to represent the math	- Abstract	✓	✓	✓	✓

The EFFL Model

Experience First, Formalize Later (EFFL) Model

Opening

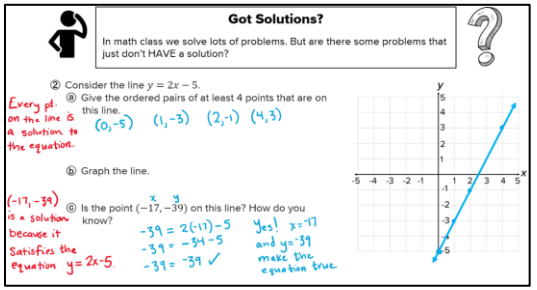
For every new lesson, the teacher begins by making the goals of the lesson crystal clear. The teacher does more than simply read the objective to the class. They make connections to previous learning, share how this learning fits into a bigger picture, or explain why this learning is important for future learning.

Activity / Interaction With New Material (INM)

For this part of the lesson, students work in pairs or groups of four to experience new content through an activity. Students might be discussing a proposed scenario, working with other groups, or doing a simulation. The student activity is designed for students to be able to do without the help of the teacher. Of course, the teacher is watching and listening in to conversations in order to formatively assess student understanding. The teacher provides questions, cues, and prompts (not answers!) to help push groups forward when they are stuck or have made a mistake. As students begin to finish the activity, the teacher identifies students to write their work on the board. Most often, the teacher selects student work that will easily allow them to connect the experience to formal learning. Students write their work on the whiteboard in a single-color marker.

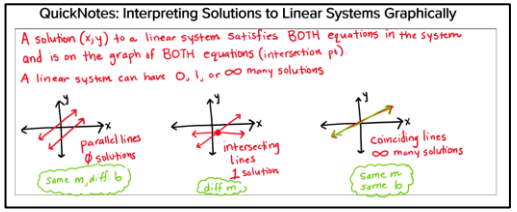
Debrief Activity

Once students have recorded their responses in their workbook (see blue writing to the right), the teacher calls the whole group back together for a debrief. It is in this discussion that the teacher will help students formalize the learning. The teacher connects the student activity experience to new vocabulary, definitions, formulas, and algorithms. The formal learning is attached specifically to the experiences of the activity so that students can enhance their constructed understanding of the new content. The teacher writes all of the formal learning in a different color in the margins of the activity **(see red writing to the right).** The students add these ideas in the margins on their activity page and often think of this as the formal "notes" of the lesson. In all of the answer keys we provide on Math Medic, the teacher formal learning points are provided in the margins in a **different color.**



QuickNotes

In this part of the lesson, the teacher uses the whole experience of the activity and the formalization in the debrief to summarize the learning from the lesson. Notice that we use the box to constrain the amount of formal "notes" that the teacher can provide.



Student Practice

Now that students have arrived at some new learning, they need to be able to apply it in new contexts. Most often we have students complete these questions in pairs and occasionally we select one question to use as an exit ticket. If we have time, we have students write solutions on the whiteboard.

Extra Practice

We typically give students around 3-5 "Extra Practice" problems for each lesson. We choose problems that are closely aligned with the Learning Objectives of the lesson. It is our belief that "less is more" here. We would rather students spend their Extra Practice time thinking deeply about just a few problems, rather than surface level thinking on many problems. When possible, we provide the answers at the bottom of the page, so they can immediately assess their understanding.

Slightly modified version of: https://www.calc-medic.com/post/experience-first-formalize-later#:~:text=%E2%80%9CExperience%20First%2C%20Formalize%20Later%E2%80%9D,at%20formal%20definitions%20and%20formulas.

Before You EFFL!

Here are helpful resources that you guide you in the right direction before your first EFFL lesson!

Why Should We EFFL?

The article advocates for the Experience First, Formalize Later (EFFL) teaching model, emphasizing its effectiveness in fostering deep understanding and flexible thinking in students. The author compares traditional teaching to a game of "Simon Says," where students merely mimic instructions without grasping underlying concepts. In contrast, EFFL encourages students to engage actively with problems, enhancing their ability to understand and apply calculus concepts creatively.

Tips for Lesson Planning

The article offers practical advice for effective lesson planning beyond the exhaustive and overly detailed approaches often emphasized during teacher training. It underscores the importance of thoughtful preparation but rejects the notion that teachers need to script every minute or detail of a class session.

Making the Most of Your EFFL Lesson Debrief

The article discusses the significance of the debriefing phase in the Experience First, Formalize Later (EFFL) lesson model, emphasizing its role in reinforcing learning and highlighting student contributions. The debrief session is seen as crucial for integrating academic vocabulary, emphasizing key lesson understandings, and valuing students' mathematical insights.

While You EFFL!

While each lesson may be unique in context and skills, all lessons benefit from the following practices:

Teacher Look Fors:

- ❑ Utilizing the Do Now to spark students' interest in the Activity.
- ❑ Use questioning to promote small group discussion and exploration, guided by monitoring questions.
- ❑ Connects Experience First to formal concepts using a colored pencil/pen to take notes along the margin during the Debrief.
- ❑ Facilitates whole-class discussions for students to reflect, share insights, and provides feedback that reinforces key concepts.
- ❑ Tracks time to adapt lesson pacing and support based on student response and engagement.

Students Look Fors:

- ❑ In the Activity, students engage in group work and discourse.
- ❑ Exploring the activity, testing hypotheses and approaches (trial & error).
- ❑ Take notes on key ideas and concepts using different colored pencil/pen to take notes along the margin.
- ❑ Share thoughts and ideas that demonstrate their approach to their work.

Other considerations

- During the **Experience First** phase, if most of your students seem stuck or disengaged, take a moment to pause, reset, and provide clear instructions. Some problems of the Activity are more suitable to do a whole-class discussion as a means to save some instructional time for Student Practice or the Exit Ticket. You are encouraged to adapt the EFFL (Experience First, Formalize Later) process to meet your students' needs while maintaining a focus on student-centered instruction.

ROADMAP

AT A GLANCE: Unit 2 – One Variable Inequalities			
Day	Date	Lesson	Lesson Title
There is 1 flexible Success Day that you can use anywhere in the unit. • Consider using 1 day to review before the Unit 2 Exam. • If you don't need to use this success days, you can/should save it for later.			
1		1	Solving Inequalities (Day 1)
2		2	Solving Inequalities (Day 2)
3		3	Solving Inequalities (Day 3)
4		4	Compound Inequalities
5			Success Day
6			Unit 2 Exam

Lesson 1: Solving Inequalities (Day 1) Date: _____

Standard(s)

◆ **A.5(B)** solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides.

Important Vocabulary

- **inequality**
- $<$
- $>$
- $\leq$
- $\geq$

Notes for Intellectual Preparation & Lesson Planning

Necessary Materials and Pre-Lesson Prep

- Unit 2 Student Workbook
- Class set of red pens

Lesson Structure:

- Do Now (7 min)
- INM (18 min)
- Debrief (5 min)
- Student Practice (15 min)
- Exit Ticket (10 min)

Mathematical Goal of this Lesson

By the end of this lesson, students should be able to solve one- and two-step inequalities and generate an inequality from a given scenario. They should also understand that while equations typically have a unique solution, inequalities typically have a range of solutions (e.g. in $x = 3$, x can only be 3, but in $x \leq 3$, x can be 3 OR any number less than 3).

NOTE: no problems in this lesson require students to "flip" the inequality symbol – that will occur in Lesson 2.2)

Opportunities to CFU

✓ INM: 5, 6

✓ Student Practice: 1a, 1b, 2, 3

Other Notes to Inform Your Planning

For **Do Now**: This Do Now presents the opportunity for students to recall what they already know about inequalities from 6th and 7th grade. It also gives the teacher an opportunity to see what background knowledge students already have. It is okay for students to make mistakes.

The big things to stamp when debriefing the Do Now is the difference between how we represent single solutions like $x = 3$ and a range of solutions like $x < 3$. If time allows, it's also worth revisiting how scenarios help you distinguish between $<$ and $\leq$, for example.

Focus on Disciplinary Literacy

INM #3

Lesson Look Fors

Look for teachers to…

- ❑ help students connect their prior knowledge of inequalities from 6th/7th with today's lesson
- ❑ emphasize the connection between this lesson and Unit 1 (i.e. we are writing and solving inequalities the same way we did equations)

Look for students to…

- ❑ set up an equation or inequality based on a situation (as in INM #3)
- ❑ explain the difference between an equation and an inequality and how it's represented on a number line

Student Know/Do Chart

Do	Students can write an inequality based on a verbal description, solve it, and graph it on a number line.
Know	When graphing inequalities, an open circle represents $>$ or $<$, and a closed circle represents $\leq$ or $\geq$.
Know	In general, the steps taken to solve an equation are the same steps to solve an inequality.

Lesson 2: Solving Inequalities (Day 2) Date: _____

Standard(s)

◆ **A.5(B)** solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides.

Important Vocabulary

- inequality
- $<$
- $>$
- $\leq$
- $\geq$

Notes for Intellectual Preparation & Lesson Planning

Necessary Materials and Pre-Lesson Prep

- Unit 2 Student Workbook
- Class set of red pens

Lesson Structure:

- Do Now (7 min)
- INM (15 min)
- Debrief (5 min)
- Student Practice (18 min)
- Exit Ticket (10 min)

Mathematical Goal of this Lesson

By the end of this lesson, students should be able to solve multi-step inequalities, including those for which application of the distributive property is necessary and/or variables are included on both sides. This lesson builds on 2.1 and emphasizes knowing when (and when not) to "flip" the inequality symbol.

Opportunities to CFU

✓ INM: 4, 5 ✓ Student Practice: 1, 2, 3

Other Notes to Inform Your Planning

For **INM**: It is always important to internalize your lessons, but it is especially important for you to think through the exploration in #s 1-4, which requires a little more scrutiny than usual. Notice that there are "Check Your Understanding" problems embedded in the INM. Most students probably will not be able to finish every single one, and that's okay! Consider assigning an assortment of mild, medium, and spicy problems and/or saving some for a success day.

For **Student Practice:** This is the first time this year that students have gone through "Twinning," a way students can self-check. Partner A should only complete Column A; Partner B should complete only Column B. If both partners get the same answer to these two different problems, they'll know they're correct! If they don't, they'll need to discuss and figure out why.

Focus on Disciplinary Literacy

Debrief

For **Exit Ticket:** The ET was intentionally designed so that one problem involves "flipping" and the other does not. Some students might flip indiscriminately. The ET should reveal who truly understands when (and when NOT) to flip.

Lesson Look Fors

Look for teachers to…

- ❑ allow students to make sense of why we flip the inequality (INM #s 2-5).
- ❑ connect the flipping of inequality symbols to students' understanding of the number line (e.g. -3 is right of -4 on the number line, but 3 is left of 4 on the number line!)

Look for students to…

- ❑ be able to explain when (and when not) to flip the inequality symbol.
- ❑ solve multi-step inequalities.

Student Know/Do Chart

Do — Students can solve a multi-step linear inequality and graph it.

Know — The inequality sign "flips" ONLY when you must multiply or divide a variable by a negative value.

Lesson 3: Solving Inequalities (Day 3) Date: _____

Standard(s)

◆ **A.5(B)** solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides.

Important Vocabulary

- inequality
- $<$
- $>$
- $\leq$
- $\geq$

Notes for Intellectual Preparation & Lesson Planning

Necessary Materials and Pre-Lesson Prep

- Unit 2 Student Workbook
- Post-it notes
- Class set of red pens
- STINKY FEET Cards (one set per group of 3-4 students.

Lesson Structure:

- Do Now (7 min)
- STINKY FEET! (18 min)
- Debrief (5 min)
- Student Practice (15 min)
- Exit Ticket (10 min)

Mathematical Goal of this Lesson

By the end of this lesson, students should be proficient at solving multi-step linear inequalities and representing their solution(s) on a number line. No new concepts or skills are introduced; this lesson exists to provide more opportunities to practice solving multi-step inequalities.

Opportunities to CFU

✓ INM: a, b

✓ Student Practice: 1, 2, 6

Other Notes to Inform Your Planning

For **Do Now**: When debriefing the Do Now, ensure students re-state how they know when it is or isn't appropriate to flip the inequality symbol.

For **STINKY FEET**: ensure you have carefully read and internalized Stinky Feet directions from TE p22.

For **Student Practice:** There is most likely not enough time for students to do EVERY Stinky Feet problem AND every Student Practice problem. How you divide the time is up to you, but either way, both the Stinky Feet activity and the traditional problem set provide students with more practice opportunities.

Focus on Disciplinary Literacy

STINKY FEET

Lesson Look Fors

Look for teachers to…

- ❑ provide clear directions and expectations for the STINKY FEET activity and hold students to those expectations
- ❑ bring the joy with STINKY FEET!

Look for students to…

- ❑ set up an inequality that accurately reflects a given scenario
- ❑ solve and graph a multi-step inequality
- ❑ justify why they did or didn't flip an inequality symbol when solving.

Student Know/Do Chart

Students can solve a multi-step linear inequality and graph it.

The inequality sign "flips" ONLY when you must multiply or divide a variable by a negative value.

Lesson 4: Compound Inequalities Date: _____

Standard(s)

This lesson is not tied to a particular standard, but is a prerequisite for A.2(A), which is a significant part of Units 3, 9, and 10.

- **A.2(A)** determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations, both continuous and discrete; and **represent domain and range using inequalities**

Important Vocabulary

- **compound inequality**
- **intersection**
- **union**

Notes for Intellectual Preparation & Lesson Planning

Necessary Materials and Pre-Lesson Prep

- Unit 2 Student Workbook
- Class set of red pens

Lesson Structure:

- Do Now (7 min)
- INM (15 min)
- Debrief (5 min)
- Student Practice (18 min)
- Exit Ticket (10 min)

Mathematical Goal of this Lesson

By the end of this lesson, students should be able to generate and interpret compound inequalities representing unions and intersections. This lesson does not require students to solve compound inequalities. This lesson is included to introduce students to inequality notation so they can represent domain and range in Unit 3.

Opportunities to CFU

- ✓ INM: 3, 4
- ✓ Student Practice: 2, 3, 4, 7, 8

Other Notes to Inform Your Planning

For **Do Now**: The Do Now spirals in previous lessons, but more importantly, it intentionally juxtaposes the simple inequality students are used to with today's new concept: compound inequalities.

For **INM**: Students have the knowledge and skills to attempt the INM on their own. Allow students to attempt each question with their partner or group, and pull them back to debrief and make the red margin notes periodically. Use debriefs to introduce the terms "intersection" and "union."

Focus on Disciplinary Literacy

Debrief #s 2&3

Lesson Look Fors

Look for teachers to…

- ❑ allow students to apply what they've learned in previous lessons to reason through the INM before teachers give them the margin notes and solutions.
- ❑ model and emphasize being careful when representing situations with inequality symbols (i.e. does this situation call for $>$ or $\geq$? How do you know?)

Look for students to…

- ❑ apply their prior knowledge of inequalities to build an understanding of compound inequalities and how they are represented on a number line.

Student Know/Do Chart

Do	Students can interpret a situation that calls for a compound inequality and write that inequality.
Do	Students can graph a compound inequality.
Know	When graphing inequalities, an open circle represents $>$ or $<$, and a closed circle represents $\leq$ or $\geq$.
Know	A compound inequality is an inequality that can be represented by either one range of values graphed on a number line ("and") or two disconnected ranges of values on a number line ("or").

Recommended Success Day Materials and Resources

A.5B
Solving Inequalities

1. Bluebonnet Resources: Skills Practice | Lesson SE | Lesson TE
2. Sirius A.5(B) Solving Inequalities Practice Sheet
3. A packet that has several pages of practice on solving inequalities
4. A PBS video on solving inequalities with negative numbers (3:34)
5. Kuta software practice on solving and graphing multi-step inequalities.

If student data indicates a pause point is not necessary, you can opt to move forward and reserve a Success Day to use at a later date.

Notes to Inform Your Planning

In this unit we practiced graphing, but not solving, compound inequalities. #s 129-140 and 148-159 in **Resource #4** involve solving compound inequalities, so students will likely be thrown off if you simply print the packet and place it in front of them. In general, but especially with **Resource #4**, ensure you have carefully selected the problems you wish to use and HOW. (For example, will you do stations review? Task cards? Jeopardy?)

Unit 2 Exam	Date: _____
Standard(s)	Notes for Intellectual Preparation & Lesson Planning
◆ **A.5(B)** solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides. ◆ **A.5(A)** solve linear equations in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides; *note that this TEKS is spiraled in from Unit 1 to give teachers another data point on a foundational TEKS.* ◆ **A.12(E)** solve mathematic and scientific formulas, and other literal equations, for a specified variable; *note that this TEKS is spiraled in from Unit 1 to give teachers another data point on a foundational TEKS.*	**Necessary Materials and Pre-Lesson Prep** ▪ Ensure you can access UE2 on EdCite. **Notes to Inform Your Planning** Review the Unit 2 Exam on Curriculum Corner. Internalize and create an exemplar for the assessment prior to teaching the unit as part of unpacking the unit. Use your exemplar to spar with the solutions provided in the Assessment Companion on Curriculum Corner. The scanning deadline for the Unit 2 Exam is **September 25, 2025**. For any test items that are not multiple choice, verify that student responses marked incorrect by Edcite truly are incorrect. (Edcite occasionally does not recognize all possible equivalent correct responses.)

UNPACKED STANDARDS

Focus standards for this unit.

Standard Breakdown		
Standard	**Specificity**	**STAAR Alignment**
A.5B solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides	**Concepts:** - Linear Inequalities - One Variable - Distributive Property - Both Sides **Skills:** - Solve - Apply **Clarifications Including but Not Limited To:** - One-step, two-step and multi-step inequalities included - Constants and coefficients include a variety of rational numbers - Inequalities should be written in a variety of forms **Limitations:** - Inequalities limited to one variable **Vertical Alignment:** - In 6th grade students solved one-step inequalities containing of positive rational numbers. Students learned to use the inverse operation to isolate the variable by making the coefficient 1 and the constant 0. - In 7th grade Pre-Algebra, students solved two-step inequalities containing positive and negative rational numbers. Students discovered that when the coefficient is negative, the inequality sign must be reversed when solving. Students learned to use the inverse operations to isolate the variable by making the coefficient 1 and the constant 0. - In Algebra 2 students will be introduced to absolute value inequalities and systems of inequalities containing 3 variables.	**2018** **Q30** What is the solution set for $-4x + 10 \geq 5x + 55$? **F** $x \geq 5$ **G** $x \geq 45$ **H** $x \leq -5$ **J** $x \leq -45$ **2016** **Q33** Which inequality describes all the solutions to $5(3 - x) < -2x + 6$? **A** $x < -9$ **B** $x > 3$ **C** $x < -3$ **D** $x > 7$

VERTICAL STANDARDS

This section details the **progression** of key student expectations/standards** in the courses **before** and **after** this course. This will help you understand what **prior knowledge skills to build upon** and guide you in knowing what **skills you are preparing your students** for in the subsequent course.

6th Grade

6.7(A) generate equivalent numerical expressions using order of operations, including whole number exponents, and prime factorization

6.7(D) generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties

6.10(A) model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts

6.7(C) determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations

6.9(A) write one-variable, one-step equations and inequalities to represent constraints or conditions within problems

6.9(B) represent solutions for one-variable, one-step equations and inequalities on number lines

6.9(C) write corresponding real-world problems given one-variable, one-step equations or inequalities

6.10(B) determine if the given value(s) make(s) one-variable, one-step equations or inequalities true

Pre-Algebra (7th Grade)

7.11(A) model and solve one-variable, two-step equations and inequalities

7.10(A) write one-variable, two-step equations and inequalities to represent constraints or conditions within problems

7.10(B) represent solutions for one-variable, two-step equations and inequalities on number lines

7.10(C) write a corresponding real-world problem given a one-variable, two-step equation or inequality

7.11(B) determine if the given value(s) make(s) one-variable, two-step equations and inequalities true

Algebra I

A.5A solve linear equations in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides

A.5B solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides

A.12E solve mathematic and scientific formulas, and other literal equations, for a specified variable

Algebra II

2A.6(E) solve absolute value linear equations

2A.3(B) solve systems of three linear equations in three variables by using Gaussian elimination, technology with matrices, and substitution

2A.6(D) formulate absolute value linear equations

2A.6(F) solve absolute value linear inequalities

2A.3(E) formulate systems of at least two linear inequalities in two variables

2A.3(F) solve systems of two or more linear inequalities in two variables

2A.3(G) determine possible solutions in the solution set of systems of two or more linear inequalities in two variables