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Key Concept

Fractions and mixed numbers with like denominators (same size parts) can be added or subtracted.


Learning Objective

In this unit, students are working on adding/subtracting fractions across 1 whole. The objective for this opening conversation is to anchor student learning in real world application. In this unit launcher, students will make connections and discuss their experience with construction and playground equipment. Students will be setting a foundation for a 3-part Real World Investigation, *Shawn's Swing Set*, which will unfold part by part over the course of this unit of study.

Unit Launcher: Class Discussion - 20 to 30 minutes

The teacher is facilitating a classroom discussion to create a context for learning about adding and subtracting fractions greater than 1 and set the stage for a 3-part investigation called *Shawn's Swing Set*. The screens below present a screen-by-screen orientation to the conversation.

Fractions Greater than 1



- We are going to be learning about adding and subtracting fractions greater than 1.
- How do we write fractions greater than 1? What are two ways to write a fraction for the model on the left?
- What kinds of things can we describe with these types of fractions?

Screen 1 – Using the sticky notes, guide the students to open a conversation about fractions greater than 1. They will discuss what these fractions describe and how to write them.

Construction and the Playground



- In construction, measurements of materials are often given using mixed numbers.
- What types of play equipment do you find at a playground? What's your favorite? Least favorite?
- How might you use fractions greater than 1 when building a swing set?

Screen 2 – This screen asks students to consider the real world example of construction. They will discuss the types of playground equipment they are familiar with and how fractions greater than 1 might be used to build a swing set.

Swing Set



Screen 3 – This screen gives a brief introduction into the three parts of the Real World Investigation, *Shawn's Swing Set*. Students will be identifying the amount of materials needed to build the swing sets.

The KWL Chart

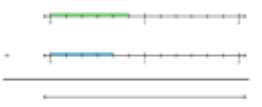
The KWL Chart is presented as part of the unit launcher to offer an optional classroom technique designed to anchor instruction. The purpose for the chart is for the classroom community to record what they already know that provides background knowledge for the unit of study; what they want to learn during the unit of study; and what they learned as they look back on a completed unit of study.

Complete using a large piece of paper and marking pen. Then post in the classroom for reference throughout the unit.

K	W	L
What we know that might help us solve this investigation	What we want to learn so we can solve the investigation	What we have learned that will help us solve the investigation
<p>SAMPLE ANSWERS:</p> <p>1) Add fractions with common denominators by combining the numerators.</p> <p>2) Subtract fractions with common denominators by finding the difference between the numerators.</p> <p>3) Fractions can be written as mixed numbers.</p>	<p>SAMPLE ANSWERS:</p> <p>1) How is adding/subtracting mixed numbers similar to adding/subtracting fractions?</p> <p>2) Does the denominator change?</p> <p>3) Will the rules for adding/subtracting whole numbers remain the same as regular whole numbers?</p>	

Screen 4 – This screen introduces the KWL chart. You may choose to skip this screen and just complete the chart on a separate sheet of paper. The sticky notes will act as a guide to fill in the chart.

Learning About Adding/Subtracting Fractions Across 1



- We will begin with equations with proper fractions that result in improper sums.
- We will add and subtract improper fractions and mixed numbers
- Many models such as the ones pictured on this screen will be used.

Screen 5 – In the final screen of the launcher, students are given an opportunity to share what they are excited to learn about in this unit.

Shawn's Data (Part 1)

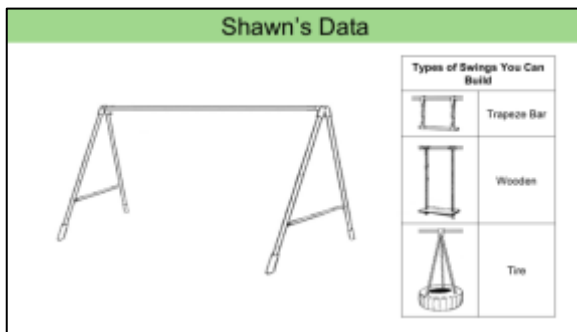
Learning Objective




Students will apply previous learning about adding and subtracting fractions across one whole to complete a data table and apply appropriate strategies.

Introducing the Investigation: Class Discussion – 7 minutes

The teacher facilitates a student dialogue to introduce the Real World Investigation. Shawn is helping to build swings for a swing set. Students will determine how much of each supply is needed to build a set of swings.




Shawn's Data



	Trapeze Bar
	Wooden
	Tire

Screen 1 – Using the sticky notes as a guide to introduce the prompt for Part 1. Lead the students to share their experiences with swings and what their favorite type of swing might be.

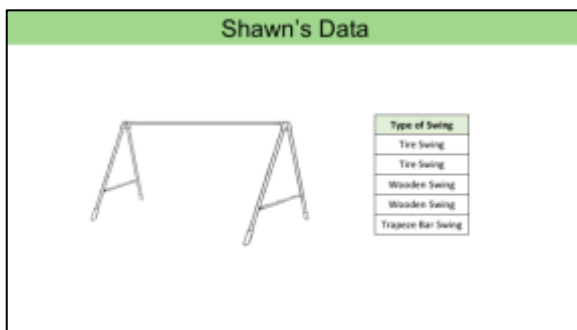
Shawn's Data

	Trapeze Bar
	Wooden
	Tire

Type of Swing	Items Needed		
	Arms	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 5/8
	Wood	1	2 4/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Screen 2 – Students discuss the information that is provided in the table and how to interpret the information so that it is helpful in solving the problem.

Shawn's Data



Tire Swing
Tire Swing
Wooden Swing
Wooden Swing
Trapeze Bar Swing

Screen 3 – This screen shows the students the number of each type of swing that Shawn has decided to build. Students should see that the number of times each swing is listed is the number of each swing type that Shawn is building.

Shawn's Data

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 5/8
	Wood	1	2 6/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Type of Swing	Items				
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Tire Swing				/	
Tire Swing				/	
Wooden Swing	/	/			
Wooden Swing	/	/			
Trapeze Bar Swing			/	/	
Total Needed					

Screen 4 – On this screen, students gain an overview of what they need to do in order to solve this problem. They will discuss how to fill in the table and what is needed in order to figure out the total amount of materials.

Completing the Investigation: Student Work Using Printout – 15 minutes

Begin working on the problem. Be prepared to share your solution.

There is a frame for an old swing set in the town park that doesn't have any swings. Shawn volunteered to build new swings for it.

Use the information in the tables to determine how much of each item he needs to buy in order to build the swings.

- Shawn wants to build 2 tire swings, 2 wooden swings, and 1 trapeze bar. Use the top table to find out how much of each item he will need to build each of the swings. Write that information in the table on the bottom.
- Use the table on the bottom to determine how much of each item Shawn will need to buy to make the swings.

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 5/8
	Wood	1	2 6/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Type of Swing	Items				
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Tire Swing				/	
Tire Swing				/	
Wooden Swing	/	/			
Wooden Swing	/	/			
Trapeze Bar Swing			/	/	
Total Needed					

Screen 5 – Hand out the printed copy of the problem. Students can work individually, cooperatively or collaboratively. Having students work in groups will allow students to engage in math discourse.

Debriefing on the Investigation: Class Discussion – 8 minutes

Use the sticky notes to help guide a discussion to help summarize student learning of writing and comparing fractions.

← 1 of 4 →

✕

Let's share some of the work we did today.

What are some strategies you used to complete the table?

The first question asks students to describe strategies they utilized to solve the problem.

← 2 of 4 →

✕

Did anyone use a different strategy?

The second question offers a chance for students to share different answers they may have gotten and discuss them.

← 3 of 4 → ✕

Why was adding and subtracting fractions and mixed numbers useful for solving this problem?

This question solicits students to explain how the information they learned in this unit was helpful for solving the problem.

← 4 of 4 → ✕

What did you find challenging about adding fractions and mixed numbers?

The fourth question asks students to reflect and describe what was challenging for them in this unit.

Create Some Data (Part 2)

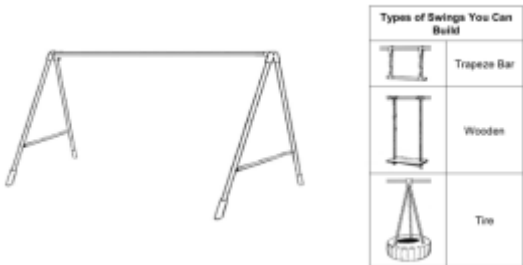
Learning Objective




Students will complete a data table by determining the unknowns and apply previous learning about adding and subtracting fractions across one whole to solve a real world problem using appropriate strategies.

Introducing the Investigation: Class Discussion – 7 minutes

The teacher facilitates a student dialogue to introduce to the Real World Investigation. Shawn is building another swing set. Students will choose the types of swings they want to build and then determine the amount of materials needed to build the set of swings.

Create Some Data



Types of Swings You Can Build	
	Trapeze Bar
	Wooden
	Tire

Screen 1 – This screen introduces the prompt to students. They will discuss the kinds of swings to build for the swing set.

Create Some Data

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 5/8
	Wood	1	2 5/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Type of Swing	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Total Needed					



Screen 2 – Students are introduced to the data table. Guide students identifying strategies they will use to figure out the amount of each material that is needed to build the swings they choose.

Create Some Data

When you go to the store, you see that they only have 2 tires, 16 feet of rope, and 12 feet of metal tubing.

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 4/8
	Wood	1	2 5/8
Trapeze Bar Swing	Chain	2	3 4/8
	Metal Tube	1	2 7/8

Type of Swing	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Total Needed					

Screen 3 – On this screen, students are introduced to the last portion of the problem. Students will discuss how the limited number of supplies will affect their planning.

Completing the Investigation: Student Work Using Printout – 15 minutes

Begin working on the problem. Be prepared to share your solution.

Your friend Shawn made new swings for an old swing set in the town park. Your school also has an old swing set. You and Shawn have decided to work together to build the swings for it. Shawn will help you build the swings, but first you need to figure out how much of each item you need.

Use the information in the tables to determine how much of each item you need to buy in order to build the swings.

- The swing set has room for 6 swings. Determine how many of each swing you will build for your school's swing set.
- Use the tables to determine how much of each item Shawn will need to buy to make the swings.
- If the store only had 2 trees, 16 feet of rope, and 12 feet of metal tubing, could you still make all of the swings you planned to make? If not, what would you have to do?

Type of Swing	Items Needed		
	Items	Number Needed/Per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	2	5 1/2
	Tire	1	
Wooden Swing	Rope	2	5 1/8
	Wood	1	2 5/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Type of Swing	Items				Trees
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	
Total Needed					

Screen 4 – Hand out the printed copy of the problem. Students can work individually, cooperatively or collaboratively. Having students work in groups will allow students to engage in math discourse.

Debriefing on the Investigation: Class Discussion – 8 minutes

Use the sticky notes to help guide a discussion to help summarize student learning of writing and comparing fractions.

← 1 of 4 →

Let's share some of our work from today. How did you decide which types of swing to choose?

The first question asks students to describe how they chose the swings they did.

← 2 of 4 →

What strategies did you use to complete the table?

This second question asks students to recall the strategies they used to solve the problem.

← 3 of 4 →

How did you determine how much of each item was needed for the swings?

This question allows students to explain how they found the amount of each item needed.

← 4 of 4 →

Did anyone run into the problem where the store did not have enough of an item you needed? What did you do?

This questions solicits students to identify how they were able to make sure that the store had enough of the materials they needed to build the swings.

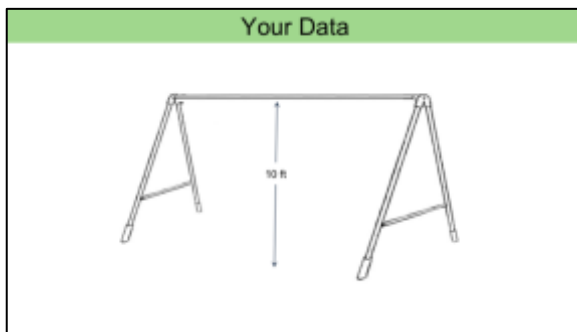
Your Data (Part 3)

Learning Objective

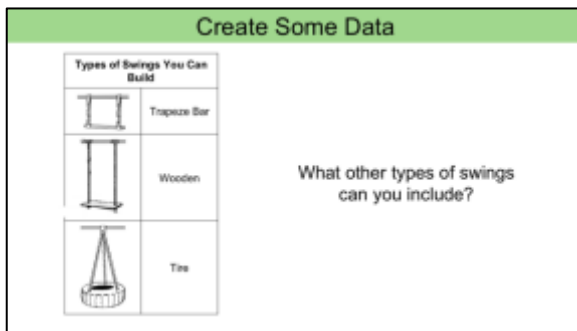
Students will apply previous learning identifying fractions to solve real-world problems, using appropriate tools, structure, and reasoning.

Introducing the Investigation: Class Discussion – 5 minutes

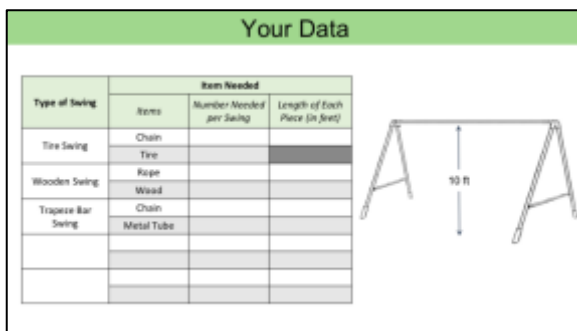
The teacher facilitates a student dialogue to introduce to the Real World Investigation. In this problem, students are solving an open-ended prompt in which they generate their own data for a swing set they are building.



Screen 1 – Students are introduced to the problem. They will be deciding how they want to design your swings to fit the swing set.



Screen 2 – This screen gives students a chance to brainstorm how they will design their swing set and discuss what types of swings to include on the swing set.



Screen 3 – Students brainstorm the amount of materials needed on this screen. They discuss the height limitations and why they will be important when identifying the measurement of the materials.

← 4 of 5 →

Why was the 10 feet swing set height an important piece of information?

The fourth question requires students to explain how the 10 feet limitation was important for their design decisions.

← 5 of 5 →

How was your knowledge of adding and subtracting fractions and mixed numbers useful for solving this problem? Explain.

The last question allows for students to explain how adding and subtracting fractions was important in solving this problem.

The Rubric and the KWL Chart

Let's evaluate our work.						
	3-Advanced Problem Solver	2-Proficient Problem Solver	1-Emerging Problem Solver	0-Beginning Problem Solver	Student work	Teacher work
Meaningful understanding of the Big Idea	My solution shows that I have a deep understanding of the Big Idea for this unit. I answered all reflection questions with detailed explanations.	My solution shows that I have a good understanding of the Big Idea for this unit. I answered the reflection questions with some explanations.	My solution shows that I have some understanding of the Big Idea for this unit. I answered the reflection questions with no explanations.	My solution does not show understanding of the Big Idea for this unit. I did not answer the reflection questions.		
Makes sense of problems and perseveres in solving them.	I read and understood all parts of the problem. I knew what the problem was asking and what to do to help solve it. I kept trying until I got it right.	I read and understood most of the problem. I knew what the problem was asking and what to do to help solve it. I mostly kept trying until I got it right.	I read some of the problem. I knew what the problem was asking and what to do to help solve it. I kept trying until I got it right.	I did not read and understand the problem. I did not know what to do to help solve it. I did not keep trying until I got it right.		
Strategic problem solving.	My calculations are all, if not nearly, correct. My answer makes sense. I completed all parts of the problem.	My calculations are mostly correct. My answer makes sense. I completed most of the problem.	My calculations have a few errors. My answer is not all made sense. I completed most of the problem.	My calculations had many errors. My answer did not make sense. I did not complete many parts of the problem.		
Communicates mathematical ideas, models, and solutions.	I chose appropriate math strategies for my task. I used appropriate models or tools to help solve the problem.	I looked for help in choosing appropriate math strategies. I used appropriate models or tools to help solve the problem.	I chose some appropriate math strategies. I used some models or tools to help solve the problem.	I did not use math strategies, models, or tools to solve the problem.		
Connects mathematical ideas.	I explained and justified my solutions. I answered all questions from others with detailed explanations. My answer sheet is neat.	I explained and justified parts of my solutions. I answered some questions from others with detailed explanations. My answer sheet is mostly correct. One or two mistakes.	I tried to explain and justify my solutions, but my explanations were unclear or incomplete when needed. I had trouble answering questions from others.	I did not or could not explain my solutions. I could not answer questions from others.		

The rubric is designed to provide the teacher and the students with a meaningful evaluation tool. It can be applied to groups of students (in cooperative or collaborative learning environments) or individuals.

K	W	L
What we know that might help us solve this investigation	What we want to learn so we can solve the investigation	What we have learned that will help us solve the investigation
<p>SAMPLE ANSWERS:</p> <p>1) Add fractions with common denominators by combining the numerators.</p> <p>2) Subtract fractions with common denominators by finding the difference between the numerators.</p>	<p>SAMPLE ANSWERS:</p> <p>1) How do we add/subtract fractions with uncommon denominators?</p> <p>2) How is adding/subtracting fractions with uncommon denominators similar to adding/subtracting fractions with common denominators?</p>	

If the class began this Fractions unit with a KWL chart, this is a good time to complete the L section by making a list of what students have learned.

Shawn's Swing Set: Shawn's Data (Part 1)

There is a frame for an old swing set in the town park that doesn't have any swings. Shawn volunteered to build new swings for it.

Use the information in the tables to determine how much of each item he needs to buy in order to build the swings.

- Shawn wants to build 2 tire swings, 2 wooden swings, and 1 trapeze bar. Use the top table to find out how much of each item he will need to build each of the swings. Write that information in the table on the bottom.
- Use the table on the bottom to determine how much of each item Shawn will need to buy to make the swings.

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 5/8
	Wood	1	2 6/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Type of Swing	Items				
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Tire Swing				/	
Tire Swing				/	
Wooden Swing	/	/			
Wooden Swing	/	/			
Trapeze Bar Swing			/	/	
Total Needed					

Shawn's Swing Set: Create Some Data (Part 2)

Your friend Shawn made new swings for an old swing set in the town park. Your school also has an old swing set. You and Shawn have decided to work together to build the swings for it. Shawn will help you build the swings, but first you need to figure out how much of each item you need.

Use the information in the tables to determine how much of each item you need to buy in order to build the swings.

- The swing set has room for 6 swings. Determine how many of each swing you will build for your school's swing set.
- Use the tables to determine how much of each item Shawn will need to buy to make the swings.
- If the store only had 2 tires, 16 feet of rope, and 12 feet of metal tubing, could you still make all of the swing you planned to make? If not, what would you have to do?

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain	3	5 2/8
	Tire	1	
Wooden Swing	Rope	2	5 5/8
	Wood	1	2 6/8
Trapeze Bar Swing	Chain	2	2 3/8
	Metal Tube	1	2 7/8

Type of Swing	Items				
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Total Needed					

Your Swing Set: Your Data (Part 3)

Your school wants you and your classmates to build new swings for your school swing set.

- The top bar of the swing set is 10 feet off the ground. Determine which items and how much of each item you will need to build each type of swing.
- Determine how many of each type of swing you will include on your swing set. The swing set is usually the most popular recess activity, so make sure there are enough swings. Can you think of any other types of swings you can include?
- Determine how much of each item you will need to buy at the store.
- Chains are sold in 20-foot lengths. Ropes are sold in 12-foot lengths. Boards are sold in 8-foot lengths. How many of each will you need to purchase?

Question for Reflection:

- Will your swings be an appropriate height off the ground?

Type of Swing	Items Needed		
	Items	Number Needed per Swing	Length of Each Piece (in feet)
Tire Swing	Chain		
	Tire		
Wooden Swing	Rope		
	Wood		
Trapeze Bar Swing	Chain		
	Metal Tube		

Type of Swing	Items				
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Total Needed					



Student Name: _____

Fractions

Big Idea 4: Adding/Subtracting Fractions Across 1
Real World Investigation: Shawn's Swing Set

	3- Advanced Problem Solver	2- Proficient Problem Solver	1- Emerging Problem Solver	0-Beginning Problem Solver	Student score	Teacher score
Demonstrates understanding of the Big Idea	<input type="checkbox"/> My solution shows that I have a deep understanding of the Big Idea for this unit. <input type="checkbox"/> I answered all reflection questions with detailed explanations.	<input type="checkbox"/> My solution shows that I have an understanding of the Big Idea for this unit. <input type="checkbox"/> I answered the reflection questions with some explanation.	<input type="checkbox"/> My solution shows that I have some understanding of the Big Idea for this unit. <input type="checkbox"/> I answered the reflection questions with no explanation.	<input type="checkbox"/> My solution does not show understanding of the Big Idea for this unit. <input type="checkbox"/> I did not answer the reflection questions.		
Makes sense of problems and perseveres in solving them.	<input type="checkbox"/> I read and understood all parts of the problem. <input type="checkbox"/> I was able to complete the problem with little to no help from others. <input type="checkbox"/> I stayed focused on the task.	<input type="checkbox"/> I read and understood most of the problem. <input type="checkbox"/> I was able to complete most of the problem with little help from others. <input type="checkbox"/> I mostly stayed focused on the task.	<input type="checkbox"/> I had some difficulty understanding the problem. <input type="checkbox"/> I completed the problem with help from others on most of the problem. <input type="checkbox"/> I was often off task.	<input type="checkbox"/> I did not read and understand the problem <input type="checkbox"/> I did not ask for help to solve the problem. <input type="checkbox"/> I did not stay on task and finish my work.		
Attends to precision	<input type="checkbox"/> My calculations are all, if not mostly, correct. <input type="checkbox"/> My answers make sense. <input type="checkbox"/> I completed all parts of the problem.	<input type="checkbox"/> My calculations are mostly correct. <input type="checkbox"/> My answers make sense. <input type="checkbox"/> I completed all parts of the problem.	<input type="checkbox"/> My calculations have a few mistakes. <input type="checkbox"/> My answers do not all make sense. <input type="checkbox"/> I completed most of the problem.	<input type="checkbox"/> My calculations have many mistakes. <input type="checkbox"/> My answers do not make sense. <input type="checkbox"/> I did not complete many parts of the problem.		
Utilizes appropriate strategies, models and tools	<input type="checkbox"/> I chose appropriate math strategies on my own. <input type="checkbox"/> I used appropriate models or tools to help me solve the problem.	<input type="checkbox"/> I asked for help in choosing appropriate math strategies. <input type="checkbox"/> I used appropriate models or tools to help me solve the problem.	<input type="checkbox"/> I did not choose appropriate math strategies. <input type="checkbox"/> The models or tools I chose were not appropriate.	<input type="checkbox"/> I did not use math strategies, models, or tools to solve this problem.		
Constructs viable arguments	<input type="checkbox"/> I explained and justified my solutions. <input type="checkbox"/> I answered all questions from others with detailed explanations. <input type="checkbox"/> My answers were correct.	<input type="checkbox"/> I explained and justified parts of my solutions. <input type="checkbox"/> I answered some questions from others with detailed explanations. <input type="checkbox"/> My answers were mostly correct. Only a few mistakes.	<input type="checkbox"/> I tried to explain and justify my solutions, but my explanations were unclear or contained some mistakes. <input type="checkbox"/> I had trouble answering questions from others.	<input type="checkbox"/> I did not or could not explain my solutions. <input type="checkbox"/> I could not answer questions from others.		

Shawn's Data (Part 1) Solution

Check for Understanding

Ask students to share their work on the investigation. Ask students to explain their reasoning and to share any models they created to support their answer. Correct answers are shown in the table below.

Items					
Type of Swing	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Tire Swing				<u>15 3/4</u>	
Tire Swing				<u>15 3/4</u>	
Wooden Swing	<u>11</u>	<u>2 3/4</u>			
Wooden Swing	<u>11</u>	<u>2 3/4</u>			
Trapeze Bar Swing			<u>2 7/8</u>	<u>7</u>	
Total Needed	<u>22 feet</u>	<u>5 1/2 feet</u>	<u>2 7/8 feet</u>	<u>38 1/2 feet</u>	<u>2 tires</u>

Indicators of Understanding

- ✓ Creates an organized plan for solving a multi- step problem.
- ✓ Explains thinking when asked to justify a method or solution.
- ✓ Selects appropriate tools and/or strategies to solve the problem.

Create Some Data (Part 2) Solution

Check for Understanding

Ask students to share their work on the investigation. Ask students to explain their reasoning. Explore the strategies students used.

Answers will vary. After completing the table, students will have to compare their totals to the amount of each supply available. If there isn't enough of a supply available, students should suggest changes to their plan.

Items					
Type of Swing	Rope <i>(in feet)</i>	Wood <i>(in feet)</i>	Metal Tube <i>(in feet)</i>	Chain <i>(in feet)</i>	Tires
Total Needed					

Indicators of Understanding

- ✓ Creates an organized plan for solving a multi-step problem.
- ✓ Solves a multi-step story problem involving the use of multiple operations.
- ✓ Explains thinking when asked to justify a method or solution.
- ✓ Selects appropriate tools and/or strategies to model and solve the problem.

Your Data (Part 3) Solution

Check for Understanding

Ask students to share their work on the investigation. Ask students to explain their reasoning. It is important that student responses demonstrate an understanding of the Big Idea, that fractions and mixed numbers with like denominators can be added and subtracted.

Extend/Modify

What other projects could students build? How could they use the skills they acquired in this problem set to solve a problem for another project?

Type of Swing	Items Needed		
	Items	Number Needed Per Swing	Length of Each Piece (in feet)
Tire Swing	Chain		
	Tire		
Wooden Swing	Rope		
	Board		
Trapeze Bar Swing	Chain		
	Metal Tube		

Type of Swing	Items				
	Rope (in feet)	Wood (in feet)	Metal Tube (in feet)	Chain (in feet)	Tires
Total Needed					

Indicators of Understanding (As assessed by the rubric)

- ✓ Demonstrates an understanding of adding and subtracting like fractions and mixed numbers.
- ✓ Makes sense of problems and perseveres in solving them.
- ✓ Attends to precision.
- ✓ Utilizes appropriate strategies, models and tools.
- ✓ Constructs viable arguments.