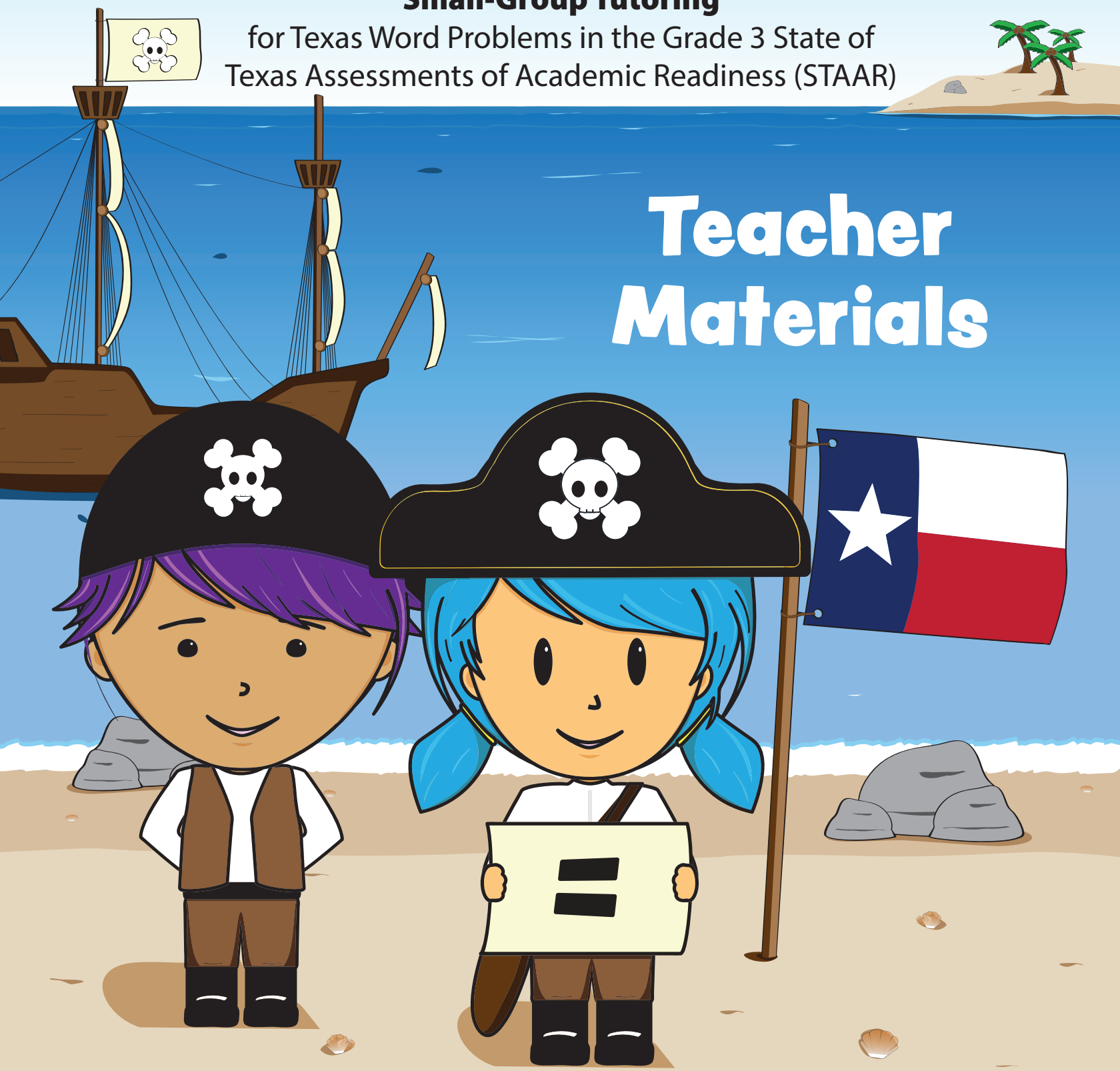
Pirate Math Equation Quest

Small-Group Tutoring
for Texas Word Problems in the Grade 3 State of Texas Assessments of Academic Readiness (STAAR)



Teacher Materials

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The University of Texas at Austin

The Meadows Center
FOR PREVENTING EDUCATIONAL RISK
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Pirate Math Equation Quest

Small-Group Intervention for Texas Word Problems in the STAAR - Grade 3

TEACHER MATERIALS

Sarah R. Powell & Katherine A. Berry

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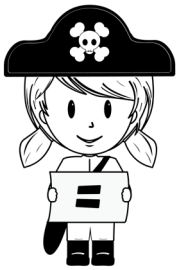


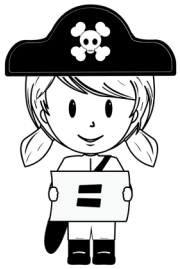
Introduction

Welcome to *Pirate Math Equation Quest*!

We designed this version of *Pirate Math Equation Quest* as a small-group intervention to help students at the third-grade instructional level to solve word problems presented on the Texas standardized test, called the State of Texas Assessments of Academic Readiness (STAAR). This version of the program was developed to offer support to any students who require supplemental mathematics remediation in the area of word-problem solving. The focus of the *Pirate Math Equation Quest* small-group intervention for Texas word problems in the STAAR - Grade 3 is single-digit and double-digit additive and multiplicative word problems that include four schemas: Total, Difference, Change, and Equal Groups.

This manual includes the Teacher Lesson Guides, called STAAR Guides, the Teacher Activity Guides, and accompanying Supplemental Materials (i.e., posters, maps, cards, graphs, and mats) necessary to implement *Pirate Math Equation Quest* with small groups of 3-4 students. A separate Student Manual includes the student materials, organized by lesson, needed to implement *Pirate Math Equation Quest*.

Scientific evaluations of *Pirate Math Equation Quest* indicated that at-risk third-grade students (with and without mathematics disabilities) who performed in the lowest 13th percentile of their classes demonstrated improved word-problem performance with *Pirate Math Equation Quest* compared to students who did not participate in *Pirate Math Equation Quest* (Powell, Berry, & Barnes, 2019).



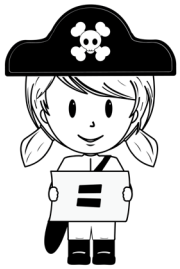
In This Manual

This Teacher Manual includes the following:

Introduction
- Basic information about implementing *Pirate Math Equation Quest*
- Schedule for implementation
- Explanation of Teacher Materials
- Explanation of Student Materials
- Explanation of Supplemental Materials
- Explanation of Other Materials

STAAR Guides 1-18
- Teacher Lesson Guides

Activity Guides
- Guides to core lesson components (teachers are referred to Activity Guides in the STAAR Guides)



Implementation

The *Pirate Math Equation Quest* small group intervention for Texas word problems in the STAAR - Grade 3 is implemented **three times** per week for **6 school weeks**. Each lesson lasts **30-35 minutes**.

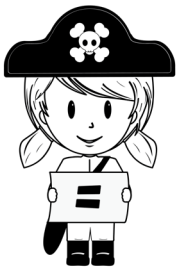
During each lesson, the teacher explicitly teaches a lesson to a group of 3-4 students. Each lesson includes five components: (1) Math Fact Flashcards, (2) Equation Quest, (3) Buccaneer Problems, (4) Shipshape Sorting, and (5) Jolly Roger Review. First, students complete two trials of Math Fact Flashcards. During Lessons 1-30, students answer as many addition and subtraction flashcards as they can in 1 minute. During Lessons 31-39, students answer as many multiplication and division flashcards as they can in 1 minute. After 2 trials, one of the students from the group graphs the higher score. Second, students receive instruction on solving equations and the meaning of the equal sign in Equation Quest. Third, students receive schema instruction to solve three word problems during Buccaneer Problems. Fourth, students participate in Shipshape Sorting and practice identifying word-problem schemas learned during the Buccaneer Problems during a 1-minute timing. Fifth, students work individually to solve addition, subtraction, multiplication, and/or division fluency problems and a word problem using the schema steps.

Daily Activities

(1) Math Fact Flashcards (2-3 minutes)
- Students complete two trials of Math Fact Flashcards, each for 1 minute
- Teacher and students count cards after each timing
- Teacher monitors and provides feedback as needed, using the Counting Up strategy to assist
- After 2 trials, students graph the higher score

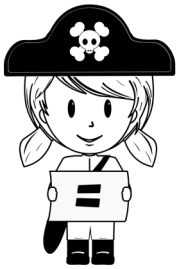
(2) Shipshape Sorting (2-3 minutes)
- Students practice identifying word-problem schemas during a 1-minute timing
- Teacher monitors and provides feedback as needed

(3) STAAR Problems (20-25 minutes)
- Students receive schema instruction to solve three word problems from the STAAR
- Teacher models Problem A as students follow along
- Teacher and students complete Problem B together as a guided practice activity
- Students complete Problem C independently
- Teacher monitors and provides feedback
- Students color number of earned coins/stamps during lesson on a Treasure Map



Schedule

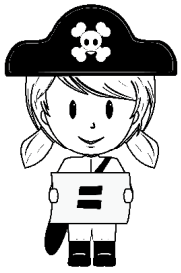
LESSON	TEACHER LESSON
1	Introduce Total problems (T as X)
2	Total problems with three and four parts
3	Total problems (P1, P2, and T as X)
4	Introduce Difference problems (D as X)
5	Difference problems (D as X)
6	Difference problems (D as X)
7	Introduce Change problems (E as X)
8	Change problems (C and E as X)
9	Change problems with two changes
10	Introduce Equal Groups problems (P as X)
11	Equal Groups problems (N as X)
12	Equal Groups problems (N and P as X)
13-18	Review of all 4 schemas



Teacher Materials

During each lesson, teachers will use the STAAR Guides and Activity Guides to provide instruction to students. Each STAAR Guide is labeled as the lesson number. For example, the STAAR Guide for Lesson 1 is labeled Lesson 1. The STAAR Guides provide a step-by-step guide for teachers to follow throughout the lesson. In the STAAR Guides, teacher dialogue **is bolded** and student responses are unbolded. Teachers should review the STAAR Guides before each lesson. To implement *Pirate Math Equation Quest* with fidelity (as conducted in the research used to validate *Pirate Math Equation Quest*), it is essential teachers teach each and every principle covered in all lessons. Some teachers study the STAAR Guides and prepare an outline; then, they use the outline to deliver the instruction in their own words. Other teachers, however, after studying the lesson, still rely heavily on the wording of the STAAR Guide to deliver the lesson. In either case, it is necessary to study the STAAR Guide before delivery. In all cases, teachers should deviate from the script to elaborate concepts if students do not seem to understand.

Lesson 1



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. ~~Shipshape Sorting~~
3. STAAR Problems
   Total

Materials

Posters

- Counting Up
- Pirate Math Rules
- RUN and Total

Student Materials

- STAAR Problems: Lesson 1
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer

Introduction

Hi. My name is _____. For the next six weeks, we will work on math word problems that you will see on the STAAR test. We will practice every time we meet and when it is time for you to take the STAAR test, you will be prepared and ready!

We will work hard to get better in math so you are ready for the STAAR test!

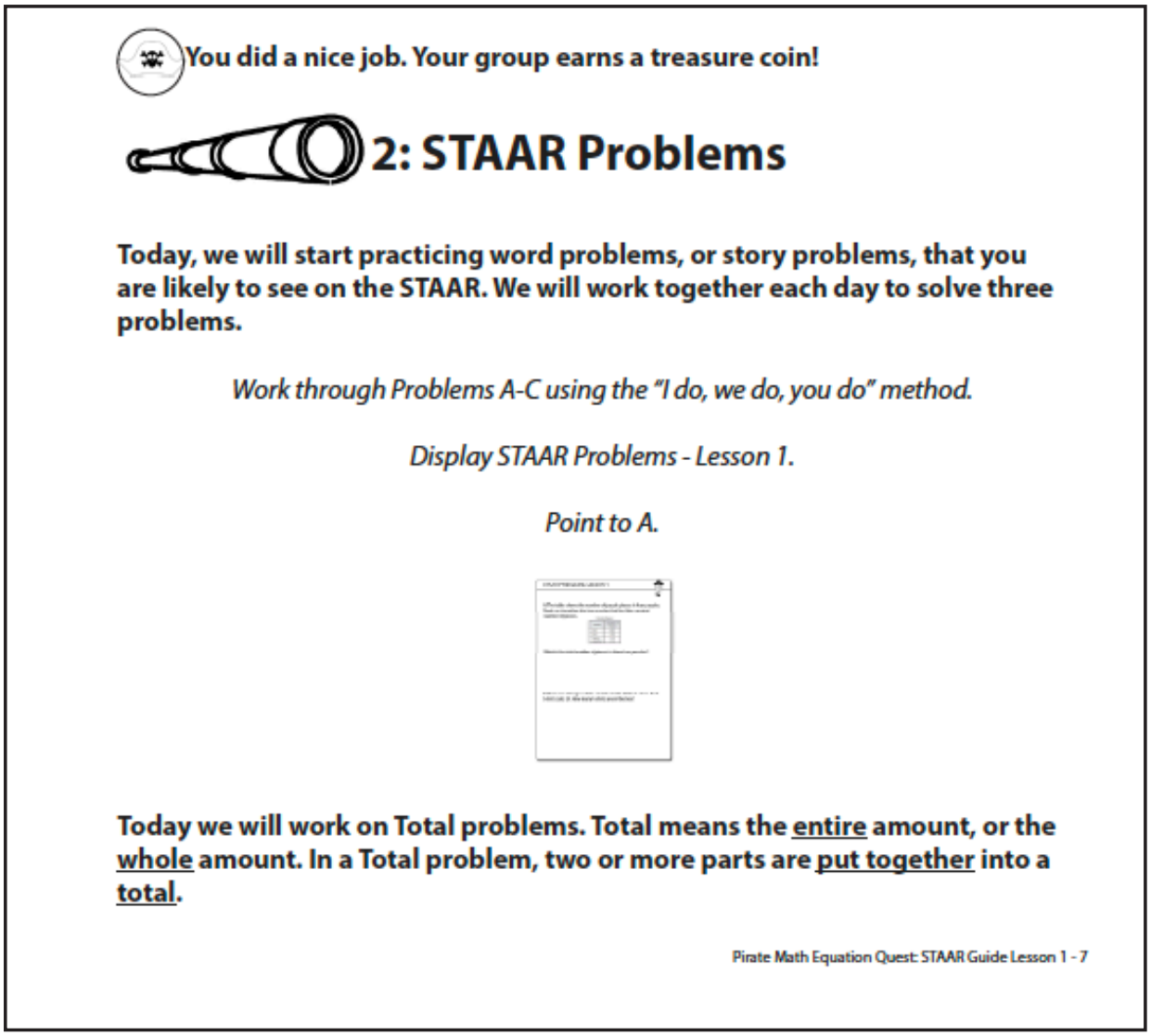
Display Rules poster.

Pirate Math Equation Quest: STAAR Guide Lesson 1 - 1

At the top of each STAAR Guide, the activities for the lesson are listed. Activities crossed out in the list indicate lesson components not taught in the current lesson. In Lesson 1, for example, Shipshape Sorting is crossed out because the activity is introduced during Lesson 2.

Below the list of activities for each lesson is a list of posters, student materials, and tutor (teacher) materials needed for each lesson. Prior to lesson implementation, teachers should review this list to ensure strong preparation in advance of each lesson.

When teachers need to introduce a poster or worksheet, dialogue is written *in italics* with an accompanying picture. In Lesson 1, shown below, the Lesson Guide reads *Display STAAR Problems - Lesson 1* with a picture below to prompt teachers to introduce STAAR Problems. Similar instructions are *written in italics* throughout the STAAR Guides.



You did a nice job. Your group earns a treasure coin!

2: STAAR Problems

Today, we will start practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 1.

Point to A.

Today we will work on Total problems. Total means the entire amount, or the whole amount. In a Total problem, two or more parts are put together into a total.

Pirate Math Equation Quest: STAAR Guide Lesson 1 - 7

There are STAAR Guides for all 18 lessons in the small group intervention program for Texas word problems in the STAAR - Grade 3. All of the developed STAAR Guides are included in this manual.

When teachers become familiar and comfortable with the lesson content and sequencing, they may choose to print and refer to the Activity Guides during lessons. The Activity Guides highlight the core lesson components. Some teachers may choose to use the Activity Guides exclusively as they progress with lesson implementation. Other teachers may print the Activity Guides and use them in combination with the STAAR Guides. Below is the first page of the RUN Activity Guide.

RUN
ACTIVITY GUIDE

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

If yes: Number the graph.
If no: Move on to R.

Follow the RUN poster.

What does R stand for?

Read the problem.

Let's read it!

Read the problem or allow a student to read the problem, if time permits.

Great! What does U stand for?

Underline the label and cross out irrelevant information.

First, let's look at the question sentence to identify the label. The question sentence is the sentence that starts with the capital letter and ends with the question mark. Then, let's underline the label.

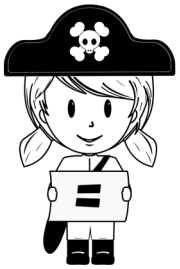
Let's do that now.

(Write.)

Before we move to the N in RUN, we need to check for irrelevant information. We only use numbers in the problem that tell us about ___ (fill in blank with label)**. A number that tells about other things is irrelevant information. In this problem, do you see any number that is not about our label?**

Yes/No.

There are Activity Guides for the following core lesson components: RUN, Total, Difference, Change, Equal Groups, Math Fact Flashcards, and Shipshape Sorting. All of the developed Activity Guides are included in this manual.



Student Materials

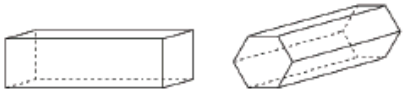
The Student Materials needed for each lesson are organized in a packet by lesson. For example, the Student Lesson Packet for Lesson 6 is labeled Lesson 6 STAAR Student Lesson Packet.

Student Lesson Packets include the following 2 pages:
(1) STAAR problems (pages 1-2)

Pictured below is the front side of the STAAR Problems worksheet, page 1, in the Lesson 6 STAAR Student Lesson Packet.

STAAR PROBLEMS: LESSON 6

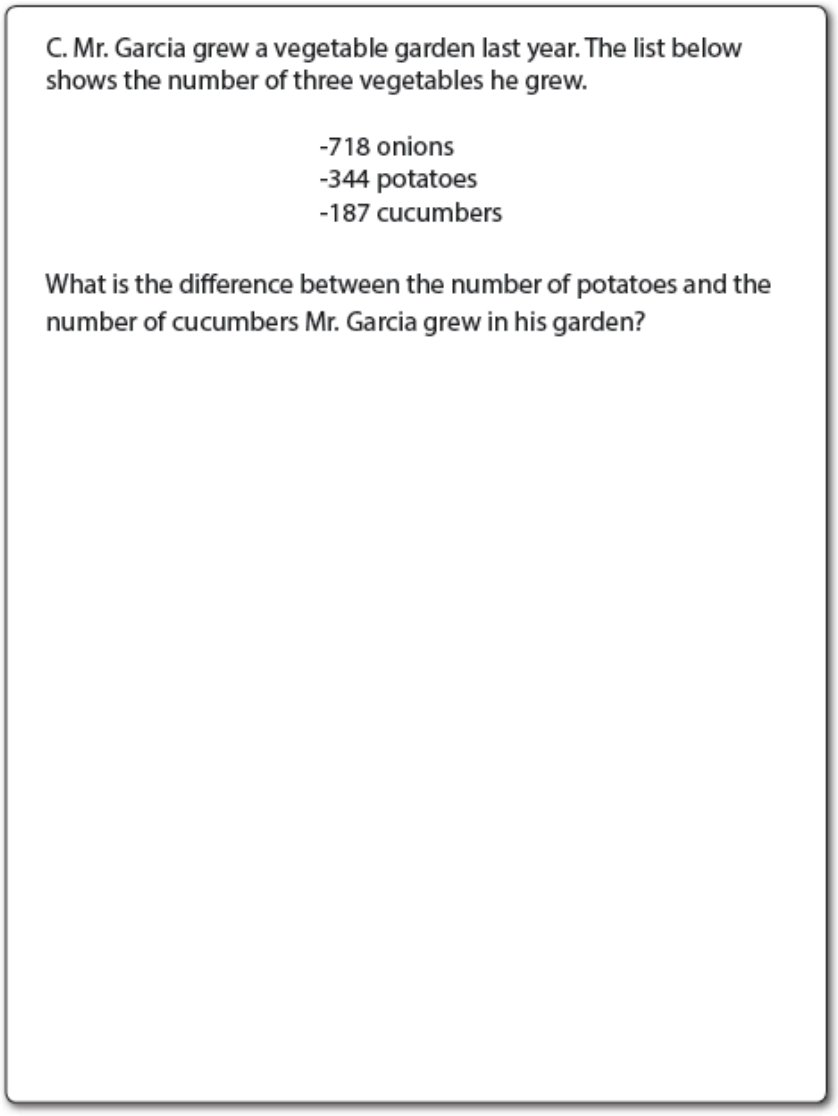
A. A pair of three-dimensional figures is shown below.



What is the difference between the number of edges on these two figures?

B. Rob had 345 concert tickets to sell. He sold 127 of these tickets on Monday. How many tickets does Rob have left to sell?

Page 2, the back side of the STAAR Problems worksheet in the Lesson 6 STAAR Student Lesson Packet, is displayed below.



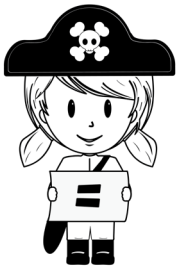
C. Mr. Garcia grew a vegetable garden last year. The list below shows the number of three vegetables he grew.

-718 onions
-344 potatoes
-187 cucumbers

What is the difference between the number of potatoes and the number of cucumbers Mr. Garcia grew in his garden?

The STAAR problems follow an "I do, we do, you do" sequence. The teacher models Problem A as students follow along. The teacher and students complete Problem B together as a guided practice activity. Students complete Problem C independently as the teacher monitors and provides feedback.

All Student Lesson Packets include 2 pages, so the packets can be printed for students in a set prior to the lesson. Teachers should print the Student Lesson Packets double-sided. The Student Lesson Packets for all 18 lessons are included in this manual.

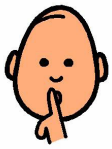


Supplemental Materials

Pirate Math Equation Quest includes six posters for teachers to display throughout the lessons. Templates for the posters are included in this manual. In the beginning lessons, teachers should display the Pirate Math Rules and Counting Up Addition and Subtraction posters pictured on this page and the following page.

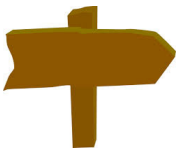
Pirate Math Rules

1. Use inside voice.



2. Stay seated.

3. Follow directions.



4. Try your best.

COUNTING UP Addition

1. Put the greater number in your fist and say it.
2. Count up the number that's less on your fingers.
3. The sum is the last number you say.

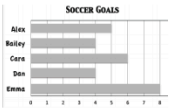
COUNTING UP Subtraction

1. Put the minus number in your fist and say it.
2. Count up your fingers to the number you start with.
3. The difference is the number of fingers you have up.

As teachers introduce the four schemas, Total, Difference, Change, and Equal Groups, they need to display the RUN poster, pictured below, and the corresponding schema posters for students to reference. The RUN poster provides an attack strategy for students to use as they solve word problems.

RUN

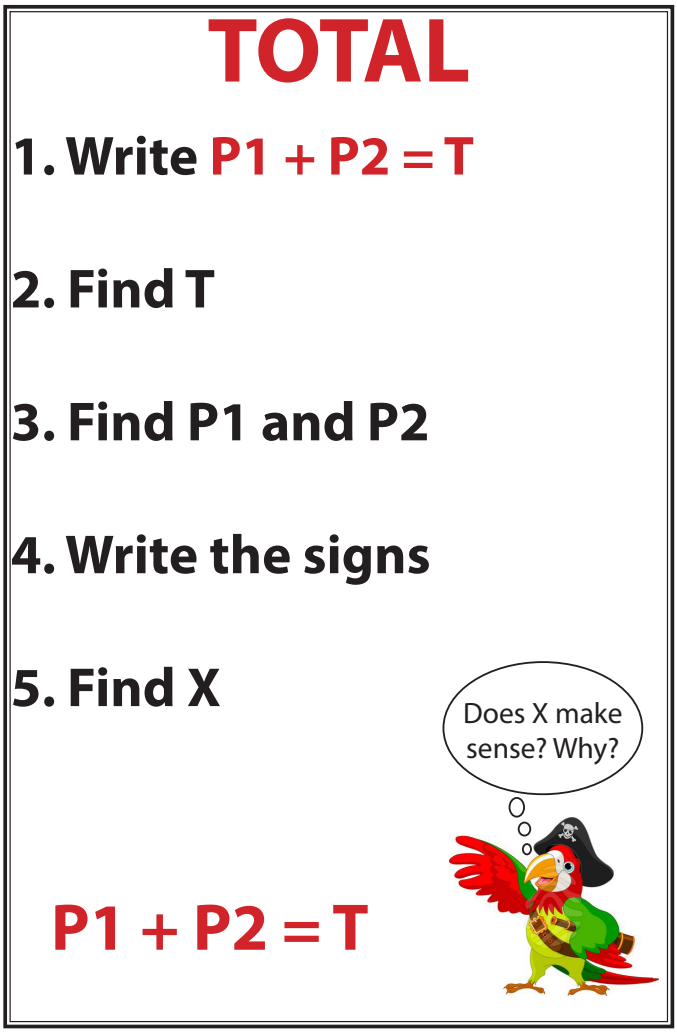
If needed, number the graph



1. ***Read*** **the problem**
2. ***Underline*** **the label and** ~~**cross out irrelevant info**~~
3. ***Name*** **the problem type**

Total
Difference
Change
Equal Groups

The schema posters, pictured below and on the following page, provide specific steps for setting up and solving a word problem after identifying the correct schema. Total problems are introduced during Lesson 1, Difference problems are introduced during Lesson 4, Change problems are introduced during Lesson 7, and Equal Groups problems are introduced during Lesson 11.



DIFFERENCE

1. Write G – L = D
2. [Compare sentence] and label G and L
3. Find D
4. Find G and L
5. Write the signs
6. Find X

G – L = D

CHANGE

1. Write ST +/– C = E
2. Find ST
3. Find C
4. Find E
5. Write the signs
6. Find X

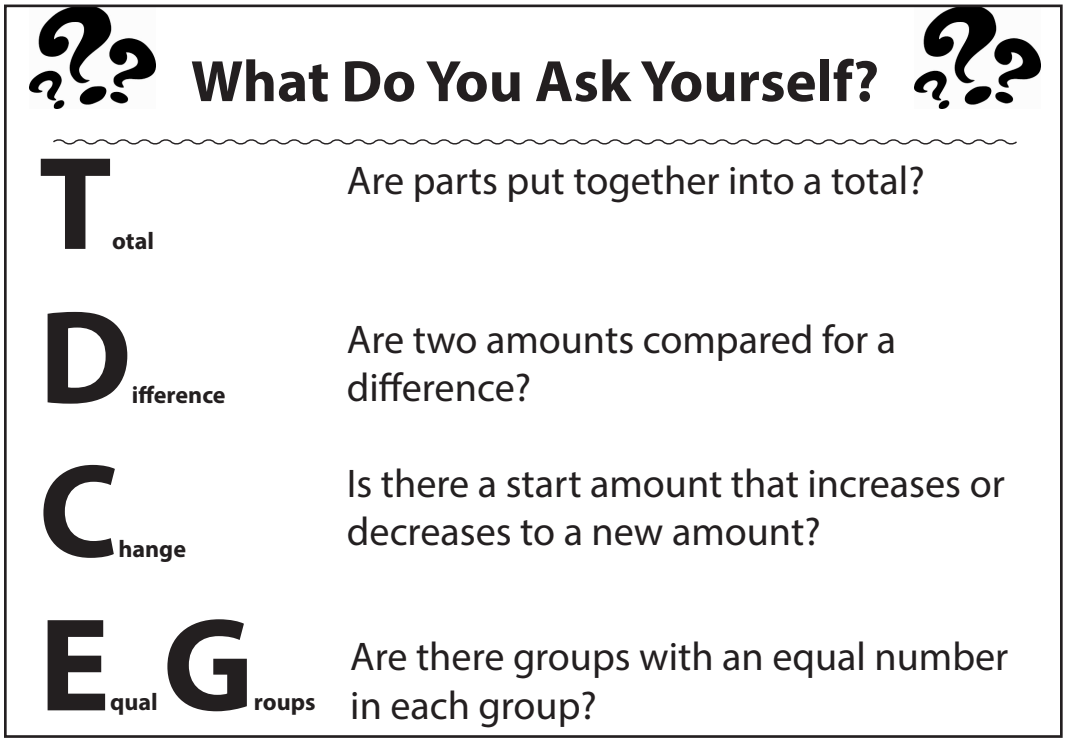
ST +/– C = E

EQUAL GROUPS

1. Write GR × N = P
2. Find P
3. Find GR and N
4. Write the signs
5. Find X

GR × N = P

After teachers have introduced the Total, Difference, Change, and Equal Groups problems, they should display the What Do You Ask Yourself? poster, featured below. The What Do You Ask Yourself? poster, introduced during Lesson 10, provides a prompt for students to ask questions and gesture to determine the correct schema. We encourage teachers to use gestures to help students recall the four schemas. The Total gesture is introduced in Lesson 1. The Difference gesture is introduced in Lesson 4. The Change gesture is introduced in Lesson 7. The Equal Groups gesture is introduced in Lesson 11. Teachers can refer to the STAAR Guides to learn the specific schema gestures to model for students. Students often struggle to identify the correct problem type after all four schemas have been introduced. This poster helps students to distinguish between the Total, Difference, Change, and Equal Groups schemas.

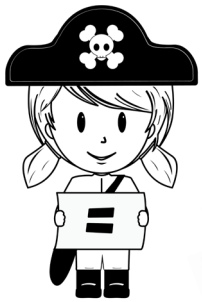


During every lesson, teachers also display the Treasure Map. Throughout each lesson, students can earn coins for their Treasure Map for following the Pirate Math rules. When students reach the end of their Treasure Map, they earn a novelty prize from a treasure box.

If teachers do not have coins, they can use stamps, stickers, or colored pencils to color the designated number of spaces on the Treasure Map. Similarly, teachers can use any prize bag or box if they do not have a treasure box.

On the following pages are four different variations of the Treasure Map. Teachers can choose one map or alternate maps depending on students' preferences. All four Treasure Map templates are included in this manual.

Pirate Math Treasure Map



Group:

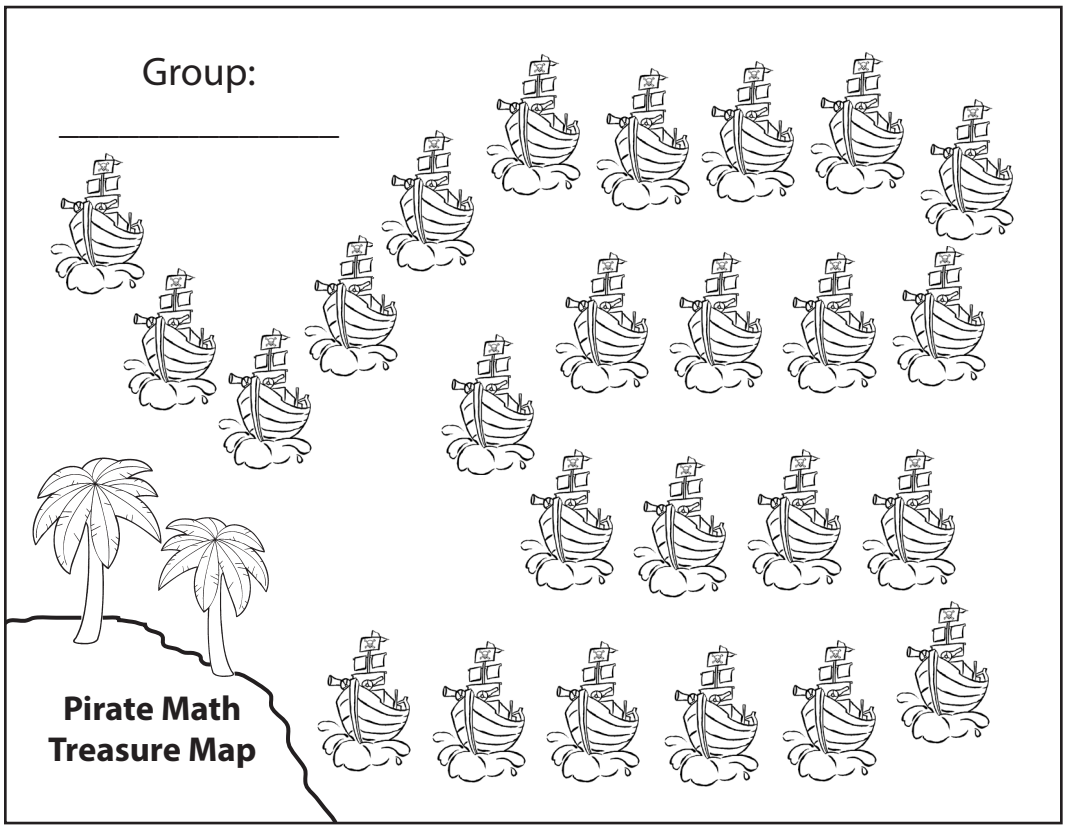
_____

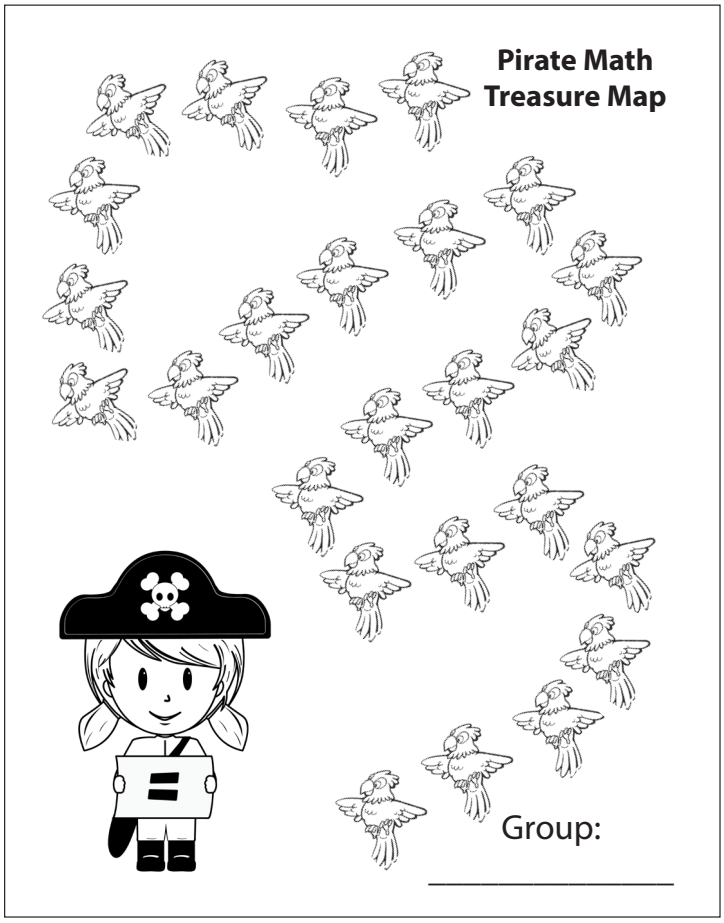
Pirate Math Treasure Map

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Group:

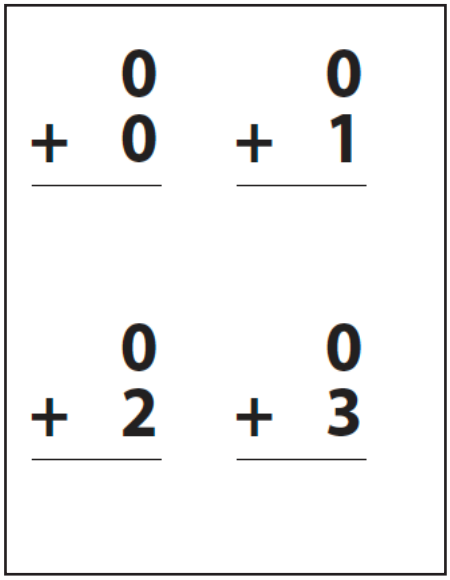
_____

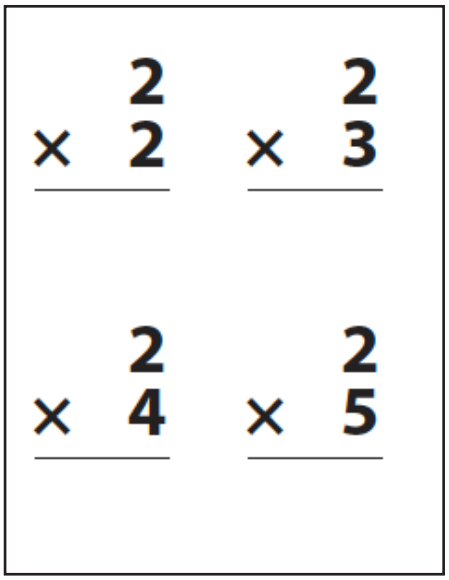

Group:
Pirate Math
Treasure Map


Pirate Math
Treasure Map
Group:

For the Math Fact Flashcards Activity, teachers need to cut and print the Math Fact Flashcards and print the Math Fact Flashcards graph. Templates for the Math Fact Flashcards and the Math Fact Flashcards graph are included in this manual.

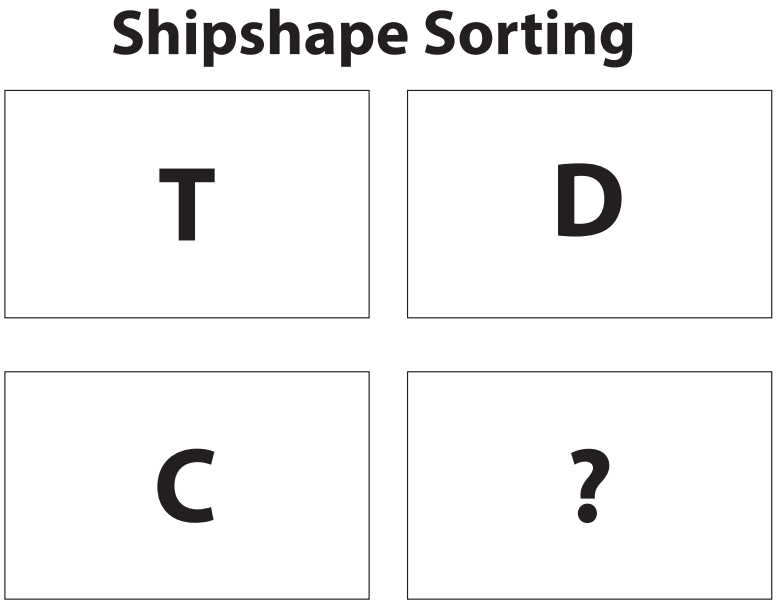
There are two sets of Math Fact Flashcards for the small group intervention for Texas word problems in the STAAR - Grade 3. The first set includes an addition or subtraction problem on the front side of the card and the correct answer on the back side of the card. The second set includes a multiplication or division problem on the front side of the card and the correct answer on the back side of the card. It is recommended that teachers print these cards double-sided on cardstock. There are four problems per page; teachers should cut each page into fourths using a paper cutter.



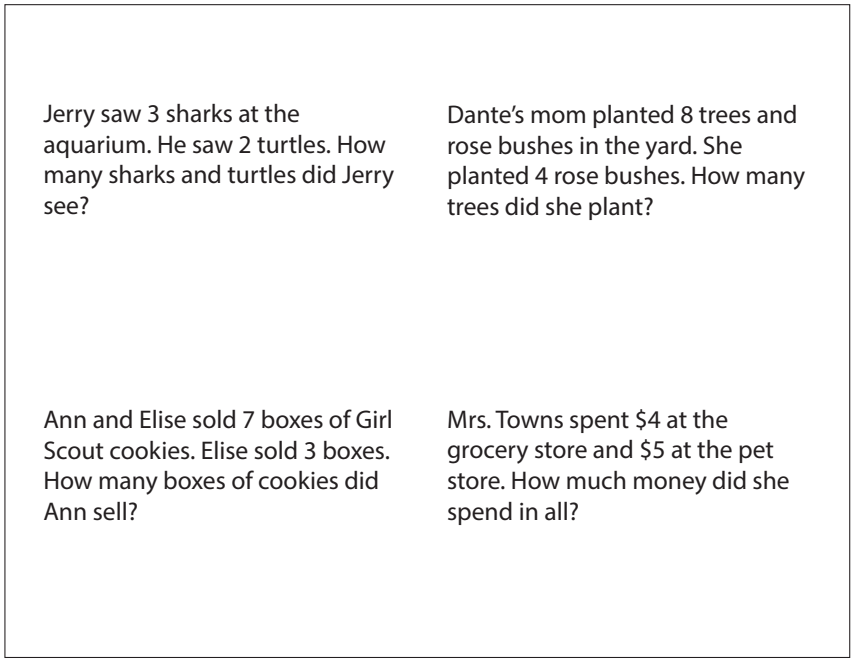


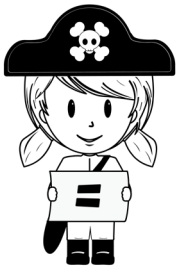
Teachers also need to print the Math Fact Flashcard Graph, pictured below, in advance of the lesson. At the end of the Math Fact Flashcards activity, students graph their higher score from the two trials on the graph below. Teachers should plan to copy extra graphs for easy access after students complete the first graph.

During Shipshape Sorting, which begins in Lesson 2, students participate in schema sorting practice using sorting cards and the sorting mat, displayed below. Templates for the Shipshape Sorting Mat and accompanying cards are included in this manual.



The Shipshape Sorting cards include a word problem on the front side of the card and the correct schema (i.e., T for Total, D for Difference, and C for Change) on the back side of the card. It is recommended that teachers print the Shipshape Sorting cards double-sided on cardstock. There are four word problems per page; teachers should cut each page into fourths using a paper cutter. There are no sorting cards for Equal Groups problems. If desired, teachers can create their own Equal Groups sorting cards and a new sorting mat that includes an EG box.





Other Materials

Other Materials

The following materials are used throughout the program but are not included in this manual.

- Timer
- Gold coins
- Treasure box
- Dry erase board
- Dry erase markers
- Dry erasers
- Blue painter's tape

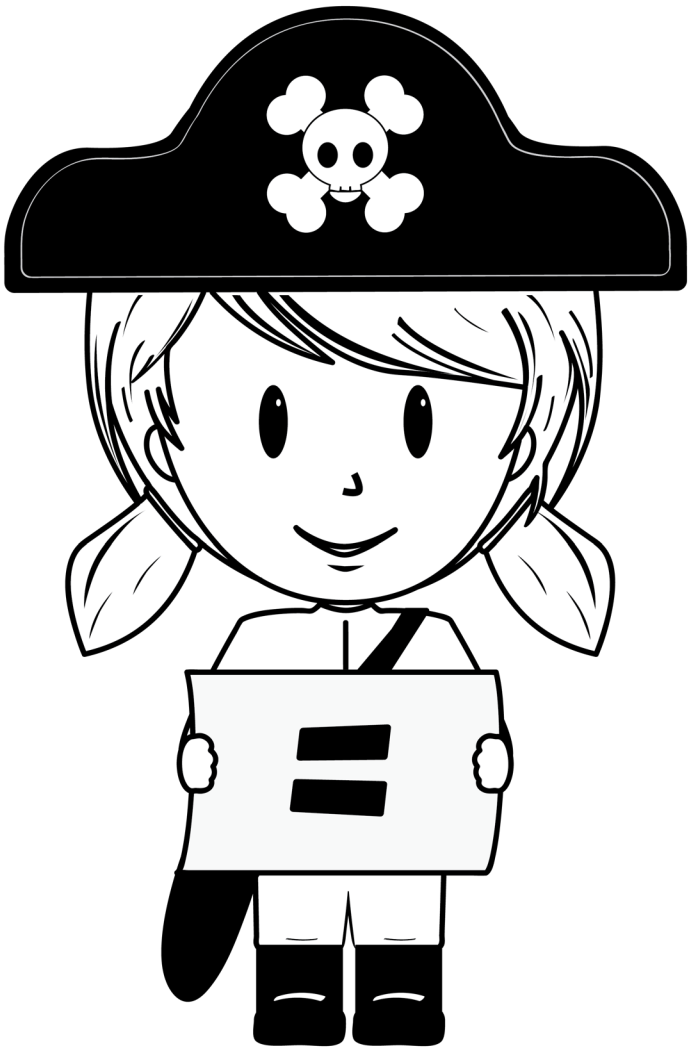
The timer is used during the timed activities: Math Fact Flashcards and Shipshape Sorting. The timer can be purchased from a teacher supply store or a mathematics manipulatives company.

The gold coins and treasure box are used throughout each lesson to reward students for following the Pirate Math rules. As previously mentioned, stamps, stickers, or colored pencils can substitute for gold coins. Teachers can use any prize bag or box if they do not have a treasure box.

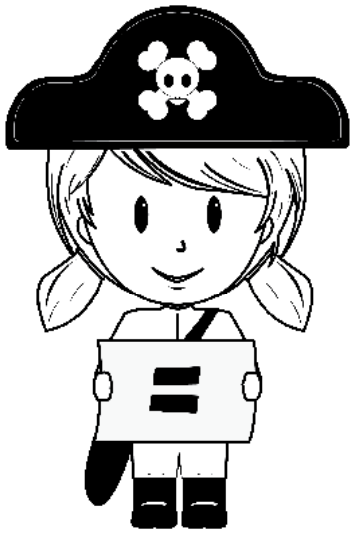
The dry erase board, dry erase markers, dry erasers, and blue painter's tape are used during lessons that include Equal Groups problems (i.e., Lessons 10-18) to help students understand the concept of Equal Groups. Students use these materials to illustrate groups with an equal number in each group. Teachers can purchase these materials from a teacher or office supply store.

For all lessons, teachers and students also need pencils.

STAAR Guides 1 - 18



Lesson 1



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. ~~Shipshape Sorting~~
3. STAAR Problems
   Total

Materials

Posters

Counting Up
Pirate Math Rules
RUN and Total

Student Materials

STAAR Problems: Lesson 1
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer

Introduction

Hi. My name is _____. For the next six weeks, we will work on math word problems that you will see on the STAAR test. We will practice every time we meet and when it is time for you to take the STAAR test, you will be prepared and ready!

We will work hard to get better in math so you are ready for the STAAR test!

Display Rules poster.

Pirate Math Rules

Before we get started, let's talk about some rules. This poster (point to Rules poster) **shows us the rules for how to behave when we work together. Look at our first rule** (point)**. It says, "Use inside voice." Look at the picture that goes with this rule** (point to first picture)**. Why is this** (point) **a good picture to remind us about using our inside voices?**

(Students respond.)

You're right. We'll work in the (library/hallway)**, so we have to be quiet and use our inside voices. Always use your inside voices. That's our first rule.**

Here's the next rule (point to second rule)**. It says, "Stay seated." Look at the picture that goes with this rule** (point to second picture)**. Why is this a good picture to remind us to stay in our seats?**

(Students respond.)

Good job! The chair reminds us that when we work together, we must stay seated. Let's look at the next rule (point)**. This rule says, "Follow directions." Why is this a good picture to remind us to follow directions** (point to third picture)**?**

(Students respond.)

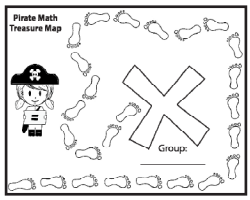
Yes. The picture reminds us to listen and follow directions. This is a very important rule. Part of following directions means raising your hand if you want to speak or answer a question. Remember that we are working in a group, so it is important for everyone to have an opportunity to speak and listen to each other.

We have one more rule (point to fourth rule)**. This last rule says, "Try your best." Look at this picture** (point to fourth picture)**. Why is this a good picture** (point) **to remind us to try our best?**

(Students respond.)

If you follow these rules, we'll have fun and learn a lot about math!

When we work on STAAR math problems together, we'll play Pirate Math Equation Quest. Just like a pirate, we will have a Treasure Map.



Display Treasure Map.

This Treasure Map has footsteps to color. When we've colored in all the footsteps and land on the "X," each of you will receive a prize from the treasure chest! On the Treasure Map, there is a space for us to write our group name. Do you have any ideas for a good group name? This will be our group name for the next six weeks when we meet. Please raise your hand.

Spend 1-2 min deciding on a group name with students.

Display treasure chest.

Throughout the lesson, your group will earn treasure coins by following the Pirate Math Equation Quest Rules. Each time we work together, we'll count the number of coins you earned as a group and color that number of footsteps on the Treasure Map.

What happens when you have enough colored footprints to land on the big "X" on the map?

Each of you gets to pick a prize from the treasure chest.

Exactly! You each get to pick a prize from the treasure chest. Then, your group will get a new Treasure Map.

I like the way you're all following our Pirate Math Equation Quest rules right now. You're using your inside voices, staying seated, following my directions,

and raising your hands. So, your group earns a treasure coin for your Treasure Map!

(Give students first coin.)

1: Math Fact Flash Cards

The first activity we will complete during our STAAR practice is Math Fact Flash Cards. Look at these cards.

Display Math Fact Flash Cards.

Each card has one math problem on it. The problems are addition, subtraction, multiplication, or division. We will complete the flash card activity as a round robin.

In the round robin, I'll show the first person in the group one card. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then, I will move to the second person and show him/her the second card. This person will look at the problem, and tell me the answer as quickly as he/she can. We will continue with the third person and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

Remember, you only answer the problem when it is your turn in the round robin.

If you answer the problem correctly, I'll put it in a pile on the table.

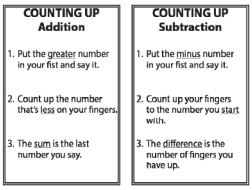
Remember, as a group, you'll have 1 minute to answer as many flash cards as you can. I'll hold up a flash card for the first person. You'll give me the answer. Then I will hold up a flash card for the next person. And so on.

Let's practice. (Hold up flash card.) **What's the answer?**

(Each group member responds to complete one round of the round robin.)

Remember, we can use Counting Up to help us solve addition and subtraction problems. Let's look at our poster to review how to use Counting Up to add and subtract.

Show Counting Up posters to students.



What sign tells you to add?

The plus sign.

If we need to add, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up addition steps.

Let's say the steps together.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Let's say the steps again.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Practice using Counting Up addition with one or two of the flash cards with students.

What sign tells you to subtract?

The minus sign.

If we need to subtract, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up subtraction steps.

Let's say the steps together.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Let's say the steps again.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Practice using Counting Up subtraction with one or two of the flash cards with students.

Good! Now let's complete the activity. At the end of 1 minute, we will count the number of cards in the pile. Are you ready? Let's try.

Show Math Fact Flash Cards in round robin for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly!

Let's try to beat that score. We'll use the same flash cards. I'll show you one card at a time. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then we will move to the second person. Remember, try to beat __. Also, remember to use your Counting Up skills and the *Counting Up* poster to help you out! You have 1 minute. Go!

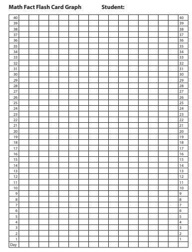
Show Math Fact Flash Cards in round robin for 1 minute.

Let's count the cards in the pile.

Count cards with group.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score.

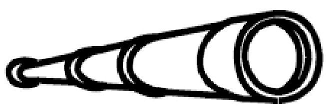
Now, we'll graph your group's higher score for today on this graph.



Teacher colors or selects one student to color the group graph.

Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

You did a nice job. Your group earns a treasure coin!



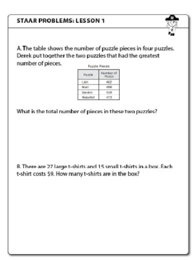
2: STAAR Problems

Today, we will start practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 1.

Point to A.



STAAR PROBLEMS: LESSON 1

A. The table shows the number of puzzle pieces in four puzzles. Derek put together the two puzzles that had the greatest number of pieces.

Puzzle Pieces

Puzzle	Number of Pieces
Lion	402
Boat	498
Garden	419
Waterfall	473

What is the total number of pieces in these two puzzles?

B. There are 27 large t-shirts and 15 small t-shirts in a box. Each t-shirt costs $9. How many t-shirts are in the box?

Today we will work on Total problems. Total means the <u>entire</u> amount, or the <u>whole</u> amount. In a Total problem, two or more parts are <u>put together</u> into a <u>total</u>.

In Total problems, we put parts together into a total.

Hold out two hands; clasp hands together. Continue using hand motions throughout.

Remember, Pirate Math Equation Quest is all about solving word problems. When there's a missing number in the story, it's a word problem. We have to find X and solve the problem. We have to figure out what the missing number is.

When we solve word problems, we need 2 things in our answer. We need a number and a label. A label is a word that tells us about our number.

Remind me. What two things do I need in an answer?

A number and a label.

Very good. You must have a number *and* a label. What's a label?

A word that tells us about our number.

Excellent. A label is a word that tells us about our missing information.

Whenever I see a word problem, I always check to see if there is a graph or a table. Is there a graph or a table?

Yes.

There is a table, but it is already numbered for us. If there were a graph or a table without numbers provided, we would number it.

What should we do anytime we see a table or graph with a word problem?

Number it.

Exactly. But this problem already has numbers in the table, so we can go ahead and solve it.

For any word problem, I can look at my RUN poster to help me solve for X and find the answer. Let me show you what I mean!

Whenever we see a word problem, we use the RUN poster to help us solve it. We RUN through the problem.

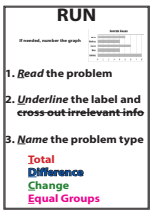
The letters in the word RUN, R-U-N, help you remember the steps for solving the problem. What do you do when you see a word problem?

RUN through the problem.

Great, you RUN through the problem.

Make running motion with arms. Continue using hand motions throughout.

Display RUN poster.



Now, look at this poster. Let's read the title together: "RUN." Now let's look at what each letter stands for.

Point to R.

R stands for "Read the problem." When you see a word problem, you read the problem. If you have trouble reading a problem I'll help you. What does the R stand for?

Read the problem.

That's great! Listen as I read the problem.

Read the problem to students.

The next letter is U.

Point to U.

U stands for "Underline the label and cross out irrelevant information." After

you read the problem, underline the label. The label is what the problem is about. We underline the label to know which numbers are important and to help label the answer later. What does the U stand for?

Underline the label and cross out irrelevant information.

The label is a word or words that tells us what the problem is mostly about. What's this problem about?

Is this problem about cookies?

No.

Is this problem about pieces in puzzles?

Yes.

Underline pieces in the question sentence.

Should we underline the word "pieces" every time we see it in the word problem?

No.

That's right. We only underline the label one time. It doesn't really matter where you underline the word "pieces," but it's usually best to underline the label in the question sentence.

The question sentence is the sentence with a question mark at the end (point)**. A sentence always starts with a capital letter. A sentence ends with a period or a question mark.**

What does a sentence start with?

A capital letter.

What does a sentence end with?

A period or question mark.

Good. In word problems, the question sentence helps us figure out the label.

After we underline the label, we have to check for irrelevant information. Sometimes we have extra numbers in a problem that are not about the label. We do not need these numbers to answer the question, so we call this irrelevant information. If there is irrelevant information, we should cross it out.

We see the words "irrelevant information" here (point) **on the RUN poster after underline the label. So, after we underline the label, we need to ask ourselves, "Is there any irrelevant information?"**

When we read the question, we learned that the question asks us about the two puzzles with the <u>greatest</u> number of pieces.

What does greatest mean?

(Students respond.)

Exactly. The greatest means the most, or the biggest. What are the two puzzles with the greatest or most number of pieces?

(Students look at the table respond.)

Yes! The boat and the waterfall have the most pieces, or the greatest number of pieces, so let's circle them in our table.

Students circle boat and waterfall with corresponding numbers.

Are there any numbers we do not need? Are any of the numbers irrelevant?

(Students respond.)

Yes! Lion and garden are not the two puzzles with the greatest or largest number of pieces, so let's cross them out.

Students cross out lion and garden with corresponding numbers.

Now look at the N.

Point to N.

The N in RUN stands for "Name the problem type." After you read the problem and underline the label and check for irrelevant information, you name the problem type. We'll learn about four problem types that you will see on the STAAR. Right now, we will talk about Total problems. A Total problem puts parts together into a total.

What is a Total problem?

(Students respond and gesture.)

Hold out two hands; clasp hands together. Continue using hand motions throughout.

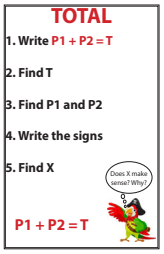
Does this problem put parts together into a total?

Yes.

Right. This problem puts parts together into a total. This is a Total problem. To remind me it's a Total problem, I write T next to the problem. T stands for Total problem.

Write T.

Display Total poster.



After you RUN through the problem, you're ready to solve it! We decided this is a Total problem, so we use this Total poster to solve it. This is the Total poster. We'll use it to help organize your work.

There are five steps. Like a pirate following a Treasure Map, we'll follow each step to get to the treasure – the word-problem answer!

To solve a Total problem, we have five steps. Step 1. "Write P1 plus P2 is the same as T." This is our Total equation.

In a Total problem, parts are put together into a total. We add part 1 plus part 2 and that is the same as the total. Once we know the problem is a Total

problem, we write our Total equation: P1 plus P2 is the same as T. (Point.) **This helps us organize our Total work. Go ahead and write P1 plus P2 is the same as T.**

(Write.)

Remind me again, what does P1 (point) **stand for?**

Part 1.

What does P2 (point) **stand for?**

Part 2.

What does T (point) **stand for?**

Total.

And what do we call P1 plus P2 is the same as T?

Total equation.

Very good. Look at Step 2: "Find T." What does T stand for?

The total.

That's right. We know T stands for the total because total starts with a T. In a Total problem, we have parts and we have a total. The question helps us figure out whether we're finding the total or one of the parts.

Look at the question again. The question says, "What is the total number in these two puzzle pieces?" The question is asking me for the total.

The two parts are the number of puzzle pieces in the boat and the number of puzzles pieces in the waterfall (gesture with hands out to show the two parts.)

We know the two parts, so the question is asking us to find the total. The missing part is the total, or T (point)**.**

In number sentences, we mark missing information with an X. How do we mark missing information?

With an X.

Right. T is the missing information, so we put an X in the number sentence under T. This helps keep the work organized.

(Write.)

Step 3: "Find P1 and P2." What do P1 and P2 stand for?

Part 1 and part 2.

Let's work on part 1, or P1. The problem asks us to find the puzzles with the greatest number of pieces. What is the first puzzle we circled in our table?

Boat.

Yes, the boat puzzle stands for part 1. How many pieces are in the boat puzzle?

498.

498 is part 1, or P1. I check off the 498 in the table, like this, so I remember I've already used it. Then, I write 498 in the number sentence underneath P1, like this.

Check off 498 and write 498 underneath the P1.

Now let's work on part 2, or P2. What is the second puzzle we circled in our table?

Waterfall.

Yes, the waterfall puzzle stands for part 2. How many pieces are in the waterfall puzzle?

473.

Right. What number is part 2?

473.

473 is part 2, or P2. I check off 473 in the table, like this, to remember that I've used that number. Then I write 473 under P2 in the number sentence.

Check off 473 and write 473 underneath the P2.

Now we have P1, P2, and T filled in (point to 498, 473, and X)**. We use these numbers to find the word-problem answer!**

But before we find the answer, look at Step 4. "Write the signs."

For Total problems, our Total equation is P1 plus P2 is the same as T. That's why we wrote the Total equation as Step 1, right here (point)**.**

Now we know what's missing in the problem, the total. We wrote X here to stand for T (point)**. We found P1 and P2 in the story. We wrote those numbers underneath P1 and P2, right here** (point)**. But we still don't have any math signs. What math signs do we need to complete our number sentence?**

Plus and the same as sign.

Right. We always use a plus sign in a Total problem because we add two parts together for a total. Write the plus and the same as signs in the number sentence like this.

(Write.)

498 stands for part 1. 473 stands for part 2. X stands for total. Now it's time to solve this problem.

To solve this problem, we need to add 498 and 473.

Help students add and regroup and remind them to use the Counting Up strategy.

What is our answer?

971.

Yes. 498 plus 473 is the same as 971. Go ahead and write 971.

(Write.)

Good. So, what number does X stand for?

971.

Right!

Whenever we write an answer to a word problem, we need a number and a label. We know that 971 is the number answer, but we still need a label. Think about what the problem is about. Go back to the word we underlined. What did we underline?

Pieces.

We underlined pieces, right here (point)**. Pieces is what the problem is about. It tells us about our missing information. We use the word pieces for our label. So, we write pieces after the number 971.**

Write pieces next to 971. Monitor that students do this as well.

What is our number answer?

971.

Right. And what is our label answer?

Pieces.

The last thing we need to do is check to see if our answer makes sense. Let's see if the answer makes sense. This is a Total problem. So, the total is always more than the numbers in parts 1 and 2. Is 971 more than 498 and more than 473?

Yes.

 **Excellent work! You earn a treasure coin!**

Let's try another problem!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

There are 27 large t-shirts and 15 small t-shirts in a box. Each t-shirt costs $9. How many t-shirts are in the box?

Problem Type:	*Total*
Relevant Information:	*P1 = 27; P2 = 15; T = X*
Irrelevant Information:	*~~$9~~*
Number Sentence:	*27 + 15 = X*
Answer:	*X = 42 t-shirts*

Follow Activity Guide: RUN.
Follow Activity Guide: Total.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

What should we do?

Number it.

(Students number the graph, using the key to count by tens.)

Solution to Problem C:

The graph shows the number of minutes Diego spent doing homework during four nights. How many minutes did Diego spend doing homework on Tuesday and Thursday combined?

Problem Type:	*Total*
Relevant Information:	*P1 = 30; P2 = 55; T = X*

Number Sentence: *30 + 55 = X*
Answer: *X = 85 minutes*

Follow Activity Guide: RUN.
Follow Activity Guide: Total.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we learned about Total problems. When you name a Total problem, what do you write next to the problem to help you remember it's a Total problem?

T.

Great. Then you use the Total poster to help you solve it!

Excellent work! You earn a treasure coin!

Treasure Map

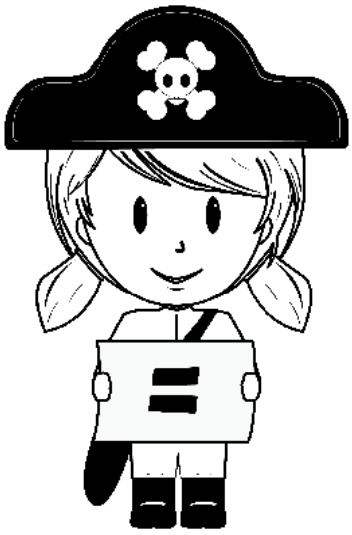
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 2



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. Shipshape Sorting
3. STAAR Problems
   Total with three and four parts

Materials

Posters

Counting Up
Pirate Math Rules
RUN and Total

Student Materials

STAAR Problems: Lesson 2
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

Introduction

Hi. My name is _____. For the next six weeks, we will work on math word problems that you will see on the STAAR test. We will practice every time we meet and when it is time for you to take the STAAR test, you will be prepared and ready!

We will work hard to get better in math so you are ready for the STAAR test!

Display Rules poster.

Review Pirate Math Equation Quest Rules with students.

I like the way you're all following our Pirate Math Equation Quest rules right now. You're using your inside voices, staying seated, following my directions, and raising your hands. So, your group earns a treasure coin for your Treasure Map!

(Give students first coin.)

1: Math Fact Flash Cards

The first activity we will complete during our STAAR practice is Math Fact Flash Cards. Look at these cards.

Display Math Fact Flash Cards.

Each card has one math problem on it. The problem is addition, subtraction, multiplication, or division. We will complete the flash card activity as a round robin.

In the round robin, I'll show the first person in the group one card. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then, I will move to the second person and show him/her the second card. This person will look at the problem, and tell me the answer as quickly as he/she can. We will continue with the third person and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

Remember, you only answer the problem when it is your turn in the round robin.

If you answer the problem correctly, I'll put it in a pile on the table.

Remember, as a group, you'll have 1 minute to answer as many flash cards as you can. I'll hold up a flash card for the first person. You'll give me the answer. Then I will hold up a flash card for the next person. And so on.

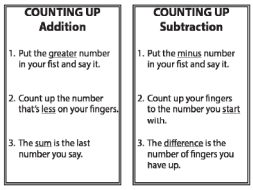
Let's practice. (Hold up flash card.) **What's the answer?**

(Each group member responds to complete one round of the round robin.)

Remember, we can use Counting Up to help us solve addition and subtraction

problems. Let's look at our poster to review how to use Counting Up to add and subtract.

Show Counting Up posters to students.



What sign tells you to add?

The plus sign.

If we need to add, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up addition steps.

Let's say the steps together.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Let's say the steps again.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Practice using Counting Up addition with one or two of the flash cards with students.

What sign tells you to subtract?

The minus sign.

If we need to subtract, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up subtraction steps.

Let's say the steps together.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Let's say the steps again.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Practice using Counting Up subtraction with one or two of the flash cards with students.

Good! Now let's complete the activity. At the end of 1 minute, we will count the number of cards in the pile. Are you ready? Let's try.

Show Math Fact Flash Cards in round robin for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly!

Let's try to beat that score. We'll use the same flash cards. I'll show you one card at a time. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then we will move to the second person. Remember, try to beat __. Also, remember to use your Counting Up skills and the *Counting Up* poster to help you out! You have 1 minute. Go!

Show Math Fact Flash Cards in round robin for 1 minute.

Let's count the cards in the pile.

Count cards with group.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score.

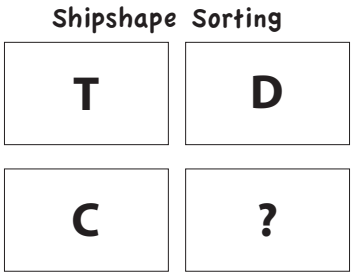
Now, we'll graph your group's higher score for today on this graph.

Teacher colors or selects one student to color the group graph.

Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

You did a nice job. Your group earns a treasure coin!

2: Shipshape Sorting



Each day, we'll play Shipshape Sorting after our Math Mact Flash Cards activity.

Display Sorting Cards.
Display Sorting Mat.

I'll show these cards. On each sorting card, there's a word problem. I'll read the problem out loud. Your job is to decide what type of problem it is, and sort it on this mat (point)**. You don't solve the problem, you just decide what type of problem it is.**

So far, we have learned about Total problems, so you'll only use the T or Total box (point) **and the question mark box** (point). **If you think the problem is a Total problem, put the card here** (point). **If it's NOT a Total problem, put the card in this question mark box** (point)**. Just like with Math Fact Flash Cards, we will play Shipshape Sorting using a round robin.**

You'll have 1 minute to listen to as many problem as you can and sort them in the correct boxes. Do you have any questions?

Begin.

Great! You did a nice job with the sorting. Let's see how many are correct.

Go through cards (answers on back of each card).
Review up to 3 incorrect cards by saying:

Look at the question. Does the word problem tell a story about two or more amounts combined for a total? Does the word problem tell a story about two amounts being compared? Or does the word problem tell a story about an amount that increases or decreases?

(Respond.)

Affirm correct response.
Review incorrect response.

Nice work with Shipshape Sorting!

You earn a treasure coin!

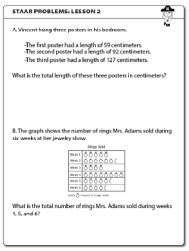
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 2.

Point to A.



STAAR PROBLEMS: LESSON 2

A. Vincent hung three posters in his bedroom.

- The first poster had a length of 59 centimeters.
- The second poster had a length of 92 centimeters.
- The third poster had a length of 127 centimeters.

What is the total length of these three posters in centimeters?

B. The graph shows the number of rings Mrs. Adams sold during six weeks at her jewelry show.

Rings Sold

Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Key: Each ◯ stands for 4 rings sold.

What is the total number of rings Mrs. Adams sold during weeks 4, 5, and 6?

Today we will work on Total problems again. Total means the <u>entire</u> amount, or the <u>whole</u> amount. In a Total problem, two or more parts are <u>put together</u> into a <u>total</u>.

In a Total problem, parts are put together to make a total. Sometimes Total problems can have *more* than two parts! And that's okay. It's still a Total problem, and we can still use the Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total. But when we have three parts, we can change the Total equation to be P1 plus P2 plus P3 is the same as T. Today, I will show you how this works but first let's review!

When we solve word problems, we need 2 things in our answer. We need a number and a label. A label is a word that tells us about our number.

Remind me. What two things do I need in an answer?

A number and a label.

Very good. You must have a number *and* a label. What's a label?

A word that tells us about our number.

Excellent. A label is a word that tells us about our missing information.

Whenever I see a word problem, I always check to see if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Vincent hung three posters in his bedroom. The first poster had a length of 59 centimeters. The second poster had a length of 92 centimeters. The third poster had a length of 127 centimeters. What is the total length of these three posters in centimeters?

Problem Type:	*Total, three parts*
Relevant Information:	*P1 = 59; P2 = 92; P3 = 127; T = X*
Number Sentence:	*59 + 92 + 127 = X*
Answer:	*X = 278 centimeters*

What's the first thing we do every time we see a word problem?

RUN through it!

Good. What does the R stand for?

Read the problem.

Listen as I read the problem.

Read problem to students.

What does the U stand for?

Underline the label and cross out irrelevant information.

What is this problem mostly about?

Centimeters.

This problem is mostly about centimeters: The length of the first poster in centimeters, the length of the second poster in centimeters, and the length of the third poster in centimeters. Let's underline the word "centimeters."

(Underline.)

Now let's check for irrelevant information. We ONLY want to find information that tells us about centimeters. What is irrelevant information?

Information we don't need.

Good. Numbers that tell about other things are irrelevant information. We have to be picky. We only use numbers that talk about centimeters. We cross out irrelevant information.

Is there any irrelevant information?

No.

Are all of the numbers about the label we underlined? Are all the numbers about centimeters?

Yes.

To decide if information is important or irrelevant, you must figure out if you're putting together 2 things or 3 things. If all these numbers are about the label (point)**, then all three numbers are important. None of these numbers are irrelevant information. All of these numbers are about centimeters** (point to label)**.**

Don't let irrelevant information trick you. But remember: Figure out which numbers are important. You use all the important numbers to answer the question. Figure out which numbers are irrelevant. Cross out irrelevant information. In this problem, all the numbers are about centimeters. We use all three numbers.

What does the N stand for?

Name the problem type.

After you read the problem and underline the label, you name the problem type. How do we know when it's a Total problem?

When parts are put together into a total.

Is that what is happening in this problem?

Yes.

How do you know?

(Students explain.)

Right. This problem puts parts together into a total. The question is "What is the total length of these three posters in centimeters?" It tells us that we're putting the centimeters together. We know this is a Total problem because we're putting the three posters together to find how many centimeters they are in all.

What should I put next to the problem to remind me it's a Total problem?

T.

Right. Write T next to the problem to remind you it's a Total problem.

(Write.)

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Total problem. (Point to the T.) **Use the Total poster to solve it.**

Display Total poster.

Let's look at the five steps. What's Step 1?

Write P1 + P2 = T.

Good. We write the Total equation: P1 plus P2 is the same as T. In a Total problem, two or more parts are put together to make a total. The Total equation, P1 plus P2 is the same as T, helps us remember how to write our number sentence for a Total problem.

(Write.)

Step 2: "Find T." Let's first look at the question to see if the problem tells us the total or if the problem asks us to find the total.

Is the question asking us to find the total number of centimeters?

Yes.

If the question is asking us to find the total number of centimeters, what is missing? T or one of the parts?

T.

Right. The missing information asks about ALL the centimeters. We know the missing information is the total. We need to find the total, or T. T is what is missing.

In number sentences, how do we mark missing information?

With an X.

Right. I put an X in the number sentence. Where do I mark the X?

Under the T.

Good. Put an X under the T because the total is what's missing.

(Write.)

Step 3: "Find P1 and P2." We need to think about the story and figure out what numbers P1 and P2 are. Remember, the total is the length of the three posters in centimeters. If we're putting together the three posters, we want to find the numbers that tell about each poster. Those will be part 1 and part 2.

Which numbers are about the posters? Let's look at the first number. It says "The first poster had a length of 59 centimeters." Is this about centimeters?

Yes.

Good. That's P1. Check off the 59 in the problem and write the number 59 in the number sentence underneath P1.

(Write.)

Let's look at the next number. It says "The second poster had a length of 92 centimeters." Is this about centimeters?

Yes.

Good. That's P2. Check off the 92 in the problem and write the number 92 in the number sentence underneath P2, like this.

(Write.)

Let's look at the next number. It says "The third poster had a length of 127 centimeters." Is this about centimeters?

Yes.

Do we have a place to put the 127 in the Total equation?

No.

You're right! In this Total problem, we're putting together 3 things instead of 2 things. The question asks, "What is the total length of these three posters in centimeters?" To answer the question we need to put 3 things together.

Let's add another part to the Total equation.

Write P3 at the beginning of our Total equation and write an extra plus sign. We need P3 because we're adding a third part to the Total equation.

(Write.)

Work should look like this:

P3 + P1 + P2 = T

59 92 X

Now, what's P3?

127.

Good. That's P3. Check off the 127 in the problem and write the number 127 in the number sentence underneath P3, like this.

(Write.)

Sometimes Total problems put 3 things together to find the total. We still name these problems Total problems because we're still putting things together.

Now let's go to Step 4. What's Step 4?

Write the signs.

Good. What math signs do we need to complete our number sentence?

+ and + and =.

Right. We need two plus signs and the same as sign. Let's write them in the number sentence.

(Write.)

127 stands for part 3. 59 stands for part 1. 92 stands for part 2. X stands for total. Does this look like a number sentence we know how to solve?

Yes.

Don't let the number sentence trick you. X is at the end. We solve it! We're going to add to find X.

Do you add or subtract?

Add.

That's right. You can just add P1 plus P2 plus P3 to find T.

(Add.)

Help students with addition and regrouping as needed.
Encourage students to use the Counting Up strategy.

X is the same as 278.

Great! In word problems, our answer must have a number and a label. We know the number answer is 278. Now we have to figure out what the label for 278 should be. Think about what the problem is mostly about. Start by looking in the question sentence. Look at what we underlined. What did we underline?

Centimeters.

Right! The question is asking about centimeters, so that's the best label. X stands for the total centimeters in the three posters.

(Write.)

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense?

(Students explain.)

Why does it make sense?

(Students explain.)

Excellent work. Let's try another problem!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

What should we do?

Number it.

(Students number the graph, using the key to count by sixes. Help students with skip counting as needed and explain that half of a ring stands for three rings.)

Solution to Problem B:

The graph shows the number of rings Mrs. Adams sold during six weeks at her jewelry show. What is the total number of rings Mrs. Adams sold during weeks 4, 5, and 6?

Problem Type:	*Total, three parts*
Relevant Information:	*P1 = 48; P2 = 33; P3 = 27; T = X*
Number Sentence:	*48 + 33 + 27 = X*
Answer:	*X = 108 rings*

Follow Activity Guide: RUN.
Follow Activity Guide: Total.

The last thing we need to do is check to see if our answer makes sense. Does

our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Felix drew the figures shown below. What is the perimeter of Figure 3?

Problem Type:	*Total, four parts*
Relevant Information:	*P1 = 12; P2 = 15; P3 = 15; P4 = 12; T = X*
Number Sentence:	*12 + 15 + 15 + 12 = X*
Answer:	*X = 54 millimeters*

Follow Activity Guide: RUN.
Follow Activity Guide: Total.
Add a P4 to the beginning of the equation and explain P4 like you explained P3.

Review the term perimeter with students.
Explain that we find the perimeter of a figure by adding all of the sides together.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we learned about Total problems with three and four parts. When you have a Total problem with more than two parts, you just need to add all the parts together!

Excellent work today! You earn a treasure coin!

Treasure Map

Let's count the number of coins your group earned today and mark them on

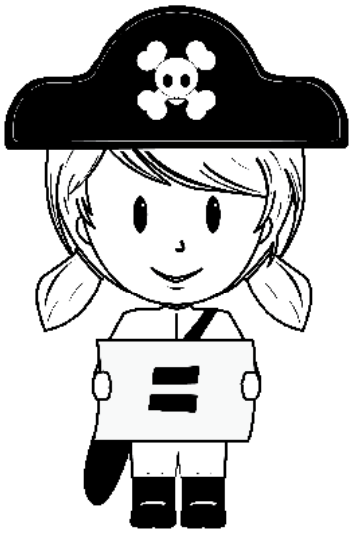
your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 3



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. Shipshape Sorting
3. STAAR Problems
   Total

Materials

Posters

Counting Up
RUN and Total

Student Materials

STAAR Problems: Lesson 3
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

The first activity we will complete during our STAAR practice is Math Fact Flash Cards. Look at these cards.

Display Math Fact Flash Cards.

Each card has one math problem on it. The problem is addition, subtraction, multiplication, or division. We will complete the flash card activity as a round robin.

In the round robin, I'll show the first person in the group one card. The first person will look at the problem, and tell me the answer as quickly as he/she

can. Then, I will move to the second person and show him/her the second card. This person will look at the problem, and tell me the answer as quickly as he/she can. We will continue with the third person and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

Remember, you only answer the problem when it is your turn in the round robin.

If you answer the problem correctly, I'll put it in a pile on the table.

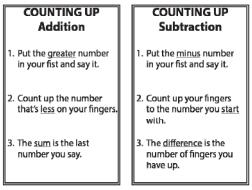
Remember, as a group, you'll have 1 minute to answer as many flash cards as you can. I'll hold up a flash card for the first person. You'll give me the answer. Then I will hold up a flash card for the next person. And so on.

Let's practice. (Hold up flash card.) **What's the answer?**

(Each group member responds to complete one round of the round robin.)

Remember, we can use Counting Up to help us solve addition and subtraction problems. Let's look at our poster to review how to use Counting Up to add and subtract.

Show Counting Up posters to students.



What sign tells you to add?

The plus sign.

If we need to add, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up addition steps.

Let's say the steps together.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Let's say the steps again.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Practice using Counting Up addition with one or two of the flash cards with students.

What sign tells you to subtract?

The minus sign.

If we need to subtract, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up subtraction steps.

Let's say the steps together.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Let's say the steps again.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Practice using Counting Up subtraction with one or two of the flash cards with students.

Good! Now let's complete the activity. At the end of 1 minute, we will count the number of cards in the pile. Are you ready? Let's try.

Show Math Fact Flash Cards in round robin for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly!

Let's try to beat that score. We'll use the same flash cards. I'll show you one card at a time. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then we will move to the second person. Remember, try to beat __. Also, remember to use your Counting Up skills and the *Counting Up* poster to help you out! You have 1 minute. Go!

Show Math Fact Flash Cards in round robin for 1 minute.

Let's count the cards in the pile.

Count cards with group.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score.

Now, we'll graph your group's higher score for today on this graph.

Teacher colors or selects one student to color the group graph.

Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

You did a nice job. Your group earns a treasure coin!

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

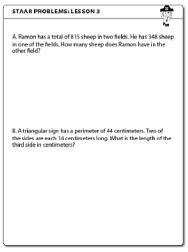
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 3.

Point to A.


STAAR PROBLEMS: LESSON 3

A. Ramon has a total of 815 sheep in two fields. He has 348 sheep in one of the fields. How many sheep does Ramon have in the other field?

B. A triangular sign has a perimeter of 44 centimeters. Two of the sides are each 16 centimeters long. What is the length of the third side in centimeters?

Today we will work on Total problems again. Total means the <u>entire</u> amount, or the <u>whole</u> amount. In a Total problem, two or more parts are <u>put together</u> into a <u>total</u>.

In a Total problem, parts are put together to make a total. Sometimes Total problems can have *more* than two parts! And that's okay. It's still a Total problem, and we can still use the Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total. But when we have three parts, we can change the Total equation to be P1 plus P2 plus P3 is the same as T. Today, we will practice two and three part Total problems. We also will learn how to solve Total problems when one of the parts is missing.

First, let's review.

When we solve word problems, we need 2 things in our answer. We need a number and a label. A label is a word that tells us about our number.

Remind me. What two things do I need in an answer?

A number and a label.

Very good. You must have a number *and* a label. What's a label?

A word that tells us about our number.

Excellent. A label is a word that tells us about our missing information.

Whenever I see a word problem, I always check to see if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Ramon has a total of 815 sheep in two fields. He has 348 sheep in one of the fields. How many sheep does Ramon have in the other field?

Problem Type:	*Total*
Relevant Information:	*P1 = 348; P2 = X; T = 815*
Number Sentence:	*348 + X = 815*
Answer:	*X = 467 sheep*

What's the first thing we do every time we see a word problem?

RUN through it!

Good. What does the R stand for?

Read the problem.

Listen as I read the problem.

Read problem to students.

What does the U stand for?

Underline the label and cross out irrelevant information.

What is this problem mostly about?

Sheep.

(Underline.)

Now let's check for irrelevant information. We ONLY want to find information that tells us about sheep. What is irrelevant information?

Information we don't need.

Good. Numbers that tell about other things are irrelevant information. We have to be picky. We only use numbers that tell about sheep. We cross out irrelevant information.

Is there any irrelevant information?

No.

Are all of the numbers about the label we underlined? Are all the numbers about sheep?

Yes.

What does the N stand for?

Name the problem type.

Does this look like a Total problem? Are we putting two parts together for a total?

(Students explain.)

That's right. This problem is about the sheep in one field. That's one part. This problem is also about the sheep in the other field. That's the other part. Two parts are put together for a total. This is a Total problem.

So far, we've solved Total problems when the missing information is the total. We are really good at solving these Total problems. Today I'll teach you about Total problems that are trickier.

In these Total problems, the story gives you T, or the Total number. The missing number is one of the parts. The question asks us to find one of the parts.

To figure out whether the problem is a Total problem, always ask yourself: Are

parts put together into a total? Remember, what's missing might be the total. But what's missing might be one of the parts. Either way, the problem is still a Total problem. It's still about parts being put together into a total.

Let me read the problem again.

Reread Problem A.

This problem is about two parts: one part is the sheep in one field; the other part is the sheep in the other field. The problem also is about a total. The total is the number of sheep in both fields together. But the total is not in the question, like we're used to. To figure out if a problem is a Total problem, you can't just look at the question.

Sometimes the story gives you the total in another part of the story, and the question asks you to find one of the parts. This makes it harder to name the problem type. You have to think hard to decide whether a problem is talking about parts being put together to make a total.

Soon, we'll learn about other types of problems. Then, we'll have to work even harder to figure out whether the problem is a Total problem or another type of problem. We need to get really good at naming Total problems so when we learn about other problems, we know what we're doing.

Let me read the problem one more time. Listen for the parts and the total, no matter where they are in the story. Think: Are parts put together into a total?

Reread Problem A.

Yes.

Right. In this problem, there are two parts and a total. This is a little tricky. The first sentence says that there are a total of 815 sheep in two fields. Does this mean that there are 815 sheep in the first field?

No.

Does this mean that there are 815 sheep in the other field?

No.

That's right. This sentence tells the number of sheep in both fields *altogether*. It's not just talking about the sheep in the first field. It's not just talking about sheep in the second field. It's talking about the sheep in the two fields *together*. It's talking about the total.

This problem is different from the Total problems we've worked before. Those other problems always asked us to find the total. This problem (point) **tells us the total. Today, we have to find one of the parts.**

Since this problem is about putting parts together into a total, we know it's a Total problem. What should I put next to the problem?

T.

Right. I put T next to the problem to remind me it's a Total problem.

(Write.)

Good! The RUN poster helped us organize our paper so we can solve the problem! We said this is a Total problem. (Point to the T.) **We use the Total poster to solve it.**

Display Total poster.

What's Step 1?

Write P1 + P2 = T.

Good. We write the Total equation: P1 plus P2 is the same as T.

(Write.)

Step 2: "Find T." In the problems we've worked on before today, the missing information was always the total. This problem is different. The first sentence says, "Ramon has a total of 815 sheep in two fields." This sentence tells us the total number of sheep in two fields. This sentence has the word total, which is a clue that we know the total. It's not talking about the number of sheep in the first field. It's not talking about the number of sheep in the second field. It's talking about the number of sheep in the first field *and* the number of sheep in the second field altogether.

If there are 815 sheep in the two fields, the total is 815. This problem tells us the total. It asks us to find one of the parts.

The total, or T, is 815. Check off the 815 in the problem, and write the number 815 in the number sentence underneath T, like this. We check off the 815 so I remember I've already used it.

(Write.)

Step 3 says, "Find P1 and P2." We know the total is 815. Now we have to find the parts. The sheep in the first field is a part. The sheep in the second field is a part. How many sheep are in the second, or other field?

We don't know.

That's right. We know the Total number of sheep in the two fields together and we know the number of sheep in the first field. The missing information is the number of sheep in the second field. The missing information is one of the parts. When one of the parts is missing, we mark P2 with X. We need to find P2. That's what's missing.

Where do I mark the X?

Under P2.

Good. Write X under P2 because part 2 is missing.

(Write.)

In Total problems, when one of the parts is missing, it doesn't matter if we call the missing part P1 or P2. We get the same answer whether we call the missing part P1 or P2. Let's solve this problem with P2 missing.

We still need to fill in part 1. Remember, the missing part is the number of sheep in the second, or other field. We decided to call the number of sheep in the second, or other field "part 2". The number of sheep in the first field will be part 1. The number of sheep in both fields is the total.

How many sheep are in the first field? What does the problem tell us?

348.

The problem says, "He has 348 sheep in one of the fields." Part 1 is 348. Check off the 348 in the problem and write the number 348 in the number sentence underneath P1, like this.

(Write.)

Have we found all the important information we need?

Yes.

Right. We only have one piece of missing information, P2, and it's marked with X. We found T and P1 in the story. Now let's go to Step 4. What's Step 4?

Write the signs.

Help students with subtraction and regrouping as needed.
Explain that when one of the parts is missing, we need to subtract.
Encourage students to use the Counting Up strategy.

X is the same as 467.

Great! In word problems, our answer must have a number and a label. We know the number answer is 467. Now we have to figure out what the label for 467 should be. Think about what the problem is mostly about. Start by looking in the question sentence. Look at what we underlined. What did we underline?

Sheep.

Right! The question is asking about sheep, so that's the best label. X stands for the number of sheep in the second field.

(Write.)

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense?

(Students explain.)

Why does it make sense?

(Students explain.)

Excellent work. Let's try another problem!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

A triangular sign has a perimeter of 44 centimeters. Two of the sides are each 14 centimeters long. What is the length of the third side in centimeters?

Problem Type:	*Total, three parts*
Relevant Information:	*P1 = 14; P2 = 14; P3 = X; T = 44*
Number Sentence:	*14 + 14 + X = 44*
Answer:	*X = 16 centimeters*

Follow Activity Guide: RUN.
Follow Activity Guide: Total.

Review the term perimeter with students.
Explain that we find the perimeter of a figure by adding all of the sides together.
Encourage students to draw a picture of a triangle to help them visualize the problem.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

You are right! There is a table, but it is already numbered for us, so we can go ahead and solve the problem.

Solution to Problem C:

The table shows the number of towns in five Texas counties. What is the total number of towns in Galveston, Dallas, and Montgomery counties?

Problem Type:	*Total, three parts*
Relevant Information:	*P1 = 37; P2 = 72; P3 = 46; T = X*
Number Sentence:	*37 + 72 + 46 = X*
Answer:	*X = 155 towns*

Follow Activity Guide: RUN.
Follow Activity Guide: Total.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we learned about Total problems with the total and the parts missing.

Excellent work today! You earn a treasure coin!

Treasure Map

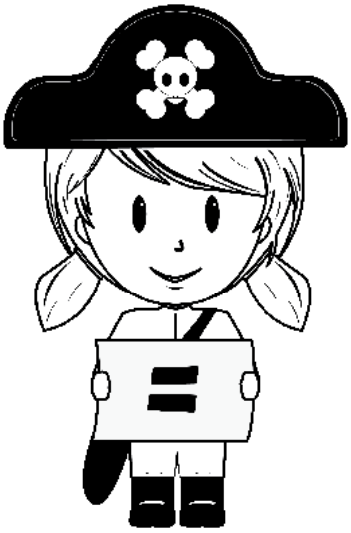
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 4



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. Shipshape Sorting
3. STAAR Problems
   Difference

Materials

Posters

Counting Up
RUN and Total
Difference

Student Materials

STAAR Problems: Lesson 4
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

The first activity we will complete during our STAAR practice is Math Fact Flash Cards. Look at these cards.

Display Math Fact Flash Cards.

Each card has one math problem on it. The problem is addition, subtraction, multiplication, or division. We will complete the flash card activity as a round robin.

In the round robin, I'll show the first person in the group one card. The first

person will look at the problem, and tell me the answer as quickly as he/she can. Then, I will move to the second person and show him/her the second card. This person will look at the problem, and tell me the answer as quickly as he/she can. We will continue with the third person and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

Remember, you only answer the problem when it is your turn in the round robin.

If you answer the problem correctly, I'll put it in a pile on the table.

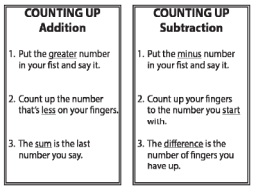
Remember, as a group, you'll have 1 minute to answer as many flash cards as you can. I'll hold up a flash card for the first person. You'll give me the answer. Then I will hold up a flash card for the next person. And so on.

Let's practice. (Hold up flash card.) **What's the answer?**

(Each group member responds to complete one round of the round robin.)

Remember, we can use Counting Up to help us solve addition and subtraction problems. Let's look at our poster to review how to use Counting Up to add and subtract.

Show Counting Up posters to students.



What sign tells you to add?

The plus sign.

If we need to add, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up addition steps.

Let's say the steps together.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Let's say the steps again.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Practice using Counting Up addition with one or two of the flash cards with students.

What sign tells you to subtract?

The minus sign.

If we need to subtract, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up subtraction steps.

Let's say the steps together.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Let's say the steps again.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Practice using Counting Up subtraction with one or two of the flash cards with students.

Good! Now let's complete the activity. At the end of 1 minute, we will count the number of cards in the pile. Are you ready? Let's try.

Show Math Fact Flash Cards in round robin for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly!

Let's try to beat that score. We'll use the same flash cards. I'll show you one card at a time. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then we will move to the second person. Remember, try to beat __. Also, remember to use your Counting Up skills and the *Counting Up* poster to help you out! You have 1 minute. Go!

Show Math Fact Flash Cards in round robin for 1 minute.

Let's count the cards in the pile.

Count cards with group.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score.

Now, we'll graph your group's higher score for today on this graph.

Teacher colors or selects one student to color the group graph.

Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

You did a nice job. Your group earns a treasure coin!

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

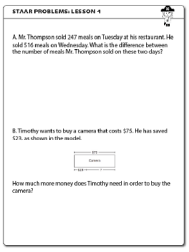
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 4.

Point to A.


STAAR PROBLEMS: LESSON 4

A. Mr. Thompson sold 247 meals on Tuesday at his restaurant. He sold 516 meals on Wednesday. What is the difference between the number of meals Mr. Thompson sold on these two days?

B. Timothy wants to buy a camera that costs $75. He has saved $23, as shown in the model.

$75
Camera
$23

How much more money does Timothy need in order to buy the camera?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total.

***All* Total problems have the same Total equation. What's the Total equation?**

P1 + P2 = T.

When we solve word problems, what two things do we have in our answer?

A number and a label.

Very good. You must have a number *and* a label. What is a label?

A word that tells us about our missing information.

Excellent. A label is a word that tells us about our missing information. Now let's practice solving word problems!

Today, we'll learn a new type of problem. We call these Difference problems.

Difference means the difference between two amounts. In a Difference problem, you <u>compare</u> two amounts. When you compare, you put two amounts side by side to see which amount is greater and which amount is less. You compare two numbers and you find the difference between the amount that's greater and the amount that's less.

In Difference problems, we compare two amounts to find the difference. One thing is greater. The other thing is less.

To find the difference, we <u>subtract</u>. What signs do we use in subtraction number sentences?

A minus sign and the same as sign.

That's right. To find the difference, we subtract. In our Difference equation, we use a minus sign and the same as sign.

Let's think back to Total problems. In Total problems, we put parts together into a total. What signs do we use in our Total equation, P1 plus P2 is the same as T?

A plus sign and the same as sign.

Right. For our Total equation, we always use a plus sign and the same as sign.

In Difference problems, we subtract. Our Difference equation is G minus L is the same as D. The amount that's greater minus the amount that's less is the same as the difference. Here is the minus sign (point), **and here is the same as sign** (point)**.**

Let's practice some STAAR problems that are Difference problems!

Whenever I see a word problem, I always check to see if there is a graph or a table. Is there a graph or a table?

No.

<u>Solution to Problem A:</u>

Mr. Thompson sold 247 meals on Tuesday at his restaurant. He sold 516 meals on

Wednesday. What is the difference between the number of meals Mr. Thompson sold on these two days?

Problem Type:	*Difference*
Relevant Information:	*G = 516; L = 247; D = X*
Number Sentence:	*516 – 247 = X*
Answer:	*X = 269 meals*

Follow Activity Guide: RUN.
When you get to the "N" follow script below.

Remember, you have to think hard to name the problem type. Before today, we've been learning about Total problems. We look for the total and the parts anywhere in the story. Always ask yourself, are parts put together into a total? If the answer is yes, it's a Total problem.

Today we are learning about Difference problems. In Difference problems, we look for two things compared in the story. Sometimes the question asks us to find how much greater or how much less. Either way, the problem is asking about the difference.

Let's decide. Is this problem about parts and a total, or is the problem about two amounts or numbers being compared? Listen as I read the problem again!

Reread Problem A.

This problem talks about the difference in the number of meals Mr. Thompson sold: He sold some meals on Tuesday and he sold some meals on Wednesday. The question asks us to find the difference between the number of meals Mr. Thompson sold on Tuesday and Wednesday. Is this a Total problem or a Difference problem?

Difference Problem.

This problem is a Difference problem because we are asked to compare the number of meals Mr. Thompson sold on Tuesday to the number of meals Mr. Thompson sold on Wednesday. He sold an amount that's greater on one day (hold one hand face level) **and an amount that's less on the other day** (hold other hand chest level)**. We're looking for the difference** (move hands back and forth)**. We're not finding a total because we're not putting the meals Mr. Thompson sold together into a total.**

Difference problems sometimes use words like *more, fewer*, and *less* to tell us the amount that's greater and the amount that's less.

What does *more* mean?

Greater.

That's right. *More* means greater. What does *fewer* mean?

Smaller.

Yes. *Fewer* means smaller. What does *less* mean?

Smaller.

Very good. *Fewer* and *less* actually mean the same thing. Both *fewer* and *less* mean smaller.

The words *more, fewer*, and *less* help us decide the amount that's greater and the amount that's less.

Difference problems are not like Total problems because Difference problems have a compare sentence. Look at the question again.

"What is the difference between the number of meals Mr. Thompson sold on these two days?"

Do you see the words *more, fewer,* or *less* in the problem?

No.

You are right. We don't see the words *more, fewer,* or *less* like we usually do in a Difference problem. But this problem is a Difference problem because the problem is asking us to compare the number of meals Mr. Thompson sold on Tuesday to the number of meals Mr. Thompson sold on Wednesday (show Difference gesture.) **Also, the question asks us to find the difference, which is a clue that this problem is a Difference problem.**

In Difference problems, compare sentences have the words *more, fewer,* or *less* in them. This problem is a little tricky. We do not have any compare words, but our compare sentence is, "What is the difference between the number of meals

Mr. Thompson sold on these two days?" The question is asking us to find the difference, so we know it's a Difference problem.

This compare sentence is really asking how many *more* meals Mr. Thompson sold on one day than the other and it helps us to decide the amount that's greater and the amount that's less.

In a Difference problem, we have to find the numbers that are greater and the numbers that are less. The number that's greater will be G. The number that's less will be L.

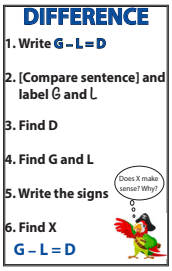
Whenever I find a compare sentence, I put brackets around the sentence to help me remember it's a compare sentence.

Put brackets around compare sentence.

This compare sentence asks us to find the difference between the number of meals Mr. Thompson sold on Tuesday and the number of meals Mr. Thompson sold on Wednesday. The problem tells us the amount that's greater and the amount that's less. We have to find the difference.

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Difference problem (Point to the D). **We use the Difference poster to solve it.**

Display Difference poster.



To solve a Difference problem, we have six steps. Step 1. "Write G minus L is the same as D."

In a Difference problem, the story is about one amount being greater or less than another amount. This G stands for the number that's greater. This L stands for the number that's less. We subtract G minus L. G minus L is the same as the difference, D. Once we know the problem is a Difference problem, we write G minus L is the same as D. (Point.) **This is the Difference equation.**

Write G – L = D.

What does G stand for?

The amount or number that's greater.

What does L stand for?

The amount or number that's less.

What does D stand for?

Difference.

Step 2: "[Compare sentence] and label G and L." We talked about this earlier. What's the compare sentence in this problem?

What is the difference between the number of meals Mr. Thompson sold on these two days?

That's right. We put brackets around our compare sentence to help us remember.

Now let's go ahead and label the amount that's greater (G) and the amount that's less (L) in our word problem.

(Write.)

I write G above Wednesday because Mr. Thompson sold more meals on Wednesday. Wednesday is talking about the number that's greater. G stands for greater. I write L above Tuesday because Mr. Thompson sold less meals on Tuesday. Tuesday is talking about the number that's less. L stands for less. Remember: Don't write G and L <u>over</u> the numbers, like this (write and then erase)**. Write G and L above the words that represent the greater and less numbers** (demonstrate)**.**

Write G above Wednesday and L above Tuesday.

Over which day did we write G?

Wednesday.

Over which day did we write L?

Tuesday.

Look at Step 3: "Find D."

D is the difference.

In this problem, the difference is not given. The question is asking us to find the difference, which is a clue that the difference is missing.

The question is asking us how many more meals Mr. Thompson sold on Wednesday than on Tuesday, so we have to *find* the difference.

If the difference is not given, you write X under D.

(Write.)

Step 4: "Find G and L." G stands for the number that's greater. L stands for the number that's less. If the difference, or D, is missing, it's really easy to find G and L.

Remember, this problem is talking about meals. We underlined the word "meals" to help us remember to use numbers that talk about meals. What numbers in this problem talk about meals?

247 and 516.

That's right. 247 talks about the meals on Tuesday. 516 talks about the meals on Wednesday. Both of these numbers talk about meals. They are both important numbers.

Good. And how many meals did Mr. Thompson sell on Wednesday?

516.

Excellent. 516 is the number that's greater. That's why we wrote G above Wednesday. Wednesday is G because Mr. Thompson sold the amount of meals that's greater on Wednesday. Check off 516 in the story and write 516 under G.

Check off 516 in the story and write 516 under G.

Over which day did we write L?

Over Tuesday.

Good. And how many meals did Mr. Thompson sell on Tuesday?

247.

Yes. On Tuesday, Mr. Thompson sold fewer meals. 247 is the number that's less. That's why we wrote L above Tuesday. Tuesday is L because Mr. Thompson sold fewer meals on Tuesday. I check off 247 in the story and write 247 under L.

Check off 247 in the story and write 247 under L.
Monitor that the students do this as well.

Now we have G, L, and D completed in the Difference equation. Look at Step 5.

Step 5: "Write the signs." For Difference problems, what math signs do we need to complete our number sentence?

Minus and the same as signs.

Right. We still need our minus sign and the same as sign. I write these in the number sentence like this.

Write the minus sign and same as sign.

516 stands for the number that's greater, or G. 247 stands for the number that's less, or L. X stands for the difference, or D. Does this look (point) **like a number sentence we know how to solve?**

Yes!

Let's read the number sentence together.

516 minus 247 is the same as X.

Step 6: "Find X!" You know how to find X!

Great! In word problems, our answer must have a number and a label. We know the number answer is 269. Now we have to figure out what the label for 269 should be. Think about what the problem is about. Look at what we underlined. What did we underline?

Meals.

Right! The question is asking about meals so that's the best label. We write meals for the label! Meals is the word that tells us about our missing information.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

The Difference story is about one amount being greater or less than another amount. The story is about the difference between these amounts. The answer, 269 meals, makes sense. It's the difference between Tuesday's and Wednesday's meals.

Excellent work. Let's try another problem!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

Timothy wants to buy a camera that costs $75. He has saved $23, as shown in the model. How much more money does Timothy need in order to buy the camera?

Problem Type:	*Difference*
Relevant Information:	*G = 75; L = 23; D = X*
Number Sentence:	*75 – 23 = X*
Answer:	*X = $52*

Follow Activity Guide: RUN.
Follow Activity Guide: Difference.

Review the compare word (more), compare sentence, and G and L with students.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

You are right! There is a table, but it is already numbered for us, so we can go ahead and solve the problem.

Solution to Problem C:

The table below shows the number of textbooks for five subjects at school. How many more science textbooks than reading textbooks are at this school?

Problem Type:	*Difference*
Relevant Information:	*G = 226; L = 187; D = X*
Number Sentence:	*226 – 187 = X*
Answer:	*X = 39 more science textbooks*

Follow Activity Guide: RUN.
Follow Activity Guide: Difference.

Review the compare word (more), compare sentence, and G and L with students.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we learned about Difference problems.

Remind me, what is a Difference problem?

(Students explain.)

Excellent work today! You earn a treasure coin!

Treasure Map

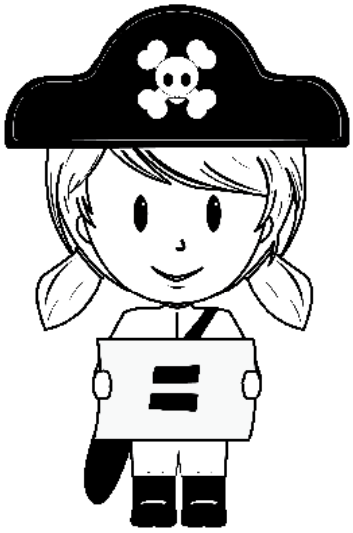
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 5



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. Shipshape Sorting
3. STAAR Problems
   Difference

Materials

Posters

Counting Up
RUN and Total
Difference

Student Materials

STAAR Problems: Lesson 5
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

The first activity we will complete during our STAAR practice is Math Fact Flash Cards. Look at these cards.

Display Math Fact Flash Cards.

Each card has one math problem on it. The problem is addition, subtraction, multiplication, or division. We will complete the flash card activity as a round robin.

In the round robin, I'll show the first person in the group one card. The first

person will look at the problem, and tell me the answer as quickly as he/she can. Then, I will move to the second person and show him/her the second card. This person will look at the problem, and tell me the answer as quickly as he/she can. We will continue with the third person and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

Remember, you only answer the problem when it is your turn in the round robin.

If you answer the problem correctly, I'll put it in a pile on the table.

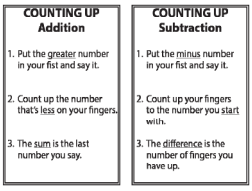
Remember, as a group, you'll have 1 minute to answer as many flash cards as you can. I'll hold up a flash card for the first person. You'll give me the answer. Then I will hold up a flash card for the next person. And so on.

Let's practice. (Hold up flash card.) **What's the answer?**

(Each group member responds to complete one round of the round robin.)

Remember, we can use Counting Up to help us solve addition and subtraction problems. Let's look at our poster to review how to use Counting Up to add and subtract.

Show Counting Up posters to students.



What sign tells you to add?

The plus sign.

If we need to add, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up addition steps.

Let's say the steps together.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Let's say the steps again.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Practice using Counting Up addition with one or two of the flash cards with students.

What sign tells you to subtract?

The minus sign.

If we need to subtract, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up subtraction steps.

Let's say the steps together.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Let's say the steps again.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Practice using Counting Up subtraction with one or two of the flash cards with students.

Good! Now let's complete the activity. At the end of 1 minute, we will count the number of cards in the pile. Are you ready? Let's try.

Show Math Fact Flash Cards in round robin for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly!

Let's try to beat that score. We'll use the same flash cards. I'll show you one card at a time. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then we will move to the second person. Remember, try to beat __. Also, remember to use your Counting Up skills and the *Counting Up* poster to help you out! You have 1 minute. Go!

Show Math Fact Flash Cards in round robin for 1 minute.

Let's count the cards in the pile.

Count cards with group.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score.

Now, we'll graph your group's higher score for today on this graph.

Teacher colors or selects one student to color the group graph.

Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

You did a nice job. Your group earns a treasure coin!

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

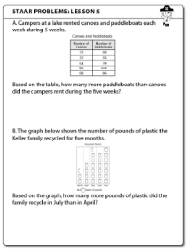
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 5.

Point to A.



STAAR PROBLEMS: LESSON 5

A. Campers at a lake rented canoes and paddleboats each week during 5 weeks.

Canoes and Paddleboats

Number of Canoes	Number of Paddleboats
12	18
15	31
13	19
14	24
10	36

Based on the table, how many more paddleboats than canoes did the campers rent during the five weeks?

B. The graph below shows the number of pounds of plastic the Keller family recycled for five months.

Pounds of Plastic Recycled

Based on the graph, how many more pounds of plastic did the family recycle in July than in April?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference.**

What's the Difference equation?

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Excellent. Now let's practice solving STAAR problems!

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

You are right! There is a table, but it is already numbered for us, so we can go ahead and solve the problem.

Solution to Problem A:

Campers at a lake rented canoes and paddleboats each week during 5 weeks. Based on the table, how many more paddleboats than canoes did the campers rent during the five weeks?

Problem Type:	*Difference*
Relevant Information:	*G = 90; L = 72; D = X*
Number Sentence:	*90 – 72 = X*
Answer:	*X = 18 more paddleboats*

Follow Activity Guide: RUN.

Follow Activity Guide: Difference.

Review the compare word (more), compare sentence, and G and L with students. Explain to students that we only need to look at one row, or one week, to solve the problem.

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

What do we need to do?

Number it.

Exactly! Let's number the graph.

Help students to use the key to number the graph and review that one full can stands for 20 pounds and one half can stands for 10 pounds.

Solution to Problem B:

The graph below shows the number of pounds of plastic the Keller family recycled for five months. Based on the graph, how many more pounds of plastic did the family recycle in July than in April?

Problem Type:	*Difference*
Relevant Information:	*G = 140; L = 80; D = X*
Number Sentence:	*140 – 80 = X*
Answer:	*X = 60 more pounds*

Follow Activity Guide: RUN.
Follow Activity Guide: Difference.

Review the compare word (more), compare sentence, and G and L with students.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Latoya has the two fish shown below in a fish tank. What is the difference in inches between the lengths of these two fish?

Problem Type:	*Difference*
Relevant Information:	*G = 39; L = 12; D = X*
Number Sentence:	*39 – 12 = X*
Answer:	*X = 27 inches*

Follow Activity Guide: RUN.
Follow Activity Guide: Difference.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the length of the larger fish and the length of the smaller fish.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we practiced Difference problems.

Remind me, what is a Difference problem?

(Students explain.)

Excellent work today! You earn a treasure coin!

Treasure Map

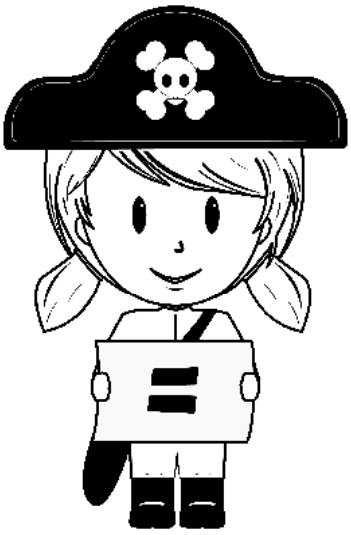
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 6



ACTIVITIES

1. Math Fact Flash Cards
   Counting Up
2. Shipshape Sorting
3. STAAR Problems
   Difference

Materials

Posters

Counting Up
RUN and Total
Difference

Student Materials

STAAR Problems: Lesson 6
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

The first activity we will complete during our STAAR practice is Math Fact Flash Cards. Look at these cards.

Display Math Fact Flash Cards.

Each card has one math problem on it. The problem is addition, subtraction, multiplication, or division. We will complete the flash card activity as a round robin.

In the round robin, I'll show the first person in the group one card. The first

person will look at the problem, and tell me the answer as quickly as he/she can. Then, I will move to the second person and show him/her the second card. This person will look at the problem, and tell me the answer as quickly as he/she can. We will continue with the third person and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

Remember, you only answer the problem when it is your turn in the round robin.

If you answer the problem correctly, I'll put it in a pile on the table.

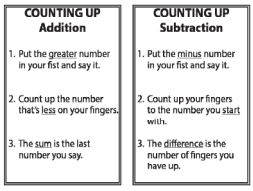
Remember, as a group, you'll have 1 minute to answer as many flash cards as you can. I'll hold up a flash card for the first person. You'll give me the answer. Then I will hold up a flash card for the next person. And so on.

Let's practice. (Hold up flash card.) **What's the answer?**

(Each group member responds to complete one round of the round robin.)

Remember, we can use Counting Up to help us solve addition and subtraction problems. Let's look at our poster to review how to use Counting Up to add and subtract.

Show Counting Up posters to students.



What sign tells you to add?

The plus sign.

If we need to add, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up addition steps.

Let's say the steps together.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Let's say the steps again.

Put the greater number in your fist and say it.
Count up the number that's less on your fingers.
The sum is the last number you say.

Practice using Counting Up addition with one or two of the flash cards with students.

What sign tells you to subtract?

The minus sign.

If we need to subtract, which Counting Up steps do we follow?

(Students point.)

Yes, we look at the Counting Up subtraction steps.

Let's say the steps together.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Let's say the steps again.

Put the minus number in your fist and say it.
Count up your fingers to the number you start with.
The difference is the number of fingers you have up.

Practice using Counting Up subtraction with one or two of the flash cards with students.

Good! Now let's complete the activity. At the end of 1 minute, we will count the number of cards in the pile. Are you ready? Let's try.

Show Math Fact Flash Cards in round robin for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly!

Let's try to beat that score. We'll use the same flash cards. I'll show you one card at a time. The first person will look at the problem, and tell me the answer as quickly as he/she can. Then we will move to the second person. Remember, try to beat __. Also, remember to use your Counting Up skills and the *Counting Up* poster to help you out! You have 1 minute. Go!

Show Math Fact Flash Cards in round robin for 1 minute.

Let's count the cards in the pile.

Count cards with group.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score.

Now, we'll graph your group's higher score for today on this graph.

Teacher colors or selects one student to color the group graph.

Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

You did a nice job. Your group earns a treasure coin!

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

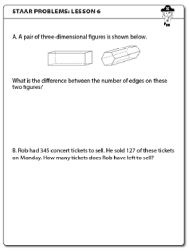
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 6.

Point to A.


STAAR PROBLEMS: LESSON 6

A. A pair of three-dimensional figures is shown below.

What is the difference between the number of edges on these two figures?

B. Rob had 345 concert tickets to sell. He sold 127 of these tickets on Monday. How many tickets does Rob have left to sell?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference.**

What's the Difference equation?

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Excellent. Now let's practice solving STAAR problems!

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

A pair of three-dimensional figures is shown below. What is the difference between the number of edges on these two figures?

Problem Type:	*Difference*
Relevant Information:	*G = 18; L = 12; D = X*
Number Sentence:	*18 – 12 = X*
Answer:	*X = 6 more edges (on the hexagonal prism)*

Follow Activity Guide: RUN.
Follow Activity Guide: Difference.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the number of edges on the first figure and the number of edges on the second figure.

Explain that the edge is the line where two faces meet on a three-dimensional figure. Use the whiteboard to draw the figures and count the edges as needed.

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

Rob had 345 concert tickets to sell. He sold 127 of these tickets on Monday. How many tickets does Rob have left to sell?

Problem Type:	*Difference*
Relevant Information:	*G = 345; L = 127; D = X*
Number Sentence:	*345 – 127 = X*
Answer:	*X = 218 more tickets*

Follow Activity Guide: RUN.

Follow Activity Guide: Difference.

Review the compare word (more is implied), compare sentence, and G and L with students.

Explain that the question is really asking how many more tickets Rob has left to sell.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Mr. Garcia grew a vegetable garden last year. The list below shows the number of three vegetables he grew. What is the difference between the number of potatoes and the number of cucumbers Mr. Garcia grew in his garden?

Problem Type: *Difference*
Relevant Information: *G = 344; L = 187; D = X*
Number Sentence: *344 – 187 = X*
Answer: *X = 157 more potatoes*

Follow Activity Guide: RUN.
Follow Activity Guide: Difference.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the number of cucumbers and the number of potatoes.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we practiced Difference problems.

Remind me, what is a Difference problem?

(Students explain.)

Excellent work today! You earn a treasure coin!

Treasure Map

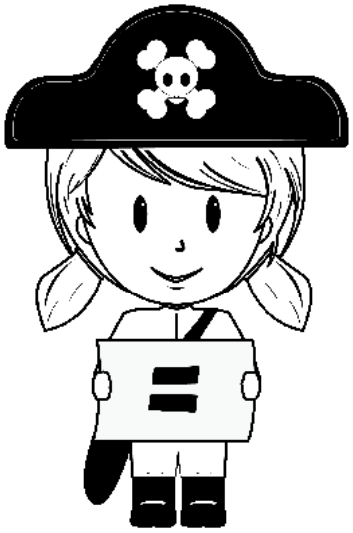
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 7



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Change problems with end missing

Materials

Posters

Counting Up
RUN and Total
Difference and Change

Student Materials

STAAR Problems: Lesson 7
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flashcards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 7.

Point to A.


STAAR PROBLEMS: LESSON 7

A. Gilbert had 85 pieces of candy. He gave 27 pieces of candy to his sister. How many pieces of candy does Gilbert have now?

B. There were 19 birds sitting on the fence. Then, 29 more birds landed on the fence. How many birds are on the fence now?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference.**

What's the Difference equation?

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Today, we'll learn about a new type of problem. We call these Change problems.

Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with. What does the word *increase* mean?

To make bigger.

Yes, the word *increase* means to make bigger or more. What does the word *decrease* mean?

To make smaller.

Great. The word *decrease* means to make smaller or less. So, Change problems tell us a starting amount. At a different time, something happens to make the amount you started with bigger or smaller.

Look at this problem.

Point to A.

Follow Activity Guide: RUN.
When you get to the "N" follow script below.

Remember, you have to think hard to name the problem type. Before today, we only knew about Total and Difference problems. If you think it's a Total problem, ask yourself: Are parts put together into a total? If you think it's a Difference problem, ask yourself: Are two amounts compared for a difference?

In Change problems, the story tells us a starting amount. Something happens in the story to CHANGE the starting amount. If you think it's a Change problem, ask yourself: Does a starting amount increase or decrease to a new amount?

In Change problems, the starting amount can increase, which means we add, or the starting amount can decrease, which means we subtract.

Let's decide. Is this problem about parts and a total? Or is it about two amounts compared for a difference? Or is it about a starting amount that increases or decreases to a new amount?

Listen as I read the problem again.

Reread Problem A.

This problem talks about pieces of candy: Gilbert had 85 pieces of candy, then he gave 27 pieces of candy to his sister. The question asks how many pieces of candy Gilbert has now. Is this a Total, Difference, or a Change problem?

Change.

This problem is a Change problem because the problem tells us a starting amount: Gilbert had 85 pieces of candy. Then something happens to change the amount. What happens? (Use Change gesture as you explain.)

Gilbert gives 27 pieces of candy to his sister.

Good. Gilbert gave 27 pieces of candy to his sister. If Gilbert gave some pieces of candy away, did the starting amount increase or decrease?

Decrease.

Right. This is a Change problem. I'll write C next to the problem to help me remember it's a Change problem.

Write C.

Now, Gilbert started with 85 pieces of candy. Then he gave 27 pieces of candy to his sister. It's a starting amount that decreases. If it's decreasing, do we add or subtract?

Subtract.

Right. Do we use a plus or a minus sign?

Minus sign.

Good. We use a minus sign. I write the minus sign before C to remind me it's a Change problem that decreases. I put the minus sign to remind me to subtract.

Write – next to C.

When we RUN through a problem, it helps us organize our paper so we can solve the problem! We said this is a Change problem. (Point to the –C.) **We use the Change poster to solve it.**

Display Change poster.

To solve a Change problem, we have six steps. The steps are a lot like the Total and Difference steps.

Step 1 is to write the Change equation. We write ST plus C is the same as E OR ST minus C is the same as E. The sign depends on whether the change is increasing or decreasing. Does this problem have an increase or decrease?

Decrease.

That's right. The change decreases. That's why we wrote a minus sign next to the C. If we wrote a minus sign, we use the Change equation of ST minus C is

the same as E.

We need to write the Change equation now.

Write ST – C = E.

Step 2: "Find ST." We have to decide the starting amount. Look at the problem. Does it tell us the starting amount of pieces of candy?

Yes.

How many pieces of candy did Gilbert start with?

85.

The starting amount, or ST, is 85. I check off the 85 and write 85 underneath ST.

Check off 85 in the story and write 85 underneath ST.

Step 3: "Find C." We have to decide the change amount. Sometimes the problem will tell us the change amount. Other times, the change amount is X. Look at the problem. Does it tell about a change to the number of pieces of candy?

Yes.

How many pieces of candy did Gilbert give to his sister?

27.

That's right. Gilbert gave 27 pieces of candy to his sister. If Gilbert gave some pieces of candy away, this describes a change in the number of pieces of candy. So, the change amount, or C, is 27. I check off the 27 and write 27 underneath C.

Check off 27 in the story and write 27 underneath C.

Step 4 says: "Find E." We have to decide the end amount. Sometimes the problem tells us the end amount. Other times, the end amount is X. Look at the problem. Does it tell about the end number of pieces of candy?

No.

The question asks, "How many pieces of candy does Gilbert have now?" We have to find the end amount of pieces of candy. How do we mark missing information?

With an X.

Right. We're missing the end amount, so I put an X underneath E.

Write X underneath E.

Step 5: "Write the signs." Change problems can have a plus sign or a minus sign. In this problem, we said the starting amount decreased. To help us remember this, we wrote ST minus C is the same as E when we wrote the Change equation. This means we use a minus sign and the same as sign to complete the number sentence.

Write the minus sign and same as sign.

85 stands for the starting amount. 27 stands for the change. X stands for the end amount. Does this (point) **look like a number sentence we know how to solve?**

Yes!

Let's read the number sentence together.

Read number sentence aloud with students.

Let's find X! You know how to solve this problem!

Great! In word problems, our answer must have a number and a label. We know the number answer is 58. Now we have to figure out what the label for 58 should be. Think about what the problem is mostly about. What did we underline?

Pieces of candy.

Right! The problem is mostly about pieces of candy, so that's the best label. We write pieces of candy for the label!

Write pieces of candy next to 58.

Let's see if the answer makes sense. "Gilbert had 85 pieces of candy. He gave 27 pieces of candy to his sister. How many pieces of candy does Gilbert have now?" Does 58 pieces of candy make sense?

Yes.

Right. 58 pieces of candy makes sense.

Good. We have a number and a label in the answer.

Good job working this Change problem!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

There were 19 birds sitting on the fence. Then, 29 more birds landed on the fence. How many birds are on the fence now?

Problem Type:	*Change, increase*
Relevant Information:	*ST = 19; C = 29; E = X*
Number Sentence:	*19 + 29 = X*
Answer:	*X = 48 birds*

Follow Activity Guide: RUN.
Follow Activity Guide: Change.

Review with students that this problem is a Change increase problem because more birds landed on the fence.

Guide students to use the Change increase equation and the plus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

There were 67 apples on the apple trees. If 29 apples fell to the ground, how many apples are still on the trees?

Problem Type:	*Change, decrease*
Relevant Information:	*ST = 67; C = 29; E = X*
Number Sentence:	*67 – 29 = X*
Answer:	*X = 38 apples*

Follow Activity Guide: RUN.
Follow Activity Guide: Change.

Review with students that this problem is a Change decrease problem because apples fell off the tree to the ground.

Guide students to use the Change decrease equation and the minus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we practiced Change problems.

Remind me, what is a Change problem?

(Students explain.)

Excellent work today! You earn a treasure coin!

Treasure Map

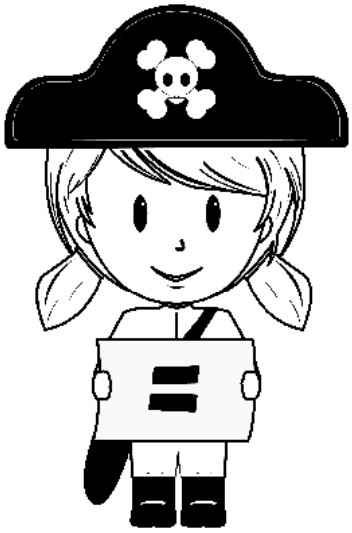
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 8



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Change with change and end missing

Materials

Posters

Counting Up
RUN and Total
Difference and Change

Student Materials

STAAR Problems: Lesson 8
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flashcards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

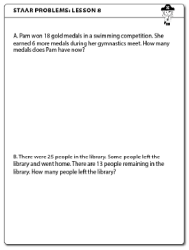
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 8.

Point to A.


STAAR PROBLEMS: LESSON 8

A. Pam won 18 gold medals in a swimming competition. She earned 6 more medals during her gymnastics meet. How many medals does Pam have now?

B. There were 25 people in the library. Some people left the library and went home. There are 13 people remaining in the library. How many people left the library?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference.**

What's the Difference equation?

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

Look at this problem.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Pam won 18 gold medals in a swimming competition. She earned 6 more medals during her gymnastics meet. How many medals does Pam have now?

Problem Type:	*Change, increase*
Relevant Information:	*ST = 18; C = 6; E = X*
Number Sentence:	*18 + 6 = X*
Answer:	*X = 24 medals*

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

Good. If it's a Total problem, ask yourself, Are parts are put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

Yes. Are two amounts compared for a difference? What helps you figure out if two amounts are compared for a difference?

A compare sentence.

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

Is this a Total, Difference, or Change problem?

Change.

Follow Activity Guide: Change.

Review with students that this problem is a Change increase problem because Pam won more medals.

Guide students to use the Change increase equation and the plus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

There were 25 people in the library. Some people left the library and went home. There are 13 people remaining in the library. How many people left the library?

Problem Type:	*Change, decrease*
Relevant Information:	*ST = 25; C = X; E = 13*
Number Sentence:	*25 – X = 13*
Answer:	*X = 12 people*

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

Good. If it's a Total problem, ask yourself, Are parts are put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

Yes. Are two amounts compared for a difference? What helps you figure out if two amounts are compared for a difference?

A compare sentence.

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

Is this a Total, Difference, or Change problem?

Change.

How do you know it's a Change problem?

There's a starting amount that decreases to a new amount.

You're right! It's a Change problem. This problem is tricky. It's a Change problem, but it doesn't ask us for the end amount.

Listen as I read the problem again and look carefully: "There were 25 people in the library. Some people left the library and went home. How many people left the library?" What happens to change the amount of people in the library?

Some people left the library and went home.

Right. This problem is about one thing that changes. The problem tells us that there are 13 people remaining in the library. Does 13 tell us how many people left the library and went home?

No.

Right. 13 tells us the end amount, the number of people remaining in the library. This question asks how many people left the library and went home. In this problem, the number of people who left the library and went home is the change. The problem asks us to find the amount of the change.

We know there were 25 people in the library to start. We know there were 13 people remaining in the library at the end. We don't know how many people left the library and went home, so we are looking for the Change

amount. Change problems start with an amount and then, at a different time, something happens to change it to make a new end amount.

Let's ask ourselves: Is there a starting amount that increases or decreases to a new amount?

Yes.

The answer is yes. Write C next to the problem to remind me it's a Change problem.

(Write.)

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Change problem. (Point to C.) **Now we use the Change poster to solve it.**

Follow Activity Guide: Change.

Review with students that this problem is a Change decrease problem because people left the library and went home.

Guide students to use the Change decrease equation and the minus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

What do we need to do?

Number it.

(Students number graph.)

Guide students to look at the key and count by fives to number the graph.

Solution to Problem C:

Pablo had $30 in his piggy bank. Then, he bought blocks. How much money does Pablo have now?

Problem Type:	*Change, decrease*
Relevant Information:	*ST = 30; C = 5; E = X*
Number Sentence:	*30 – 5 = X*
Answer:	*X = $25*

Follow Activity Guide: RUN.
Follow Activity Guide: Change.

Review with students that this problem is a Change decrease problem because John spent some of his money on blocks.

Guide students to use the Change decrease equation and the minus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we practiced Change problems with the change and the end missing.

Remind me, what is a Change problem?

(Students explain.)

Excellent work today! You earn a treasure coin!

Treasure Map

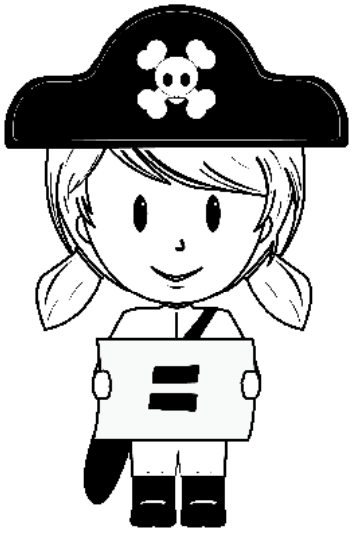
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 9



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Change, two changes

Materials

Posters

Counting Up
RUN and Total
Difference and Change

Student Materials

STAAR Problems: Lesson 9
Treasure Map

Tutor Materials

Gold coins
Treasure chest
Math Fact Flash Cards
Timer
Sorting Cards
Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flashcards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 9.

Point to A.

STAAR PROBLEMS: LESSON 9

A. An art teacher had 736 crayons.

-She threw away 197 broken crayons.
-Then she bought 150 more crayons.

How many crayons does the art teacher have now?

B. Rita had two boxes of ribbons.

-She had 37 large ribbons in the first box.
-She had 36 small ribbons in the second box.
-She gave 28 of the ribbons to her sister.

How many ribbons does Rita have left in the two boxes?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference.**

What's the Difference equation?

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

Look at this problem.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

An art teacher had 736 crayons. She threw away 197 broken crayons. Then she bought 150 more crayons. How many crayons does the art teacher have now?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 736; C = – 197; C = + 150; E = X*
Number Sentence:	*736 – 197 + 150 = X*
Answer:	*X = 689 crayons*

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

Good. If it's a Total problem, ask yourself, Are parts are put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

Yes. Are two amounts compared for a difference? What helps you figure out if two amounts are compared for a difference?

A compare sentence.

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

Is this a Total, Difference, or Change problem?

Change.

The answer is yes. This is a Change problem. Write C to remind me it's a Change problem.

(Write.)

Now let's figure out if it's an increase or decrease. What happens in the story to change the amount of crayons the art teacher has?

She threw away 197 broken crayons.

Yes. She threw away 197 broken crayons. Look carefully though. Another thing happened in this story to change the starting amount. What is it?

She bought 150 more crayons.

That's right. In this problem, there are two changes! We have to figure out if these changes increased or decreased the amount. What happened in the story first?

She threw away 197 broken crayons.

Is that an increase or decrease?

Decrease.

Good. I put a minus sign in front of the C. We're not done, though. What happened next?

She bought 150 more crayons.

Is that an increase or decrease?

Increase.

Good. That's another change. I write a plus C next to the problem. This reminds me there are two changes. The first change decreased the number of crayons the art teacher had and the second change increased the number of crayons the art teacher had.

Write minus C plus C on your paper. This reminds us it's a Change problem with two changes.

(Write.)

Let's review. This is a Change problem because a starting amount, the art teacher's crayons, changes to a new end amount. So far, we've solved problems where only one thing happens to change the starting amount. In this problem, two things happen to change the start amount. Let's look at the Change poster.

Display Change poster.

Here are the six steps for a Change problem. Step 1 says to write the Change equation.

We write ST plus C is the same as E or ST minus C is the same as E. Our Change equation sets up a problem when there's only one change. In this problem, though, there are two changes. Our Change equation should look like this:

Write ST – C + C = E.

We put two changes in the equation so we get the right end amount.

Step 2: "Find ST." What's the art teacher's starting amount of crayons?

736.

736 is the starting amount of crayons. So, check off 736 and write 736 under ST.

(Write.)

Step 3: "Find C." Remember, this problem talks about two changes. So, let's think about the first change.

The art teacher threw away 197 broken crayons. So, what's the first change?

197.

Very good! First, the art teacher threw away 197 broken crayons. Check off 197 in the story and write 197 under the first C.

(Write.)

There's still another C. So we can't move to Step 4 yet. What's the other change?

150.

Yes! Then the art teacher bought 150 more crayons. The other change is 150. Check off 150 in the story, and write 150 under the other C.

(Write.)

Now we can move to Step 4. "Find E." What's the end amount of crayons?

We don't know.

That's right. The question asks, "How many crayons does the art teacher have now?" We have to find the end amount of crayons. Write X underneath E.

(Write.)

Sometimes Change problems ask us to put two changes in the equation. These are still Change problems, because there's still a starting amount that changes. It just changes more than once.

When a problem has extra numbers, it's easy to think there's irrelevant information. Don't be fooled. To decide if information is important or irrelevant, you must think carefully about the problem. Figure out if the amount you start with changes just one time or more than one time. If all the numbers are about the label (point), **then there's more than one change. All of the numbers are important.**

Don't let irrelevant information trick you. You have to figure out which numbers are important information. In this problem, there is no irrelevant information. All of the numbers (point to each number) **are important.**

Let's go to Step 5. What's Step 5?

Write the signs.

Good. What math signs do we use to complete our number sentence?

– and + and =.

(Write.)

736 stands for start. 197 stands for the first change. 150 stands for the next change. X stands for end. We need to be sure that we put the changes in same order we see them in the problem. The art teacher threw away crayons first, so that's the first change. The art teacher bought more crayons second, so that's the next change.

Does this look like a number sentence we know how to solve?

Yes/No.

Don't let the number sentence trick you. We solved some like this when we solved Total problems with three parts.

X is at the end, so we solve it! We add then subtract find X.

Let's read the number sentence together.

Read number sentence aloud with students.

Let's find X!

Let's look at the first sign. Is this a plus or a minus sign?

Minus sign. We subtract.

Right. The minus sign tells us to subtract. I subtract 736 minus 197. What's 736 minus 197?

539.

Good. I write 539 underneath 736 minus 197 to remind me it's 539. I'm not finished though. What do we do next to find X?

Add 539 + 150.

Good. We know 736 minus 197 is the same as 539. We add 539 plus 150 to find

X. What number does X stand for in 736 minus 197 plus 150 is the same as X?

689.

Right! You said 736 minus 197 is the same as 539. Then, 539 plus 150 is the same as 689. X is the same as 689. Let's put 689 in the problem in place of X.

Write 736 – 197 + 150 = 689, and then X = 689.

Right. So X is the same as 689.

Great! In word problems, our answer must have a number and a label. We know the number answer is 689. Now we figure out what the label for 689 should be. Think about what the problem is mostly about. Start by looking in the question sentence. Look at what we underlined. What did we underline in the question?

Crayons.

Right! The problem is mostly about crayons, so that's the best label. X stands for the number of crayons the art teacher has at the end.

Write crayons next to 689.

Let's see if the answer makes sense. "An art teacher had 736 crayons. Then, she threw away 197 broken crayons, and she bought 150 more crayons. How many crayons does the art teacher have now?"

Did we answer the question, "How many crayons does the art teacher have now?"

Yes.

We did because the art teacher has 689 crayons. We have a number and a label in the answer.

Let's review. This Change problem tells us about two changes. Two things happened to change the starting amount. We have to be careful when we see an extra number in a problem. Sometimes the extra number is irrelevant information. But other times, the extra number is important information, like in the problem we just solved. So be careful. You have to think hard to decide

whether a number is irrelevant or important.

Great job solving that Change problem. Let's try another one!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

Rita had two boxes of ribbons. She had 37 large ribbons in the first box. She had 56 small ribbons in the second box. She gave 28 of the ribbons to her sister. How many ribbons does Rita have left in the two boxes?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 37; C = + 56; C = – 28; E = X*
Number Sentence:	*37 + 56 – 28 = X*
Answer:	*X = 65 ribbons*

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

Good. If it's a Total problem, ask yourself, Are parts are put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

Yes. Are two amounts compared for a difference? What helps you figure out if two amounts are compared for a difference?

A compare sentence.

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

Is this a Total, Difference, or Change problem?

Change.

How do you know it's a Change problem?

There's a starting amount that increases then decreases to a new amount.

Follow Activity Guide: Change.

Review with students that this problem is a Change problem with two changes. First, there is a change that increases then a change that decreases because Rita had large ribbons in the first box and small ribbons in the second box, then she gave some ribbons to her sister.

Guide students to use the Change increase then decrease equations and the plus then minus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Wanda traveled on an airplane three times last year. In January she traveled 278 miles. In April she traveled 652 miles. In September she traveled 767 miles. How many more miles did Wanda travel in January and April combined than she traveled in September?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 278; C = + 652; C = – 767; E = X*
Number Sentence:	*278 + 652 – 767 = X*

Answer: *X = 163 more miles*

Follow Activity Guide: RUN.
Follow Activity Guide: Change.

Review with students that this problem is a Change problem with two changes. First, there is a change that increases then a change that decreases because Wanda traveled miles in January and she traveled miles in April, then the problem asks how many more miles she traveled in January and Apri than in September.

Guide students to use the Change increase then decrease equations and the plus then minus and same as signs.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Today we practiced Change problems with two changes.

Remind me, what is a Change problem?

(Students explain.)

Excellent work today! You earn a treasure coin!

Treasure Map

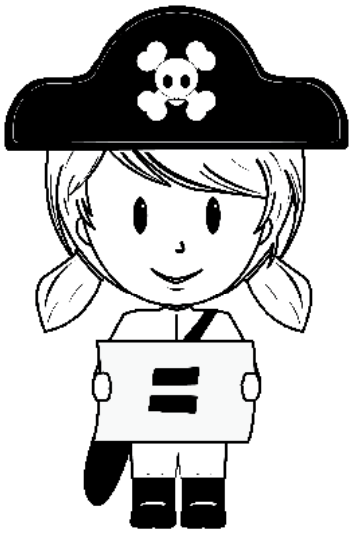
Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)

Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 10



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Equal Groups with P missing

Materials

Posters

- Counting Up
- RUN and Total
- Difference and Change
- Equal Groups

Student Materials

- STAAR Problems: Lesson 10
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flashcards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

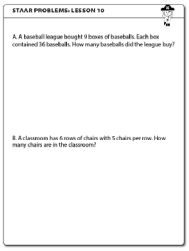
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 10.

Point to A.


STAAR PROBLEMS: LESSON 10

A. A baseball league bought 9 boxes of baseballs. Each box contained 36 baseballs. How many baseballs did the league buy?

B. A classroom has 6 rows of chairs with 5 chairs per row. How many chairs are in the classroom?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

Today, we'll learn about a new type of problem. We call these Equal Groups problems. Say that with me.

Equal Groups.

In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What does it mean to make an equal group?

(Students respond.)

Exactly. When we have equal groups, we have the same number in each group.

Let me show you what I mean. Look at this problem.

Point to A.

"A baseball league bought 9 boxes of baseballs. Each box contained 4 baseballs. How many baseballs did the league buy?"

This is an Equal Groups story because the story tells us that a baseball league bought 9 boxes of baseballs, which stands for 9 equal groups, and there are an equal number of baseballs in each box, or group.

How many groups or boxes of baseballs did the league buy?

9.

Exactly.

The baseball league bought 9 boxes of baseballs. Each box contained an equal number of baseballs.

Remind me what equal number means?

The same.

Exactly. The baseball league has 9 boxes of baseballs with an equal number of baseballs in each of the 9 boxes.

How many baseballs are in each box, or how many are in each group?

4.

Good! This is an Equal Groups story because there are 4 baseballs in each of the 9 boxes.

Circle 9 and 4 in the story.

Here's the number sentence that goes with this story: 9 times 4 is the same as X.

Write $9 \times 4 = X$.

This number sentence stands for what's happening in this Equal Groups story. The baseball league has 9 boxes of baseballs, which are the number of groups. How many groups do we have?

9.

Right. There are 9 groups, or boxes of baseballs.

There are an equal number of baseballs in each group, or box. How many baseballs are in each box?

4.

Right. There are 9 groups, or boxes of baseballs. There are 4 baseballs in each box, which is the equal number in each group. That's like the number sentence: 9 times 4 is the same as X. Let me show you how this works.

Use the whiteboard to start drawing 9 boxes and 4 baseballs within each box with students.

We know the baseball league has 9 groups, which are the 9 boxes of baseballs. We know there are 4 baseballs in each group, which is the equal number in each group.

In Equal Groups problems, the story tells us the number of groups. The story also tells us the number in each group. In an Equal Groups story, there is an equal number, or the same number in each group. In this problem, the baseball league has the same number of baseballs in each group, or box. How many baseballs are in each group?

Count the 4 baseballs in each group with the students, using the whiteboard and picture as a guide. Review that there are the same number of baseballs in each of the 9 groups, or 9 boxes.

4.

Right. There are 4 baseballs in each of the baseball league's 9 boxes.

Let's review. The baseball league has 9 groups, or 9 boxes of baseballs. The baseball league has 4 baseballs in each group, or box. To find out how many baseballs the league bought, I can count how many baseballs are in all of the boxes. If we count the 4 baseballs in each of the 9 boxes, we have 36 baseballs in all.

Use the whiteboard and picture to demonstrate counting the number of groups and the number in each group.

How many baseballs did the league buy in all?

36.

Exactly! The baseball league bought 36 baseballs in all!

For Equal Groups stories, you always can draw a picture to show the number of groups and the equal number in each group.

An easier way to solve Equal Groups problems is to MULTIPLY.

The 9 boxes of baseballs times the 4 baseballs in each group or box gave us 36 baseballs in all. This is like the number sentence 9 times 4 is the same as 36.

Write $9 \times 4 = 36$ and $X = 36$ with students.

The Equal Groups equation for this problem is GR times N is the same as P.

Write $GR \times N = P$.

GR (point) **stands for the number of groups. N** (point) **stands for the number in each group. And P** (point) **stands for the product. When we multiply, we call the answer the product.**

What do we call the answer when we multiply?

The product.

What does GR (point) **stand for?**

The number of groups.

What does N (point) **stand for?**

The number in each group.

What does P (point) **stand for?**

The product.

Follow Activity Guide: RUN.
When you get to the "N" follow script below.

This problem is an Equal Groups problem because there are groups with an equal number in each group. How many groups do we have?

9.

Exactly. We have 9 groups or boxes of baseballs. How many do we have in each group?

4.

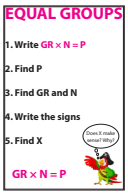
Right. We have 4 baseballs in each of our 9 boxes or groups.

This is an Equal Groups problem. I'll write EG next to the problem to help me remember it's an Equal Groups problem.

Write EG.

When we RUN through a problem, it helps us organize our paper so we can solve the problem! We said this is an Equal Groups problem. (Point to the EG.) **We use the Equal Groups poster to solve it.**

Display Equal Groups poster.



To solve an Equal Groups problem, we have five steps. The steps are a lot like the Total, Difference, and Change steps.

Step 1 is to write the Equal Groups equation. We write GR times N is the same P.

We need to write the Equal Groups equation now.

Write GR × N = P.

Step 2: "Find P." What does P stand for?

The product.

That's right. We know P stands for the product because product starts with a P. We have to determine if the problem gives us the answer or product or if the problem asks us to find the answer or product.

In an Equal Groups problem, there are groups with an equal number in each group. The question helps us figure out whether we're finding the product, the number of groups, or the number *in* each group.

Look at the word problem again. The first sentence (point) **says, "A baseball league bought 9 boxes of baseballs." The boxes are the number of groups.** (Demonstrate the Equal Groups gesture. Hold one hand out with your palm flat to show the number of groups.)

The next sentence (point) **says, "Each box contained 4 baseballs." The baseballs in each box are the equal number *in* each group.** (Demonstrate the Equal Groups gesture. With your one hand out with your palm flat, use your other hand to pretend to place an object in the palm of your hand. Show that for one group or box, there are 4 baseballs. Repeat the gesture for the number of groups you want to show. For this problem, start repeating the gesture 9 times to show 9 groups with 4 in each group.)

The question asks, "How many baseballs did the league buy?" (Demonstrate the Equal Groups gesture again.)

We know the number of groups and the number in each group, so the question is asking us to find the product. The missing part is the product, or P (point)**.**

In number sentences, how do we mark missing information?

With an X.

Right. P is the missing information, so we put X in the number sentence under P. This helps keep the work organized.

Write X under P.

Step 3: "Find GR and N." First, let's find GR. What does GR stand for again?

The number of groups.

How many groups do we have?

9.

Exactly. We have 9 groups, or 9 boxes of baseballs.

Check off 9 in the story and write 9 underneath GR. Continue to use whiteboards with painter's tape to illustrate the groups as needed.

Next, let's find N. What does N stand for again?

The number in each group.

How many do we have *in* each group?

4.

Exactly. We have 4 baseballs in each group, or in each box.

Check off 4 in the story and write 4 underneath N. Continue to use whiteboards with painter's tape to illustrate the equal number in each group as needed.

Step 4 says: "Write the signs." Equal Groups problems use a multiplication or times sign and the same as sign.

Write the multiplication sign and same as sign.

9 stands for the number of groups. 4 stands for the number in each group. X stands for the product. Does this (point) **look like a number sentence we know how to solve?**

Yes!

Let's read the number sentence together.

Read number sentence aloud with students.

Step 5 says: "Find X." Let's find X! You know how to do this!

Help students with multiplication. Monitor students as needed.

What is X?

36.

Great! In word problems, our answer must have a number and a label. We know the number answer is 36. Now we have to figure out what the label for 36 should be. Think about what the problem is mostly about. What did we underline?

Baseballs.

Right! The problem is mostly about baseballs, so that's the best label. We write baseballs for the label!

Write baseballs next to 36.

Let's see if the answer makes sense. "The baseball league bought 9 boxes of baseballs. Each box contained 4 baseballs. How many baseballs did the league buy?" Does 36 baseballs make sense?

Continue to use whiteboards with painter's tape to illustrate the answer as needed.

Yes.

Right. 36 makes sense.

Good. We have a number and a label in the answer.

Good job working this Equal Groups problem! Let's try another one!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

A classroom has 6 rows of chairs with 5 chairs per row. How many chairs are in the classroom?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 6; N = 5; P = X*
Number Sentence:	*$6 \times 5 = X$*
Answer:	*X = 30 chairs*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
Follow Activity Guide: Equal Groups.

Continue to use whiteboards with painter's tape to illustrate the groups and the equal number in each group as needed.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a

table. Is there a graph or a table?

No.

Solution to Problem C:

Each rectangle shown will be covered with equal-sized squares. Some of the squares have been placed as shown. What is the area of Rectangle V?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 6; N = 6; P = X*
Number Sentence:	*$6 \times 6 = X$*
Answer:	*X = 36 square centimeters*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
Follow Activity Guide: Equal Groups.

Continue to use whiteboards with painter's tape to illustrate the groups and the equal number in each group as needed.

Review the term area with students and explain that the area means the number of squares required to cover a figure completely, like the squares of Rectangle V. Area is measured in "square" units.

Review with students that we can find the area by multiplying the length of the figure times the width of the figure or by following the Equal Groups steps. Explain that we also can find the area by filling in all of the squares within Rectangle V and counting all of the squares.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

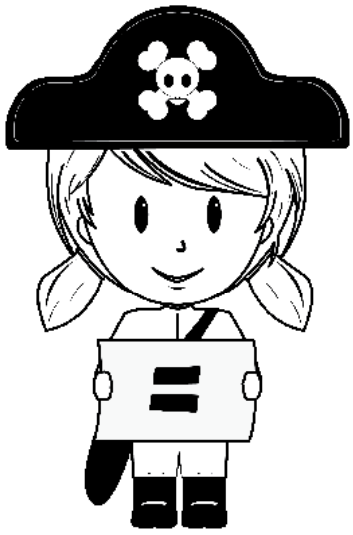
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 11



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Equal Groups with N missing

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 11
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

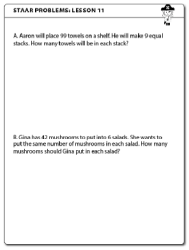
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 11.

Point to A.


STAAR PROBLEMS: LESSON 11

A. Aaron will place 99 towels on a shelf. He will make 9 equal stacks. How many towels will be in each stack?

B. Gina has 42 mushrooms to put into 6 salads. She wants to put the same number of mushrooms in each salad. How many mushrooms should Gina put in each salad?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

Yesterday, we started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Aaron will place 99 towels on a shelf. He will make 9 equal stacks. How many towels will be in each stack?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 9; N = X; P = 99*
Number Sentence:	*9 × X = 99*
Answer:	*X = 11 towels*

What's the first thing we do every time we see a word problem?

RUN through it!

Good. What does R stand for?

Read the problem.

Listen as I read the problem. "Aaron will place towels on a shelf. He will make 9 equal stacks. How many towels will be in each stack?"

What does U stand for?

Underline the label and cross out irrelevant information.

First, look at the question to see if it helps with the label. The question is, "How many towels will be in each stack?" What's this problem mostly about?

Towels.

This story is mostly about towels. Let's underline the word towels in the question. This will help us remember we're looking for numbers that talk about towels.

(Underline.)

Is there any irrelevant information?

No.

Are all of the numbers about the label we underlined?

Yes.

You're right! All of the numbers talk about towels.

What does N stand for?

Name the problem type.

After you read the problem and underline the label, you name the problem type.

When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

You're right! This is an Equal Groups problem because we have groups with an equal number in each group.

This problem is a little different from the other Equal Groups problems we have solved before. Let me show you what I mean.

Let me read the problem again.

Reread Problem A.

This problem is about 99 towels that are put into 9 equal stacks. We know that there are 9 groups, which are the 9 stacks of towels. And we know that there are 99 towels in all. We do not know how many towels are *in* each group or stack. So, we know the number of groups, which is the 9 stacks of towels. We also know the product, which is the 99 towels in all. We don't know the number *in* each group, which is the number of towels in each stack.

Look at this whiteboard so you can see what I mean.

Use whiteboard with painter's tape to draw a picture of 9 groups, placing 9 horizontal dots to show that one dot represents each group. One by one, add a dot to each of the 9 rows until you get to 99. Illustrate the 9 groups and 99 towels to show that we are missing the number in each group.

This problem is different from the Equal Groups problems we've worked on before. Those other problems always asked us to find the product. This problem (point) **tells us the product of 99. Today, we have to find the number in each group.**

Because this problem is about groups with an equal number in each group, we know it's an Equal Groups problem. What should I put next to the problem?

EG.

Right. I put EG next to the problem to remind me it's an Equal Groups problem.

(Write.)

Good! The RUN poster helped us organize our paper so we can solve the problem! We said this is an Equal Groups problem. (Point to the EG.) **We use the Equal Groups poster to solve it.**

Display Equal Groups poster.

Step 1 is to write the Equal Groups equation. We write GR times N is the same P.

We need to write the Equal Groups equation now.

Write GR × N = P.

Step 2: "Find P." What does P stand for?

The product.

That's right. We know P stands for the product because product starts with a P. We have to determine if the problem gives us the answer or product or if the problem asks us to find the answer or product.

In an Equal Groups problem, there are groups with an equal number in each group. The question helps us figure out whether we're finding the product, the number of groups, or the number *in* each group.

Look at the word problem again. The first sentence (point) **says, "Aaron will place 99 towels on a shelf." The 99 towels are the product. We know Aaron has 99 towels in all. The product is like the total number. But don't confuse that with a Total problem!**

The next sentence (point) **says, "He will make 9 equal stacks." The 9 equal stacks of towels are the number of groups.** (Demonstrate the Equal Groups gesture. With your one hand out with your palm flat, show one group. Show that we have one group, or stack of towels, but we don't know how many towels are in each stack. Repeat the gesture for the number of groups you want to show. For this problem, repeat the gesture 9 times to show 9 groups and explain that we are looking for the number in each group.)

The question asks, "How many towels will be in each stack?" (Demonstrate the Equal Groups gesture again.)

We know the product and the number of groups, so the question is asking us to find the number *in* each group. The missing part is the number in each group, or N (point)**.**

What's the product?

99.

Good! Write 99 under the P.

Write 99 under P.

Step 3: "Find GR and N." First, let's find GR. What does GR stand for again?

The number of groups.

How many groups do we have?

9.

Exactly. We have 9 groups, or 9 stacks of towels.

Check off 9 in the story and write 9 underneath GR. Continue to use whiteboards with painter's tape to illustrate the groups as needed.

Next, let's find N. What does N stand for again?

The number in each group.

How many do we have in each group?

We don't know.

Exactly! We are looking for the number in each group. In number sentences, how do we mark missing information?

With an X.

Right. N is the missing information, so we put an X in the number sentence under N. This helps keep the work organized.

Write X under N.

Continue to use whiteboards with painter's tape to illustrate the equal number in each group as needed.

Step 4 says: "Write the signs." Equal Groups problems use a multiplication or times sign and the same as sign.

Write the multiplication sign and same as sign.

9 stands for the number of groups. X stands for the number in each group. 99 stands for the product. Does this (point) **look like a number sentence we know how to solve?**

Yes!

In this problem, the times sign and the X are right next to each other, so make sure you write a BIG X so we don't confuse the times sign and the X.

Monitor students to make sure they write the times sign and a BIG X.

Let's read the number sentence together.

Read number sentence aloud with students.

Step 5 says: "Find X." Let's find X! You know how to do this!

Help students with multiplication by encouraging them to use their whiteboards. Assist students in drawing 1 big circle around the first set of 9 dots, a second big circle around the second set of 9 dots, and so on. You also can ask students what number times 9 gives us 99.

How many big circles did we draw around our dots?

11.

Good! So, what is X?

11.

Great! In word problems, our answer must have a number and a label. We

know the number answer is 11. Now we have to figure out what the label for 11 should be. Think about what the problem is mostly about. What did we underline?

Towels.

Right! The problem is mostly about towels, so that's the best label. We write towels for the label!

Write towels next to 11.

Let's see if the answer makes sense. "Aaron will place 99 towels on a shelf. He will make 9 equal stacks. How many towels will be in each stack?" Does 11 towels make sense?

Continue to use whiteboards with painter's tape to illustrate the answer as needed.

Yes.

Right. 11 towels makes sense.

Good job working this Equal Groups problem! Let's try another one!

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

Gina has 42 mushrooms to put into 6 salads. She wants to put the same number of mushrooms in each salad. How many mushrooms should Gina put in each salad?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 6; N = X; P = 42*
Number Sentence:	*$6 \times X = 42$*
Answer:	*X = 7 mushrooms*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

As needed, use the language from Problem A and the whiteboards to explain how to solve Equal Groups problems when the number in each group is missing.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Deon and his two brothers ate a bowl of grapes. There were 27 grapes in the bowl. Each boy ate the same number of grapes. What is the number of grapes each boy ate?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 3; N = X; P = 27*
Number Sentence:	*$3 \times X = 27$*
Answer:	*X = 9 grapes*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

As needed, use the language from Problem A and the whiteboards to explain how to solve Equal Groups problems when the number in each group is missing.

The last thing we need to do is check to see if our answer makes sense. Does

our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

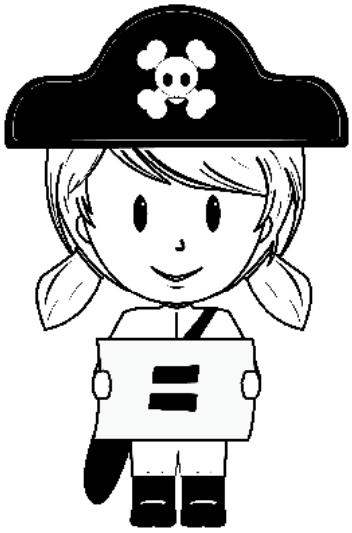
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 12



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Equal Groups

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 12
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Soring Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

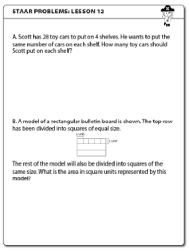
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 12.

Point to A.


STAAR PROBLEMS: LESSON 12

A. Scott has 28 toy cars to put on 4 shelves. He wants to put the same number of cars on each shelf. How many toy cars should Scott put on each shelf?

B. A model of a rectangular bulletin board is shown. The top row has been divided into squares of equal size.

The rest of the model will also be divided into squares of the same size. What is the area in square units represented by this model?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Scott has 28 toy cars to put on 4 shelves. He wants to put the same number of cars on each shelf. How many toy cars should Scott put on each shelf?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 4; N = X; P = 28*
Number Sentence:	*4 × X = 28*
Answer:	*X = 7 toy cars*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

A model of a rectangular bulletin board is shown. The top row has been divided into squares of equal size. The rest of the model will also be divided into squares of the same size. What is the area in square units represented by this model?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 3; N = 5; P = X*
Number Sentence:	*$3 \times 5 = X$*
Answer:	*X = 15 square units*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

Review the term area with students and explain that the area means the number of squares required to cover a figure completely, like the squares of the rectangular bulletin board. Area is measured in "square" units.

Review with students that we can find the area by multiplying the length of the figure times the width of the figure or by following the Equal Groups steps. Explain that we also can find the area by filling in all of the squares within the rectangular bulletin board and counting all of the squares.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

<u>Solution to Problem C:</u>

In math class 5 students split up 65 flash cards to practice their math facts. The

picture shows the total number of flash cards. Each student took the same number of flash cards. What is the number of flash cards each student took?
Problem Type: *Equal Groups*
Relevant Information: *GR = 5; N = X; P = 65*
Number Sentence: *$5 \times X = 65$*
Answer: *X = 13 flash cards*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

Encourage students to use the picture of the flash cards to make 5 equal groups to determine the number in each group, 13.

Monitor students as needed.

The last thing we need to do is check to see if our answer makes sense. Does

our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

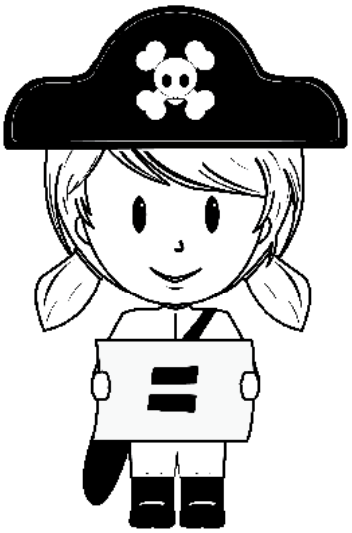
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 13



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Review of Difference, Change, Equal Groups

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 13
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

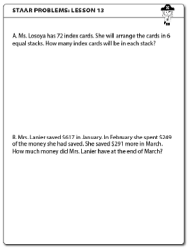
Use Activity Guide: Shipshape Sorting.

3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method. Display STAAR Problems - Lesson 13.

Point to A.


STAAR PROBLEMS: LESSON 13

A. Ms. Loseya has 72 index cards. She will arrange the cards in 6 equal stacks. How many index cards will be in each stack?

B. Mrs. Lanier saved $617 in January. In February she spent $249 of the money she had saved. She saved $291 more in March. How much money did Mrs. Lanier have at the end of March?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Ms. Losoya has 72 index cards. She will arrange the cards in 6 equal stacks. How many index cards will be in each stack?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 6; N = X; P = 72*
Number Sentence:	*6 × X = 72*
Answer:	*X = 12 index cards*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

Mrs. Lanier saved $617 in January. In February she spent $249 of the money she had saved. She saved $291 more in March. How much money did Mrs. Lanier have at the end of March?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 617; C = – 249; C = + 291; E = X*
Number Sentence:	*617 – 249 + 291 = X*
Answer:	*X = $659*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Change.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

A company received 492 phone calls from customers in June and 267 phone calls from customers in July. What is the difference between the number of phone calls received in these two months?

Problem Type:	*Difference*
Relevant Information:	*G = 492; L = 267; D = X*
Number Sentence:	*492 – 267 = X*
Answer:	*X = 225 (more) phone calls*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Difference.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the number of phone calls received in June and the number of phone calls received in July.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

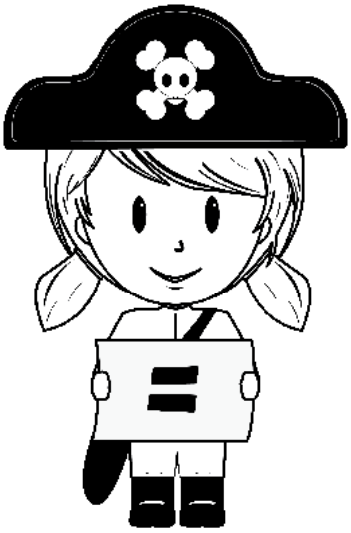
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 14



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Review of Change and Equal Groups

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 14
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

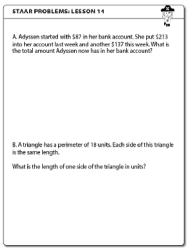
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 14.

Point to A.


STAAR PROBLEMS: LESSON 14

A. Adyssen started with $87 in her bank account. She put $213 into her account last week and another $137 this week. What is the total amount Adyssen now has in her bank account?

B. A triangle has a perimeter of 18 units. Each side of this triangle is the same length.

What is the length of one side of the triangle in units?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Adyssen started with $87 in her bank account. She put $213 into her account last week and another $137 this week. What is the total amount Adyssen now has in her bank account?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 87; C = + 213; C = + 137; E = X*
Number Sentence:	*87 + 213 + 137 = X*
Answer:	*X = $437*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Change.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

A triangle has a perimeter of 18 units. Each side of this triangle is the same length. What is the length of one side of the triangle in units?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 3; N = X; P = 18*
Number Sentence:	*$3 \times X = 18$*
Answer:	*X = 6 units*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

Remind students that we can find the perimeter by adding all of the sides of a figure together. Also, explain to students that we have three groups because a triangle has three sides. This problem is an Equal Groups problems because we know the product, 18, and the number of groups, 3. We are looking for the length of each side, which is the same as looking for the number in each group.

Encourage students to draw a picture to help them visualize the problem.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

<u>*Solution to Problem C:*</u>

The members of a gym use 8 towels every day. How many towels are used in 5 days?

Problem Type: *Equal Groups*
Relevant Information: *GR = 5; N = 8; P = X*
Number Sentence: *5 × 8 = X*
Answer: *X = 40 towels*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

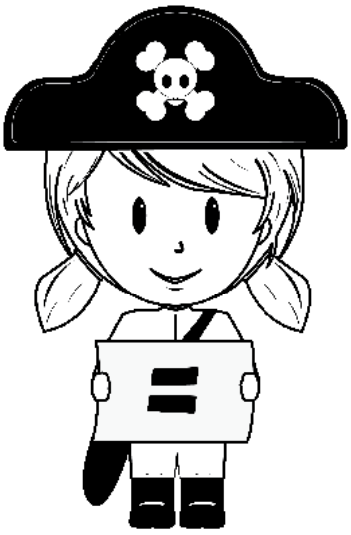
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 15



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Review of Total, Difference, and Change

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 15
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

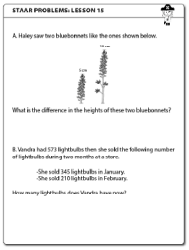
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 15.

Point to A.


STAAR PROBLEMS: LESSON 15

A. Haley saw two bluebonnets like the ones shown below.

What is the difference in the heights of these two bluebonnets?

B. Vandra had 573 lightbulbs then she sold the following number of lightbulbs during two months at a store.

-She sold 345 lightbulbs in January.
-She sold 210 lightbulbs in February.

How many lightbulbs does Vandra have now?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Haley saw two bluebonnets like the ones shown below. What is the difference in the heights of these two bluebonnets?

Problem Type:	*Difference*
Relevant Information:	*G = 18; L = 5; D = X*
Number Sentence:	*18 – 5 = X*
Answer:	*X = 13 centimeters*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Difference.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the length of the two bluebonnets.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

Vandra had 573 lightbulbs then she sold the following number of lightbulbs during two months at a store. She sold 345 lightbulbs in January. She sold 210 lightbulbs in February. How many lightbulbs does Vandra have now?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 573; C = – 345; C = – 210; E = X*
Number Sentence:	*573 – 345 – 210 = X*
Answer:	*X = 18 lightbulbs*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.

When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Change.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

What should we do?

Number it.

(Students number the graph.)

Solution to Problem C:

The graph shows the number of students at different grade levels who brought projects for a science fair. How many students in second and fourth grades brought a project?

Problem Type:	*Total*
Relevant Information:	*P1 = 30; P2 = 90; T = X*
Number Sentence:	*30 + 90 = X*
Answer:	*X = 120 students*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Total.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

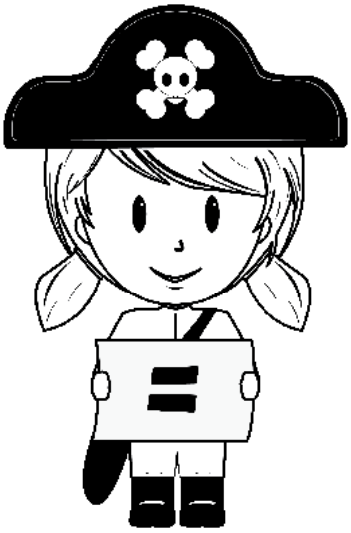
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 16



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Review of Difference, Change, and Equal Groups

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 16
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

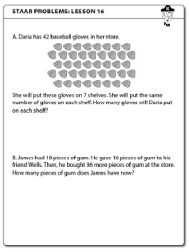
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 16.

Point to A.


STAAR PROBLEMS: LESSON 16

A. Daria has 42 baseball gloves in her store.

She will put these gloves on 7 shelves. She will put the same number of gloves on each shelf. How many gloves will Daria put on each shelf?

B. James had 18 pieces of gum. He gave 16 pieces of gum to his friend Wells. Then, he bought 36 more pieces of gum at the store. How many pieces of gum does James have now?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

Daria has 42 baseball gloves in her store. She will put these gloves on 7 shelves. She will put the same number of gloves on each shelf. How many gloves will Daria put on each shelf?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 7; N = X; P = 42*
Number Sentence:	*7 × X = 42*
Answer:	*X = 6 gloves*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

Encourage students to use the picture of the baseball gloves to make equal groups with an equal number in each group.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem B:

James had 18 pieces of gum. He gave 16 pieces of gum to his friend Wells. Then, he bought 36 more pieces of gum at the store. How many pieces of gum does James have now?

Problem Type:	*Change, two changes*
Relevant Information:	*ST = 18; C = – 16; C = + 36; E = X*
Number Sentence:	*18 – 16 + 36 = X*
Answer:	*X = 38 pieces of gum*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.

Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Change.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

You're right. There is a table, but it is already numbered for us. We can go ahead and solve the problem.

<u>*Solution to Problem C:*</u>

> *The table below shows the number of coats and sweaters donated during a clothing drive. What is the difference between the number of coats and the number of sweaters donated during the clothing drive?*

Problem Type: *Difference*
Relevant Information: *G = 212; L = 95; D = X*
Number Sentence: *212 – 95 = X*
Answer: *X = 117 (more) coats*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that before we can subtract to find the difference, we need to find the total number of coats donated over the three days and the total number of sweaters donated over the three days.

Explain to students that this problem is really two, three-part Total problems followed by a Difference problem.

Assist students in adding the number of coats sold on Wednesday, Thursday, and Friday, which is 212 coats. Then, assist students in adding the number of sweaters sold on Wednesday, Thursday, and Friday, which is 95 sweaters.

Follow Activity Guide: Difference.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the number of coats and the number of sweaters sold during the clothing drive over three days.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

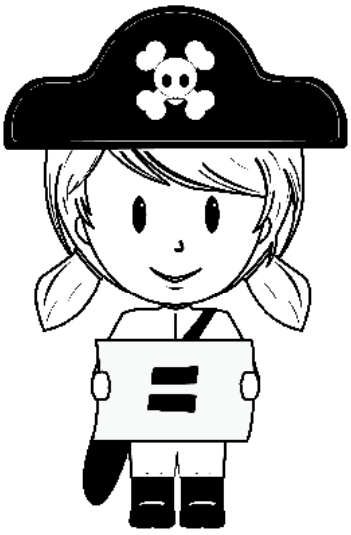
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 17



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Review of Total and Equal Groups

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 17
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

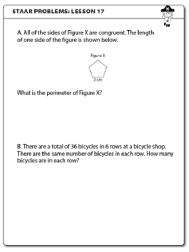
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 17.

Point to A.


STAAR PROBLEMS: LESSON 17

A. All of the sides of Figure X are congruent. The length of one side of the figure is shown below.

Figure X

What is the perimeter of Figure X?

B. There are a total of 36 bicycles in 6 rows at a bicycle shop. There are the same number of bicycles in each row. How many bicycles are in each row?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the Difference equation?**

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem A:

All of the sides of Figure X are congruent. The length of one side of the figure is shown below. What is the perimeter of Figure X?

Problem Type:	*Total, five parts*
Relevant Information:	*P1 = 3; P2 = 3; P3 = 3; P4 = 3; P5 = 3; T = X*
Number Sentence:	*3 + 3 + 3 + 3 + 3 = X*
Answer:	*X = 15 centimeters*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Total.

Explain to students that this problem includes two important terms: congruent and perimeter.

Explain to students that congruent means exactly the same, so all of the sides in Figure X are the same length. Explain to students that we know that one side is 3 cm, so all of the sides are 3 cm.

Remind students that we can find the perimeter of a figure by adding all of the sides together. Review with students that it does not matter how many parts we have in a problem. In this problem, we have five parts, but we still just add the five parts together to find the total.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

<u>Solution to Problem B:</u>

There are a total of 36 bicycles in 6 rows at a bicycle shop. There are the same number of bicycles in each row. How many bicycles are in each row?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 6; N = X; P = 36*
Number Sentence:	*$6 \times X = 36$*
Answer:	*X = 6 bicycles*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Felicia started placing square tiles inside a rectangle, as shown in the diagram. Each square tile has a side length of 1 cm. She continued placing square tiles without any overlaps to cover the rectangle. What is the area of the rectangle in square centimeters?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 4; N = 7; P = X*
Number Sentence:	*4 × 7 = X*
Answer:	*X = 28 square centimeters*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

Review the term area with students and explain that the area means the number of squares required to cover a figure completely, like the squares of the rectangle. Area is measured in "square" units.

Review with students that we can find the area by multiplying the length of the figure times the width of the figure or by following the Equal Groups steps. Explain that we also can find the area by filling in all of the squares within the rectangle and counting all of the squares.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

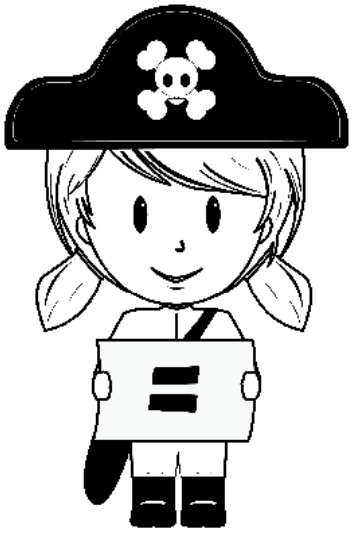
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Lesson 18



ACTIVITIES

1. Math Fact Flash Cards
2. Shipshape Sorting
3. STAAR Problems
   Review of Total, Difference, and Equal Groups

Materials

Posters

- RUN and Total
- Difference and Change
- Equal Groups
- What Do You Ask Yourself?

Student Materials

- STAAR Problems: Lesson 18
- Treasure Map

Tutor Materials

- Gold coins
- Treasure chest
- Math Fact Flash Cards
- Timer
- Sorting Cards
- Sorting Mat

1: Math Fact Flash Cards

Use Activity Guide: Math Fact Flash Cards.

2: Shipshape Sorting

Use Activity Guide: Shipshape Sorting.

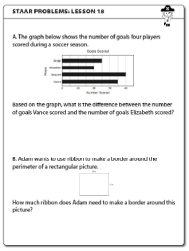
3: STAAR Problems

Today, we will continue practicing word problems, or story problems, that you are likely to see on the STAAR. We will work together each day to solve three problems.

Work through Problems A-C using the "I do, we do, you do" method.

Display STAAR Problems - Lesson 18.

Point to A.


STAAR PROBLEMS: LESSON 18

A. The graph below shows the number of goals four players scored during a soccer season.

Goals Scored

Based on the graph, what is the difference between the number of goals Vance scored and the number of goals Elizabeth scored?

B. Adam wants to use ribbon to make a border around the perimeter of a rectangular picture.

How much ribbon does Adam need to make a border around this picture?

Let's review. What's a Total problem?

When parts are put together into a total.

In a Total problem, two or more parts are put together to make a total. All Total problems have the same Total equation. What's the Total equation?

P1 + P2 = T.

That's right. The Total equation is part 1 plus part 2 is the same as the total.

Now let's review Difference problems. In Difference problems, we compare two amounts to find the difference. What does it mean to compare two amounts?

(Students explain.)

Good. One amount is greater. The other amount is less.

The Difference equation is G minus L is the same as D (point)**. The amount that's greater minus the amount that's less is the same as the difference. What's the**

Difference equation?

G – L = D.

Let's say the equation together, one more time.

G – L = D.

Let's review again. What's the Total equation?

P1 + P2 = T.

Good. Say it again.

P1 + P2 = T.

Now say the Difference equation again.

G – L = D.

Recently, we learned about Change problems. Change problems tell us a starting amount. Then, something happens to increase or decrease the amount we started with.

What does increase mean?

To make bigger.

Exactly! What does decrease mean?

To make smaller.

Yes! What are the two Change equations?

ST + C = E and ST – C = E.

Great job! Say the two Change equations again.

ST + C = E and ST – C = E.

We recently started talking about Equal Groups problems. In Equal Groups

problems, we make groups with an equal number in each group to find an answer, which we call the product.

What is our Equal Groups equation?

GR × N = P.

Great job! Let's say our Equal Groups equation again.

GR × N = P.

Point to A.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

Yes.

What should we do?

Number it.

(Students number the graph.)

Solution to Problem A:

The graph below shows the number of goals four players scored during a soccer season. Based on the graph, what is the difference between the number of goals Vance scored and the number of goals Elizabeth scored?

Problem Type:	*Difference*
Relevant Information:	*G = 35; L = 20; D = X*
Number Sentence:	*35 – 20 = X*
Answer:	*X = 15 goals*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Difference.

Review that the question is asking us to find the difference, which is a clue that the problem is a Difference problem.

Explain to students that even though we don't have a compare word, we are clearly comparing the difference between two amounts: the number of goals Vance scored and the number of goals Elizabeth scored.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to B.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

<u>*Solution to Problem B:*</u>

Adam wants to use ribbon to make a border around the perimeter of a

rectangular picture. How much ribbon does Adam need to make a border around this picture?

Problem Type:	*Total, four parts*
Relevant Information:	*P1 = 15; P2 = 19; P3 = 15; P4 = 19; T = X*
Number Sentence:	*15 + 19 + 15 + 19 = X*
Answer:	*X = 68 inches*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Total.

Explain to students that this figure is a rectangle, so we know the two lengths are the same and the two widths are the same. We know the top and the bottom of the figure (the two lengths) are both 19 in and the two sides (the two widths) are both 15 in. Remember, in a rectangle, opposite sides are the same length.

Remind students that we can find the perimeter of a figure by adding all of the sides

together. Review with students that it does not matter how many parts we have in a problem. In this problem, we have four parts, but we still just add the four parts together to find the total.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Point to C.

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

No.

Solution to Problem C:

Valentina will arrange 22 mirrors on 2 shelves in a store. There will be an equal number of mirrors on each of the shelves. How many mirrors will be on each of the shelves?

Problem Type:	*Equal Groups*
Relevant Information:	*GR = 2; N = X; P = 22*
Number Sentence:	*$2 \times X = 22$*
Answer:	*X = 11 mirrors*

What's the first thing we do every time we see a word problem?

RUN through it!

Follow Activity Guide: RUN.
When you get to the "N" follow script below.
Display "What Do You Ask Yourself?" poster.

If you think it's a Total problem, what do you ask yourself? (Point.)

Are parts put together into a total?

If you think it's a Difference problem, what do you ask yourself? (Point.)

Are two amounts compared for a difference?

If you think it's a Change problem, what do you ask yourself? (Point.)

Is there a starting amount that increases or decreases to a new amount?

If you think it's an Equal Groups problem, what do you ask yourself? (Point.)

Are there groups with an equal number in each group?

Wait 10 seconds for students to think.

Follow Activity Guide: Equal Groups.

Encourage students to use the picture to make groups with an equal number in each group.

The last thing we need to do is check to see if our answer makes sense. Does our answer make sense? Why?

(Students explain.)

Excellent work today! You earn a treasure coin!

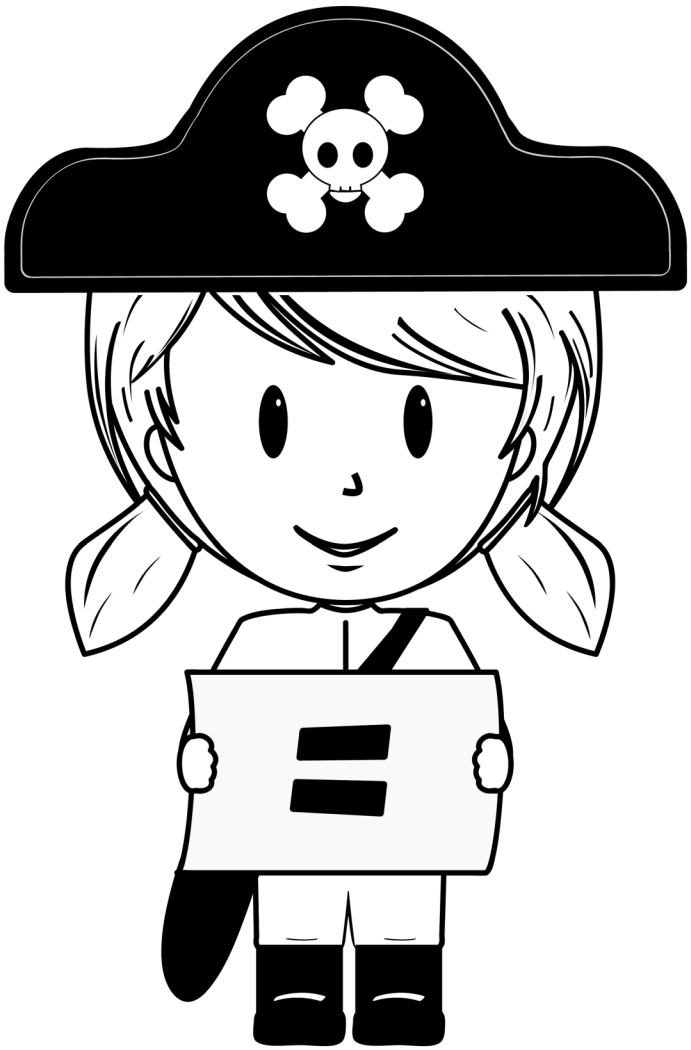
Treasure Map

Let's count the number of coins your group earned today and mark them on your Treasure Map.

Count coins.

Go ahead and color __ footsteps on your Treasure Map! (Students color.)
Remember, once your group fills in the footsteps to the 'X' in the middle of the map, everyone will choose a prize out of the treasure box!

Activity Guides



Math Fact Flash Cards ACTIVITY GUIDE

The first activity we'll do every day is round robin Math Fact Flash Cards.

Display Math Fact Flash Cards.

The first person in the group will look at the problem and tell me the answer as quickly as he/she can. If he/she answers the problem correctly, I'll put it in a pile on the table. If the student answers the problem incorrectly, I will say, "count up," and the student will answer the problem again by counting up. I'll put the card in the pile once the student answers the problem correctly, then it will be the next person's turn. We will continue the round robin with the third and fourth person. We will repeat the pattern and your group will answer as many flash cards as you can in 1 minute.

You have 1 minute. Are you ready?

Show Math Fact Flash Cards for 1 minute.

Good! Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly! Let's try to beat that score. You have 1 minute. Go!

Show Math Fact Flash Cards for 1 minute.

Let's count the cards in the pile.

Count cards with students.

Your group answered __ Math Fact Flash Cards correctly. You beat/did not beat your score. Now, we'll graph your group's higher score for today on your graph.

Help students color graph.

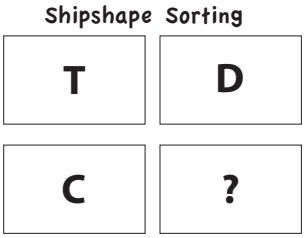
Every day we'll warm up our brain with these flash cards. As you get better in math, your graph will get higher and higher!

Your group did a nice job. You earn a treasure coin!

**For Lessons 1-18, we recommend teachers use the addition, subtraction, multiplication, and division flash cards. However, teachers always should assess students' needs and ability levels before determining which flash cards are most appropriate for each lesson.*

Shipshape Sorting ACTIVITY GUIDE

It's time for Shipshape Sorting!



Display Sorting Cards.
Display Sorting Mat.

I'll show these cards. On each sorting card, there's a word problem. I'll read the word problem aloud. Your job is to decide what type of problem is on the card and to sort the card on this mat (point)**. You don't solve the problem, you decide what type of problem it is.**

For Total lessons: **So far, we've learned about Total problems, so you'll only use the T or Total box** (point) **and the question mark box** (point). **If you think the problem is a Total problem, put the card here** (point). **If it's NOT a Total problem, put the card in this question mark box** (point)**.**

For Difference lessons: **So far, we've learned about Total problems and Difference problems, so you'll use the Total, Difference, and question mark boxes. If you think the problem is a Total problem, put the card here** (point)**. If you think it's a Difference problem, put the card here** (point). **If it's NOT a Total or Difference problem, put the card in the question mark box** (point).

For Change lessons: **Now, we've learned about Total, Difference, and Change problems. If the problem is a Total problem, put the card in the Total box** (point). **If it's a Difference problem, put the card in the Difference box** (point). **If it's a Change problem, put the card in the Change box** (point). **You don't need to use the question mark box because all of the problems are Total, Difference, or Change.**

Do you have any questions? Begin.

Hold up and read cards to students in a round robin for 1 minute.

Great! You did a nice job with the sorting. Let's see how many are correct.

Go through cards (answers are on the back of each card).

Review up to 3 incorrect cards with students by saying:

Look at the question. Does the word problem tell a story about two or more amounts combined for a total? Does the word problem tell a story about two amounts being compared? Or does the word problem tell a story about a starting amount that increases or decreases?

If correct: **That's right.**
If incorrect: **Let's look at this card together** (Review problem)**.**

Nice work with Shipshape Sorting!

You earn a treasure coin!

**Note: For the STAAR tutoring program, we introduce Equal Groups problems during Lesson 10. We did not develop Equal Groups sorting cards or a sorting mat that includes EG. If desired, teachers can develop their own Equal Groups sorting cards and update the sorting mat to include an EG box for Shipshape Sorting during Lessons 10-18.*

RUN
ACTIVITY GUIDE

Whenever we see a word problem, we first have to check if there is a graph or a table. Is there a graph or a table?

If yes: Number the graph.
If no: Move on to R.

Follow the RUN poster.

What does R stand for?

Read the problem.

Let's read it!

Read the problem or allow a student to read the problem, if time permits.

Great! What does U stand for?

Underline the label and cross out irrelevant information.

First, let's look at the question sentence to identify the label. The question sentence is the sentence that starts with the capital letter and ends with the question mark. Then, let's underline the label.

Let's do that now.

(Write.)

Before we move to the N in RUN, we need to check for irrelevant information. We only use numbers in the problem that tell us about ___ (fill in blank with label)**. A number that tells about other things is irrelevant information. In this problem, do you see any number that is not about our label?**

Yes/No.

If students say no and are correct: **That's right. We need all the numbers in this problem to find our answer.**

If students say no but are incorrect: **One of the numbers in this problem is irrelevant. You don't need one of these numbers** (point) **to find the answer. Look again more carefully and explain to me which number is irrelevant.**

If students say yes and are correct: **Right. The number of** ___ (fill in blank with irrelevant information) **is irrelevant information.**

If students say yes but are incorrect: **Let's look again at this problem.** *Explain why we need each number, one at a time. As you explain, engage the students by asking questions.*

If there is irrelevant information: **So we've figured out that**___ (fill in blank with irrelevant information) **is irrelevant. We don't need this number** (point) **to solve the word problem. What do we do with irrelevant information?**

Cross it out.

Excellent. Let's do that now. What does N stand for?

Name the problem type.

What's the problem type?

Total/Difference/Change/Equal Groups.

Depending on the problem type, skip to appropriate section.

TOTAL

Is this a Total problem? Are parts put together into a total?

Yes.

You're right. The problem puts ___ and ___ together. It's a Total problem. The question wants us to find how many ___ altogether. So we're putting ___ together. What kind of problem puts parts together?

Total.

Right. So what kind of problem is this?

Total.

Good. This is a Total problem because it puts ___ together. We ask ourselves: Are parts put together into a total? If the answer is yes, it's a Total problem. I put T next to the problem to remind me it's a Total problem.

(Write.)

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Total problem. (Point to T.) **Now we can use the Total poster to solve it.**

Follow the Total Poster Activity Guide.

D

DIFFERENCE

Is this a Difference problem? Are two amounts compared for a difference?

Yes.

Right. The problem compares ___ and ___. It's about a difference. I put D next to the problem to remind me it's a Difference problem.

(Write.)

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Difference problem. (Point to D.) **Now we use the Difference poster to solve it.**

Follow the Difference Poster Activity Guide.

C

CHANGE

Is this a Change problem? Is there a starting amount that increases or

decreases to a new amount?

Yes.

You're right. This question gives/asks for a starting amount. The amount changes to a new end amount. I put C next to the problem to remind me it's a Change problem.

(Write.)

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Change problem. (Point to C.) **Now we use the Change poster to solve it.**

Follow the Change Poster Activity Guide.

EG

EQUAL GROUPS

Is this an Equal Groups problem? Do we have groups with an equal number in each group?

Yes.

You're right. The problem has ___ groups with ___ in each group. It's an Equal Groups problem. We have groups with an equal number in each group. What kind of problem has groups with an equal number in each group?

Equal Groups.

Right. So what kind of problem is this?

Equal Groups.

Good, it's an Equal Groups problem because we have groups with an equal number in each group. I put EG next to the problem to remind me that it's an Equal Groups problem.

(Write.)

The RUN poster helped us organize our paper so we can solve the problem! We said this is a Equal Groups problem. (Point to GR.) **Now we use the Equal Groups poster to solve it.**

Follow the Equal Groups Poster Activity Guide.

Total
ACTIVITY GUIDE

Let's use the Total poster to solve our word problem!

Let's look at the five steps. What's Step 1?

Write P1 + P2 = T.

Good. We write the Total equation: P1 plus P2 is the same as T. In a Total problem, parts are put together into a total. The Total equation, P1 plus P2 is the same as T, helps us remember how to write our number sentence for a Total problem.

(Write.)

Step 2: "Find T." Does the problem give us the total or ask us to find the total?

___.

If T is missing:	*If T is a number:*
This problem asks us to find the total. That's what's missing. We have to find T. What should we write under T? X. (Write.)	**This problem tells us the total is ___. Where should we write ___?** Underneath T. (Write.)

Step 3: "Find P1 and P2." We need to think about the story and figure out the parts. What are the parts?

___ and ___.

If P1 is a number and P2 is missing: **This problem tells us about one of the parts and asks us to find the other part. So, ___ is P1. Where should we write ___?** Under P1. (Write and check off the number.) **The other part is missing. We have to find P2. What should we write under P2?** X. (Write.)	*If P1 and P2 are numbers:* **This problem tells us P1 and P2. Where should we write ___ and ___?** Underneath P1 and P2. (Write and check off the numbers.)

Now let's go to Step 4. What's Step 4?

Write the signs.

Good. What math signs do we need to complete our number sentence?

+ and =.

Does this look like a number sentence we know how to solve?

Yes!

Let's read the number sentence together.

Read number sentence aloud with the students.

Let's solve for X!

After you find X, be sure to label the number answer with the word underlined in the problem. Ask students if they "answered the question."

The last thing we need to do is check to see if our answer makes sense. Does

this answer make sense? Why?

(Students explain.)

Difference ACTIVITY GUIDE

Here are the six steps for a Difference problem. What's Step 1?

Write G – L = D.

Good. We write the Difference equation: G minus L is the same as D.

(Write.)

Step 2: "[Compare sentence] and label G and L." A compare sentence usually has the words *more, fewer, less,* or "er" words. Let's find the compare word. What's the compare word?

____.

Good. What's the compare sentence in this problem?

____.

Great job. Let's put brackets around our compare sentence.

(Bracket.)

Now let's label G and L in the word problem.

(Write.)

Who/What is the amount that's greater?

____.

So we'll write a G above ____.

Who/What is the amount that's less?

____.

So we'll write an L above ___.

Step 3 says, "Find D."

This compare sentence asks us to find the difference between G and L. The difference is what's missing. We write X under D.

(Write.)

Step 4: "Find G and L."

We know that ___ has the amount that's greater and ___has the amount that's less when we look at the compare sentence. Let's review. Who's/What's G?

___.

That's right. ___ is the amount that's greater. To help us remember that, we wrote a G above ___.

(Write.)

Who's/What's L?

___.

___ is the amount that's less. To help us remember that, we wrote an L above ___.

(Write.)

Now, let's think. What numbers go with G and L?

What's the number that's greater?

___.

This problem tells us the amount that's greater is ___. Where do we write ___?

Underneath G.

(Write and check off the number.)

What's the amount that's less?

___.

This problem tells us the amount that's less is ___. Where do we write ___?

Underneath L.

(Write and check off the number.)

What's Step 5?

Write the signs.

Good. What math signs do we use to complete our number sentence?

– and =.

(Write.)

___ stands for G. ___ stands for L. ___ stands for the Difference. Does this look like a number sentence we know how to solve?

Yes!

Let's read the number sentence together.

Read number sentence aloud with students.

Let's solve for X!

After you find X, be sure to label the number answer with the word underlined in the problem. Ask student if he/she "answered the question."

The last thing we need to do is check to see if our answer makes sense. Does this answer make sense? Why?

(Students explain.)

Change
ACTIVITY GUIDE

Here are the six steps for a Change problem. What's Step 1?

Write ST +/– C = E.

Good. We write the Change equation: ST plus or minus C is the same as E.

(Write.)

Is this a Change increase or Change decrease?

Increase/decrease.

Remember, if it's a Change increase, we'll use the plus sign. If it's a Change decrease, we'll use the minus sign.

Step 2: "Find ST." We have to decide the starting amount. Look at the problem. Does it tell us the starting amount?

If ST is a number: **Very good. _____ is the starting amount. The problem gives us ST. We write _____ under ST.** (Write and check off the number.)	*If ST is missing:* **That's right. In this problem, we have to figure out the starting amount. The starting amount is missing. We write X under ST.** (Write.)

Step 3: "Find C." We have to decide the change amount. Sometimes the problem will tell us the change amount. Other times, the change amount is X. Look at the problem. Does it tell about a change?

If C is a number: **Yes! _____ is the change. We write _____ under C.** (Write and check off the number.)	*If C is missing:* **Yes. We have to find the change. The change is what's missing. We write X under C.** (Write.)

Step 4 says: "Find E." We have to decide the end amount. Sometimes the problem tells us the end amount. Other times, the end amount is X. Look at the problem. Does it tell us the end amount?

If E is a number: **Yes! _____ is the end amount. We write _____ under E.** (Write and check off the number.)	*If E is missing:* **Yes. We have to find the end amount. The end amount is what's missing. We write X under E.** (Write.)

What's Step 5?

Write the signs.

Good. What math signs do we use to complete our number sentence?

+/– and =.

(Write.)

___ stands for ST. ___ stands for C. ___ stands for E. Does this look like a number sentence we know how to solve?

Yes!

Let's read the number sentence together.

Read number sentence aloud with students.

Let's solve for X!

After you find X, be sure to label the number answer with the word underlined in the

problem. Ask students if they "answered the question."

The last thing we need to do is check to see if our answer makes sense. Does this answer make sense? Why?

(Students explain.)

Equal Groups ACTIVITY GUIDE

Let's use the Equal Groups poster to solve our word problem!

Let's look at the five steps. What's Step 1?

Write GR × N = P

Good. We write the Equal Groups equation: GR times N is the same as P. In an Equal Groups problem, we make groups with an equal number in each group to find a product. The Equal Groups equation, GR times N is the same as P, helps us remember how to write our number sentence for an Equal Groups problem.

(Write.)

Step 2: "Find P." Does the problem give us the product or ask us to find the product?

___.

If P is a number:	*If P is missing:*
This problem tells us the product is ___. Where should we write ___? Underneath P. (Write.)	**This problem asks us to find the product. That's what's missing. We have to find P. What should we write under P?** X. (Write.)

Step 3: "Find GR and N." We need to think about the story and figure out the number of groups and the number in each group. Do we know how many groups there are?

___.

If GR is a number and N is missing: **This problem tells us about the number of groups and asks us to find how many are in each group. So, ___ is the number of groups. Where should we write ___?** Under GR. (Write and check off the number.) **The number in each group is missing. We have to find N. What should we write under N?** X. (Write.)	*If GR is missing and N is a number:* **This problem asks us to find the number of groups and tells us how many are in each group. So, the number of groups is missing. What should we write under GR?** X. (Write.) **The problem tells us how many are in each group. Where should we write ____?** Under N. (Write and check off the number.)	*If GR and N are numbers:* **This problem tells us GR and N. Where should we write ___ and ___?** Underneath GR and N. (Write and check off the numbers.)

Now let's go to Step 4. What's Step 4?

Write the signs.

Good. What math signs do we need to complete our number sentence?

× and =.

Does this look like a number sentence we know how to solve?

Yes!

Let's read the number sentence together.

Read number sentence aloud with the students.

Let's solve for X!

After you find X, be sure to label the number answer with the word underlined in the problem. Ask students if they "answered the question."

The last thing we need to do is check to see if our answer makes sense. Does this answer make sense? Why?

(Students explain.)