

Cutting Ribbon (ECR)

Overview

Students will use addition and subtraction within 100 to find the lengths of ribbon. Students will use drawings and equations to solve the problems.

Standards

Relate addition and subtraction to length.

2.MD.B.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task's standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.MD.B.5	<ul style="list-style-type: none">2.MD.A.4	<ol style="list-style-type: none">Alison walked 26 meters to her friend's house. Then she walked another 15 meters to her grandmother's house. How far did Alison walk in all?<ol style="list-style-type: none">Alison walked 41 meters.Jackson is 37 inches tall. His sister, Julie, is 48 inches tall. How much taller is Julie than Jackson?<ol style="list-style-type: none">Julie is 11 inches taller than Jackson.	<ul style="list-style-type: none">http://standardstoolkit.k12.hi.us/the-longer-foot-2-md-4-2-md-1/http://standardstoolkit.k12.hi.us/how-much-longer-1/http://standardstoolkit.k12.hi.us/how-much-longer-2-2-md-4-2-md-1/

After the Task

Prior to this task students should have had experience with measuring objects in order to understand the context of length in these problems. Students should also have experience with adding and subtracting within 100, building toward fluency with those operations.

If students struggle with these problems, first determine if they were able to draw representations of the problems to guide their selection of operations. If students were unable to draw representations, provide students with additional practice using drawings to represent given problems. Drawings do not have to be precise (i.e., represent proportional relationships or precise measurements), and they do not have to have details (i.e., color). Drawings should be labeled to identify which portion of the problem the drawing represents. Since this is a measurement task, units should also be used in the labels of the drawings.

If students were able to draw representations of the problem but struggled to add and/or subtract the two-digit numbers, provide extra practice in addition and subtraction with two-digit numbers. Remind students to add tens to tens and ones to ones (the same is true for subtraction) and that sometimes they must compose a ten in addition. In subtraction, they may have to regroup a ten.

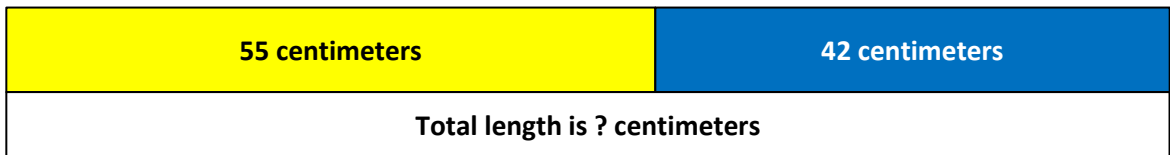
This task can be used at different times throughout the year with larger/smaller numbers as needed. Also the measurement units can be changed to reflect the units students are familiar with at the time this task is used.

This task is adapted from <http://standardstoolkit.k12.hi.us/cut-the-ribbon-2-2-md-5-2-oa-1-2-nbt-5/> and <http://standardstoolkit.k12.hi.us/cut-the-ribbon-1-2-md-5-2-oa-1-2-nbt-5/>.

Extended Constructed Response Exemplar Response

Solve the problems below. Remember to use the correct units in the answer.

1. There are two ribbons. The yellow ribbon measures 55 centimeters. The blue ribbon measures 42 centimeters.
 - a. What is the total length of the two ribbons? Use a drawing and equation to show how you found your answer.



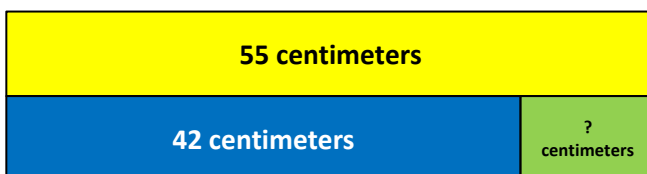
$$55 + 42 = ?$$

$$55 + 42 = 97$$

The total length of the two ribbons is 97 centimeters.

***Note: Other drawings are acceptable to show how students added the two numbers.*

- b. How much longer is the yellow ribbon than the blue ribbon? Use a drawing and equation to show how you found your answer.



$$55 - 42 = ?$$

$$55 - 42 = 13$$

The yellow ribbon is 13 centimeters longer than the blue ribbon.

***Note: Other drawings are acceptable to show how students added the two numbers.*

2. You used only 25 centimeters of purple ribbon to make a bow for a present. There were still 64 centimeters left.

- a. What was the length of the ribbon when you started? Use a drawing and equation to show how you found your answer.

64 centimeters	25 centimeters
Starting length ? centimeters	

$$? - 25 = 64$$

$$64 + 25 = ?$$

$$64 + 25 = 89$$

I started with 89 centimeters of purple ribbon.

***Note: Other drawings are acceptable to show how students added the two numbers.*

- b. Using the 64 centimeters that are left, you cut a piece that is 35 centimeters long. How much ribbon is left now? Use a drawing and equation to show how you found your answer.

64 centimeters	
35 centimeters	? centimeters left

$$64 - 35 = ?$$

$$64 - 35 = 29$$

There are 29 centimeters of purple ribbon left.

***Note: Other drawings are acceptable to show how students added the two numbers.*

Madison’s Birthday Cake (ECR)

Overview

Madison takes a survey to help decide what kind of cake to have for her party. Students must make a bar graph, read a tally chart, add 4 one-digit numbers, and work a two-step word problem.

Standards

Represent and solve problems involving addition and subtraction.

2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Add and subtract within 20.

2.OA.B.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of 2 one-digit numbers.

Represent and interpret data.

2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together and take-apart problems, and compare problems using information presented in a bar graph.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are pre-requisites for student success with this task’s standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.OA.A.1	<ul style="list-style-type: none"> 1.OA.A.1 1.NBT.C.4 1.NBT.C.5 1.NBT.C.6 	<ol style="list-style-type: none"> 5 frogs are sitting on a log. 2 frogs jump into the water. 3 more frogs jump on the log. How many frogs are sitting on the log? <ol style="list-style-type: none"> $5 - 2 = 3$ $3 + 3 = 6$ <p>There are 6 frogs sitting on the log.</p> https://www.illustrativemathematics.org/illustrations/1 	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/160 https://www.illustrativemathematics.org/illustrations/162 https://www.illustrativemathematics.org/illustrations/162 https://www.illustrativemathematics.org/illustrations/194 https://www.illustrativemathematics.org/illustrations/196 https://www.illustrativemathematics.org/illustrations/197 https://www.illustrativemathematics.org/illustrations/1317

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items																												
2.OA.B.2	<ul style="list-style-type: none"> 1.OA.C.6 	<ol style="list-style-type: none"> Find $3 + 7 + 3$ <ol style="list-style-type: none"> $3 + 7 = 10$ So, $10 + 3 = 13$ https://www.illustrativemathematics.org/illustrations/1394 https://www.illustrativemathematics.org/illustrations/1396 	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/1084 https://www.illustrativemathematics.org/illustrations/1169 																												
2.MD.D.10	<ul style="list-style-type: none"> 1.MD.C.4 	<ol style="list-style-type: none"> Use the table to answer the questions. <p style="text-align: center;">Colors of flowers in the garden</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>6</td><td></td><td></td><td></td></tr> <tr><td>5</td><td style="background-color: #f8d7da;"></td><td></td><td style="background-color: #d1ecf1;"></td></tr> <tr><td>4</td><td style="background-color: #f8d7da;"></td><td></td><td style="background-color: #d1ecf1;"></td></tr> <tr><td>3</td><td style="background-color: #f8d7da;"></td><td style="background-color: #fff3cd;"></td><td style="background-color: #d1ecf1;"></td></tr> <tr><td>2</td><td style="background-color: #f8d7da;"></td><td style="background-color: #fff3cd;"></td><td style="background-color: #d1ecf1;"></td></tr> <tr><td>1</td><td style="background-color: #f8d7da;"></td><td style="background-color: #fff3cd;"></td><td style="background-color: #d1ecf1;"></td></tr> <tr><td></td><td style="background-color: #d1ecf1;">Pink</td><td style="background-color: #d1ecf1;">Yellow</td><td style="background-color: #d1ecf1;">Purple</td></tr> </table> <ol style="list-style-type: none"> What color flower is found the most in the garden? <ol style="list-style-type: none"> Purple How many pink and yellow flowers are there altogether? <ol style="list-style-type: none"> $5 + 3 = 8$ How many more purple flowers are there than yellow? <ol style="list-style-type: none"> $6 - 3 = 3$ 	6				5				4				3				2				1					Pink	Yellow	Purple	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/506 https://www.illustrativemathematics.org/illustrations/1233
6																															
5																															
4																															
3																															
2																															
1																															
	Pink	Yellow	Purple																												

After the Task

If students did poorly on any of the parts of this constructed response task, it may be due to the following gaps in understanding.

Problem 1:

- Students should understand that a bar graph uses bars of different lengths or heights to show data.

Problem 2:

- Students should understand you can add three or four numbers by grouping the addends in different ways. The sum will stay the same. This is the associative property of addition. Students do not need to know the name of the property.
- To add three or more numbers, first decide which two addends are easier to add. Then find their sum. Next, add the third addend to find the total.

Problem 3:

- Students should solve two-step word problems by reading the problem very carefully and determining what information is important and what is being asked.
- Since two steps are involved, students must figure out what to do first to get the information they need for the second step.
- Students may need to be reminded to go back to reread the problem to be sure they have answered the question that was asked.

Problem 4:

- Students should understand you can add three or four numbers by grouping the addends in different ways. The sum will stay the same. This is the associative property of addition. Students do not need to know the name of the property.
- To add three or more numbers, first decide which two addends are easier to add. Then find their sum. Next, add the third addend to find the total.

Student Extended Constructed Response

Madison is having a birthday party next week and cannot decide what kind of cake to serve. She asks the people coming to her party, “What is your favorite cake flavor?” She uses their responses to make the chart below.

Favorite Cake	Tally
Chocolate	IIII
Vanilla	III
Lemon	I
Strawberry	II

1. Use the information from the tally chart to create a bar graph.

4. If everyone who told Madison their favorite cake flavor goes to the party, how many people will be at Madison's party? Show or explain your reasoning.

Extended Constructed Response Exemplar Response

Madison is having a birthday party next week and cannot decide what kind of cake to serve. She asks the people coming to her party, “What is your favorite cake flavor?” She uses their responses to make the chart below.

Favorite Cake	Tally
Chocolate	IIII
Vanilla	III
Lemon	I
Strawberry	II

1. Use the information from the tally chart to create a bar graph.

5				
4				
3				
2				
1				
	Chocolate	Vanilla	Lemon	Strawberry

2. How many friends answered Madison’s question? Use your bar graph to write and solve the problem.

$$4 + 3 + 1 + 2 = ?$$

$$7 + 1 + 2 = ?$$

$$7 + 3 = ?$$

$$10 = ?$$

Madison surveyed 10 friends.

Note: Students may also explain their reasoning using the bar graph instead of an equation. They may say that they counted each colored square in each column in the bar graph.

3. The day before the party, Madison asks her four cousins about their favorite flavor of cake. They all say that chocolate cake is their favorite.
- a. Draw a new bar graph that includes her cousins’ votes and the votes from Question 1.

9				
8				
7				
6				
5				
4				
3				
2				
1				
	Chocolate	Vanilla	Lemon	Strawberry

- b. Using the new bar graph, how many more people like chocolate cake than vanilla cake? Explain how you found your answer.

$$4 + 4 = 8$$

At first, 4 people liked chocolate cake. With 4 more, 8 people like chocolate cake.

3 people like vanilla cake. I subtracted the 3 votes for the vanilla cake from the 8 chocolate votes.

$$8 - 3 = 5$$

5 more people like chocolate cake than vanilla cake.

Note: Students may also explain their reasoning using the bar graph instead of equations. They may say that they counted 5 more chocolate votes than vanilla votes in the final bar graph.

4. If everyone who told Madison their favorite cake flavor goes to the party, how many people will be at Madison's party? Show or explain your reasoning.

$$8 + 3 + 1 + 2 = ?$$

$$10 + 3 + 1 = ?$$

$$10 + 4 = ?$$

$$14 = ?$$

If everyone who told Madison their favorite cake flavor goes to the party, 14 people will attend the party.

Note: Students may also explain their reasoning using the bar graph instead of an equation. They may say that they counted each colored square in each column in the final bar graph.

Food Donation (ECR)

Overview

Students will use understanding of place value to compose, decompose, write, and compare numbers.

Standards

Understand place value.

2.NBT.A.1 Understand that the three digits of a three-digit number represent hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

- a. 100 can be thought of as a bundle of 10 tens—called a “hundred.”
- b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

2.NBT.A.4 Compare 2 three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task’s standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.NBT.A.1	<ul style="list-style-type: none">• 1.NBT.B.2	<ol style="list-style-type: none">1. Write a number to represent 2 hundreds + 4 ones.<ol style="list-style-type: none">a. 2042. Write a number to represent 12 tens.<ol style="list-style-type: none">a. 1203. https://www.illustrativemathematics.org/illustrations/974. https://www.illustrativemathematics.org/illustrations/1445. https://www.illustrativemathematics.org/illustrations/1926. https://www.illustrativemathematics.org/illustrations/1477. https://www.illustrativemathematics.org/illustrations/718. https://www.illustrativemathematics.org/illustrations/574	<ul style="list-style-type: none">• https://www.illustrativemathematics.org/illustrations/987

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.NBT.A.4	<ul style="list-style-type: none"> 2.NBT.A.1 	<ol style="list-style-type: none"> Compare the following: 143 _____ 14 tens + 3 ones a. 143 <u> </u> = <u> </u> 14 tens + 3 ones Compare the following: 2 hundreds + 3 ones _____ 230 a. 2 hundreds + 3 ones <u> </u> < 230 https://www.illustrativemathematics.org/illustrations/7 https://www.illustrativemathematics.org/illustrations/575 https://www.illustrativemathematics.org/illustrations/111 https://www.illustrativemathematics.org/illustrations/396 https://www.illustrativemathematics.org/illustrations/371 https://www.illustrativemathematics.org/illustrations/1237 	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/156 https://www.illustrativemathematics.org/illustrations/94 https://www.illustrativemathematics.org/illustrations/96 https://www.illustrativemathematics.org/illustrations/1236 https://www.illustrativemathematics.org/illustrations/157

Real-World Preparation: The following questions will prepare students for some of the real-world components of this task:

1. What is a food drive? During a food drive, people donate food items to be given to others in need of food. Food items are usually nonperishable items like canned goods.

After the Task

If students did poorly on any of the parts of this constructed response task, it may be due to the following gaps in understanding.

Problem 1

The order of the summands in this item does not correspond to the place value. Students might reverse the ones and tens digits. Remind students to look at the value of the digit given and match that to the correct place in the three-digit number.

Problem 2

Students may struggle with the 16 tens. Remind them that 16 tens represent 1 hundred with 6 tens left over. Students may struggle with 15 ones. Remind them that 15 ones represent 1 ten with 5 ones left over. If necessary, provide students with base ten blocks to help them visualize how 1 hundred and 1 ten is composed from 10 tens and 10 ones, respectively.

Problem 3

Students may struggle with the ones place. Remind them that if they do not have ones, they should put a 0 in the ones place.

Problem 4

Students may struggle with the tens and ones places. Remind them that if they do not have tens, they should put a 0 in the tens place. Remind them that if they do not have ones, they should put a 0 in the ones place.

Problem 5

Students may forget that they can compare numbers using the equal sign. Remind students that an equal sign does not mean to compute. Instead, the equal sign implies that when both sides of the equation are compared, they are found to have the same value.

Student Extended Constructed Response

Sunshine Elementary and Rainbow Academy had a food drive. The chart below shows how many cans of food each class collected for the food drive.

	Kindergarten	1 st grade	2 nd grade	3 rd grade
Sunshine Elementary	139	154	200	220
Rainbow Academy	131	125	139	275

Use the chart to answer the questions below.

1. A class at Sunshine Elementary collected a number of cans that was equal to 1 hundred + 4 ones + 5 tens.
 - a. What number represents this number of cans?

 - b. Which class collected this number of cans at Sunshine Elementary?

2. A class at Rainbow Academy collected a number of cans that was equal to 1 hundred + 16 tens + 15 ones.
- What number represents this number of cans? Show how you found your answer using drawings, numbers, or words.
 - What class collected this number of cans at Rainbow Academy?

For Problems 3-5, use the chart on page 1 to find the number of cans each class collected. Write the number on the line. Then complete the place value mat for each problem by telling how many hundreds, tens, and ones are in the number.

3. Sunshine Elementary 3rd grade: _____

Hundreds	Tens	Ones

4. Rainbow Academy Kindergarten: _____

Hundreds	Tens	Ones

5. Sunshine Elementary 2nd grade: _____

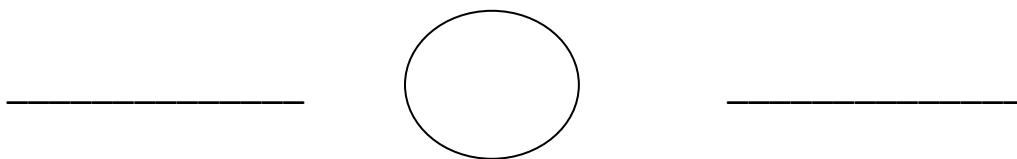
Hundreds	Tens	Ones

Use the chart on page 1 to compare the values for the classes listed.

Write <, >, or = in the circle.

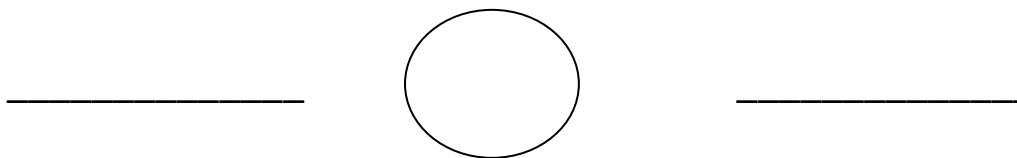
6. Sunshine Elementary Kindergarten

Rainbow Academy 2nd grade



7. Rainbow Academy 3rd grade

Sunshine Elementary 2nd grade



Extended Constructed Response Exemplar Response

Sunshine Elementary and Rainbow Academy had a food drive. The chart below shows how many cans of food each class collected for the food drive.

	Kindergarten	1 st grade	2 nd grade	3 rd grade
Sunshine Elementary	139	154	200	220
Rainbow Academy	131	125	139	275

Use the chart to answer the questions below.

1. A class at Sunshine Elementary collected a number of cans that was equal to 1 hundred + 4 ones + 5 tens.

- a. What number represents this number of cans?

The number of cans is 154.

- b. Which class collected this number of cans at Sunshine Elementary?

The 1st grade class at Sunshine Elementary collected 154 cans.

2. A class at Rainbow Academy collected a number of cans that was equal to 1 hundred + 16 tens + 15 ones.

- a. What number represents this number of cans? Show how you found your answer using drawings, numbers, or words.

The number of cans is 275.

1 hundred

16 tens = 10 tens + 6 tens = 1 hundred + 6 tens

15 ones = 10 ones + 5 ones = 1 ten + 5 ones

I have 2 hundreds, 7 tens, and 5 ones. $200 + 70 + 5 = 275$

- b. What class collected this number of cans at Rainbow Academy?

The 3rd-grade class at Rainbow Academy collected 275 cans.

For Problems 3-5, use the chart on page 1 to find the number of cans each class collected. Write the number on the line. Then complete the place value mat for each problem by telling how many hundreds, tens, and ones are in the number.

3. Sunshine Elementary 3rd grade: 220

Hundreds	Tens	Ones
2	2	0

4. Rainbow Academy Kindergarten: 131

Hundreds	Tens	Ones
1	3	1

5. Sunshine Elementary 2nd grade: 200

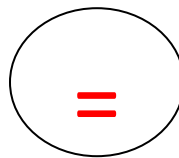
Hundreds	Tens	Ones
2	0	0

Use the chart on page 1 to compare the values for the classes listed.
Write <, >, or = in the circle.

6. Sunshine Elementary Kindergarten

Rainbow Academy 2nd grade

139

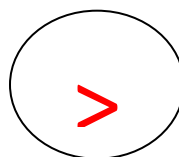


139

7. Rainbow Academy 3rd grade

Sunshine Elementary 2nd grade

275



200

Visit to the Mall (ECR)

Overview

Students will solve word problems involving common addition and subtraction situations.

Standards

Represent and solve problems involving addition and subtraction.

2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are pre-requisites for student success with this task's standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.OA.A.1	<ul style="list-style-type: none">1.OA.A.11.NBT.C.41.NBT.C.51.NBT.C.6	<ol style="list-style-type: none">Maria has three LSU T-shirts. She bought some more LSU T-shirts. Now Maria has seven LSU T-shirts. How many more LSU T-shirts did she buy?<ol style="list-style-type: none">$3 + ? = 7$ 4Hector has five books on his desk. He gives Chang two of his books. How many books are on Hector's desk now?<ol style="list-style-type: none">$5 - 2 = ?$ 3https://www.illustrativemathematics.org/illustrations/1	<ul style="list-style-type: none">https://www.illustrativemathematics.org/illustrations/160https://www.illustrativemathematics.org/illustrations/162https://www.illustrativemathematics.org/illustrations/194https://www.illustrativemathematics.org/illustrations/196https://www.illustrativemathematics.org/illustrations/197https://www.illustrativemathematics.org/illustrations/1317

Real-World preparation: The following questions will prepare students for some of the real-world components of this task:

- What is a mall?** A mall is a collection of stores in one place.
- What is a food court?** Many malls have food courts. This is an area of the mall with a collection of restaurants. Customers buy their food at a restaurant and sit in a large seating area that is used by customers of all of the restaurants.

After the Task

The addition/subtraction situations in these problems can be found in Table 1 on page 7 of the [Operations and Algebraic Thinking Progression](#).¹

This task can be modified using different numbers as students become more fluent with addition and subtraction within 100 throughout the year.

¹ http://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf

Student Extended Constructed Response

Sharon is shopping at the mall. Answer the following questions about Sharon's trip. Use a drawing or an equation to show your thinking for each question.

1. At the pet store, Sharon sees 13 kittens in a cage. Four more kittens were put into the cage. How many kittens are in the cage now? Show how you found your answer.

2. Sharon is buying toys for her new kitten. Each ball costs 49 cents. How much would two balls cost? Show how you found your answer.

3. At the clothing store, Sharon spent 76 dollars for the pants and shirts she bought. She spent some money on pants. Sharon spent 34 dollars on shirts. How much money did Sharon spend on pants? Show how you found your answer.

Extended Constructed Response Exemplar Response

Sharon is shopping at the mall. Answer the following questions about Sharon's trip. Use a drawing or an equation to show your thinking for each question.

1. At the pet store, Sharon sees 13 kittens in a cage. Four more kittens were put into the cage. How many kittens are in the cage now? Show how you found your answer.

$$13 + 4 = ?$$

$$13 + 4 = 17$$

There are 17 kittens in the cage now.

2. Sharon is buying toys for her new kitten. Each ball costs 49 cents. How much would two balls cost? Show how you found your answer.

$$49 + 49 = ?$$

$$49 + 49 = 98$$

Two balls would cost 98 cents.

3. At the clothing store, Sharon spent 76 dollars for the pants and shirts she bought. She spent some money on pants. Sharon spent 34 dollars on shirts. How much money did Sharon spend on pants? Show how you found your answer.

$$34 + ? = 76$$

$$76 - 34 = ?$$

$$76 - 34 = 42$$

Sharon spent 42 dollars on pants.

4. Sharon is buying shoes. She spent 36 dollars on sandals and 75 dollars on tennis shoes. How much more did Sharon spend on tennis shoes than on sandals? Show how you found your answer.

$$75 - 36 = ?$$

$$75 - 36 = 39$$

Sharon spent 39 dollars more on tennis shoes than on sandals.

5. Sharon meets Andrea and Chanda at the mall for lunch. Sharon spent five dollars less than Andrea for lunch. Andrea spent 16 dollars for lunch. Chanda spent 21 dollars for lunch. How much did the three friends spend altogether? Show how you found your answer.

Sharon: $16 - 5 = 11$ Sharon spent 11 dollars for lunch

$$11 + 16 + 21 = 27 + 21 = 48$$

Together the three friends spent 48 dollars.

Field Trip to the Zoo (ECR)

Overview

Students must determine whether numbers are even or odd, add 4 two-digit numbers, solve a two-step word problem involving adding three numbers, and compare 2 two-digit numbers.

Standards

Represent and solve problems involving addition and subtraction.

2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Work with equal groups of objects to gain foundations for multiplication.

2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.



Use place value understanding and properties of operations to add and subtract.

2.NBT.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.

Prior to the Task

Standards Preparation: The material in the chart below illustrates the standards and sample tasks that are prerequisites for student success with this task's standards.

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.OA.A.1	<ul style="list-style-type: none">1.OA.A.11.NBT.C.41.NBT.C.51.NBT.C.6	<ol style="list-style-type: none">Jane has 6 goldfish. Sydney has 2 birds. Nicholas has 3 kittens. How many pets do they have all together?<ol style="list-style-type: none">$6 + 2 + 3 = 11$. They have 11 pets.https://www.illustrativemathematics.org/illustrations/1	<ul style="list-style-type: none">https://www.illustrativemathematics.org/illustrations/160https://www.illustrativemathematics.org/illustrations/162https://www.illustrativemathematics.org/illustrations/162https://www.illustrativemathematics.org/illustrations/194https://www.illustrativemathematics.org/illustrations/196https://www.illustrativemathematics.org/illustrations/197https://www.illustrativemathematics.org/illustrations/1317

Grade Level Standard	The Following Standards Will Prepare Them	Items to Check for Task Readiness	Sample Remediation Items
2.OA.C.3	<ul style="list-style-type: none"> 1.OA.D.7 	<p>1. Use connecting cubes to determine if 5 is an even or odd number.</p>  <p>a. Group by 2s. Since there is 1 left over, it is an odd number.</p>  <p>2. https://www.illustrativemathematics.org/illustrations/620</p> <p>3. https://www.illustrativemathematics.org/illustrations/1418</p>	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/466 https://www.illustrativemathematics.org/illustrations/1057 https://www.illustrativemathematics.org/illustrations/475 https://www.illustrativemathematics.org/illustrations/1152
2.NBT.B.6	<ul style="list-style-type: none"> 2.NBT.A.1 2.NBT.B.7 	<p>1. $8 + 2 + 3 + 4 = ?$</p> <p>a. $8 + 2 = 10$ $10 + 3 = 13$ $13 + 4 = 17$, so $8 + 2 + 3 + 4 = 17$</p> <p>2. https://www.illustrativemathematics.org/illustrations/755</p>	<ul style="list-style-type: none"> https://www.illustrativemathematics.org/illustrations/97 https://www.illustrativemathematics.org/illustrations/156 https://www.illustrativemathematics.org/illustrations/144 https://www.illustrativemathematics.org/illustrations/192 https://www.illustrativemathematics.org/illustrations/147 https://www.illustrativemathematics.org/illustrations/71 https://www.illustrativemathematics.org/illustrations/574 https://www.illustrativemathematics.org/illustrations/94 https://www.illustrativemathematics.org/illustrations/96 https://www.illustrativemathematics.org/illustrations/1063 https://www.illustrativemathematics.org/illustrations/1628

After the Task

If students did poorly on any of the parts of this constructed response, it may be due to the following gaps in understanding:

Problem 1

- Even numbers can be counted by 2s, broken into pairs, or divided into equal groups.
- Odd numbers have 1 left over when grouped by 2s, broken into pairs, or divided into equal groups.

Problem 2

- Remind students that they can use the same steps to add 3 or 4 two-digit numbers that they use to add 2 two-digit numbers.
- Numbers can be added in any order.
- When adding the ones digits, look for known facts.

Problem 3

- Remind students to solve two-step word problems by reading the problem very carefully and determining what information is important and what is being asked.
- Since two steps are involved, figure out what to do first to get the information needed for the second step.
- Remind students that they can use the same steps to add 3 or 4 two-digit numbers that they use to add 2 two-digit numbers.
- When deciding if there is enough room on the bus, compare the 2 numbers. Remind students to compare the number of tens first. Because the numbers have the same number of tens, compare the number of ones.

Student Extended Constructed Response Task

Ms. Cobb and Mrs. Phillips are bringing their classes on a field trip to the zoo.

1. Ms. Cobb has 17 students in her class. Ms. Cobb tells her students to pair up at the zoo.
 - a. Is 17 an even or an odd number? Show how you know your answer is correct.

b. Will all of the students have a partner? Explain your answer.

2. While at the zoo, Ms. Cobb's class will see the following animals:

Birds	Snakes	Zebras	Monkeys
23	31	11	17

What is the total number of animals they will see? Write and solve this problem. Show your work.

3. Ms. Cobb has 17 students in her class, and Mrs. Phillips has 23 students in her class. The bus holds 48 people. Is there enough room for the students of both classes and the two teachers to share the bus? Explain your answer. Show all of your work.

Extended Constructed Response Exemplar Response

Ms. Cobb and Mrs. Phillips are bringing their classes on a field trip to the zoo.

1. Ms. Cobb has 17 students in her class. Ms. Cobb tells her students to pair up at the zoo.

a. Is 17 an even or an odd number? Show how you know your answer is correct.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

I circled pairs of numbers and there was one number left, so 17 is an odd number..

b. Will all of the students have a partner? Explain your answer.

All the students will not have a partner. Since 17 is an odd number, one student will not have a partner when the others get in pairs.

2. While at the zoo, Ms. Cobb's class will see the following animals:

Birds	Snakes	Zebras	Monkeys
23	31	11	17

What is the total number of animals they will see? Write and solve this problem. Show your work.

$$23 + 31 + 11 + 17 = ?$$

$$23 + 17 = 20 + 3 + 10 + 7 = 20 + 10 + 3 + 7 = 30 + 10 = 40$$

$$31 + 11 = 30 + 1 + 10 + 1 = 30 + 10 + 1 + 1 = 40 + 2 = 42$$

$$40 + 42 = 40 + 40 + 2 = 82$$

Ms. Cobb's class will see 82 animals at the zoo.

***Note: Students may use other methods to add the 4 two-digit numbers. Check student work for accuracy and an understanding of place value and/or properties of operations.*

3. Ms. Cobb has 17 students in her class, and Mrs. Phillips has 23 students in her class. The bus holds 48 people. Is there enough room for the students of both classes and the two teachers to share the bus? Explain your answer. Show all of your work.

$$\begin{aligned} 23 + 17 + 2 &= \underline{\quad} \\ &= 20 + 3 + 17 + 2 \\ &= 20 + 3 + 10 + 7 + 2 \\ &= 20 + 10 + 3 + 7 + 2 \\ &= 20 + 10 + 10 + 2 \\ &= 42 \end{aligned}$$

Because 42 is less than 48, there is enough room on the bus for both classes and their teachers to share the bus.