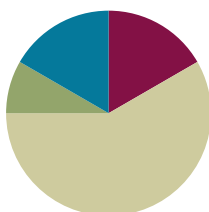# Lesson 11

Objective: Collect, sort, and organize data; then ask and answer questions about the number of data points.

Suggested Lesson Structure

- ■ Fluency Practice   (10 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (35 minutes)
- ■ Student Debrief   (10 minutes)
  - **Total Time**   **(60 minutes)**

Fluency Practice (10 minutes)

- ▪ Sprint: Subtraction Within 20 **1.OA.6**   (10 minutes)

Sprint: Subtraction Within 20 (10 minutes)

Materials: (S) Subtraction Within 20 Sprint

Note: This Sprint addresses the Grade 1 standard of subtracting within 20. This is the second time students are seeing this Sprint. Ask students if they were able to complete more problems than the last time they tried this Sprint.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Remember that the strength of the Sprint is in students' on-going experience of success. The tendency is to want to compete with a peer rather than with oneself. At times, it is wise to downplay who improved the most or who got the most correct but rather opt for self-reflection:
>
> - ▪ Who feels they tried hard today?
> - ▪ Who feels they have improved with their subtraction since the beginning of first grade?
> - ▪ Who feels they are memorizing more facts?

Application Problem (5 minutes)

Larry asked his friends whether dogs or cats are smarter. 9 of his friends think dogs are smarter, and 6 think cats are smarter. Make a table to show Larry's data collection. How many friends did he ask?

Note: This Application Problem reviews organizing data, the objective in Lesson 10. Some students may show their work with simple shapes, such as lines or circles, while others may experiment with tally marks.

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Concept Development (35 minutes)

Materials: (T) Chart paper with a table entitled *Favorite Rainy Day Activities* with *Activity* and *Number of Students* on the top line, class list (S) Clipboard, class list (preferably with first names in alphabetical order)

Have students sit in the meeting area in a semicircle formation.

T: (Post the chart.) Let's brainstorm some of our favorite rainy day activities and make a table to see how many students like which activity the best and compare the information. To make this table, what do we need to do first? Turn and talk to your partner.

S: (Answers may vary.) We need to figure out the choices we will vote on.

T: You are right! What are some of your favorite things to do on a rainy day?

Answers may vary. Choose three activities, and write them down on the chart in the first column. For example, they could be *read a book, watch a movie,* and *play board games.*

MP.3

T: Now, what do we do? Turn and talk to your partner.

S: We need to ask around and get everyone to vote.
→ We need to write down who likes which activity the best. → We can use 5-group rows to show our votes.
→ We can use tally marks to show everyone's votes.

T: If we want to compare the information in the table, what do you think is the best way to record the information? Why?

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Connect literature with the table students will be making in class today. Pick a favorite book that discusses rainy day activities, or alternatively visit with the school librarian to check one out. Read it aloud to the class before making the table to get students ready with ideas.

S: (Answers may vary.) 5-group rows help me see better because I can line them up with the other rows. → I like using the tally marks because I can count faster.

T: Good thinking! (Project the class list.) To make sure I interview everyone and get everyone's vote, I'm going to use the class list to help me keep track of who answered my question and what he voted for. (Start from the top of the list. Model collecting data using the class list by asking the first seven to eight students on the list. Check off each name as a student volunteer either makes a tally mark or draws a circle in 5-group rows on the table to represent each vote.)

To save time, call out a choice, and ask the remaining students to raise their hands. Elicit one to two questions to interpret the data. Then, have students come up with additional questions for their partners to answer, including any of the following:

- How many students like to [watch a movie] the most on a rainy day?

- Which rainy day activity is liked the most by our class? The least? How can you tell from the table?

- How many students like to [read a book] or [play board games] the most on a rainy day?

- If two more students voted for [watching a movie], how many students would like [watching a movie] the best?

T: Just like we created this entire table as a class, you will now get to create your own table! Let's look at the Problem Set together to see how!

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Problem Set (20 minutes)

Students should do their personal best to create questions based on their tables in the Problem Set and answer their partner's questions within the allotted 20 minutes.

Read over the Problem Set directions and go over the steps to follow. Distribute the Problem Set and a class list. Give students approximately 20 minutes to collect and organize their data.

Students who need more structured directions can work in a small group with the teacher for step-by-step guidance.

Photocopy today's Problem Set on two separate sheets of paper so that students can set their papers side by side as they refer to their tables and design questions.

Student Debrief (10 minutes)

Lesson Objective: Collect, sort, and organize data, then ask and answer questions about the number of data points.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did you organize your data?
- How could you have used tallies? Pictures? Shapes? What other ways might someone organize data?
- How did you solve Problem 4?
- How did you solve Problem 5? How can you solve Problem 5 by looking at your notes on the class list? Which would be easier to use to find the answer, the class list or the table? Why?
- Look at the Application Problem. How did you organize the data? How did you solve the problem?

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Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.
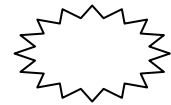
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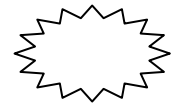Lesson 11: Collect, sort, and organize data; then ask and answer questions about the number of data points.

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A

Number Correct: _____

Name _____   Date _____

*Write the missing number.

1.	17 – 1 = ☐		16.	19 – 9 = ☐	
2.	15 – 1 = ☐		17.	18 – 9 = ☐	
3.	19 – 1 = ☐		18.	11 – 9 = ☐	
4.	15 – 2 = ☐		19.	16 – 5 = ☐	
5.	17 – 2 = ☐		20.	15 – 5 = ☐	
6.	18 – 2 = ☐		21.	14 – 5 = ☐	
7.	18 – 3 = ☐		22.	12 – 5 = ☐	
8.	18 – 5 = ☐		23.	12 – 6 = ☐	
9.	17 – 5 = ☐		24.	14 – ☐ = 11	
10.	19 – 5 = ☐		25.	14 – ☐ = 10	
11.	17 – 7 = ☐		26.	14 – ☐ = 9	
12..	18 – 7 = ☐		27.	15 – ☐ = 9	
13.	19 – 7 = ☐		28.	☐ – 7 = 9	
14	19 – 2 = ☐		29.	19 – 5 = 16 – ☐	
15.	19 – 7 = ☐		30.	15 – 8 = ☐ – 9	

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B

Number Correct: _____

Name _____   Date _____

*Write the missing number.

1.	16 – 1 = ☐		16.	19 – 9 = ☐	
2.	14 – 1 = ☐		17.	18 – 9 = ☐	
3.	18 – 1 = ☐		18.	12 – 9 = ☐	
4.	19 – 2 = ☐		19.	19 – 8 = ☐	
5.	17 – 2 = ☐		20.	18 – 8 = ☐	
6.	15 – 2 = ☐		21.	17 – 8 = ☐	
7.	15 – 3 = ☐		22.	14 – 5 = ☐	
8.	17 – 5 = ☐		23.	13 – 5 = ☐	
9.	19 – 5 = ☐		24.	12 – ☐ = 7	
10.	16 – 5 = ☐		25.	16 – ☐ = 10	
11.	16 – 6 = ☐		26.	16 – ☐ = 9	
12.	19 – 6 = ☐		27.	17 – ☐ = 9	
13.	17 – 6 = ☐		28.	☐ – 7 = 9	
14.	17 – 1 = ☐		29.	19 – 4 = 17 – ☐	
15.	17 – 6 = ☐		30.	16 – 8 = ☐ – 9	

Name _____   Date _____

Welcome to Data Day! Follow the directions to **collect** and **organize** data. Then, **ask** and **answer questions** about the data.

- Choose a question. Circle your choice.
- Pick 3 answer choices.
- Ask your classmates the question, and show them the 3 choices. Record the data on a class list.
- Organize the data in the chart below.

Which fruit do you like best?	Which snack do you like best?	What do you like to do on the playground the most?	Which school subject do you like the best?	Which animal would you most like to be?

Answer Choices	Number of Students

- Complete the question sentence frames to ask questions about your data.
- Trade papers with a partner, and have your partner answer your questions.

1. How many students liked _____ the best?

2. Which category received the fewest votes? _____

3. How many more students liked _____ than _____?

4. What is the total number of students who liked _____ or

   _____ the best?

5. How many students answered the question? How do you know?

Name _____   Date _____

A class collected the information in the chart below. Students asked each other: Among stuffed animals, toy cars, and blocks, which is your favorite toy?

Then, they organized the information in this chart.

Toy	Number of Students
Stuffed Animals	11
Toy Cars	5
Blocks	13

1. How many students chose toy cars? _____

2. How many more students chose blocks than stuffed animals? _____

3. How many students would need to choose toy cars to equal the number of students who chose blocks? _____

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Name _____ Date _____

Collect information about things you own. Use tally marks or numbers to organize the data in the chart below.

How many **pets** do you have?	How many **toothbrushes** are in your home?	How many **pillows** are in your home?	How many **jars of tomato sauce** are in your home?	How many **picture frames** are in your home?

- Complete the question sentence frames to ask questions about your data.
- Answer your own questions.

1. How many _____ do you have? (Pick the item you have the **most** of.)

2. How many _____ do you have? (Pick the item you have the **least** of.)
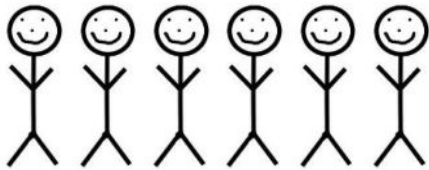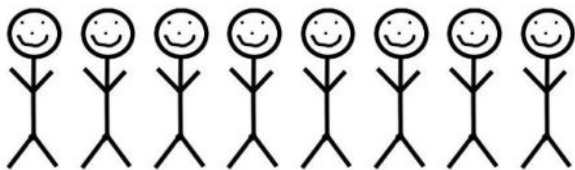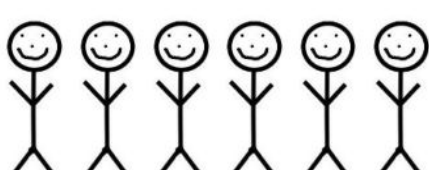
3. **Together**, how many picture frames and pillows do you have?

4. Write and answer two more questions using the data you collected.

    a. _____?

    b. _____?

Lesson 11: Collect, sort, and organize data; then ask and answer questions about the number of data points.

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Students voted on their favorite type of museum to visit. Each student could only vote once. Answer the questions based on the data in the table.

Science Museum	
Art Museum	
History Museum	

5. How many students chose art museums? _____ students

6. How many students chose the art museum or the science museum?

    _____ students

7. From this data, can you tell how many students are in this class? Explain your thinking.

Lesson 11: Collect, sort, and organize data; then ask and answer questions about the number of data points.

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