



Investigations

in Number, Data, and Space®

Unit Guide for Grade 1, Unit 1:
How Many of Each?
Addition, Subtraction, and the Number System 1



Unit Guide for Grade 1, Unit 1

How Many of Each?

Addition, Subtraction, and the Number System 1

Unit Summary:

Students count, order, compare quantities, and work with the operation of addition. Students also work on finding addition combinations up to 10 and learn to make sense of and solve story problems. They are introduced to several of the classroom routines that practice and reinforce work with counting, developing visual images of number, collecting data, and working with concepts of time (calendar/clock).

Materials:

How Many of Each? (1 copy per person)

Student Activity Book p. 14, Ordering Numbers (1 per person)

Primary Number Cards (1 deck per pair, use manufactured set or Resource Masters M13-M16, see Materials to Prepare, p. 51)

Connecting cubes (about 40 per pair)

Student Activity Book p. 21, How Many Pencils? (1 per person)

Student Activity Book p. 33, Seven Peas and Carrots (1 per person)

Cubes or counters in two colors (7 of each color per person)

Paper plates (1 per person)

Crayons or markers in the same colors as cubes or counters (1 of each color per pair)

Do the following activities from *How Many of Each?*:

1. Identify the mathematics in the unit

To get an overview of the mathematics students will be doing in this unit, refer to these sections in the unit front matter. As you look at these sections, begin thinking about the main mathematical ideas students work on in this unit.

- Turn to pp. 8-9, *Overview of This Unit*. Look at the title of each Investigation and read the summary for each Investigation.
- Review the *Mathematics in This Unit* essay, pp. 10-13. Look at the Mathematical Emphases and Math Focus Points. (The emphases are numbered, and can be found above bulleted lists of Math Focus Points.)
- Read the “Benchmarks in This Unit” in the table on p. 15, *Assessing the Benchmarks*.

Discuss

- What mathematical ideas and skills are students working on in this unit?
- What mathematics are students expected to know at the beginning of the unit? At the end?

2. Introducing Start With/Get To (Session 2.1)

Throughout Investigation 1 of this unit, students are introduced to the yearlong *Morning Meeting Classroom Routine*. During this session, students are introduced to another yearlong routine, *Start With/Get To*, which uses the number line as a mathematical tool for counting.

- Read the Activity, *Introducing Start With/Get To*, pp. 55-56.
- Read the Dialogue Box, *Start With/Get To*, p. 225.

Discuss

- As students do the *Start With/Get To* activity, what information can you attain about their understanding of the counting sequence, number names, written numbers, and/or the distance between numbers?
- How might this activity benefit students as they work on other math activities?

3. Ordering Numbers (Session 2.7)

Students order four numbers or quantities and discuss the notation that mathematicians use to compare numbers.

- Read the Activities, *Introducing Ordering Numbers*, pp. 89-90 and *Ordering Numbers*, pp. 90-91. Complete Student Activity Book p. 14, Ordering Numbers.

Discuss

- As you observe students working on this activity, what information about their understanding of numbers and sequencing can you collect?

- Read the Discussion, *Comparing and Ordering Numbers*, pp. 91-93, and the Teacher Note, *Introducing Notation, Part 1* pp. 198-199.

Discuss

- Why is it important to match your recording to what the students say?
- What is the purpose of modeling standard notation in Grade 1?

4. Solving an Addition Story Problem and Sharing Strategies (Session 3.3)

During this Investigation, students have been playing several games about combining two quantities. For this session, students are introduced to, and solve, addition story problems.

- Read the Activity, *Solving an Addition Story Problem*, pp. 113-116 and the Discussion, *Sharing Strategies*, pp. 116-118. As you read the text, discuss the importance of connecting the context of the story to understanding the operation of addition.

Discuss

- Examine the sample student work on pp. 115-116. How are these students making sense of this addition story problem?

- Read the Teacher Note, *Recording Strategies for a Combining Problem*, pp. 204-205.

Discuss

- How does the teacher help each student to clearly describe their strategy and a way for the student to record their work?

5. Seven Peas and Carrots (Session 4.1)

In this session, students are introduced to a new type of problem in which they determine one or more combinations they could have to make 7 in all. This is the first of several *How Many of Each?* problems students will solve over the course of the year.

- Complete Student Activity Book p. 33, Seven Peas and Carrots. Discuss with a partner how you know you have found all the combinations.
- Read the Activities, *Introducing Seven Peas and Carrots*, p. 149, and *Solving Seven Peas and Carrots*, pp. 150-151.
- Read the Teacher Note, *About How Many of Each? Problems*, pp. 211-212.

Discuss

- What math ideas are students working on as they solve *How Many of Each?* problems?
- How do these problems help meet a range of learners within a classroom?

- Read the Teacher Note, *When the Teacher Records Students' Solutions* p. 215.

Discuss

- During class discussions, why is it important to vary the recording method and to record solutions in the order that students give them?

6. Wrap Up

- Look back at the unit overview, pp. 8-9.

Discuss

- How do the activities done during this unit study fit into the mathematics of the rest of the unit?

Other Key Features of *How Many of Each?*

- Algebra Connections in This Unit, pp. 16-19
- Classroom Routines in This Unit, p. 20
 - Morning Meeting*
 - Start With/Get To*
 - Quick Images*
- Assessment
 - Assessment: Counting 20 (Sessions 1.2-1.4)
Resource Master M3, Assessment Checklist
 - Assessment: Counting 20 (Session 2.6)
Teacher Note, pp. 194-197
 - Assessment: Double Compare (Session 3.6)
Teacher Note, pp. 208-210
 - End-of-Unit Assessment (Session 4.7)
Teacher Note, pp. 216-223