



GRADE 1 SUPPLEMENT

Set A5 Number & Operations: Place Value

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Skills & Concepts

- ★ compare and order whole numbers to 100
- ★ count and group objects in tens and ones
- ★ identify the number of tens and ones in whole numbers between 10 and 100
- ★ estimate and measure using non-standard units

Bridges in Mathematics Grade 1 Supplement

Set A5 Numbers & Operations: Place Value

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Bridges in Mathematics is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

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Set A5 ★ Activity 1



ACTIVITY

Cube Collections

Overview

Students work together to count the number of cubes in 3 different collections, organizing each collection into 10s and 1s to make the job easier. Then they order the 3 collections from least to most. When this is finished, each student does a similar task with pictures of Unifix cubes organized into groups of 10s and 1s.

Skills & Concepts

- ★ compare and order whole numbers to 100
- ★ count and group objects in tens and ones
- ★ identify the number of tens and ones in whole numbers between 10 and 100

You'll need

- ★ Cube Collections (page A5.4, class set plus a few extra)
- ★ Unifix cubes (see Advance Preparation)
- ★ 3 gallon-size resealable bags (see Advance Preparation)
- ★ three 3" × 5" index cards
- ★ 4" × 9" strips of construction paper, 2 per student plus a few extra
- ★ pencils
- ★ scissors
- ★ glue sticks

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Advance Preparation Fill each bag with more than 50 but fewer than 99 cubes in one color. Make the quantities relatively close, so it's not obvious which bag has the most and which has the least. For example, you might put 64 red cubes in one bag, 71 blue cubes in the second, and 56 green cubes the third bag. Seal the top of each bag.

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Instructions for Cube Collections

1. Gather children to your discussion circle. Show them the 3 bags of Unifix cubes and ask which they think has the fewest in it, and which the most. Have them pair-share their ideas and then invite volunteers to share their thinking with the class. Encourage them to explain their reasoning as they share.

Michelle *I think the bag with the red cubes has the most because it looks the biggest.*

Eduardo *I think the bag with blue cubes has the most. It looks like a little more than the reds.*

Samantha *Probably the red cubes have the most because I like red best.*

2. Suggest counting the cubes in each bag to find out for sure. Discuss the best way to do this, and solicit agreement from the group that organizing each bagful into 10s and 1s would be easier than trying to count the cubes one-by-one.

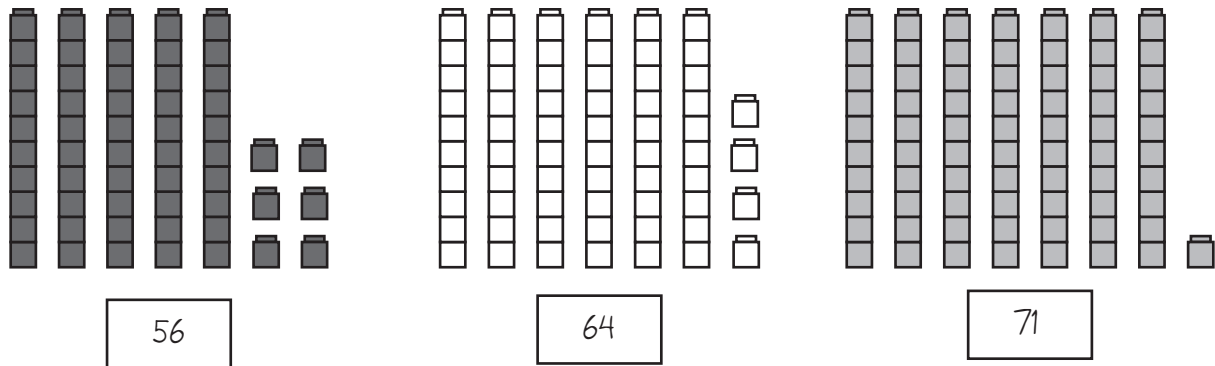
3. Dump the contents of each bag out in the middle of the discussion circle. Be sure to keep the 3 piles well apart. Assign 2–3 students to each pile to start snapping cubes together in trains of 10. After they've had a minute to work, ask them to take their places in the circle again and assign 2–3 more students to work on each pile. Repeat this, giving as many students as possible a chance to help until the job is finished.

Activity 1 Cube Collections (cont.)

4. Count each of the collections by 10s and 1s with the students and work with their input to record the number on an index card. Then arrange the 3 collections in order from least to most, again working with input from students. Encourage them to share their reasoning as you work together. How do they know that one quantity is more than another?

Adrien I know that 71 is most because it has the most of those big stacks.

K'Sondra If you count like 1, 2, 3, 4, and keep going, you get to 56 first, and then 64, and then 71. 71 is the most and 56 is the smallest.



5. Now show students a copy of the Cube Collections sheet and 2 strips of 4" × 9" construction paper.

Set A5 Number & Operations: Place Value Blackline Run a class set plus a few extra

Cube Collections

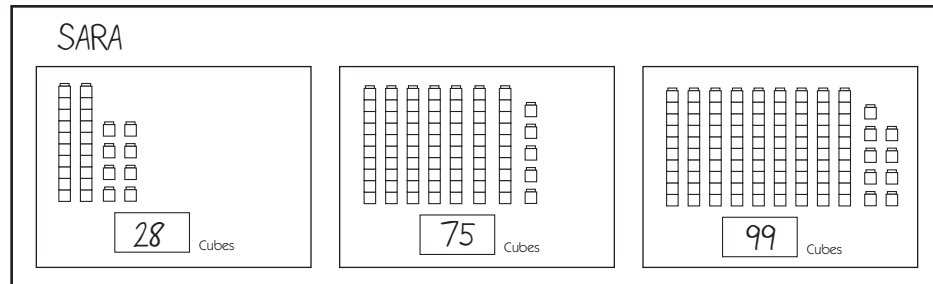
Label each collection of cubes to show how many there are. Then cut the collections apart.

 <input type="text"/> Cubes	 <input type="text"/> Cubes
 <input type="text"/> Cubes	 <input type="text"/> Cubes

Explain that they'll each get their own materials in a minute. When they do, they'll need to count how many cubes there are in each collection and label each with the correct number. Next, they'll need to cut the 6 collections apart and choose 3 of them at random. Then they'll need to arrange the 3 collections in order from least to most on one of the strips of construction paper. Last, they'll need to do the same thing with the other 3 collections. Ask them to get you or a friend to check their work before they glue the collections down on the paper. There are lots of different arrangements, depending on which 3 cards they choose first.

Activity 1 Cube Collections (cont.)

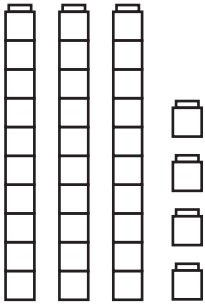
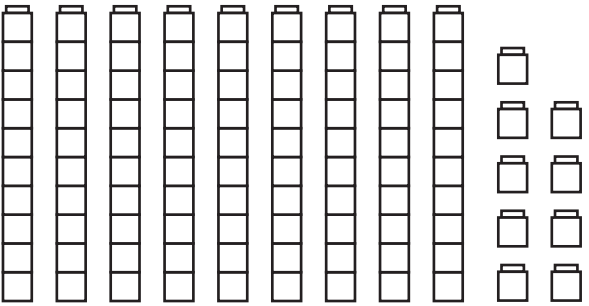
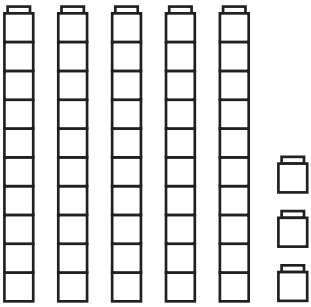
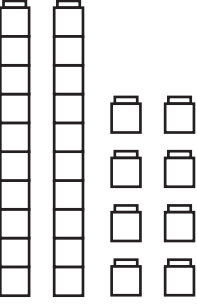
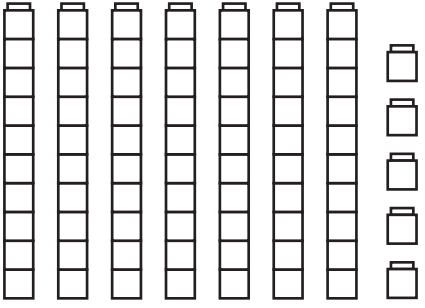
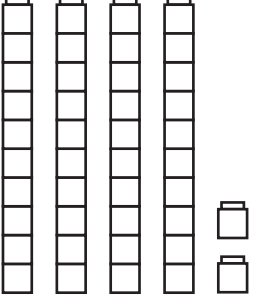
6. Model as much of the activity as needed, working with input from the class. When most students understand what to do, send them back to their tables to get out their pencils, scissors, and glue sticks while you hand out copies of the worksheet and construction paper strips. Circulate as they work, providing assistance where needed. Some students will count the cubes in each collection one by one no matter what, but you can support children in counting by 10s and 1s as you move from table to table.

**Extensions**

- Some of your students might want to tape the 2 construction paper strips together and sequence all 6 collections from least to most.
- As students finish, have them meet in pairs to share their work with each other.

Cube Collections

Label each collection of cubes to show how many there are. Then cut the collections apart on the dotted lines.

 <input type="text"/> Cubes	 <input type="text"/> Cubes
 <input type="text"/> Cubes	 <input type="text"/> Cubes
 <input type="text"/> Cubes	 <input type="text"/> Cubes

Set A5 ★ Activity 2



ACTIVITY

Button Boxes

Overview

Students work together to count the number of buttons in 3 different collections, organizing each collection into 10s and 1s to make the job easier. Then they order the 3 collections from least to most. When this is finished, each student does a similar task with pictures of buttons organized into groups of 10s and 1s.

Skills & Concepts

- ★ compare and order whole numbers to 100
- ★ count and group objects in tens and ones
- ★ identify the number of tens and ones in whole numbers between 10 and 100

You'll need

- ★ Button Boxes (page A5.8, class set plus a few extra)
- ★ 3 small boxes with lids (see Advance Preparation)
- ★ buttons (see Advance Preparation)
- ★ portion cups
- ★ 3 pieces of 12" × 18" construction paper, each in a different color
- ★ three 3" × 5" index cards
- ★ 4" × 18" strips of construction paper, 1 per student plus a few extra
- ★ pencils
- ★ scissors
- ★ glue sticks

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Advance Preparation Place anywhere between 40 and 99 buttons in each of the 3 boxes. (If you can find small attractive boxes with lids, students may find the activity more intriguing.) Make the quantities relatively close, so it's not obvious which box has the most and which has the least.

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Instructions for Button Boxes

1. Gather children to your discussion circle. Tell them you've made 3 collections of buttons to share today. Show them the 3 boxes of buttons (with the lids off) and ask which they think has the fewest buttons in it, and which the most. Have them pair-share their ideas and then invite volunteers to share their thinking with the class.



2. Suggest counting the buttons in each box to find out for sure, and solicit agreement from the class that this will be easier if you organize the buttons into 10s and 1s instead of trying to count them one by one. Show the students your portion cups and explain that these are each designed to hold exactly 10 buttons.

Activity 2 Button Boxes (cont.)

Demonstrate by counting 10 of the buttons from one of the boxes into a cup, and then dump them back into the box.

3. Place 3 sheets of construction paper, each a different color, in the middle of the discussion circle. Place one of the button boxes on each sheet along with a small stack of portion cups. Ask 2–3 students to work on each sheet, organizing the buttons into cups of 10. After they've had a minute to work, ask them to take their places in the circle again and assign 2–3 more students to work on each sheet. Repeat this, giving as many students as possible a chance to help until the job is finished. Give children more portion cups if necessary, but remind them that they have to put exactly 10 in each cup. If they have fewer than 10 buttons left at the end, they should lay them on the sheet beside the cups.

4. Count each of the collections by 10s and 1s with the students and work with their input to record the number on an index card. Then arrange the 3 collections in order from least to most, again working with input from students. Encourage them to share their reasoning as you work together. How do they know that one quantity is more than another?

Hector *The one with 92 is the most because 92 is the biggest number.*

Ashley *92 is the most because there are 9 cups of buttons on that one. On 48, there are only 4 cups of buttons.*

48

63

92

5. Now show students a copy of the Button Boxes sheet and 1 strip of 4" × 18" construction paper.

Set A5 Number & Operations: Place Value Blackline Run a class set p us a few extra

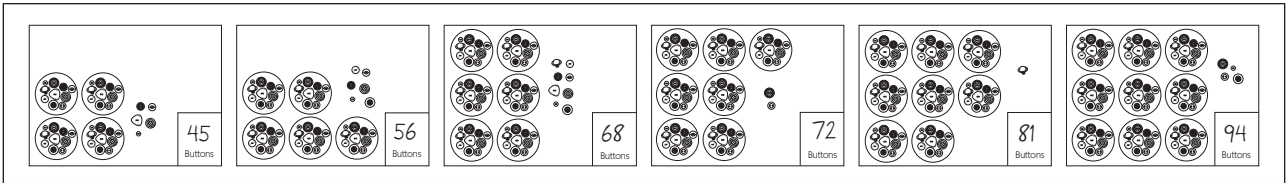
Name _____ Date _____

Button Boxes

Label each box of buttons to show how many there are. Then cut the boxes apart.

Activity 2 Button Boxes (cont.)

Explain that they'll each get their own materials in a minute. When they do, they'll need to count how many buttons there are in each box and label each with the correct number. Next, they'll need to cut the 6 collections apart and arrange them in order from least to most on their strip of construction paper. Have them get you or a friend to check their work before they glue the collections down on the paper.



6. Model as much of the activity as necessary. When most students understand what to do, send them back to their tables to get out their pencils, scissors, and glue sticks while you hand out copies of the worksheet and construction paper strips. Circulate as they work, providing assistance where needed. Some students will count the buttons in each box one by one no matter what, but you can support children in counting by 10s and 1s as you move from table to table.

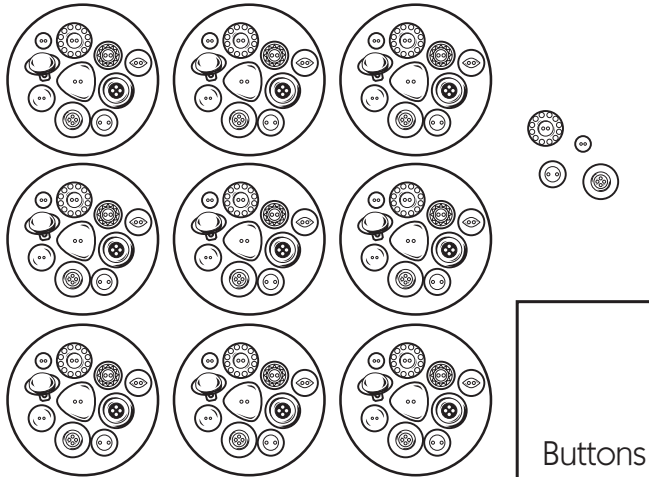
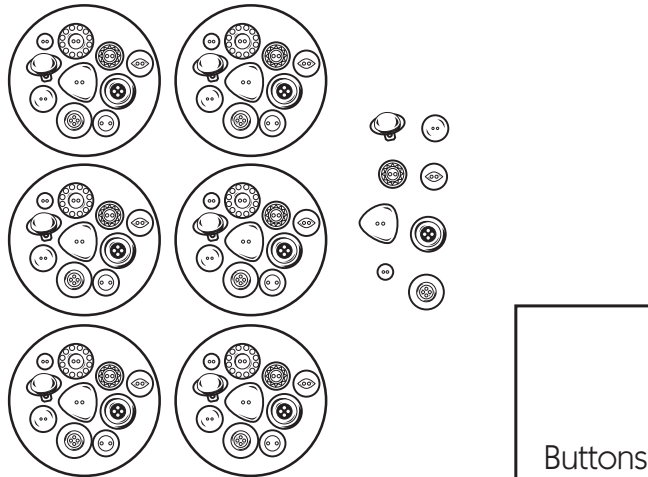
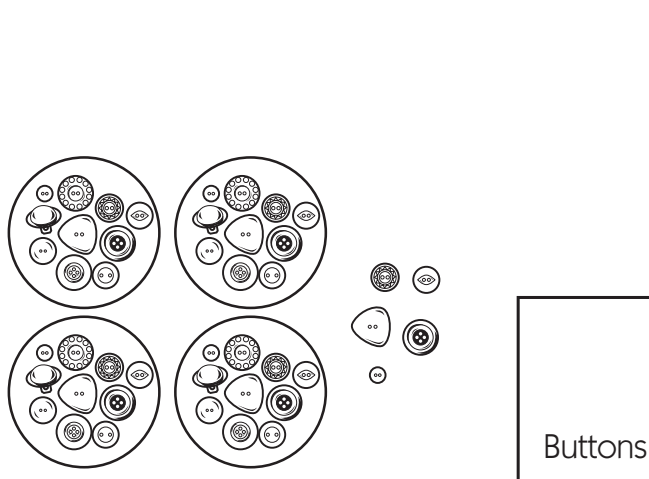
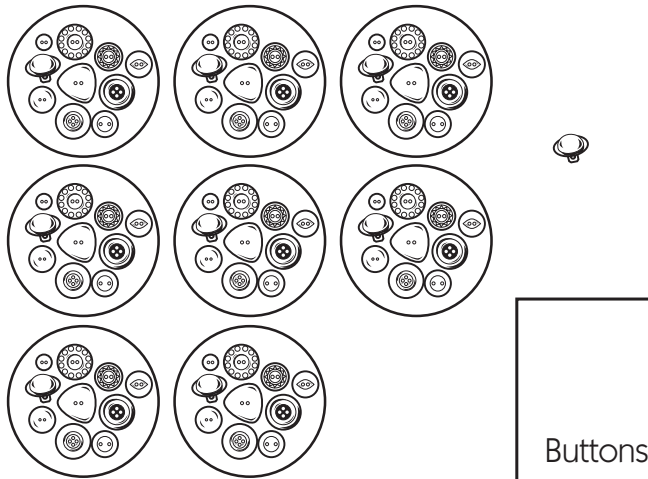
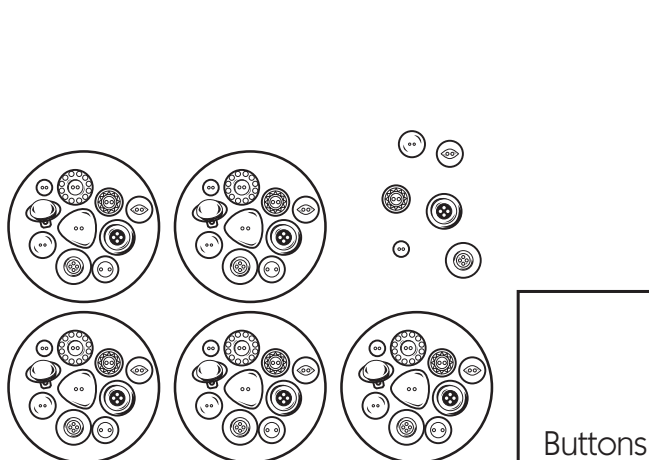
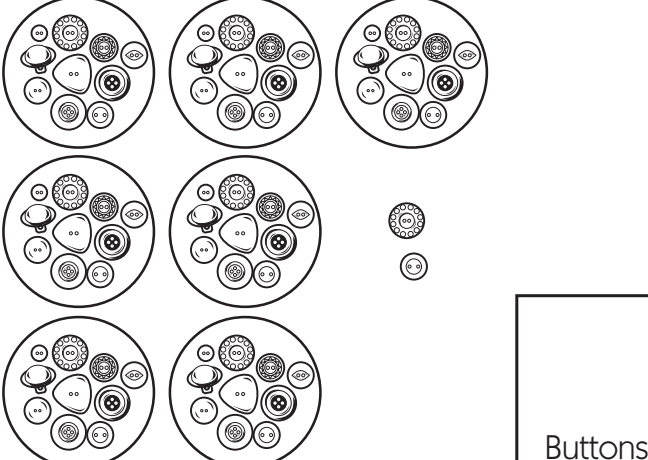
Note It may be more appropriate for some of your students to sequence 3 of the boxes at a time instead of all 6. Have these students cut their construction paper strip in half, choose 3 boxes at random to arrange in sequence on the first half, and repeat with the other 3 boxes on the second half.

NAME _____

DATE _____

Button Boxes

Label each box of buttons to show how many there are. Then cut the boxes apart.

 <p>Buttons</p>	 <p>Buttons</p>
 <p>Buttons</p>	 <p>Buttons</p>
 <p>Buttons</p>	 <p>Buttons</p>

Set A5 ★ Activity 3



ACTIVITY

Put Them in Order

Overview

Which is the longest—the back of your chair, a classroom table, or the width of the calendar pocket chart? Students make predictions and measure each object with Unifix cubes. Then they count the cubes by 10s and 1s to find the answer, and record the results. This activity can be used as a Work Place after you've introduced it to the whole class.

Skills & Concepts

- ★ compare and order whole numbers to 100
- ★ count and group objects in tens and ones
- ★ identify the number of tens and ones in whole numbers between 10 and 100
- ★ estimate and measure using non-standard units

You'll need

- ★ Measuring Record Sheet (page A5.12, class set plus a few extra)
- ★ Blank Measuring Record Sheet (page A5.13, optional, run as needed)
- ★ Unifix cubes (see Advance Preparation)
- ★ three 3" × 5" index cards
- ★ pencils
- ★ crayons

.....
Advance Preparation Have students help you make 30 stacks of 10 Unifix cubes, each in a single color, before you conduct this activity. Place 10 stacks in each of three plastic tubs or baskets.

Instructions for Put Them in Order

1. Gather children to your discussion circle. Ask them which they think is longest—the back of your chair, the length of one of the tables (show them which one), or the distance across the bottom of the calendar pocket chart? Which of these three is shortest? Have them pair-share their ideas and then ask volunteers to share their thinking with the class.

***Maria** I think the table is longest because it looks longer than those other two things.*

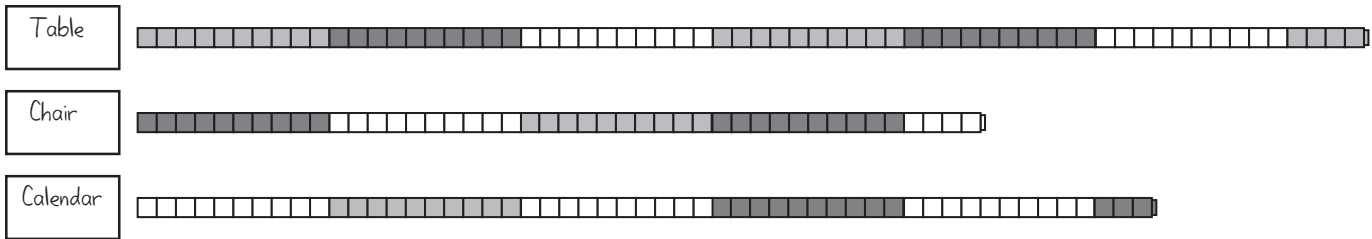
***Jamal** I think maybe the calendar and Teacher's chair are about the same.*

***Esteban** I think Teacher's chair is the shortest. I can see it really good from here.*

2. Suggest measuring each object with Unifix cubes to find out for sure, and show students the stacks of Unifix cubes you've prepared. Select 6 helpers at random (we like to draw from a box that contains everyone's name so they all feel like they have an equal chance). Divide your helpers into pairs. Give each pair a tub or basket of stacked cubes and send them out to measure one of the 3 objects by creating a train of cubes as long as the object.

Activity 3 Put Them in Order (cont.)

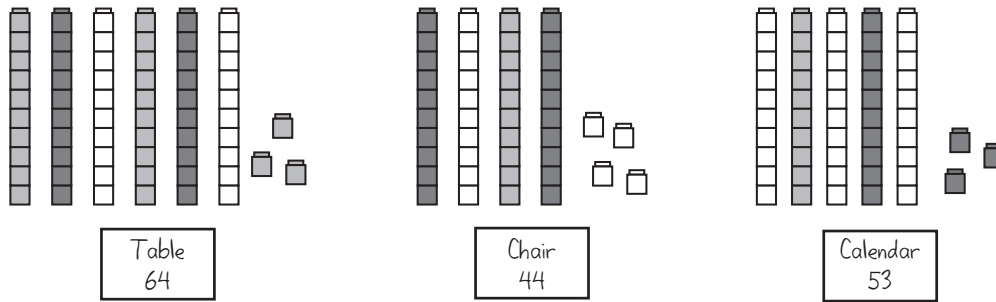
3. As they're working, create a label for each object on an index card. Ask the students in the circle to help you spell the needed words. As each pair finishes, ask them to bring their measuring train back to the discussion circle. (It's fine if they break it into sections to carry it back to the circle.) When they arrive, have them reconstruct their train in the middle of the circle and label it with the correct index card.



4. Ask all the students to pair-share comments and observations.

Students *Yes! I knew the table was going to be the longest one.
The chair is pretty short.
The calendar is longer than the chair—it has more cubes.*

Count the number of cubes in each train by 10s and 1s, and then by 1s to confirm the total for students who are still learning to trust place value counting. Finally, break each of the trains into stacks of 10s and 1s and recount them one more time before you label each card with the total.



5. Now show students a copy of the Measuring Record Sheet. Demonstrate how to color in the cubes to show how long the chair turned out to be.

Set A5 Number & Operations: Place Value Blackline Class set plus a few extra

NAME _____ DATE _____

Measuring Record Sheet

<p>1 Teachers Chair</p>	<p>Cubes Long <input type="text"/></p>
<p>2 Table</p>	<p>Cubes Long <input type="text"/></p>

Activity 3 Put Them in Order (cont.)

Explain that in a minute, they'll each complete their own copy of the sheet so they can show and tell their family all about the measuring experiment you did in class today. Be sure they understand that they need to write the 3 lengths in order at the bottom of the sheet, starting with the shortest. When students understand what to do, send them back to their tables to get out their crayons and pencils as you pass out the sheets.

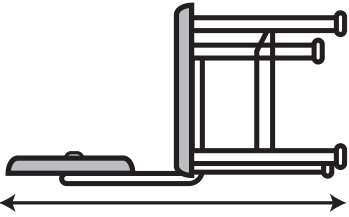
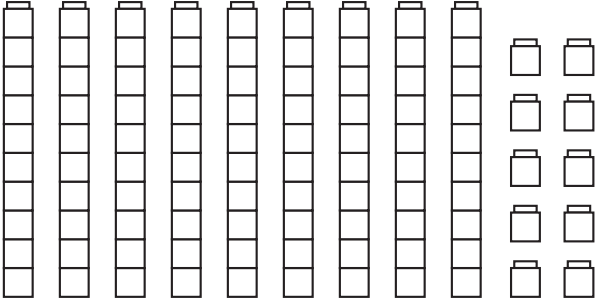

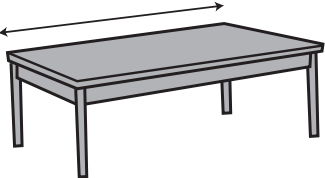
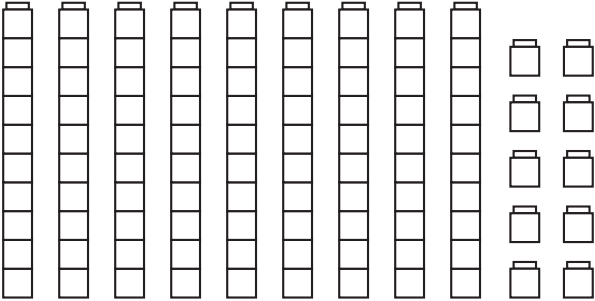

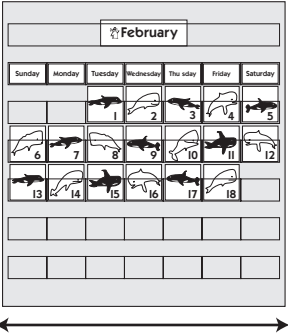
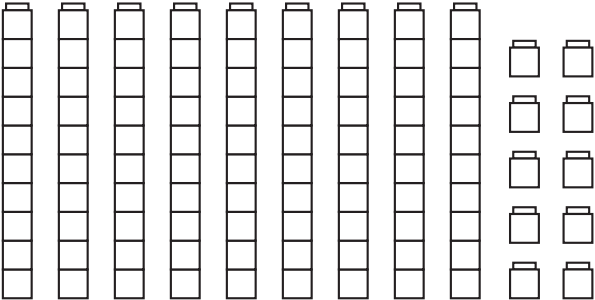




Extension

- Make 2–3 copies of the Blank Measuring Record Sheet and fill each in with 3 different items around the classroom. Depending on the needs of your students, you may want to choose items that are shorter or longer than the ones the class measured today. Run multiple copies of each sheet and place in a tub, along with a few crayons and the stacks of Unifix cubes for students to use during Work Places.

NAME _____

DATE _____

Measuring Record Sheet

<p>1 Teachers Chair</p> 	 <div style="text-align: right; margin-top: 10px;">  Cubes Long </div>
<p>2 Table</p> 	 <div style="text-align: right; margin-top: 10px;">  Cubes Long </div>
<p>3 Calendar Chart</p> 	 <div style="text-align: right; margin-top: 10px;">  Cubes Long </div>
<p>4 Write the lengths in order.</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  Shortest </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  Longest </div> </div>	

NAME _____

DATE _____

Blank Measuring Record Sheet

1	 <p style="text-align: right;">Cubes Long</p>
2	 <p style="text-align: right;">Cubes Long</p>
3	 <p style="text-align: right;">Cubes Long</p>

4 Write the lengths in order.

Shortest

Longest

