

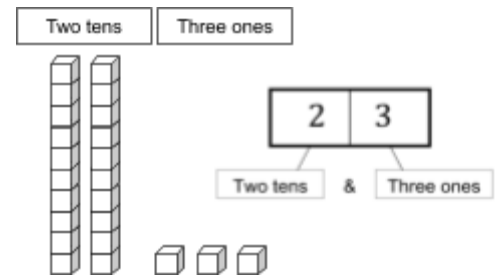
Grade 1 Family Letter

Unit 1.9: Numbers Greater than 20

In this unit students examine how two-digit numbers are composed of tens and ones. Throughout the unit students will build numbers up to 100 using concrete models and many representations. They add and subtract numbers within 100. To form larger numbers they decompose, or pull numbers apart, and recompose, or put numbers together. They compare numbers by looking at the number of tens and ones in each number.

Tens and Ones

Shown here is a collection of twenty-three cubes that has been arranged as 2 groups of ten and 3 more, which we write as 23. Some students may think of this number as 2 and 3 more, but it actually shows 2 **tens** and 3 more. In our base-ten number system, two-digit numbers are always written to show tens and any extra ones.

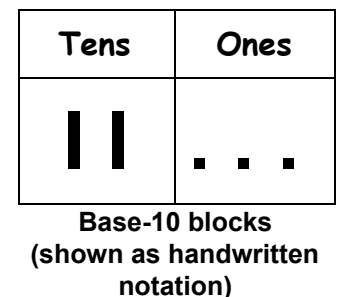
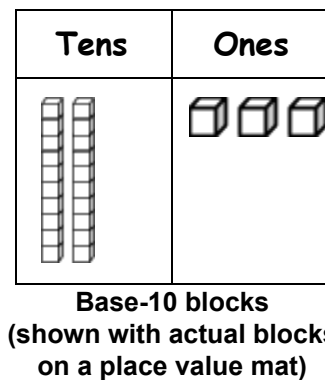
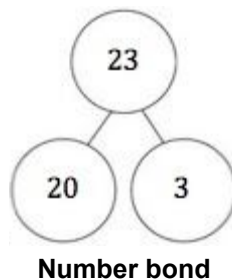


Use of Manipulatives and Visual Models

Adults with a deep command of place value may not understand why students record numbers in different ways as part of their learning. First graders are still making sense of what a number is and the importance of place value. Seeing numbers in different ways supports students becoming more flexible with numbers as they put them together and pull them apart. Building on the example above, these are some of the visual models that show how a student can think of or show the number 23. Students have seen some of these models in earlier units.

$$23 = 20 + 3$$

Expanded form



Using a 99 Chart

A 99 chart like the one to the right is a valuable place value tool for students to use as they add. For example, to add twenty to thirty-three ($33 + 20$), a student can move down two rows. The way the chart is set up supports this place value understanding, which will be crucial as students move from working with manipulatives (such as 10 blocks that can be put together physically) to the more symbolic representations they will see in second grade. For first graders, the emphasis is on building concrete and conceptual understanding.

0	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	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

Comparing Numbers

In this unit, students compare quantities, answering questions such as these:

Which one is more? How do you know?

Shown here is a comparison of 32 and 23. Even though the numbers use the same two digits, the number with 3 tens is larger than the number with 2 tens, based on place value understanding.

Tens	Ones
	••

Tens	Ones
	•••

Symbols:
> is greater than
< is less than
= is equal to

$$32 > 23$$

Helping Your Child with Homework

The Standards for Mathematical Practice describe the ways students behave as they learn math. While the mathematics content changes from grade to grade, these standards are the same for kindergarten through high school.

Mathematical Practice Standard 2 says: **Reason abstractly and quantitatively.** As student work with larger numbers, they still need to make sense of the context of the numbers, or the story the numbers appear in, and to understand how to manipulate them.

Questions that you can ask that support this practice are:

- [If you start with a story] Can you write a number sentence to match the situation?
- [If you start with numbers] Can you write a story that matches the numbers?
- What's the connection between the numbers and the story?

Connecting Mathematical Practice 2 with Literature

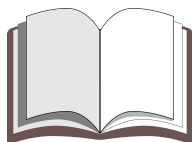
Reading at home builds a child's success in school, and it can be an imaginative way to practice in a loving family environment what a student is learning at school. Reading books that include numbers provides an opportunity for students to **reason abstractly and quantitatively.** These are some other books you can find in your public library that tell math stories in a fun and engaging way. Here are some questions you might want to ask: *Who are the characters? What are the numbers in the stories? How are the numbers put together and broken apart?*

Counting and Addition Literature



In *The Mission of Addition* by Brian P. Cleary addition stories are shown with rhymes and funny cartoons

Quack and Count by Keith Baker follows a family of ducklings as they group themselves in different ways.



In *Ten Sly Piranhas: A Counting Story in Reverse* by William Wise, piranhas swim until they disappear one by one.

One Is A Snail, Ten Is A Crab by April Pulley Sayre and Jeff Sayre introduces repeated addition through counting numbers of feet on different kinds of animals.