Putting Research into Practice

From the National Research Council Report on Mathematics Learning in Early Childhood: The Ten in Teen Numbers

*Focus in Kindergarten* (NCTM, 2010) overviews on pages 23 to 29 the research reported in the National Research Council Report *Mathematics learning in early childhood: Paths toward excellence and equity* concerning the crucial foundations for place value in Kindergarten: composing and decomposing teen numbers 11 to 19 into ten ones and more ones (CCSS K.NBT.1). A teaching-learning progression for steps in relating quantities, count words, and written numerals is shown in Figure 2.3.

This progression moves from children making unitary collections of teen numbers of things and then finding and separating ten ones within the collection. The picture shows children doing this with objects and with a drawing and relating each part of the teen number to its written symbol (10 and 3 or 10 and 4). Children use Number Tiles to see that the ones number covers the 0 in the 10 (10 = 10 + 3); they learn to see teen numbers such as 18 as having a 0 hiding under the ones number (here, the 8). Children move on to use 5-groups within the teen numbers 15 through 19, with fingers and with *Math Expressions* 5-group manipulatives.

In English, teen and 2-digit number words are complex and difficult to learn. In contrast, in some Asian languages the word for 13, for example, translates into “ten three.” In the English system, teen and 2-digit numbers look like two single-digit numbers written beside each other; nothing shows the ten value for the digit on the left. Young children need verbal and visual supports for understanding these number words and written numbers.
In this program, we provide this scaffolding by using tens and ones words, as well as standard number words, when working with teen and 2-digit numbers. We say 13 as thirteen and as 10 ones plus 3 ones. These words are used interchangeably and help reinforce the embedded ten-based thinking and place value understanding. These words relate to the quantities children make or count that show the ten ones and some further ones. They also relate to the base ten numerals in an equation such as $14 = 10 + 4$ or with Number Tiles (both as 14 and as the separated 10 and 4, as shown).

Other Useful References: Place Value


Getting Ready to Teach Unit 3

Using the Common Core Standards for Mathematical Practice

The Common Core State Standards for Mathematical Content indicate what concepts, skills, and types of problem solving children should learn. The Common Core State Standards for Mathematical Practice indicate how children should demonstrate understanding. These Mathematical Practices are embedded directly into the Student and Teacher Editions for each unit in Math Expressions. As you use the teaching suggestions, you will automatically implement a teaching style that encourages children to demonstrate a thorough understanding of concepts, skills, and problems. In this program, Math Talk suggestions are a vehicle used to encourage discussion that supports all eight Mathematical Practices. See examples in Mathematical Practice 6.

Mathematical Practice 1
Make sense of problems and persevere in solving them.

Children analyze and make conjectures about how to solve a problem. They plan, monitor, and check their solutions. They determine if their answers are reasonable and can justify their reasoning.

TEACHER EDITION: Examples from Unit 3

MP.1, MP.4 Make Sense of Problems / Model with Mathematics  Follow the Five Steps to Problem Solving shown in the Unit 3 Overview and summarized here:

1. Build language through retelling story problems.
2. Use objects to solve story problems.
3. Show the operation with Number Tiles and +/- Tiles.
4. Share solutions.
5. Record the situation and equation. Say the equation.

MP.1 Make Sense of Problems
Analyze the Problem  Elicit addition and subtraction story problems from children about the Park Scene. Help them use story problem language and totals of 6, 7, 8, 9, or 10. Urge children to practice visualizing the story problems. Provide each child with Square-Inch Tiles or centimeter cubes, a +/- Tile, and Number Tiles.

Mathematical Practice 1 is integrated into Unit 3 in the following ways:

<table>
<thead>
<tr>
<th>Act It Out</th>
<th>Make Sense of Problems</th>
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<tbody>
<tr>
<td>Analyze the Problem</td>
<td>Persevere in Solving Problems</td>
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</table>
**COMMON CORE**

**Mathematical Practice 2**

**Reason abstractly and quantitatively.**

Children make sense of quantities and their relationships in problem situations. They can connect models and expressions to a given situation. Quantitative reasoning entails attending to the meaning of quantities. In this unit, this involves identifying a group with a given number of objects, counting out a group with a specified number of objects, connecting the + and – symbols with the addition and subtraction of quantities/numbers, recognizing the equality or inequality of amounts and correctly using the =/≠ symbols, and determining the unknown quantity when the total and one partner are known.

**TEACHER EDITION: Examples from Unit 3**

**MP.2 Reason Abstractly and Quantitatively** Connect Symbols and Models

Show the partner tiles and write the equation on the board.

```
  6 = 4 + 2
```

Have children use their fingers to show the partners.

Ask children to look at the partners 4 and 2 that make 6. Then have them close their eyes and visualize the 4 and the 2.

**Mathematical Practice 2** is integrated into Unit 3 in the following ways:

- Connect Symbols and Models
- Connect Symbols and Words
- Reason Abstractly
- Reason Abstractly and Quantitatively
- Reason Quantitatively
**COMMON CORE**

**Mathematical Practice 3**

*Construct viable arguments and critique the reasoning of others.*

Children use stated assumptions, definitions, and previously established results in constructing arguments. They are able to analyze situations and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others.

Children are also able to distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Children can listen to the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Math Talk is a conversation tool by which children formulate ideas, analyze responses, and engage in discourse. See also MP.6 Attend to Precision.

### TEACHER EDITION: Examples from Unit 3

#### What’s the Error? **MATH TALK**

**MP.3, MP.6 Construct Viable Arguments/Critique Reasoning of Others**

Puzzled Penguin

Explain that Puzzled Penguin was asked to solve several addition and subtraction equations. Write the following equations on the board:

\[
\begin{align*}
6 + 2 &= 4 \\
5 + 4 &= 9 \\
5 - 2 &= 3 \\
7 - 1 &= 8
\end{align*}
\]

- Puzzled Penguin is not sure that all the equations were solved correctly. We’ll help Puzzled Penguin find any mistakes.
- Let’s look at the first equation. Raise your hand if you know whether the equation is solved correctly or not.

#### Are there more triangles or more shapes with 4 sides? more shapes with 4 sides

**MP.3 Construct a Viable Argument**

**Justify Conclusions**

Ask children to put the shapes side by side to check that more of them are 4-sided.

**Mathematical Practice 3** is integrated into Unit 3 in the following ways:

- **Compare Methods**
- **Compare Representations**
- **Construct a Viable Argument**
- **Justify Conclusions**
- **Puzzled Penguin**
**Mathematical Practice 4**
Model with mathematics.

Children are prepared to use the mathematics they know to solve problems that arise in everyday life. This might be as basic as writing an expression or equation. They become comfortable applying what they’ve learned to new situations and different types of problems.

Children may first use manipulatives or draw pictures to help them conceptualize and organize the quantities in a problem, before presenting the problem in mathematical terms. They are able to identify important values in a practical situation and represent their relationships using such tools as sketches, tables, and computations.

**Teacher Edition: Examples from Unit 3**

**MP.4 Model with Mathematics** Show an Expression  You may want to start with several of these story problems. Children first model the problem with Square-Inch Tiles or centimeter cubes. Then they show the expression with Number Tiles and +/-Tiles, and you make a circle drawing and write the equation on the board. The class should say each equation together.

- 7 girls are playing tag. 2 boys join them. How many children are playing tag now? Children should show 7 + 2. You make a circle drawing and write 7 + 2 = 9.
- A boy puts 2 game cards to his left. He puts 5 game cards to his right. How many game cards are there altogether? Children should show 2 + 5. You make a circle drawing and write 2 + 5 = 7.
- 9 joggers are running in the park. 3 joggers stop to rest. How many joggers are still running? Children should show 9 − 3. You make a circle drawing and write 9 − 3 = 6.

**Mathematical Practice 4** is integrated into Unit 3 in the following ways:

- Model with Mathematics
- Show an Expression
**Common Core**

**Mathematical Practice 5**

Use appropriate tools strategically.

Children consider the available tools and models when solving mathematical problems. Children make sound decisions about when each of these tools might be helpful. These tools might include paper and pencil for drawings and computation, manipulatives, or even their fingers. They recognize both the insight to be gained from using the tool and the tool’s limitations. When making mathematical models, children are able to identify quantities in a practical situation and represent their relationships appropriately.

Modeling numbers in problems and in computations is a central focus in *Math Expressions* lessons. Children learn and develop models to solve numerical problems and to model problem situations. Children continually use both kinds of modeling throughout the program.

**TEACHER EDITION: Examples from Unit 3**

**MP.5 Use Appropriate Tools** Use a **Concrete Model** Point out to children that they do not have a 10-Counter Strip to use in place of the group of 10. Ask them what else they can use to show a group of 10.

- What do we have to make a fast ten? two 5-Square Tiles

Instruct children to show 16 again, putting the two 5-Square Tiles on the left instead of the group of 10 separate tiles. Then ask them to put the Number Tiles in place.

**Lesson 13** **Activity 2**

**MP.5 Use Appropriate Tools** Use a **Concrete Model** Assign children various teen numbers. Children will use their 10-group and loose items to show those numbers.

Ask children to glue the group of 10 and the correct number of additional items onto construction paper to show their assigned number. When the compositions are dry, label them (for example, $14 = 10 + 4$) and hang them in the classroom, so that children can relate the written numbers to the groups of items.

**Lesson 20** **Activity 1**

Mathematical Practice 5 is integrated into Unit 3 in the following ways:

Use Appropriate Tools
Use a Concrete Model
Model the Math
Mathematical Practice 6
Attend to precision.

Children try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose. When restating story problems, they are careful about specifying units to clarify the correspondence with quantities in the problem. They calculate accurately and efficiently, and express numerical answers with a degree of precision appropriate for the problem context. Children give carefully formulated explanations to each other.

TEACHER EDITION: Examples from Unit 3

What’s the Error? SMALL GROUPS

MP.3, MP.6 Construct Viable Arguments/Critique Reasoning of Others
Puzzled Penguin For Exercise 4, explain that Puzzled Penguin counted the number of circles in each box and wrote the number. Puzzled Penguin thinks they are all correct. Ask children to find the number of circles in each box. Request that children talk with the others in their group to decide if any of the numbers are wrong. If a number is incorrect, they should draw an X over it and write the correct number. Children should determine that 9 should be 8 and 8 should be 9.

Mathematical Practice 6 is integrated into Unit 3 in the following ways:
Attend to Precision
Describe
Describe a Method

Mathematical Practice 6

Let’s look some more at 5-groups. Why are they useful when we’re counting?

Charlie: When I look at a group of objects, it’s easier to see how many there are if they’re arranged in some way.
Penny: Yes, if I can see 5 at once, it makes counting much faster.
Rosa: I can show that by drawing 3 groups with the same number of circles.

Rosa: All 3 groups have 9 circles, but it’s easy to see that there are 9 in the last group.
Penny: Yes! In the last group, I can start with 5 and count on from there. In the first group, the circles are not in any order at all. I have to count every one.

MP.6 Attend to Precision
What about the middle group of circles?

Charlie: Even though the circles in the middle group are arranged in a big circle, it’s not easy to see that there are 9. I still have to count every one.
Common Core
Mathematical Practice 7
Look for structure.

Children analyze problems to discern the structure. They draw conclusions about the structure or the relationships they have identified.

Teacher Edition: Examples from Unit 3

The Ten Bug flies to someone else and counts to 18. Then it flies to the third child and counts to 19. It asks children for help.

- Does anyone have a better way to count so I can see how many counters there are?

Ask for Ideas Allow children to share and discuss ideas for counting the counters. Help children to see that they have 10 fingers and can put the counters into groups of 10.

MP.7 Look for Structure Explain that the Ten Bug loves seeing 10s, so it likes the idea of using the special number 10 to organize the counters. The Ten Bug is sure this idea will help.

- Oh, what a great idea! Ten is a special number. It will help us count teen numbers much faster.

Children may also suggest using 5-groups like those on the Ten Bug. If they have not noticed this, point it out.

- We can also organize 10 counters using 5-groups.

Mathematical Practice 7 is integrated into Unit 3 in the following ways:

Look for Structure
Identify Relationships
**COMMON CORE**

**Mathematical Practice 8**

Look for and express regularity in repeated reasoning.

Children use repeated reasoning as they analyze patterns, relationships, and calculations to generalize methods, rules, and shortcuts. As they work to solve a problem, children maintain oversight of the process while attending to the details. They continually evaluate the reasonableness of their intermediate results.

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### TEACHER EDITION: Examples from Unit 3

**MP.8 Use Repeated Reasoning**  On Student Activity Book page 100, children add and subtract within 5 to gain fluency. Tell children they may use fingers or drawings if necessary. Point out similarities of facts within some rows. For example, in the first row of addition, 0 is one of the partners in each problem. Ask children to recall that when 0 is added to a number, the total is the same as that number. It does not matter if 0 is the first partner or the second partner.

**MP.8 Use Repeated Reasoning**  Add the new pages to the Teen Display pages already hanging in the classroom. Let children practice the Finger Freeze (for example, 16 is 10 and 6) as you point to numbers in the display. You can use the Giant Number Cards to further reinforce the ten that is part of the teen number. Show $16 = 10 + 6$, and so on.

- Let’s do the Finger Freeze for 16. 16 is 10 and 6

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### STUDENT EDITION: LESSON 21 PAGES 143–144

**FOCUS on Mathematical Practices**

Unit 3 includes a special lesson that involves solving real-world problems and incorporates all 8 Mathematical Practices. In this lesson, children use what they know about geometric shapes to identify and count different shapes in a picture. They also sort a group of shapes in different ways, according to specified attributes. Finally, children review positional words, describing the position of one shape in relation to another.
Getting Ready to Teach Unit 3

Learning Path in the Common Core Standards
In this unit, children begin the study of the teen numbers and their structure as ten ones and more ones. They continue to represent the numbers 6–10 as a 5-group and some ones, and they find all the partners for the numbers 2 through 7. Children tell and retell stories about a park scene and make up and solve story problems about the scene. In geometry, they put shapes together to make new shapes. They also sort shapes by a given attribute.

Help Students Avoid Common Errors
Math Expressions gives children opportunities to analyze and correct errors, explaining why the reasoning was flawed.

In this unit, we use Puzzled Penguin to show typical errors that children make. Children enjoy teaching Puzzled Penguin the correct way, telling why this way is correct, and explaining why the error is wrong. The common errors are presented as requests for help from Puzzled Penguin to the children:

- **Lesson 1**: counting 4 and 3 out of order
- **Lesson 4**: misreading operations signs and adding instead of subtracting and subtracting instead of adding
- **Lesson 11**: counting the totals for 8 and 9 incorrectly and counting 8 fingers when only 6 fingers are shown
- **Lesson 13**: putting only 4 objects as 5-groups to show the numbers 6–10
- **Lesson 19**: incorrectly writing the number of objects after correctly drawing the objects

In addition to Puzzled Penguin, other suggestions are listed in the Teacher Edition to help you watch for situations that may lead to common errors. As a part of the Unit Test Teacher Edition pages, you will find a common error and prescription listed for each test item.
**Story Problems**

**Create Story Problems** Children make up stories about a park scene. After telling a story, children retell the story to help them understand the situation. To create problems, they ask “What if” questions about the story situation.

**Five Steps to Problem Solving** The steps are cumulative to help reinforce an orderly approach to solving problems, so encourage children to work through all the steps for each problem.

**Build language through retelling story problems.** Ask a child to retell, in his or her own words, another child’s story problem. Other children listen and determine if the situation is the same as in the original story. The retelling of each story facilitates language comprehension and vocabulary development.

**Use objects to solve story problems.** Children use Square-Inch Tiles or centimeter cubes to solve problems by modeling the situation and acting out the problem.

**Show the operation with Number Tiles and +/– Tiles.** To show the operation needed to solve the problem (for example, 7 + 1 or 9 – 4), children use their Number Tiles and +/– Tiles. The expression they generate is actually the operational part of the solution equation. Because equations may be difficult for kindergarten children to write, they use Number Tiles to represent the operation.

**Share solutions.** Have one or two children share how they solved the story problem using objects.

**Record the situation and equation.** At the end, summarize for the children by using circles to make a math drawing and then writing an equation.

Draw the circles with 5-groups. To show subtraction, cross out circles beginning with the first circle. (This will help later when children count on to subtract.) Using a horizontal line to cross out helps children connect the drawing and the minus sign in the equation.

<table>
<thead>
<tr>
<th>Math Drawing</th>
<th>Equation</th>
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<tbody>
<tr>
<td>○ ○ ○ ○ ○</td>
<td>7 + 1 = 8</td>
</tr>
<tr>
<td>○ ○ ○</td>
<td>9 – 4 = 5</td>
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</tbody>
</table>

The class should say the equations aloud together using the math words *plus* or *minus* and *equals*.
Quick Practice Routines

In this unit, new Quick Practice routines are introduced in Lesson 3. As in previous units, turn over directing the tasks to Student Leaders as soon as the children are familiar with the routines.

New Routines The Quick Practice routines introduced in Lesson 3 reinforce the ten ones and more ones structure of the teen numbers, build subitizing skills with 5-groups and ones for 6–10, and show the recursive nature of the numbers beyond 20. The first two routines use the Giant Number Cards and the last one uses the 120 Poster.

10 and 1 Make 11... Children flash 10 fingers to the left and then show the number of ones in a teen number to the right. This helps reinforce how teen numbers are written and shows the underlying structure of a teen number as ten ones and some more ones.

Fast Fingers for 6–10 For Fast Fingers, children show all the fingers for a number at once. They do not show a 5 and then add on as many as needed to show the number.

To keep children alert, mix in some numbers less than 6, so that they do not automatically show 5 with their left hands for each number.

Count by Ones from 20 Through 60 As children count by ones the numbers that are pointed out on the 120 Poster, they flash an appropriate number of tens for each decade number. Then children count by tens, again flashing fingers for the number of tens in each number they say.

Kindergarten Students act out adding and subtracting situations by representing quantities in the situation with objects, their fingers, and math drawings. To do this, students must mathematize a real world situation (MP.4), focusing on the quantities and their relationships rather than non-mathematical aspects of the situation. Situations can be acted out and/or presented with pictures or words. Math drawings facilitate reflection and discussion because they remain after the problem is solved. These concrete methods that show all of the objects are called Level 1 methods.
Teen Numbers as Ten Ones and More Ones

Ten Bug  Use this new character daily to help children see tens in their world. The Ten Bug cutout is at the end of Lesson 2 in this unit. Glue the Ten Bug onto cardboard or construction paper. If you would like it to be as sturdy as possible, laminate it as well. Then cut it out and attach a stick or a ruler to the back. Now you have created a puppet that you can manipulate to fly around the classroom looking for groups of ten or for two groups of five.

Groups of Ten Ones  A main focus of this unit is for children to see teen numbers as ten ones and more ones. Children count a teen number of objects, then group 10 objects as a 10-group and see how many more ones are in the number.

Math Expressions uses a 10-Counter Strip as a manipulative to represent 10 ones or 10. The 10-Counter Strip shows a group of 10 counters with a small gap, so that it also represents two 5-groups. The 10-Counter Strip shows 10 counters but also looks like a 1, so it supports teen numbers written in standard form, such as 12.

The Number Tiles and the + Tile are also useful to help children see the structure of teen numbers as 10 ones and some more ones. When they make 12 by placing a 2 tile over the 0 on the 10 tile, they see that 12 is 10 ones + 2 more ones. To help children visualize the 10 as 10 ones, have them turn the 10 tile over to see the dot side.

from THE PROGRESSIONS FOR THE COMMON CORE STATE STANDARDS ON OPERATIONS AND ALGEBRAIC THINKING

Work with numbers from 11 to 19 to gain foundations for place value  The numerals 11, 12, 13, ..., 19 need special attention for children to understand them. The first nine numerals 1, 2, 3, ..., 9 and 0 are essentially arbitrary marks. These same marks are used again to represent larger numbers. Children need to learn the differences in the ways these marks are used. For example, initially, a numeral such as 16 looks like “one, six,” not “1 ten and 6 ones.” Layered place value cards can help children see the 0 “hiding” under the ones place and that the 1 in the tens place really is 10 (ten ones). By working with teen numbers in this way in Kindergarten, students gain a foundation for viewing 10 ones as a new unit called a ten in Grade 1.
**Match Partners and Totals** Rather than immediately writing equations to show matching partners and totals, children use Teen Total Cards in an activity where they match the partners of a teen number with the teen number total. The Teen Total Cards are cutouts in the Student Activity Book, and extras can be made using a blackline master from the Teacher’s Resource Book.

Children first sort the cards into partner cards and total cards. They then work in pairs to match each partner card with a total card. Encourage them to discuss quietly how they match the cards and what strategies they use. Each pair may order the cards in any way that makes sense. Two ways children may use are shown below.

```
10 + 1 = 11
10 + 2 = 12
10 + 3 = 13
10 + 4 = 14
10 + 5 = 15
10 + 6 = 16
10 + 7 = 17
10 + 8 = 18
10 + 9 = 19
```

**Teen Display** For a classroom display, children make pages with an equation and a model for a teen number. For each page, you write the equation and then the child uses stickers or simple drawings to represent the equation. Children may group the ten as 1 ten-group or as 2 five-groups. Post the pages to make a Teen Display. You may want to first pass them around so that children can practice using Finger Freezes to show each number. When pointing out numbers for various counting activities, use the Teen Display.

```
14 = 10 + 4
```

*from THE PROGRESSIONS FOR THE COMMON CORE STATE STANDARDS ON OPERATIONS AND ALGEBRAIC THINKING*

**Work with numbers from 11 to 19 to gain foundations for place value** Students use objects, math drawings, and equations to describe, explore, and explain how the “teen numbers,” the counting numbers from 11 through 19, are ten ones and some more ones. Students can count out a given teen number of objects, e.g., 12, and group the objects to see the ten ones and the two ones. It is also helpful to structure the ten ones into patterns that can be seen as ten objects, such as two fives.
Partners of Numbers

Finding partners of numbers prepares children to represent addition and subtraction situations with expressions and equations.

Counting Mat In Unit 3, children use a new manipulative, the Break-Apart Stick, to find all the partners of the numbers 2–7. After showing a number with Square-Inch Tiles or centimeter cubes, children use the Break-Apart Stick to find a pair of partners for that number. The Break-Apart Stick visually separates the partners and helps children remember which partners they made. After children use Number Tiles to show the expression for the partners, you write the equation for the total and the partners.

Children show:

\[
\begin{array}{c}
6 \\
\vert \\
1 \quad 5
\end{array}
\quad \begin{array}{c}
6 \\
\vert \\
4 \quad 2
\end{array}
\]

You write:

\[
6 = 1 + 5 \\
6 = 4 + 2
\]

When writing a partners equation, write the total to the left of the equal sign and the partners to the right, showing that the starting number is decomposed into two partners.

Children also demonstrate understanding of partners by completing expressions for drawings of partners.

\[
\begin{array}{c}
\text{5} \\
\vert \\
1 \quad 4
\end{array}
\quad \begin{array}{c}
\text{6} \\
\vert \\
2 \quad 4
\end{array}
\quad \begin{array}{c}
\text{7} \\
\vert \\
3 \quad 4
\end{array}
\]

The term total is used instead of sum. The word sum can be confusing because of its homophone some. Since some means “a number of,” “a few,” or “several” but not “all,” young children may not easily associate the word sum with “total” or “all.” For this reason, Math Expressions uses the term total in Grades K–2.
Reinforce Subitizing with 5-Groups

Drawing Models Children use circles as models for ones to draw representations of the numbers through 10. As they make their drawings of the numbers 6–10, emphasize the importance of drawing the first five ones as a 5-group. Help children see that making a 5-group gives them a starting place for counting and modeling the numbers from 6–10.

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Make New Shapes

Among the Geometry skills in the Kindergarten Common Core State Standards are composing simple shapes to form larger shapes, correctly naming shapes, and describing relative positions of objects. The lessons in this unit focus on these skills that help children describe their physical world.

From THE PROGRESSIONS FOR THE COMMON CORE STATE STANDARDS ON COUNTING AND CARDINALITY

From subitizing to single-digit arithmetic fluency Perceptual subitizing develops into conceptual subitizing—recognizing that a collection of objects is composed of two subcollections and quickly combining their cardinalities to find the cardinality of the collection (e.g., seeing a set as two subsets of cardinality 2 and saying “four”).
Students in Kindergarten classify objects into categories, initially specified by the teacher and perhaps eventually elicited from students. For example, ... the teacher might ask students in the class to sort pictures of various organisms into two piles: organisms with wings and those without wings. Students can then count the number of specimens in each pile. Students can use these category counts and their understanding of cardinality to say whether there are more specimens with wings or without wings.

As part of developing understanding of addition and subtraction, the Common Core State Standards ask that kindergarten children fluently add and subtract within 5. One way for children to achieve this goal is persistent practice. In many lessons, a full or half page of exercises provides this continual practice that will enable children to become fluent with addition and subtraction within 5 by the end of kindergarten. A Path to Fluency icon marks these exercise sets in the Student Activity Book, thus ensuring that parents will also be aware of this important kindergarten goal.