TIPS FOR FAMILIES

KEY CONCEPT OVERVIEW

During the next week, our math class will learn how to add vertically, with a focus on building lasting place value understanding. Grade 2 students are not expected to solve solely by using the **algorithm**. They will first learn how to model and record the steps of the **vertical form** by using **place value disks** on a place value chart. Then students will move on to drawings of place value disks and, later, the **chip model** to show place value concepts at work.

You can expect to see homework that asks your child to do the following:

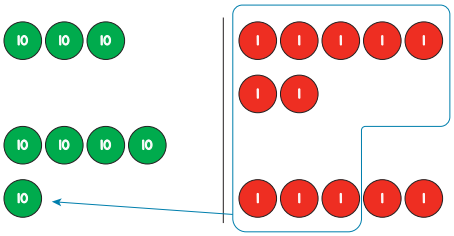
- Use a place value chart and place value disks to model and solve addition problems.
- Create simple place value disk and chip model drawings to solve addition problems in vertical form.
- Use place value understanding to solve word problems.

SAMPLE PROBLEM *(From Lesson 8)*

Solve vertically. Draw and **bundle** place value disks on the place value chart.

37 + 45 = **82**

$$\begin{array}{r} 37 \\ +\ 45 \\ \hline 82 \end{array}$$



HOW YOU CAN HELP AT HOME

- Give your child a plastic bag to store the place value disks she will bring home after completing Lesson 6. Your child will need these disks for future lessons. You might also provide pennies, dimes, and dollar coins to represent ones, tens, and hundreds. You can use groups, or bundles, of straws or toothpicks for concrete visual support for homework in this topic, such as modeling word problems.
- Encourage your child to explain what she is doing when solving problems to reinforce place value language. For example, ask, "How did you know you needed (or didn't need) to bundle in the ones place?" "I knew I needed to bundle in the ones place because 7 ones plus 5 ones equals 12 ones. That's 1 ten 2 ones."
- At a separate time away from homework, practice sequences of math problems that use the same pattern, starting with a problem your child can easily solve. For example, you might use the sequence 9 + 3, 19 + 3, 29 + 3. Encourage your child to tell you what he noticed about the sequence of problems: "How did knowing 9 + 3 help with later problems?"

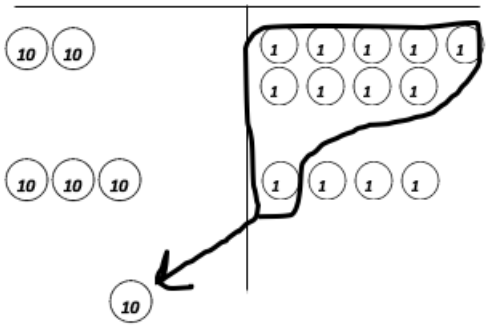
TERMS

Algorithm: A step-by-step procedure used to solve a particular type of problem, usually recorded in vertical form. (See below.) In Grade 2, students may use the standard algorithm to solve two- and three-digit addition and subtraction problems.

$$\begin{array}{r} 67 \\ -41 \\ \hline 26 \end{array}$$

Bundle/Unbundle: To exchange smaller place value units for a larger place value unit (bundle) or a larger place value unit for smaller place value units (unbundle) when adding or subtracting. For example, you might exchange 10 ones for 1 ten or 1 ten for 10 ones.

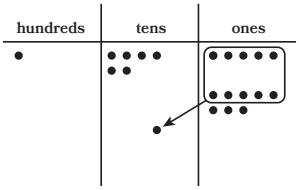
$$\begin{array}{r} 29 \\ +\ 34 \\ \hline 63 \end{array}$$



Vertical form: A way of adding and subtracting by lining up place value units vertically. (See Algorithm above.)

MODELS

Chip Model: Drawings of dots in 5-groups that represent numbers on a place value chart. For example, the chip model at the right represents 145 + 28.



Place Value Disks: Circles, or disks, that have a value of 1, 10, or 100. (In later grades, disks may have a larger or smaller value, such as 1,000 or 0.1.)