

# Grade 1, Unit Two: From Land to Sea

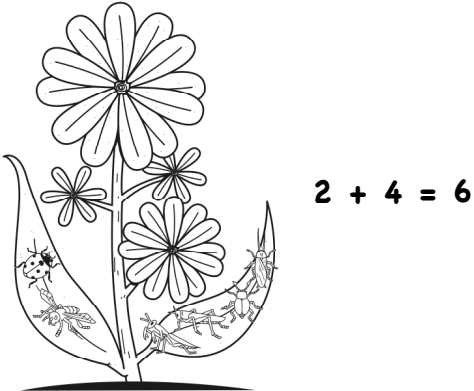

## Understanding Addition & Subtraction

In this unit your child will:

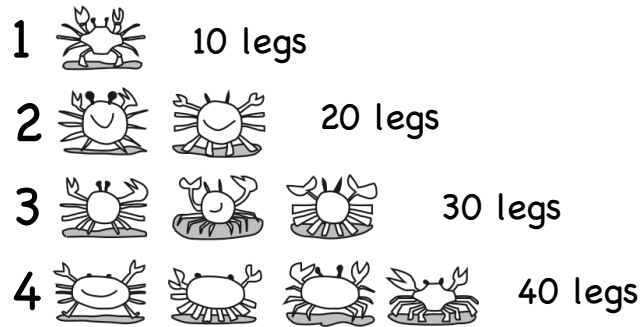
- solve addition and subtraction problems using objects, drawings, and numbers
- find the value of mixed collections of pennies, nickels, and dimes
- describe, extend, and make generalizations about number and shape patterns



Your child will learn and practice these skills by solving problems like those shown below. Keep this sheet for reference when you're helping with homework.

Problem	Comments
<p>Write and solve an equation to show how many bugs are on the leaves altogether.</p>  <p style="text-align: center;"><math>2 + 4 = 6</math></p>	<p>While students can certainly count the bugs on both leaves one by one, asking them to write an addition equation encourages them to think about adding 2 and 4 to arrive at a total of 6. Writing the equation also helps students move from concrete (pictures, plastic bugs) to abstract ways of thinking about and representing their mathematical problem solving.</p>
<p>Use bugs to show and solve this subtraction problem.</p> <p style="text-align: center;"><math>5 - 2 = 3</math></p>  <p><i>"Five bugs altogether. Two went in the house. Three are left outside."</i></p>	<p>In this example, students begin with the equation (abstract) and use bugs to act out (concrete) a situation that corresponds to that equation. In this case, the student thought about subtraction as a process of taking away, specifically taking 2 bugs away from 5. In modeling the situation, the student can see that 3 bugs remain outside. The equation <math>5 - 2 = 3</math> represents this problem and its solution symbolically.</p>

What patterns do you see in the rows of crabs?



How many legs would 5 crabs have altogether?

$$40 + 10 = 50$$

Students work together as a class to create a chart with 6 rows of crabs. The first 4 rows are shown at left. Based on the fact that each crab has 10 legs, students find the total number of legs in each row and find patterns on the chart. In this example, students use the pattern of adding 10 legs with each new row to determine that 5 crabs would have 50 legs altogether.

## Frequently Asked Questions about Unit Two

**Q: Why are students solving story problems? Wouldn't it be simpler to have them solve addition and subtraction problems with numbers on a worksheet?**

**A:** It might appear more straightforward to have students complete collections of simple addition and subtraction problems with numbers alone. However, first graders are still developing a sense of number, as well as an understanding of what it means to add and subtract. The reality is that problems presented with numbers and symbols alone are too abstract for most first graders early in the year. However, students who may not be able to solve problems expressed numerically may be perfectly capable of interpreting and solving those same problems when they are embedded in a context and a story.

For this reason, students act out and tell stories about addition and subtraction problems in this unit. This provides the context many young students need to solve the problems. It also helps students begin to understand addition as a process of combining or adding to, and subtraction as a process of taking away or finding the difference. As you may have noticed in the examples on this sheet, students are encouraged again and again to draw connections between these stories and equations that represent them. As they make these connections, students are better able to work symbolically; later in the year or in second grade, they will become more comfortable working with numbers alone.