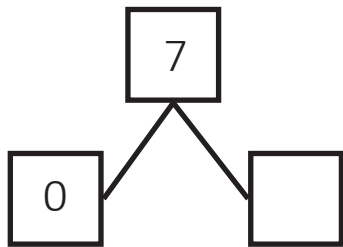In the last lesson you used number bonds to show all the ways you can connect numbers to make the addition family trees for FOUR, FIVE, and SIX.
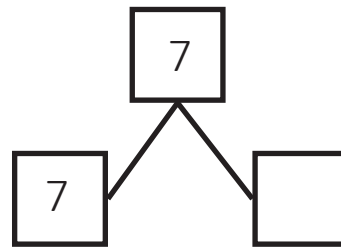
In this lesson you will use number bonds to show the addition family trees for SEVEN, EIGHT, NINE and TEN.

There are 8 possible number bonds that show the connections for the number SEVEN. See if you can solve the puzzle of the family trees of SEVEN.
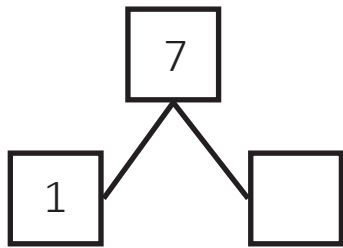
(1)

```
      7
     / \
   0     □
```

(2)

```
      7
     / \
   7     □
```

(3)

```
      7
     / \
   1     □
```

(4)

```
      7
     / \
   6     □
```

(5)

```
      7
     / \
   2     □
```

(6)

```
      7
     / \
   5     □
```

(7)

```
      7
     / \
   3     □
```

(8)

```
      7
     / \
   4     □
```

Let's stop to look at the family trees you just made. The easiest way to make sure you find all the trees in the number family is to start with the number itself. What number added to a given number always gives you that same number?

Yes, zero. It helps to do the "opposite" fact next, with the order of the numbers changed. In this case, 0 and 7 are 7.

Do you remember that when we add two numbers together it does not matter what order they are in? You can think of these pairs as the "opposite" of the other. We will make the family trees for SIX as an example.

<div align="center">0 and 6 are 6      6 and 0 are 6</div>

If you go through the family trees using the pairs, it will help you keep track of what trees you have found so far. After doing the "zero pair," use the next counting number (one).

<div align="center">1 and 5 are 6      5 and 1 are 6</div>

You can keep using the next counting number until you use double numbers or you start repeating the opposites that you already made. Here's a list of the family trees for six. Can you see how the opposites have already been done when you work with the pairs?

**0** and **6** are 6    **6** and **0** are 6        **1** and **5** are 6    **5** and **1** are 6

**2** and **4** are 6    **4** and **2** are 6        **3** and **3** are 6    (already used)

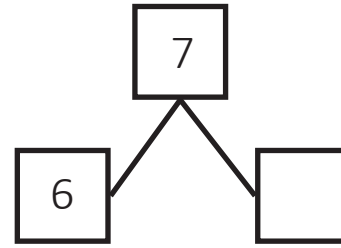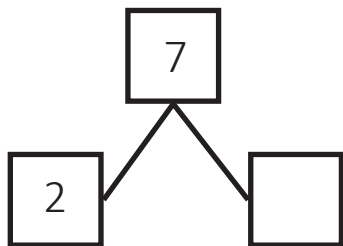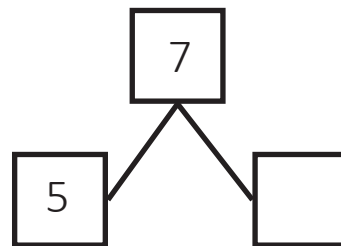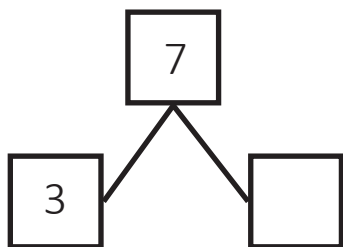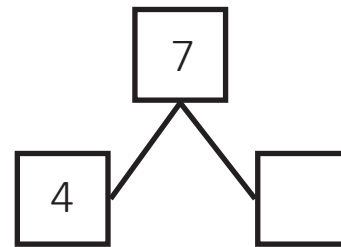There are 9 possible number bonds that show the connections for the number EIGHT. See if you can solve the puzzle of the family trees of EIGHT by filling in the number bonds yourself on the worksheets you teacher gives you.

There are 10 possible number bonds that show the connections for the number NINE. See if you can solve the puzzle of the family trees of NINE by filling in the number bonds yourself on the worksheets.

There are 11 possible number bonds that show the connections for the number TEN. See if you can solve the puzzle of the family trees of TEN by filling in the number bonds yourself on the worksheets.

Do you remember when you first learned how to dress yourself or tie your shoes that it seemed hard at first, but the more you did it, the easier it became? That's because you practiced doing it every day. Before long, you didn't even have to think about how to do it—you just did it.

That's what you need to do with the addition facts. You need to practice them enough so that the answers come quickly. This will make learning others skills in math much easier, too.

See how many of these addition facts you can answer quickly. Your teacher will read them aloud. When you answer, repeat the question and then give the answer aloud.

> Question: How many are 2 and 4?
> **Answer: 2 and 4 are 6.**

(1) How many are 3 and 5?          (2) How many are 4 and 7?

(3) How many are 6 and 4?          (4) How many are 3 and 8?

(5) How many are 2 and 9?          (6) How many are 8 and 2?

(7) How many are 1 and 10?         (8) How many are 7 and 2?

(9) How many are 3 and 3?          (10) How many are 4 and 4?

(11) How many are 5 and 4?         (12) How many are 6 and 5?

(13) How many are 2 and 5?         (14) How many are 3 and 10?

(15) How many are 10 and 4?        (16) How many are 3 and 9?

(17) How many are 6 and 7?         (18) How many are 7 and 5?

(19) How many are 4 and 8?         (20) How many are 5 and 9?

Today you will practice more addition facts. See how many of these addition facts you can answer quickly. Your teacher will read them aloud. When you answer, repeat the question and then give the answer aloud.

> Question: How many are 2 and 4?
> **Answer: 2 and 4 are 6.**

(1) How many are 10 and 6?

(2) How many are 9 and 7?

(3) How many are 7 and 7?

(4) How many are 6 and 6?

(5) How many are 8 and 6?

(6) How many are 10 and 7?

(7) How many are 2 and 6?

(8) How many are 6 and 9?

(9) How many are 9 and 4?

(10) How many are 10 and 9?

(11) How many are 10 and 8?

(12) How many are 5 and 8?

(13) How many are 8 and 7?

(14) How many are 2 and 2?

(15) How many are 5 and 5?

(16) How many are 7 and 3?

(17) How many are 8 and 8?

(18) How many are 9 and 9?

(19) How many are 4 and 3?

(20) How many are 2 and 3?

Today you are going on a safari. A safari is a special kind of trip. Usually on a safari you are looking for animals. Instead of looking for animals, you will look for numbers. So far you have been adding two numbers together to get a new number. You have been looking at two numbers to find the answer they make when you put them together.

**Any time you add, you are always putting numbers together.** Any time you add, you are adding two numbers. That is why we have spent so much time making sure you understand how to add and why it works. A good safari guide never goes out without making sure he has everything he needs. A good safari guide has the right tools. In your case, your tools are the addition facts you have learned.

Once you know HOW to add, you can look for several numbers together. But to do so, you always have to add two numbers together first, get the answer, and then add the next number to that new number to get the final answer.

Are you ready to go? You will need to look for the answer to three numbers added together. Let's use the pictures of the counters to show how to find the numbers.
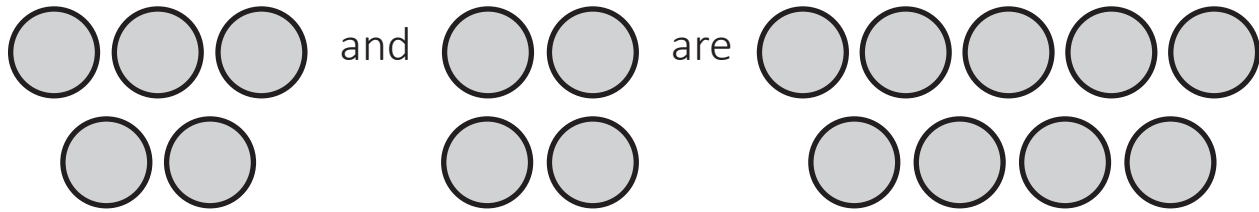
**How many are 3 and 2 and 4?** Can you add these numbers all at once?

No, there are more than two numbers, which means you have to do it in steps.

**Step 1:**  The first step is adding the first two numbers. Add 3 and 2. You can use counters if you need to do so.  3 and 2 are 5.

◯◯◯ and ◯◯ are ◯◯◯◯◯

**Step 2:** Now take that answer and add it to the third number in the question. Add 5 and 4.

◯◯◯  and  ◯◯  are  ◯◯◯◯◯
◯◯        ◯◯          ◯◯◯

➤ Can you see that 5 and 4 are **9**?

➤ Can you see that 3 and 2 and 4 are **9**?

Let's try another question. This time you will use the cards your teacher gives you to help you search for the answer. Here's the question: How many are 1 and 3 and 6? You have three cards; each card has one of these numbers on it.

A good safari guide knows the area he is searching in. A good safari guide knows that when we add, we can put the numbers in any order. So pick any two of the three cards. Add those two numbers together. Then add the number on the third card to that answer. What number did you get?

Was it **10**? Let's map out the different paths we can take on this safari.

● If you pick the cards with the 1 and the 3, adding those two numbers together gives you 4 (1 and 3 are **4**). Adding the number on the third card, the number 6, to this answer gives you 10 (**4** and 6 are 10). So 1 and 3 and 6 are **10**.

What happens if you take a different path?

● What if you pick the cards with the 3 and the 6 first? 3 and 6 are 9. Now add the number on the third card to this answer. 9 and 1 are 10. So 3 and 6 and 1 are **10**.

Can you say right now what will happen if you take still another path?

● What if you pick the cards with the 1 and the 6 first? Tell how you would search for the answer. Did you get the same answer that you found on the first two paths?

➢ Did you see that no matter which path you took with these numbers, you got the same answer? No matter what order you choose to add the numbers, you get the same answer.

➢ Can you see that you can choose any two numbers to add, and then add the third number to that new number to get the final answer?

To make sure you know how to make your way through this safari of adding several numbers, let's use the counters to check your work.

Put the three cards down in front of you, numbered side up. Now put counters below each card that show that number. It should look something like this.

| 1 | 3 | 6 |

◯  ◯◯◯  ◯◯◯◯◯◯
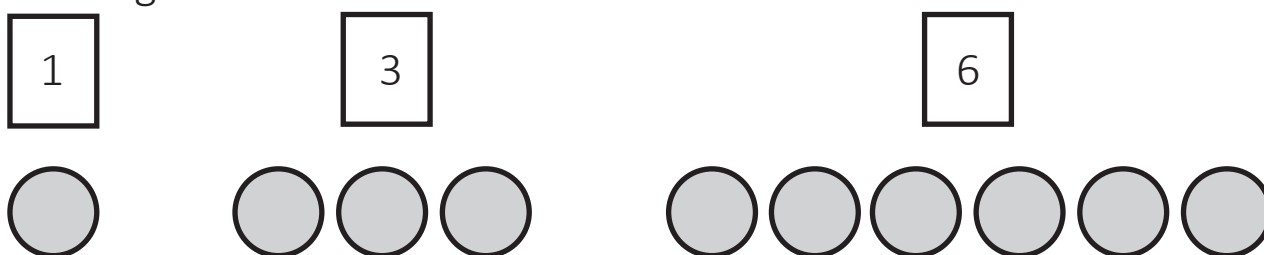
Now count the first two groups of counters on the left. 1 and 3 are 4. Now add the last group of counters to that number. 4 and 6 are 10.

Now try the other path you took. Add the last two groups of counters on the right. 3 and 6 are 9. Add the first group to that answer. 9 and 1 are 10.

Next, add the first group and the last group of counters. 1 and 6 are 7. Now add the middle group to that number. 7 and 3 are 10.

Now it's time to mix it all up. Yes, mix up all the counters together in one bunch, like one herd of animals. Count the animals — I mean counters! — one by one. How many counters are there? Did you get the same answer that you got when you followed the different paths above?

No matter what path you take on any addition safari of several numbers, you will hunt down the same answer. No matter what two numbers you add together first, when you add the third number to that answer, you will get the same final answer. The order does not matter when **adding**.

Now it's time for you to go on safari by yourself. Can you search for the answers to these questions? Be sure to go armed with your addition facts.

## ✏️ Practice

(1) How many are 2 and 2 and 2?    (2) How many are 4 and 4 and 4?

(3) How many are 6 and 4 and 6?    (4) How many are 2 and 6 and 1?

(5) How many are 3 and 5 and 2?    (6) How many are 2 and 6 and 8?