Disc●ver!
Math

1

Related Subtraction Facts

Lesson Objectives

By the end of this lesson, your student will be able to:

- demonstrate an understanding of related subtraction facts
- identify related subtraction facts
- identify fact families up to 10

Supporting Your Student

The pages in this section contain two types of text. The standard text describes tips for implementing the lesson with your student. It is not intended to be read aloud. The italicized text is intended to be read aloud to your student as you complete the lesson together.

In The Real World
Gotcha Days can be filled with fun family traditions to celebrate a person or a pet who has joined your family. The traditions can include eating special foods, going to special places, or taking photos. What traditions would you want to incorporate?

Explore
You are still helping at the pet adoption event. It is so rewarding to see pets go home with a forever family! You have had lots of opportunities to use your subtraction skills while getting the event set up. Now that the dogs have been walked, the cats have been brushed, and all the animals have been fed and given water, it is time to open up the gates and let everyone in!

Take a Closer Look
There are lots of good reasons to have a pet. Not only are you giving a deserving animal a loving home, but they can also help you in return! Pets can help you feel less stressed, they can encourage you to get outside in the fresh air, and they can be a best friend to play with every day.

Read *(Adoption Application)*
To adopt a pet, new owners have to fill out an application. The animal shelter reads the application to make sure the new pets and owners will be happy and healthy together. There were ten applications on the table at the front of the adoption fair, but now there are four being filled out. How many applications are left?

Here is one way to write the subtraction sentence for this problem:

$10 - 4 = 6$

This means that there were ten applications, four of them were filled out, and six are left.

Here is another way to write this subtraction sentence:
$10 - 6 = 4$

Remind your student that they already know about related addition facts. This is similar, but ensure they understand that there are differences. The ten cannot be moved because students cannot take six from four or ten from six or four. The first number in a subtraction sentence will always stay the same.

*$10 - 4 = 6$ and $10 - 6 = 4$ are **related subtraction facts** because they are subtraction sentences that use the same three numbers.*

Practice *(Related Subtraction Facts)*
Three more people take applications. There were ten at the beginning, and now seven have been taken. Fill in the blanks of the related subtraction sentences to show two ways to solve this.

If your student is struggling, have them draw ten circles and cross out seven to show that three are left. They can also draw ten circles and cross out three to show that seven are left. This can also be done using counters or other manipulatives.

Write
What changed between the related subtraction facts? What stayed the same?

If your student is struggling to understand why the ten cannot move, demonstrate with counters or cubes. Show them how it is not possible to take ten cubes away from four or six cubes.

Read *(Dog Treats)*
There is a jar of dog treats on the front table for people to give the dogs as they play with them. There are ten treats in the jar. A little girl comes up and gets eight treats out of the jar. Now, there are only two treats left. The subtraction sentence that matches this story looks like this: $10 - 8 = 2$

A volunteer comes and puts eight treats back in the jar from a stash that is behind the table. The number sentence now looks like this: 2 + 8 = 10

10 – 8 = 2 and 2 + 8 = 10 are members of a fact family. A **fact family** is a group of number sentences using the same three numbers. Even though one number sentence is adding and the other is subtracting, they are in a fact family because they share numbers. These are all the number sentences in the fact family from the story:

Direct your student to the fact family and help them read the equations. Ensure your student sees the difference between related subtraction facts and a fact family. Remind them that related subtraction facts are only subtraction. The total stays the same and does not move. In a fact family, there is addition and subtraction, and sometimes all of the numbers move. It is important to point out that in the fact family, the number sentences must be written properly. The sum cannot be added to an addend in an addition sentence, and the difference cannot be subtracted from a smaller number in a subtraction sentence.

Practice (Fact Families)
There is a craft table where kids can make cat toys with sticks, feathers, beads, and other materials. There were eight bottles of glue on the table. Two of the bottles were used up. How many bottles of glue are left?

1. First, write the subtraction sentence that matches the story.

2. Now, fill in the rest of the number sentences that make this fact family.

Remind your students that in the subtraction sentences of the number family, the largest number will not be subtracted from smaller numbers, and it will not be an addend in an addition sentence. If it is helpful, you can demonstrate with counters.

Practice (Pet Adoptions)
The pet adoption fair was a success! There were ten dogs up for adoption, and nine of them went home with new forever families today. There is one dog left, and you are allowed to take him home! Your dog Max will be so excited to have a playmate!

1. Fill in the blanks to show the related subtraction sentences that match the story.

There were eight cats up for adoption and six of them went to good homes. The cats that were not adopted ended up being adopted by volunteers.

2. How many cats were adopted by volunteers? Write the related subtraction facts that match the story.

If your student is unsure, they can use counters to solve the problem. Remind them that related subtraction sentences will have the same numbers.

Review
In this lesson, you learned:

- Related subtraction facts can be written as number sentences.
- Problems can be solved using related subtraction facts.
- Fact families can be identified and used to solve problems.

Think About It
Why would you need to use related facts to help you solve a problem?

Skill Builder (Geometry)
At the craft table, you can make a pattern on the cat toys with shape stickers.

1. Complete each pattern with the shape that comes next.

If your student needs a reminder about patterns, refer back to the lesson "Shape Patterns." You can also remind them they can use manipulatives to recreate the patterns on the page if necessary.

2. Use the shapes to create a drawing of a pet in the drawing box.

Show What You Know
Choose the correct answer for each question.

1. Which number completes the related subtraction sentences 6 – 5 = __ and 6 – __ = 5?

   A. 11
   B. 1
   C. 5
   D. 0

2. *Which number completes the number sentences from the fact family?*

6 + 4 = ___   4 + 6 = ___   ___ – 6 = 4   ___ – 4 = 6

A. *4*

B. *6*

C. *8*

D. *10*

Read each sentence. Circle True or False.

3. *True or False*   *A related subtraction sentence can include addition.*

4. *True or False*   *A fact family only contains addition.*

5. *True or False*   *4 + 5 = 9 and 9 – 5 = 4 are in the same fact family.*

Play *(Counters in a Cup)*

Place ten two-sided counters in a cup and dump them out. Write two related subtraction facts to represent what was dumped out. Here is an example:

Note how the subtraction sentences connect to the counters in the example. There are ten counters in all. If three are yellow and seven are red, then the sentences are 10 – 3 = 7 and 10 – 7 = 3.

To make the game more fun, your student can play with a friend or sibling. They can see who can come up with the related subtraction facts the quickest.

Learning Styles

Auditory learners may enjoy listening to a fact family being read aloud.

Visual learners may enjoy drawing pictures to match each number sentence in a fact family.

Kinesthetic learners may enjoy creating fact families and related facts with the game Counters in a Cup.

Extension Activities

Missing Pieces
Write some parts of a fact family down on a piece of paper or a whiteboard. Have your student see how quickly they can accurately fill in the blanks.

Fact Family Fun
Let your student roll a pair of dice. The numbers that they roll should be used to create a fact family. If your student rolls two numbers whose total is more than 10, they can roll again. To add some competition, your student can compete against a friend or sibling to see who can write all of the number sentences in the fact family first.

Answer Key

Practice *(Related Subtraction Facts)*

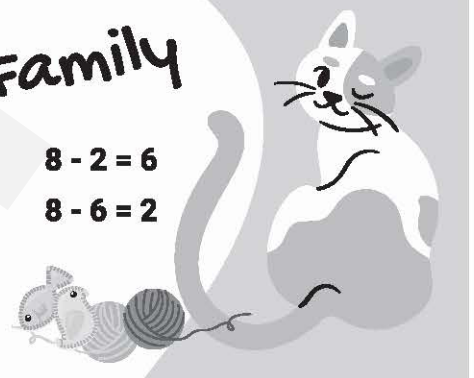10 – 7 = 3   10 – 3 = 7

Write

Answers will vary. Possible answer: The 7 and 3 changed, but the 10 stayed the same.

Practice *(Fact Families)*
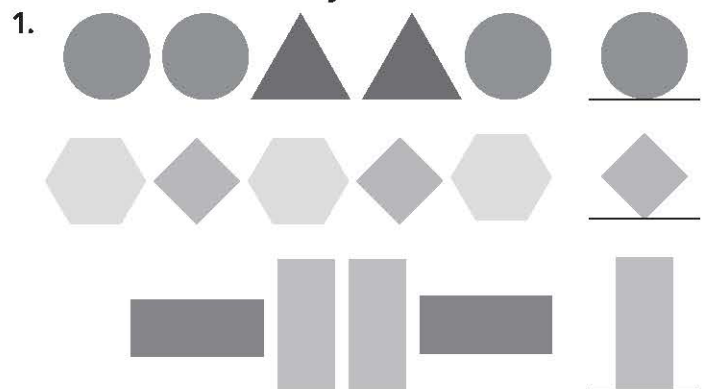
1. 6

2.

Fact Family

2 + 6 = 8   8 - 2 = 6

6 + 2 = 8   8 - 6 = 2

Practice *(Pet Adoptions)*

1. 1; 10

2. 2; 2

Skill Builder *(Geometry)*

1.

2. Drawings will vary. Possible answer:
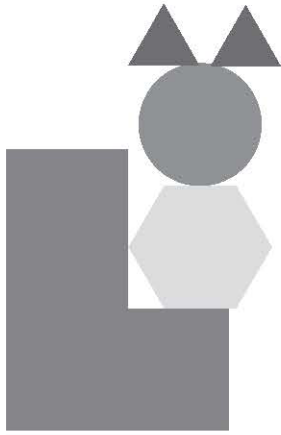
Show What You Know

1. B

2. D

3. False

4. False

5. True