

Problem Solvers Activity 10: Fruits for Our Friends

CHILDREN ARE LEARNING TO...¹

- Understand that adding one or more objects will increase the quantity of the set, and that taking away one or more objects will decrease the quantity the set.
- Solve simple addition and subtraction problems nonverbally (and often verbally) with a very small number of objects (sums up to 4 or 5).

MATERIALS NEEDED:

4 Baskets

56 index cards

4 stuffed animals or dolls

Handout 1: Images for Number Cards

Handout 2: Fruits

PREPARATION:

- Photocopy **Handout 1**.
- Create number cards.
 - On 2 index cards, write a "3". Cut and glue the "3" dot images from **Handout 1** onto the cards.
 - On 2 index cards, write a "4". Cut and glue the "4" dot images onto the cards.
 - On 2 index cards, write a "5". Cut and glue the "5" dot images onto the cards.
 - On 2 index cards, write a "6". Cut and glue the "6" dot images onto the cards.
- Using **Handout 2**, make 4 copies of the apples and oranges (16 apples and 16 oranges all together). Make 2 copies of the cherries and bananas (6 cherries and 6 bananas all together). If possible, make color copies.
- Cut out each fruit and glue it to an index card to make 16 apple cards, 16 orange cards, 6 cherry cards, and 6 banana cards.
- In the area where you will be working with children, line up 6 apples and 6 oranges to create a fruit display you might see at a fruit stand or grocery store. (Keep the cherry and banana cards close by. Set the remaining apples and oranges aside until the partner activity.)
- Stack the baskets near the fruits.
- Set the stuffed animals aside until the partner activity.
- Prepare copies of the parent handout for distribution.
- If you plan on implementing the optional book activity, refer to the preparation instructions in that section.

¹ California Department of Education (2008). Preschool Learning Foundations. Retrieved from <https://www.cde.ca.gov/sp/cd/re/documents/preschoollf.pdf>

Activity Instructions

ENGAGE

Gather a group of 4 children. Keep your number cards handy.

Point out the fruits.

SAY: Problem Solvers, I spy a fruit stand in our classroom! Have you ever been shopping to buy fruit for your family? What kinds of fruit have you seen? What is your favorite fruit? Is there a fruit that you *don't* like? What is it? *Facilitate a conversation with children.*

SAY: Our classroom fruit stand has different fruits. What fruits do you see? [Name the fruits or ask children to name them.] I wonder how many apples we have. Does it look like a lot or a little? What can we do to find out how many we have?

Wait to see if children suggest counting; count together to discover there are 6 apples. Repeat with bananas.

SAY: I wonder how many fruits there are **all together**. What can we do to find out? [Listen for children's ideas.] Let's see. We'll start counting apples and then keep going.

Count the apples and bananas together—"There are 12 fruits at our fruit stand." Remember that counting past 10 will be challenging for children and they probably will not be able to do this without your help.

SAY: Now let's count the fruits by color. My favorite color is orange. Let's count the oranges first and then the red apples.

Observe that the total quantity is still 12.

SAY: Let's pretend a puppy ran through our fruit stand and knocked everything over [put the fruits in random order]. Now our fruits are all mixed up. Do you think we still have 12 fruits? Tell me what you predict, or think will happen, when we count. [Listen for children's thoughts.]

Count the fruits once more, pointing to each one as you do. Encourage children to join in.

Observe that the total quantity is still 12.

Encouraging children to count in different ways supports the developing of two counting concepts:

Order Irrelevance is the concept that the order of how objects are counted is not important.

Abstraction is the idea that it doesn't matter what we count (objects, sounds, sights, etc.), *how* we count always stays the same.

Developing these concepts helps children understand that counting determines a *quantity* (and is not just a sequence of number words).

Put the fruit cards back in two sets of apples and oranges.

EXPAND

SAY: Let's play a game using our fruit stand, Problem Solvers! We are going to pretend to go shopping and buy fruit for snack. Who would like to go shopping with me first?

Select a volunteer and give them a basket. Give them a "3" card (show the group as well) and explain that they can buy 3 fruits.

While the first child is "shopping," select a second child and give them a "3" card and a basket. Let them go shopping to pick 3 fruits each.

SAY: Let's look at the fruits in your baskets and see what you bought!

Ask each child to line up the fruit they selected. Invite them to tell you what/how many fruits they chose. Describe the different combinations of each set and point out how each child's total quantity is 3: *I see you picked 2 apples and 1 orange. And I see you picked 2 oranges and 1 apple. But you both have a set of 3 fruits.*

SAY: Let's try it again with different fruits this time.

Add the cherries and bananas to the fruit stand. Select the two children who have not had a turn yet and give them each a "4" card and a basket. Ask them to choose 4 fruits.

SAY: Let's look at the fruits in your baskets and see what you chose for snack!

Ask each child to line up the fruit they selected. Invite them to notice and describe the combination of fruits in each of their baskets. Together, count the total number of fruits in each basket. Observe how the total of each set is 4. The objective is for children to begin to understand that the same quantity can be created (*composed*) in different ways.

Replace all the fruits in the fruit stand. Hold the number cards out facedown and select a child to choose a card. Look at it together. Talk about the number and count the dots so that children understand the quantity the number represents (for example, 5). Place the card on the table where all children can refer to it, if needed.

ASK all children to go shopping for that quantity of fruit. If the child selected a 5 card, then all the children select 5 fruits.

SAY: Let's look at the fruits in your baskets and see what you bought!

ASK each child to line up the fruit they selected. Give each child a chance to tell their number story. If they don't on their own, prompt children to describe how many of each fruit they have in their basket: *3 apples and 2 oranges*. Be sure to explore how many that is "all together."

Teacher Tip

You may notice that children naturally organize the fruits into sets of the same fruit—like putting 3 apple cards and 2 orange cards in separate piles. This is an example of how children are exploring composing and decomposing all on their own. Any number can be broken down into different parts—this is called *decomposing*. For example, the number 5 can be decomposed into 3 apples and 2 bananas, or 4 apples and 1 banana. *Composing* is combining the parts to form the whole—putting all the fruit cards back together in one pile to discover that, no matter how you decompose the number, it still remains a quantity of 5. Helping children discover, see, touch, and explore these part-whole relationships is an important part of this game.

Observe how there are many different ways to make a set of 5 fruits. Return all fruits to the fruit stand.

SAY: We have discovered so many different ways to make groups of fruit today!

EXPLORE

For children aged 2 ½ to 3 ½ years, continue the activity as a group. Ask for a volunteer to choose another number card and shop for that quantity of fruits.

For children aged 3 to 4 years, try *Fruit for Our Friends* as partner play. Form pairs of children. Give one pair of children 8 apples and 8 oranges. Give the other pair of children 8 apples and 8 oranges. Set 2 stuffed animals in front of each pair.

Take out a "5" card and place it where children can see. Together, notice the number and count the dots together to review the concept of "five."

SAY: You have two animal friends with you for this game. Your animal friends are HUNGRY. They want a snack. Work with your partner to gather 5 fruits for your hungry friends.

Let partners select fruits together. Observe how they share the task of selecting five fruits. Are they counting each fruit as they go? Or are they subitizing (recognizing quantities without counting) to figure out how many they have?

As children finish their shopping, ask them what they can do to make sure they have 5 fruits all together in their baskets. Do a visual check to make sure each group has chosen 5 fruits.

SAY: Your animal friends are so excited for snack! The two of you can decide how many fruits to give to each friend.

Let children decide how to divide the fruit between the animals. When they are done, ask each pair to talk about how many they gave to each animal.

Describe how they have split up (decomposed) the set: "You had 5 fruits to start with. Tell me how you divided up your fruits." [Children can describe how they gave 3 apples to the bear and 2 oranges to the bunny.] As you review the other pair's choices, you may find they have divided the snacks differently. Point this out and emphasize how both groups still have five.

SAY: Our animal friends are done eating now. Can you put your fruits back in a line? What can you do to find out how many fruits you and your partner have all together?

Listen to see how children think about this problem.

OBSERVE: Even though your sets of fruit were different, you both had five all together. We can also take our sets apart, but when we put the fruits back together, we still have five!

Ask children to return the fruit to the fruit stand. Choose another number card ("4" or "6") and play another round as described above. Continue playing with the remaining card if time allows.

REFLECT

SAY: We have been discovering how to make different groups of fruit today. Let's talk about our own group of children right here! What can I do to find out how many children are in our group today?

SAY: Our group has children with shorter hair and children with longer hair. How many children have shorter hair in our group? How many children have longer hair in our group? [Feel free to choose a different characteristic: Sneakers/Not sneakers, Long sleeves/Not long sleeves, etc.]

See if children would like to move into different groups of shorter and longer hair (decompose the group). Count each group.

SAY: If we all come back together into one group again, what can we do to find out how many children we have all together?

Listen for children's thinking about composing/decomposing: how groups can be organized or separated in different ways but the total quantity remains the same.

SAY: Now, our group is going to get smaller and smaller because our time together for Problem Solvers is ending. I am going to choose 1 child to be all done: [Name]. Now I will choose 2 children to be all done: [Name] and [Name]. And now I will choose 1 child and 1 teacher to be all done: [Name] and ME! And now we are ALL DONE!

Individualizing the Activity

MAKE IT MORE CHALLENGING:

- Use larger quantities (8-12) for the opening game and partner activity. Note that this expansion will entail making additional Number Cards and additional fruits.
- In the opening activity, give pairs of children cards with different quantities. Have each child tell you their different number stories. Encourage children to compare their sets: Which looks larger or smaller, has more or less?
- In the partner activity, introduce cherries and/or bananas so that children are creating more complex sets.

MAKE IT LESS CHALLENGING:

- Use smaller quantities (3-6) for the opening game.
- Use only the apples and oranges.

MAKING CONNECTIONS ACROSS THE DAY:

- When you are gathering for snack, notice how there are two children sitting: "We have a group of 3 children—one wearing jeans and two wearing leggings. All together, there are 3 children."
- In the Blocks area, you might notice how there are four blocks together in a pile. Ask children, "Let's see all the ways we can make a group of 4." Create a set of 1 block and a set of 3 blocks and then push them together to make 4. Create a set of 2 blocks and 2 blocks, and push them together to make 4.
- As you are distributing markers/crayons for art activities or food items for snack, ask children how many they would like to start with. Offer the child's selected quantity in two groups: 2 crayons first and then 1 more.

Song: At the Fruit Stand

The lyrics to the song are below. As you listen for the first time, sway side-to-side (seated or standing) on the big beats of the song and encourage children to do what you do. As you listen again, use the fruit cut-outs you prepared for the group activity to give children a chance to participate in the song.

Verse 1

At the fruit stand, the fruit stand

I will fill up my pack.

Then I'll share with my friends and we'll have a nice snack.

I'll pick one apple here *(As fruits are mentioned, place the cards where all children can see.)*
and one orange there

And with two little cherries *(Pause the song to give children a chance to count the fruits with you)*

I'll have four in my pack. *(Hold up 4 fingers)*

An apple for D'Shawn, I think you'll agree. *(Distribute the cards to children in the group)*

An orange for Jeannie; she loves them, you see?

And the two little cherries, I'm saving for me!

La LA La La LA La La LA La La LA

I shared with my friends, and we all got a snack! *(Pause the song and ask: Let's see how many snacks we have all together...)*

Verse 2

At the fruit stand, the fruit stand

I will fill up my pack.

Then I'll share with my family and we'll have a nice snack.

I'll pick one banana here *(As fruits are mentioned, place the cards where all children can see.)*

And two apples there

And with two little cherries *(Pause the song to give children a chance to count the fruits with you)*

I'll have five in my pack. *(Hold up 5 fingers)*

A banana for my Mama, I think you'll agree. *(Distribute the cards to children in the group)*

Apples for my Papa, he'll love them, you see!

And the two little cherries, I'm saving for me!

La LA La La LA La La LA La La LA

I shared with my family, and we all got a snack! *(Pause the song and ask: Let's see how many snacks we have all together...)*

Making Literacy Connections

Share the following book with children as an opportunity to deepen their understanding of counting and quantity. The literacy extension activity below suggests another play-based experience to invite counting.

Suggested Book: *Quack and Count* by Keith Baker

AS YOU READ:

Pre-teach the vocabulary word *duckling* (a baby duck). Talk briefly about what children know about ducks—especially, that they can both swim and fly. Ducks are a kind of water bird.

On the opening page, as the ducks are lined up, point to each and encourage children to join you in counting this group of seven ducks. Write the number 7 on a small whiteboard or piece of paper so children can see it.

As the story progresses, the author groups the ducks differently – but each time the total number of ducks is 7. On the second two-page spread, the author has 6 ducklings on the left-hand page and 1 duckling on the right-hand page. First, prompt children to count each separate group of ducklings (6 and 1). Then have them count the *whole* group of ducklings from 1 to 7. Do this with each illustration of duckling groups. On the final page, as all 7 ducks fly in a V-formation across the sky, encourage children to count the group with you again.

This is a great book to read again and again to children. Once children know the story, you can begin to pause and let children fill in the rhyming words—which are also the numeral words. For example: “Slipping, sliding, having fun...7 ducklings, 6 plus [pause].” Wait to see if children jump in to shout “ONE!”

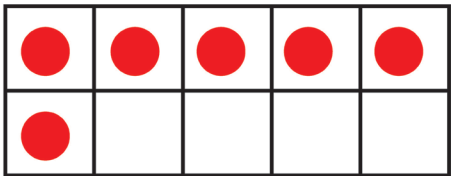
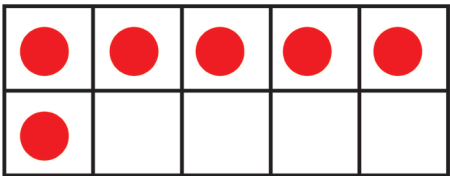
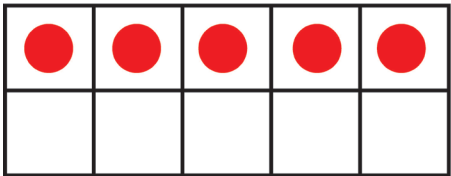
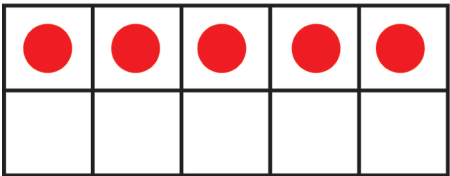
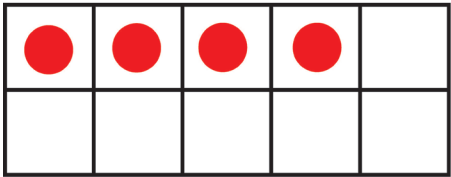
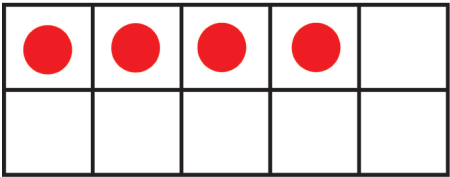
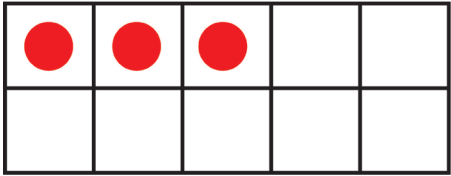
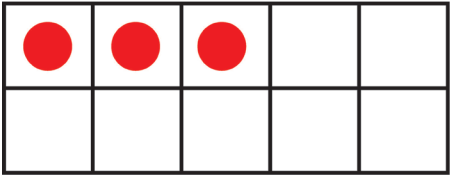
BUILD ON THE BOOK

Materials: 7 blocks (or other counters) per child

As you read the book, select children to form groups of “ducklings” along with the text of the story. On the page that says, “Slipping, sliding, having fun...7 ducklings, 6 plus one,” you might have 1 child stand on one side of the circle time rug and 6 children stand on the other side of the circle time rug. You can then have them “swim” together to make a large group. Count together to check it’s 7.

You can also give each child 7 blocks. As you read the number combinations outlined in the book, they can use the blocks to create their own groups of blocks, pushing the blocks together and then counting the total quantity to check it’s 7.

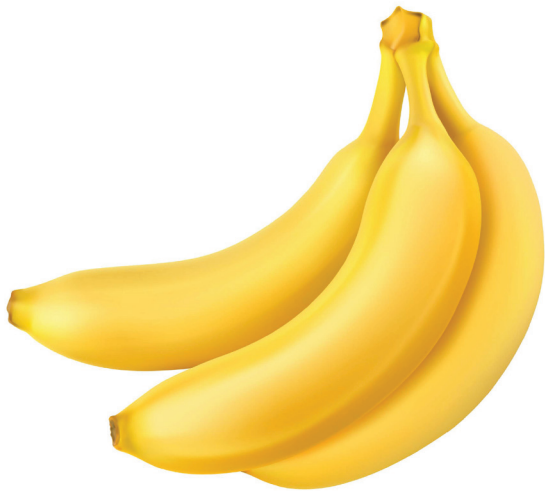
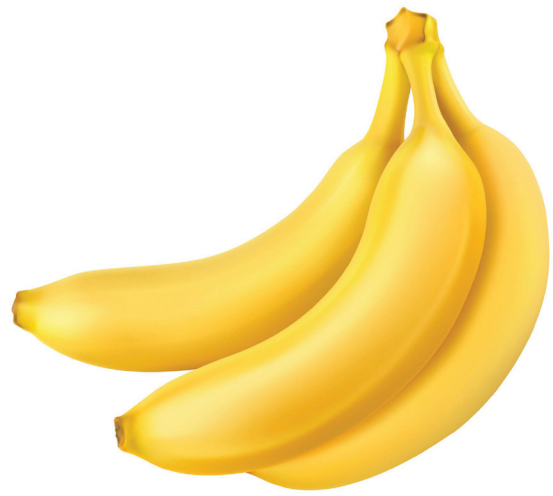
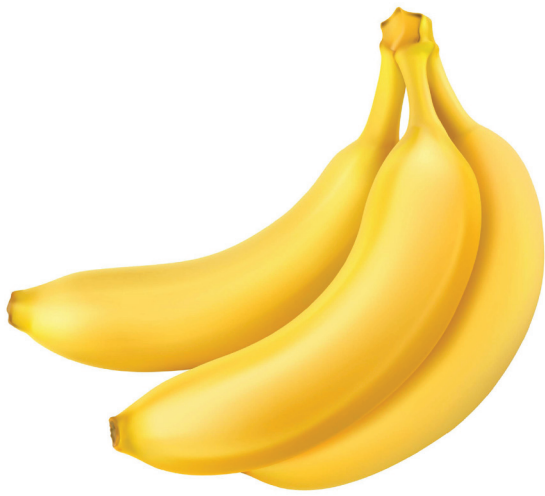
Handout 1: Images for Number Cards

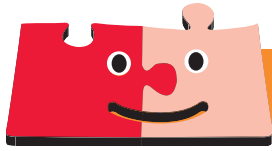


Handout 2: Fruits







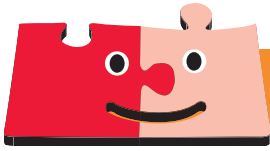


Number of the Day

This week, play a game to help your child learn different ways of making sets.

1. Choose a number between 1-5. Tell your child how that number—number 3, for example—will be the Number of the Day.
2. As you go through your daily routines, take a moment to ask your child to make groups of 3. For example:
 - While you are putting away laundry, say: *3 is our number of the day. Can you find 3 socks in the basket?*
 - While setting the table, say: *Can you take out 3 forks?*
 - During playtime, say: *Can you bring me 3 toys?*
 - When you get home for the day, say: *Show me 3 shoes.*
 - During bath-time, say: *Can you find 3 bottles of shampoo or soap?*
 - At bedtime, say: *What 3 books should we read together tonight?*
3. Notice how these sets may be made up of different items: *You brought me one toy truck and two blocks—that makes 3 toys. Or: You showed me two of Papa's work boots and one of your sneakers. That makes 3 shoes.*
4. Let your child have a turn asking you to make a set with the number of the day.
5. Choose a new number the next day!

If your child finds this game challenging, use smaller quantities (1-3). If your child is ready for more challenge, use larger quantities (6-10).



Solo para familias

Número del día

Esta semana, juegue un juego para ayudar a su hijo a aprender diferentes formas de hacer conjuntos.

1. Elija un número entre el 1 y el 5. Dígame a su hijo cómo ese número, el número 3, por ejemplo, será el número del día.
2. A medida que avanza en sus rutinas diarias, tómese un momento para pedirle a su hijo que haga grupos de 3. Por ejemplo:
 - Mientras guarda la ropa, diga: 3 es nuestro número del día. ¿Puedes encontrar 3 calcetines en la cesta?
 - Mientras pones la mesa, diga: ¿Puedes sacar 3 tenedores?
 - Durante el tiempo de juego, diga: ¿Puedes traerme 3 juguetes?
 - Cuando llegues a casa por el día, diga: Muéstrame 3 zapatos.
 - Durante la hora del baño, diga: ¿Puedes encontrar 3 botellas de champú o jabón?
 - A la hora de acostarse, diga: ¿Qué 3 libros debemos leer juntos esta noche?
3. Observe cómo estos juegos pueden estar compuestos de diferentes artículos: Me trajiste un camión de juguete y dos bloques, eso hace 3 juguetes. O: Me mostraste dos botas de trabajo de papá y uno de tus zapatos. Eso hace 3 zapatos.
4. Deje que su hijo tenga un turno pidiéndole que haga un conjunto con el número del día.
5. ¡Elige un nuevo número al día siguiente!

Si a su hijo le resulta difícil este juego, use cantidades más pequeñas (1 a 3). Si su hijo está listo para más desafíos, use cantidades más grandes (6 a 10).