



Level: Kindergarten

Cost: Less than \$5.00

Mess Factor: Little

Suggested Room in the House: Anywhere



By now, your children can probably count objects using one-to-one correspondence, and may be able to recognize some numerals. As kindergartners continue to grow in the area of mathematics development, they will increase the number of objects they can count, and will gain confidence while doing so! When you explore and count various collections with your children, you may want to expand their thinking and understanding of higher level math concepts as you play together.

Your children will experience:



- Counting (with one-to-one correspondence) more than 10 objects and saying the last number counted tells how many
- Saying how many more or fewer are in one set than in another set
- Composing and/or decomposing a number in two or more ways

Materials:



- Collections of materials – Choose one of the following collections for this activity, or use a different collection you may have at home. Collections should include items with different characteristics (such as size, shape, color, or texture) in order for children to be able to sort, count, and compare.
 - Purchased toys (teddy bear counters, building bricks, lacing beads)
 - Natural materials (seashells, rocks, leaves)
 - Found materials (buttons, lids from milk jugs, orange juice cartons, water bottles, and spice containers)
 - Sorting containers, such as ice cube trays or empty egg cartons

Beginning:



Introduce a collection of materials to your children. Say something like “I found a jar of buttons in the cabinet that I’d like to show you. I enjoyed playing with buttons when I was your age.” Give children time to look through them. Sit on the floor with them and examine the buttons, talking about the various colors and shapes, how many holes are in certain buttons, and which ones are your favorites or your children’s favorites. Introduce sorting containers, such as ice cube trays or empty egg cartons, to put the buttons in. This will promote sorting and counting as well as providing another way to manipulate the materials.

continued on next page

**Middle:**

Children may begin organizing the buttons into sets based on their characteristics. For example, one pile might be pink sparkly buttons, another pile green buttons, and another pile shiny red buttons. If children don't do this on their own, you might either suggest they separate the buttons into piles, or simply begin creating your own sets or piles. They may see you doing this and imitate your idea. As your children go through this process, you might ask things like "Why did you put the yellow button in that pile?" or "Where do you think this one should go?"



Once the buttons are arranged in piles, children may naturally begin counting them. If they don't do this, you might initiate the idea by saying something like "Wow, that pile of shiny red buttons is big. I wonder how many there are." Your comment might spark an interest in counting the buttons. Some kindergartners may count all of the buttons, using one-to-one correspondence (touching each object and associating one number with each object counted). Kindergartners are becoming more experienced counters, and can typically count more than 10 objects correctly. At this stage in their math development, kindergartners can usually say how many objects there are after they are finished counting. When children are able to do this, they have reached a new level of understanding of number awareness.



If you find that counting the sets of buttons is a fairly simple task for your kindergartners, you may want to challenge them by encouraging them to compare the different sets. For example, if 16 pink sparkly buttons and 10 green buttons were counted, you might want to ask something like "How many more pink sparkly buttons are there than green ones?" Some children may be able to tell you the answer with ease, or they might explore ways to solve the problem. If necessary, you may want to show them how to line up the buttons next to each other to assist them in discovering the answer. Comparing quantities like this is a higher level of understanding, and may not be grasped by kindergartners right away. Continue to give them opportunities to count, and support your children's attempts to compare quantities in this way.



If your children have a solid grasp on counting and understanding number, you may want to try one more activity. Use nine or fewer buttons for this new challenge. Present the buttons to your children (for the sake of our example, let's use seven buttons). Divide the buttons into two sets. Place four buttons in one set and three buttons in another. Point to each set and say "There are four buttons in this set and three buttons in this set. Together, that makes seven." Next, ask the children if they can show another way to make seven. Children may divide the two sets into one plus six, two plus five, or three plus two plus two. They might suggest trying another number and repeating the challenge. Engaging in activities like this will prepare kindergartners for higher level math concepts as they get older.



continued on next page

**End:**

You may want to encourage children to give you problems to solve in order to extend this activity a bit longer. Say something like “You’ve been solving all of the math problems I’ve been giving you. Now, it’s your turn to give me a problem to solve.” You may need to give an example. Kindergartners may enjoy reversing the roles in this way. If children seem to be tiring of this activity, put your collection away and bring it out another time.

**Cleanup:**

If your children have enjoyed the math activities and challenges during your time together, you may want to continue offering more math problems to solve as they clean up the collection. You may simply count the buttons together as you put them back in the box, or you may want to offer more math problems to solve. You could ask something like “If you put six of the pink sparkly buttons in the box, how many will you have left on the floor?” Or children might be tired of answering the math questions you’ve presented during the activity and choose to simply put the buttons back in the box when it’s time to clean up.

**Younger Children:**

- Preschoolers will first count by rote (or by memory), and gradually begin counting by using one-to-one correspondence. While some preschoolers are able to count up to ten or more objects with accuracy, others may make some mistakes when counting (by skipping numbers, double counting, or mixing up the order of numbers). These “mistakes” are normal and expected as preschoolers begin to mature in their understanding of number. To encourage preschoolers to count, offer opportunities throughout their daily routine to engage in counting activities. Count the number of steps as you go upstairs to bed, count how many grapes they have on their plate at lunch, count the number of ducks you see at a neighborhood park, or count the number of red cars parked in a parking lot. Counting activities like these make math meaningful and fun for preschoolers!

**Older Children:**

- Your older children’s math success in the primary grades will be dependent on the experiences they’ve had with math as younger children. Older children will continue to benefit from concrete experiences with math, and may benefit from using math manipulatives in order to see and understand more advanced mathematical concepts. Teachers may use manipulatives to teach your children certain math concepts. Talk with a teacher to get ideas about what types of manipulatives your children are using at school, and use some of the same manipulatives at home to continue practicing and exploring those math concepts taught at school.



continued on next page

**Hints:**

- As children develop in their understanding of various number and counting concepts, be aware that mistakes will probably be made. If kindergartners leave out a number as they count, you may want to encourage them to try again to see if they correct the mistake. You might want to say something like “Hmm...let’s try counting this pile again. Sometimes it can be easy to accidentally skip over a button and forget to count it.” Older children and adults often need to check and recheck their work when engaging in math activities, and this is a good habit for young children to get into. If children omit the same number on their second attempt, you may want to count the objects, modeling the correct order as you count. You may also want to make simple mistakes as you count, and seek the children’s help. Say something like “I can’t tell if there are six buttons or seven buttons in this pile. Will you help me count as I point to each one?” Modeling mistakes can help them feel that mistakes are natural, and asking for their help builds their confidence. Be accepting of children’s level of development, and be assured that as children continue to practice various math concepts, they will become more accurate in their counting attempts.
- As you play with and explore the collection with your children, don’t bombard them with too many math questions. The problems or questions you present should be given to encourage and stretch their thinking, not to overwhelm them with question after question in a drilling kind of way. Try to maintain a balance between asking relevant math questions, stating observations about something children have done, and simply staying quiet to allow time for exploration.

**More!**

- To encourage kindergartners to count and engage in other math activities, offer opportunities throughout their daily routine to engage in counting activities and number games. As children help you put away the silverware from the dishwasher, encourage them to count the spoons and the forks. Ask your kindergartners how many more spoons there were than forks. As you walk through a parking lot, let them choose what color car to count (perhaps red). You choose a different color (maybe white). When you reach your car, ask your children how many red cars they counted. Share your number of white cars, and see if they can figure out how many red cars and white cars there were all together. Counting and number games like these make math relevant and fun for kindergartners!
- The next time you are at your local library, look for an *I Spy* book. There are countless *I Spy* books available for a variety of levels of counters and readers. These books encourage counting in a fun, game-like way.
- Turn snacktime into a math and counting activity. Offer snacks, like trail mix, which include an assortment of nuts, dried fruit, seeds, grains, and a few sweets. Children will enjoy sorting their snack into sets (or piles), counting and comparing the tasty treat. Solving math problems is especially fun when children get to eat their answers!



continued on next page



Special Needs Accommodations:

- To encourage math development, be sure to offer objects for children to manipulate and handle, in order to help keep math concepts meaningful and concrete. Children with limited language may use visuals as a way to “speak” to you. For example, you may want to create and laminate number cards (with numerals written on the cards) to be used to help children communicate answers to you. These are not meant to be flash cards, but rather visuals to touch and “tell” how many, how many more, what comes next, etc. Children with developmental delays will need meaningful opportunities to practice counting objects. In addition to counting a variety of things around your home, you can encourage counting by looking at counting books, singing counting songs, or chanting counting rhymes. Counting games are available on various websites and apps on your computer, tablet, or smart phone. Some children respond well to learning math and other concepts by using technology. When used in moderation and with adult support, technology can be a very useful way to enhance learning and understanding.

