

# count · play · explore

## DISCOVER THE POWER OF MATH

Early math activities for you and your child to enjoy together.

**Babies Count** - Clap with your baby. Clap once – say “one.” Clap twice – say “one, two.” Clap three times – say “one, two, three.”

**Toddlers Count** - Count jumping jacks. Count out loud as you and your toddler jump together. How many jumping jacks can you do in a row?

**Preschoolers Count** - Go for a walk. Count the animals you see. How many small animals did you see? How many large animals did you see?

**Kindergarteners Count** - Go on a number scavenger hunt. Take your camera. Photograph numbers or objects that represent the numbers 6 to 12. Look at the pictures. What number or numbers are represented in each them.

**Grade School Kids Count** - Ask your child to find three ways that three different numbers can be added together to get a sum of 15.

**Babies Play** - Encourage your baby to play with toys that make sounds when moved. Let your baby figure out that moving the object produces a noise. Activities like this promote your baby’s understanding of cause and effect.

**Toddlers Play** - Find different sized containers or buckets to fill with soil, sand, or mud. Use different sized scoops to fill the containers.

**Preschoolers Play** - Collect boxes. Find out which boxes will fit inside each other. Find out which box will hold the most. Create a model of city skyscrapers with the boxes.

**Kindergarteners Play** - Find small objects that can be pulled with a magnet. Can you pull them in a line like a train? How many can you pick up with a magnet at one time?

**Grade School Kids Play** - Ask your child to create a repeating pattern with different colored objects. Ask them to explain the pattern and tell you what comes next.

**Babies Explore** - Which of your baby’s toys will fit in a muffin tin? Help your baby place toys into the muffin tin. As your baby explores, talk about what will fit and what is too big to fit.

**Toddlers Explore** - Fill bottles with different objects, securing the tops so they can’t come off during play. Let your toddler explore the sound and weight of the bottles.

**Preschoolers Explore** - Look at a coin. The side with a face is called “heads.” The side without a face is called “tails.” Flip a coin into the air ten times. Did it land more often with the head or the tail side up?

**Kindergarteners Explore** - Explore patterns with your child. Patterns can be made with colors, shapes, sounds, movements etc. Make several different patterns together and take turns describing what comes next in the pattern.

**Grade School Kids Explore** - Cook a favorite recipe together. Encourage your child to measure all the ingredients. Challenge older children to double or halve the recipe.



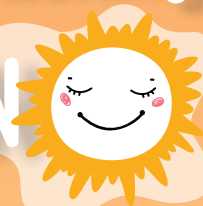


# STEM FAMILY ACTIVITIES

for independent learning



## SHADOWS AND THE SUN



### Activity:

1. For this exploration, you will need a blank piece of paper, a crayon or pencil, a few small toys, and a sunny day.  
In the morning, place two or three toys along the edge of the paper, making sure that your toys' shadows are on the paper. Trace the shadows. Don't move anything! Come back a few hours later and trace the toys' shadows again, this time using a different color. Do this one more time later in the afternoon.

2. Do another exploration by using sidewalk chalk and your body. Stand in a sunny spot and have an adult trace your shadow with chalk. Come back a few hours later and trace your shadow again. This time notice where the sun is located in the sky each time you trace your shadow.

3. What did you notice was similar between your toys' shadow and your shadow during these activities? What questions do you have? Why do you think the shadows change size and direction during the day?

4. Play Shadow Tag – Whoever is "IT" must tag others by touching their shadow. If your shadow is tagged, you sit down. Play until everyone's shadow has been touched. The last person tagged is now "IT"

### Optional Technology Connections:

Set up a phone to take a time lapse video of your toys' shadows for 1 hour or longer.



Create a Shadow Scavenger Hunt!  
Take pictures of different shadows you find in your yard or neighborhood. Share these pictures with a family member and see if they can find what made each shadow.

Watch this Crash Course Kids Video: Following the Sun.  
[tingurl.com/CrashCourseShadow](https://www.youtube.com/watch?v=CrashCourseShadow)

Create a sundial, a tool that uses the sun to tell time.  
[www.wikihow.com/Make-a-Sundial](https://www.wikihow.com/Make-a-Sundial)

Optional: Go to this link to print a "STEM journal" to record your observations and questions.  
[tingurl.com/STEMjournal4](https://tingurl.com/STEMjournal4)



**fresno county**  
**superintendent of schools**

For more resources or support, contact  
Jon Dueck, FCSS STEM Direction – [jdueck@fcoe.org](mailto:jdueck@fcoe.org)  
or visit our website: [stem.fcoe.org](https://stem.fcoe.org)