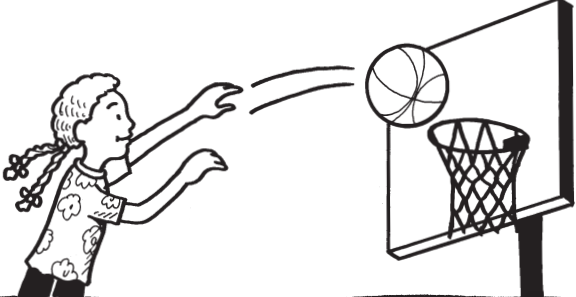
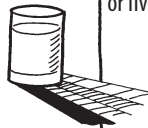

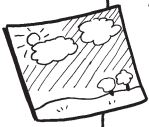















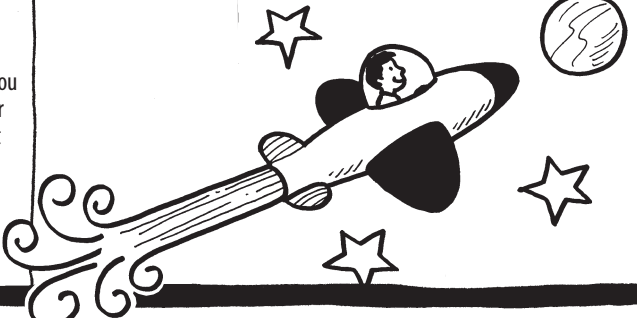


**Note:** Fill in the month and dates, and post this calendar on your refrigerator. Then, encourage your child to do an activity a day.

# Daily Math & Science Calendar

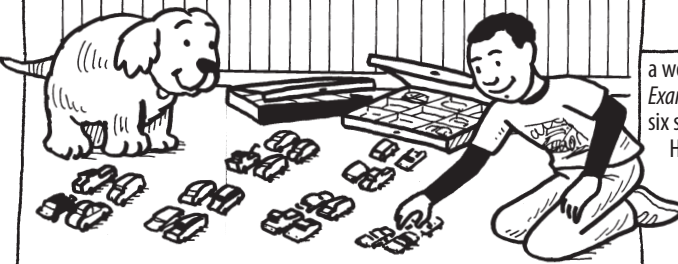


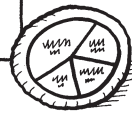











(INTERMEDIATE EDITION)

MONTH						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			Shoot baskets and predict how many you'll make out of 20 attempts. How close was your prediction? Write the fraction of shots you made.	Draw three rows of three circles. Put a number, 1–9, in each circle so that each row, column, and diagonal equals the same sum.	Make a prism by filling a glass with water and placing it in a sunny window. Observe how the rays of light separate into different colors. 	Show coin combinations that equal 50¢, 75¢, or \$1.00. For instance, you could use two quarters or five dimes for 50¢. 
Use crayons to draw the sky. What do the clouds look like (high and wispy, low and cottony)? Is the sun or moon visible? 	Write number words in order for every number that ends with zero. (Start with "zero" and stop at "one hundred.")	Collect several similar leaves from the ground. Examine one closely, remembering specific characteristics (small tear, yellow spot). Mix up the leaves and try to identify the one you examined. 	Create a bar graph showing how many days are in each month (28, 30, 31). Which bar is the tallest? The shortest?	Use an eye dropper to squeeze water, one drop at a time, onto one side of a penny and then onto the other. Which side holds the most drops? Why? 	Remove the face cards from a deck of cards. Draw five cards. Line them up to make the largest and then the smallest possible five-digit numbers (ace = 1). 	Make a weather mobile. Cut several 6-inch circles and draw a different type of weather on each (blizzard, rain-storm). Attach them to a clothes hanger with string. 
With a parent or friend, take turns trying to think of a math term for each letter of the alphabet. Examples: <i>addition, billion, centimeter.</i>	Find two bugs. Draw and label their parts (head, legs, body), and compare and contrast them. ("Both have six legs, but one has wings and one doesn't.") 	Practice division as you divide up snacks. If there are 12 crackers and 3 people, how many crackers does each person get? 	How old would you be on another planet? Visit <a href="http://exploratorium.edu/ronh/age/index.html">exploratorium.edu/ronh/age/index.html</a> to find your age and next birthday on each planet. 	Clip grocery coupons from a magazine or circular for each item your family uses. Add up the savings. 	Hold a paper airplane contest. Invite friends over and have each person design a plane. Which one flies the farthest? 	Roll a die three times, and write the numbers in the order rolled (1, 5, 3). Then, write it as a roman numeral (153 = CLIII). 
In a growing pattern, a number is added to each sequence (example: 5 6 7 5 6 7 8 5 6 7 8 9). With a parent, take turns making a growing pattern for each other to continue. 	Take your pulse for 10 seconds. Multiply by 6 to see how many times your heart beats per minute. Repeat after running in place for 1 minute. What happens?	Write your phone number as a 10-digit number. Round the number to the nearest 10, the nearest 100, and the nearest 1,000.	Some ancient cultures had symbols representing the four seasons. Design your own symbols that show what you know about seasonal changes. 	Prepare your favorite recipe without a 1-cup measure. If the recipe calls for $2\frac{1}{4}$ cups of flour, which measuring cups could you use? 	Go on a simple-machine hunt in your house. Try to find a lever, an inclined plane, a wheel and an axle, a wedge, a pulley, and a screw. 	Write secret messages on paper using a white crayon. Reveal the words by coloring over them with a washable marker. (The oily wax in the crayon resists the water-based marker.)
Find an ant-hill outside and observe the activities of the ants. Record your observations. What did you learn? 	Pop some popcorn, and have each family member grab a handful. Estimate who has the most. Then, have everyone count their kernels.	Fill a sink with water. Place a can of regular soda in the water, then a can of diet soda. Which one floats? Why?	The moon is almost 240,000 miles from earth. If you travel 4,000 miles per hour, how long will it take to get there?			

**Note:** Fill in the month and dates, and post this calendar on your refrigerator. Then, encourage your child to do an activity a day.

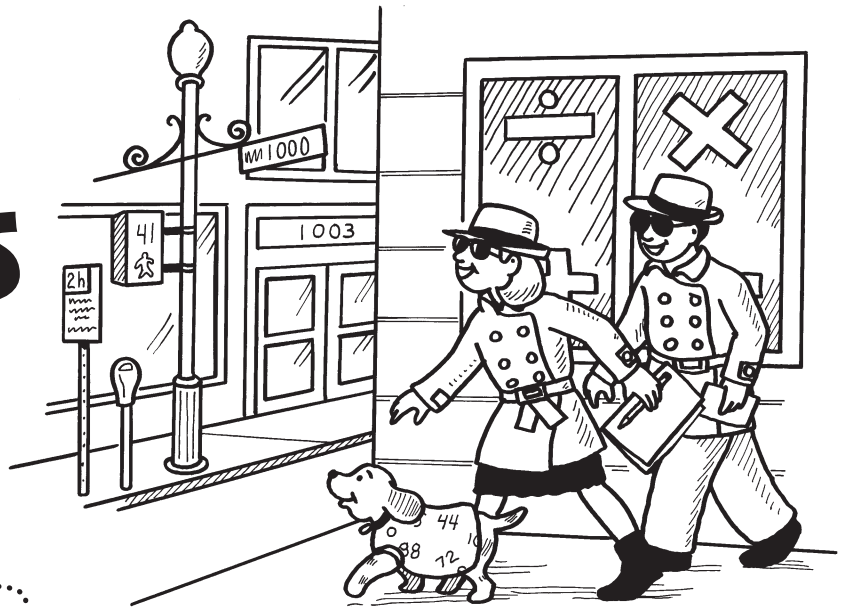
# Daily Math & Science Calendar

(INTERMEDIATE EDITION)

MONTH						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			Use toys to make up—and solve—a word problem. <i>Example:</i> "I have six sets of four cars. How many cars do I have?" $(6 \times 4 = 24)$	Read a newspaper or magazine article about a scientific study. Underline all the science words ( <i>predicted, hypothesis, photosynthesis</i> ).	Write down the ages of four children you know, starting with the oldest (10, 6, 4, 1). Write the number (10,641) in words (ten thousand six hundred forty-one). 	What kinds of energy are used in your community? Take pencil and paper in the car, and draw signs of energy use (chimneys, electric power lines, solar panels).
Look online to find a map or list of your state's zip codes. Which city has the largest number? The smallest? Where does your city's code fit in?	Have each family member press a thumb on an ink pad and then onto an index card. Sort the thumbprints by characteristics (hills, circles, curves). 	 Keep track of the time you spend reading, playing, and doing homework today. On a paper plate, make a pie graph of the data.	Time how long it takes for a teaspoon of sugar to dissolve in $\frac{1}{2}$ cup warm water and then in $\frac{1}{4}$ cup cold water. Record the results.	Write four ways to represent your age (9). <i>Examples:</i> $5 + 4$ , $12 - 3$ , $81 \div 9$ , 1 nickel and 4 pennies.	Test objects (pen, hard-boiled egg) to see which ones roll down an inclined plane the fastest. <i>Tip:</i> Make an inclined plane by stacking three books and laying a fourth against them. 	Sort the shoes in your house according to whether they have laces. What fraction of shoes have laces? 
Float a toy boat in the bathtub. Estimate how many pennies it will hold before it sinks. Start adding pennies one at a time. 	Stand straight with your right shoulder and foot against the wall. Why can't you lift your left foot? (The wall keeps you from shifting your "center of gravity" to balance yourself.)	Call the friend or relative who lives the farthest from you. Ask what the weather is like. How much hotter or colder is your weather?	Fill a zipper bag $\frac{3}{4}$ full with water and seal. Stick a sharpened pencil through the water and plastic. Why doesn't the water spill out? (Molecule chains in the plastic form a seal around the pencil). 	Look at an empty cereal box. Draw a picture of what you think it would look like unfolded. Then, unfold it to see.	Close your eyes, hold your nose, and taste two yogurt flavors (strawberry, cherry). Can you tell them apart? Then, try it without holding your nose. What happens?	Walk one block. Record the number and types of vehicles you see and the number of wheels on each. What fraction of all the wheels belongs to cars? Minivans? Motorcycles?
List ways that your family uses science today. <i>Examples:</i> baking bread, boiling a pot of water.	What can you do in one minute? Set a timer and try to put on your shoes and jacket, clean the bathroom mirror, or take out the trash. 	Fill a glass with club soda, and drop in a few raisins. What happens? Wait a few seconds. What's happening to the raisins now?	Play "I Spy" with numbers. <i>Example:</i> "I spy something with the number 12." Use clocks, calendars, remote controls, mobile phones, and books.	What does your family recycle most? Post a chart with a column for each material (glass, plastic, aluminum). Add a tally mark each time something goes into the recycling bin. 	Sketch your home from the outside. Label the shapes (rectangle, circle, square). How many of each shape can you find? 	Compare two household objects that have a similar purpose (chair, couch). How are they alike and different? (Both have a back and a seat. One is hard, and one is soft.) 
A male giraffe can grow to 18 feet tall. Measure your height and round it to the nearest foot. About how many times taller is a giraffe? 	How many coins can you balance on one finger? Try it, and then count the money.	Survey your family to find out whether each person prefers pizza or pasta. Write the fractions. ( <i>Example:</i> $\frac{3}{5}$ of people like pizza best.) 	Go on a spider web hunt. Take along paper and pencil, and draw each web you find.			

# Math Detectives

*Top secret: Math operations are everywhere, and children can use them to solve everyday problems. With these games and activities, they will investigate addition, subtraction, multiplication, and division—and build math sleuthing skills.*



## Make a meal

Your youngster's mission is to put together a balanced meal—and to correctly calculate the cost. Give him 24 index cards. Have him draw a food on one side of each card and write a price on the other. He should draw 6 main dishes, 6 fruits, 6 vegetables, and 6 beverages. For example, he might illustrate a chicken sandwich for \$2.50, a bowl of peas for \$1.25, and a glass of milk for 75 cents.



Put the cards picture sides down in a pile and take turns picking one up. The goal is to get one entree, two sides, and a drink. If he draws a card he doesn't need (say, a second entree), he puts it at the bottom of the pile, and his turn ends. When he keeps a card, he adds its price to his total. The winner is the first person to get a complete meal and correctly add the prices. *Variation:* Find the “secret combination”—compete to see who can put together the most or least expensive meal.

## Race to zero

To be the first player to reach zero, your child must unlock the strategy in this game. Start by writing the number 100 at

the top of a piece of paper. The first player should subtract any number, 1–10, from 100 and write the equation underneath. For example, he could pick 5 and write, “ $100 - 5 = 95$ .” The next player subtracts a new number that is 1–10 greater than the first player's number (in this example, any number from 6 to 16) and writes the new problem underneath ( $95 - 16 = 79$ ).

Go back and forth, subtracting bigger and bigger numbers (1–10 greater than the last player's number). The player who writes a problem that equals zero wins the game.

## Calendar countdown

Can your youngster solve the mystery of how many hours there are until a special family event? Use your calendar for multiplication fun. Ask her to choose a fun event that's coming up, such as her birthday, a field trip to the zoo, or a family reunion.

Then, have her count the days until the special event and multiply by 24 to calculate how many hours she has to wait. Say her birthday is in 10 days—her number sentence would be  $10 \times 24 = 240$  hours. Or if she's going on a field trip in 12 days, her equation would be  $12 \times 24 = 288$ .



*continued*



### Clock it!

How many number sentences are “hidden” in the time on a digital clock? Your youngster can be a math detective and find out. When you’re stopped at a red light or waiting in line at the store, use the car clock or a digital watch to help him practice addition, subtraction, multiplication, or division!

Take turns giving each other a math problem using the numbers on the clock. If it’s 4:45, you might ask, “What is  $4 + 4 + 5$ ?” (13) Then, your youngster could ask, “What is  $4 \times 5$ ?” (20) Also, play backward: “The answer is 16. What’s the problem?” ( $4 \times 4 = 16$ ) See how many different math operations you can do with the numbers before the time changes. Once it does, your child will have a new set of numbers to play with.

### S’more fun

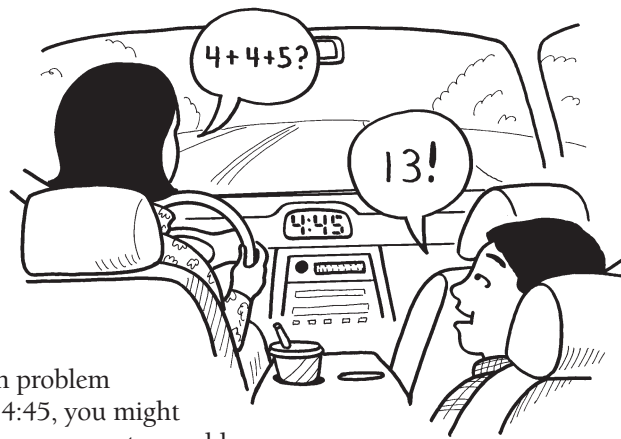
Try this snack-time division activity that lets you and your child eat the results! You will need graham crackers, mini-marshmallows, and chocolate bars.

Have each person take eight graham crackers, four chocolate squares, and a handful of marshmallows. Count your marshmallows (12), divide by 4 to find out how many there are for each s’more, and let your youngster say the equation aloud ( $12 \div 4 = 3$ ). If any marshmallows are left over (the remainder), your child can eat them! Then, she can check her division by “dealing” out the marshmallows one at a time as she makes her s’mores. *Variation:* Play with other snacks, such as cheese and crackers or “ants on a log” (peanut butter and raisins on celery sticks). Have her come up with equations and then divide the ingredients evenly.

### I spy...

Equations are the clues in this math version of “I Spy.” On your turn, make up a number sentence about something that you see. The other person has to guess what you’re looking at and solve your math problem.

For instance, you could pick 4 chairs, each with 4 legs, and say, “I spy  $4 \times 4$ .” Then, have your youngster walk around the room looking for your objects—you might let him know if



he’s close (“You’re getting warm”) or far away (“Now you’re cold”). When he figures it out, he can give the answer (16) and then make up a number sentence for you. *Idea:* Ask him to think of a different problem for the same objects ( $4 + 4 + 4 + 4 = 16$ ). This will help him understand that there is more than one way to get the same answer.

### Roll a sign

Your child can investigate all four operations—addition, subtraction, multiplication, and division—with this game. She will need a die and a deck of cards. First, have her put a small square of masking tape on each side of the die. Write a different math symbol (+, −, ×, and ÷) on four sides. On the two remaining sides, put a question mark. Then, remove face cards and jokers from the deck, and put the rest of the cards facedown in a pile.

To play, take turns rolling the die and drawing two cards. Solve a problem using the two numbers you drew and the symbol on the die. For instance, if you roll a subtraction sign and draw a 9 and a 5, you would say, “ $9 - 5 = 4$ .” If you roll a question mark, you can choose any type of math operation you want. When you solve a problem correctly, keep the cards. After you’ve drawn all the cards, the player with the most cards wins.

### What’s my number?

Let your youngster use addition, subtraction, multiplication, and division to solve the mystery of which number is on her back. First, have each person secretly write a number between 1 and 10 on an index card and tape it to any other player’s back.

Take turns saying equations to figure out what number is on your own back. The equation must include addition, subtraction, multiplication, or division, and each person can use each operation only once. For example, your youngster might say, “ $4 \times 2$ .” You tell her whether the number on her back is higher or lower than, or equal to, the answer to the equation. So if your child has a 7 on her back, you would say, “Lower,” because  $4 \times 2 = 8$ , and 7 is less than 8. When everyone has figured out their numbers, play again with new ones.

