Summer Learning Spotlight

Math

Middle/High School
Summer 2024

THE PARENT INSTITUTE®

Engaging in math activities over the summer will help keep your teen's skills sharp until school resumes. But it doesn't have to feel like work! Try a variety of these outside-the-classroom activities with your teen to strengthen interest, ability and enjoyment of math all summer long.

Show your teen the value of math by relating it to money

Most teens are interested in making—and spending—money. Use your teen's interest to demonstrate how essential math is to making positive financial decisions. Encourage your teen to:

- **Discover the costs** of running a household. List basic items and expenses for your teen to research. Choose examples that might seem surprisingly expensive to your teen (a mattress, car insurance, water bills, etc.).
- **Plan family outings.** Let your teen develop an itinerary for a day trip and estimate the cost. Suggest clipping coupons for restaurants and attractions and searching for the least-expensive gas stations along the way. Your teen can also calculate how much can be saved by bringing food instead of dining out.
- **Research ways to cut costs** on media plans. Can your family get a free trial to watch the Summer Olympics? Bundle two or more services to save?

- **Compare vehicles.** Many teens dream about their future car. Encourage your teen to research which would cost more: a gas-powered car and five years of gas, or an electric vehicle and five years of electric bills? How about a hybrid vehicle?
- **Evaluate credit card offers.** Have your teen think analytically about "pre-approved" offers that come in the mail. Your teen should consider interest rates, annual fees and reward programs to figure out which offer the best deals.

Build math vocabulary in fun ways

To help your teen brush up on math vocabulary before starting a new math class this fall:

- **Play family games** using only math words. At home, try math charades, math Pictionary or math Scattergories. On the road, play math 20 Questions: *Is your word a number? Is it a geometry term?* or math hangman. Have your teen keep a math book on hand for looking up terms.
- **Create and solve crosswords** puzzles with math terms using a puzzle generator like *puzzlemaker.discoveryeducation.com/criss-cross*. Your teen could look up trigonometry terms such as *cosine, tangent* and *secant*, then put the words and definitions into the generator.

Capture math in pictures

On a beautiful summer day, challenge your teen to go outside and take photos of math. Together, brainstorm a list of possibilities. Your teen might photograph parallel lines in a pool or on a highway, a symmetrical seashell or a one-gallon pitcher of lemonade. Encourage creativity with suggestions like making an entire page of photos featuring prime numbers (for example, a staircase with 13 stairs, an elevator button for the 11th floor, etc.).

Ask, 'How did you use math today?'

Start a regular family dinner ritual by sharing ways math played a role in your day. Maybe you kept track of how many servings of fruits and vegetables you ate. Or, perhaps your teen planned a bike ride with friends and divided the distance by the desired speed to figure out how long the trip would take. Your teen will see that math can be useful *and* add to the fun.

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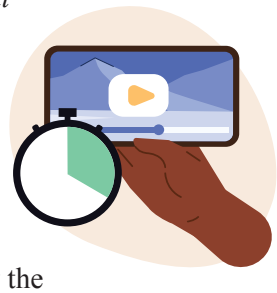
Turn your teen into a powerful 'math thinker'

Strong mathematical thinking skills will help your teen do better in any STEM class or activity that requires reasoning and logic. To strengthen these skills, encourage your teen to:

- **Communicate with others.** Teens love to star in videos. Offer to record your teen explaining math concepts aloud while solving problems on a whiteboard. Your teen could share the videos with siblings, friends or younger students.
- **Use visuals.** Diagrams and models deepen students' understanding of math. Encourage your teen to create some for summer projects. For example, your teen could sketch a blueprint for planting a garden or building a birdfeeder. Or, challenge your teen to measure and fold paper to make cubes or rectangular prisms with various volumes.
- **Look for weather patterns.** Have your teen use a weather app to track the paths of summer storms. Your teen can also research past storms. What patterns emerge? Do storms often occur in the same locations? Are they getting stronger over time?
- **Explore multiple strategies** to solve problems. Suggest that your teen try to solve old math homework problems in at least two ways. If the answer is the same, it's likely correct.

Tame screen time with math

The average teenager clocks nearly 8.5 hours of recreational screen time per day. Use that fact to show your teen how math helps people understand statistics. Ask: *How many hours is that per week? What percentage of the week, and of the year, do teens spend using screens?* Your teen will likely be surprised by the answers—and possibly inspired to cut back on screen time!



Source: The Common Sense Census: Media Use by Tweens and Teens, 2021.

Help your teen discover how useful math can be

Give your student "real-world" reasons to use math this summer. Ask your teen to:

- **Gather and analyze data** by taking a survey of friends' and family members' summer sports predictions. Which country is favored to win Olympic gold in basketball or gymnastics? Which nation do most people predict will win the women's soccer World Cup? Your teen can graph and share the results.
- **Plan summer meals.** Your teen could be in charge of dinner once a week—or even plan cookouts and picnics. Start by setting a budget per meal or per serving. Then, have your teen find recipes in cookbooks or online, figure out how many servings to make, create a shopping list and prepare the food.
- **Determine the optimal** internet speed for your household by considering how many devices you have and what you use them for. Have your teen do research and be sure to consider both upload and download speeds.

Read about math in the news

For a change from solving math problems, encourage reading about math! Ask your teen to find and discuss news articles that contain a math element. For example, how was a spacecraft designed to hold enough fuel to put a satellite into orbit without being too heavy? Or, your teen might read about the role math plays in the field of artificial intelligence. Also suggest reading up on the stock market, housing prices, interest rates, etc. Your teen can compile the stories into a math scrapbook to use for a future school project.

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