

What your child will learn in Grade 7 Mathematics

Number

Your child will work with whole numbers, fractions, decimals and negative numbers, and learn why these systems work the way they do.

Divisibility and division

You can ask your child to explain why some numbers divide evenly by 2, 3, 4, 5, 6, 8, 9 or 10, and why no number can be divided by 0. This builds their sense of how numbers fit together. [See the curriculum.](#)

Decimals in real problems

Your child will add, subtract, multiply and divide decimals to solve everyday problems like calculating costs or measurements. For harder problems with large multipliers or divisors, they will use a calculator or computer. [See the curriculum.](#)

Percentages

You can ask your child to solve problems involving percentages from 1% to 100%, such as calculating discounts, tips or portions of a whole. [See the curriculum.](#)

Fractions and decimals

Your child will understand that a fraction like $\frac{3}{4}$ and a decimal like 0.75 represent the same amount, and that some fractions produce repeating decimals like $\frac{1}{3} = 0.333...$ This helps them see numbers from different angles. [See the curriculum.](#)

Adding and subtracting fractions

You can ask your child to add and subtract fractions and mixed numbers, whether the denominators are the same or different. They will draw pictures or use concrete materials to show their thinking. [See the curriculum.](#)

Negative numbers

Your child will add and subtract negative numbers using pictures, objects or symbols. Explain that adding a positive or subtracting a negative moves right, while subtracting a positive or adding a negative moves left. [See the curriculum.](#)

Ordering numbers

You can ask your child to put fractions, decimals and whole numbers in order by using benchmarks (like knowing that $\frac{1}{2}$ is halfway), place value, or by converting them to equivalent forms. [See the curriculum.](#)

Patterns and Relations

Your child will recognize patterns in numbers and use them to solve problems, and will learn how to write and solve simple equations.

Patterns and linear relationships

You can ask your child to describe a pattern they see in a sequence of numbers or objects, and to explain the rule in words or as a simple equation. For example, if a pattern grows by 3 each time, they can write that rule down. [See the curriculum.](#)

Tables, graphs and conclusions

Your child will create a table of values from a pattern, plot those values on a graph, and use the graph to answer questions or solve problems. This helps them see how patterns behave visually. [See the curriculum.](#)

Expressions versus equations

You can ask your child to explain the difference between an expression (like $2x + 5$, which is just a calculation) and an equation (like $2x + 5 = 15$, which asks "what value makes this true?"). [See the curriculum.](#)

Evaluating expressions

Your child will substitute a number for a variable and calculate the result. For example, if $x = 3$ and the expression is $2x + 5$, they will find that the answer is 11. [See the curriculum.](#)

Solving simple equations

You can ask your child to solve equations like $x + 7 = 12$ by finding the value of x . They will use concrete materials, pictures or symbols to show their work. [See the curriculum.](#)

Solving multi-step equations

Your child will solve equations like $2x + 3 = 11$ or $x/2 = 10$, matching the forms specified for Grade 7. They will model these with pictures or objects to understand why the steps work. [See the curriculum.](#)

Keeping equations balanced

You can ask your child to explain what "keeping an equation balanced" means: if you do something to one side, you must do the same thing to the other side. This is the key to solving equations correctly. [See the curriculum.](#)

Shape and Space

Your child will work with circles, triangles and other shapes, learn how to measure them, and understand how shapes move and transform.

Circles

You can ask your child to explain the relationship between the radius (distance from centre to edge), diameter (distance across) and circumference (distance around). They will also learn that the circumference is always about 3.14 times the diameter, a number called pi. They can draw circles with a given radius or diameter and solve problems about circles. [See the curriculum.](#)

Area of triangles and parallelograms

Your child will develop and use a formula to find the area of triangles and parallelograms. For example, the area of a triangle is $\frac{1}{2} \times \text{base} \times \text{height}$. [See the curriculum.](#)

Area of circles

Your child will develop and use a formula to find the area of a circle. They will understand how this formula connects to the radius and to pi. [See the curriculum.](#)

Geometric constructions

You can ask your child to draw perpendicular lines (lines that meet at a right angle), parallel lines (lines that never meet), perpendicular bisectors (lines that cut another line in half at a right angle) and angle bisectors (lines that cut an angle in half). They will use tools like a ruler, compass and protractor. [See the curriculum.](#)

Plotting points and coordinates

Your child will locate and plot points on a grid using ordered pairs like (3, " 2), where the first number is the horizontal position and the second is the vertical position. They will work in all four quadrants, including negative coordinates. [See the curriculum](#).

Transformations

You can ask your child to move or flip a shape on a grid by translating it (sliding), rotating it (turning) or reflecting it (flipping). They will describe what happened and plot the new position. [See the curriculum](#).

Statistics and Probability

Your child will collect, display and analyze data, including measures of central tendency, circle graphs, and probability of events, to solve problems.

Mean, median, mode and range

You can ask your child to find the average (mean), the middle value (median), the most common value (mode) and the spread (range) of a set of data. They will decide which measure best describes the data. For example, if one person in a group earns much more than everyone else, the median might be more useful than the mean. [See the curriculum](#).

Outliers

Your child will see how a single unusual value (an outlier) can change the mean, median and mode. For instance, if most data values are between 70 and 80 but one value is 20, that outlier pulls the mean down [See the curriculum](#).

Circle graphs

You can ask your child to create and read circle graphs (pie charts) to show how a whole is divided into parts. They will label the sections and use the graph to answer questions. [See the curriculum](#).

Probability as a ratio, fraction or percent

Your child will express the likelihood of an event in three ways: as a ratio (like 3:5), a fraction (like $\frac{3}{5}$) or a percent (like 60%). They will understand that these all mean the same thing. [See the curriculum](#).

Sample space

You can ask your child to list all the possible outcomes of an experiment. For example, if you flip a coin and roll a die, the sample space includes all 12 combinations (heads with 1, heads with 2, and so on). [See the curriculum](#).

Theoretical versus experimental probability

Your child will predict the probability of an event using logic or a tree diagram, then conduct an experiment to see what actually happens. They will compare the two results and explain any differences. For example, a fair coin should land heads 50% of the time, but in a small experiment it might land heads 6 times out of 10. [See the curriculum](#).

How to help at home: Number

Play with divisibility. Ask your child which numbers divide evenly into 24, 36 or 100, and why. This strengthens their understanding of how numbers break apart. [See the curriculum](#).

Calculate with decimals in real situations. When shopping, cooking or measuring, ask your child to add or subtract decimal amounts. For example, "If this costs \$12.50 and that costs \$8.75, how much altogether?". [See the curriculum](#).

Work with percentages in daily life. Ask your child to calculate 10%, 25% or 50% of a price or quantity. Discounts, tips and portions of recipes are all good practice. [See the curriculum.](#)

Compare fractions and decimals. Ask your child to convert $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ to decimals, or to say which is bigger: 0.6 or $\frac{2}{3}$. This builds flexibility with number forms. [See the curriculum.](#)

Add and subtract fractions at home. Use recipes or measurements: "If we need $1\frac{1}{2}$ cups of flour and we have $\frac{3}{4}$ cup, how much more do we need?". [See the curriculum.](#)

How to help at home: Patterns and Relations

Find patterns together. Look for patterns in nature, music, sports scores or building designs. Ask your child to describe the rule and predict what comes next. [See the curriculum.](#)

Make a table and graph. If your child has a pattern, help them create a table of values and plot it on graph paper. Ask what the graph tells them about how the pattern grows. [See the curriculum.](#)

Solve equations with objects. Use coins, blocks or counters to model an equation like $x + 5 = 12$. Move objects to show what x must be. [See the curriculum:](#) [1](#), [2](#).

Substitute numbers into expressions. Give your child an expression like $3x + 2$ and ask them to find the answer when $x = 4$, 5 or 10. This builds comfort with variables. [See the curriculum.](#)

Write equations for real situations. If your child earns \$5 per week in allowance, help them write an equation for total earnings: money = $5 \times$ weeks. Then use it to answer questions. [See the curriculum.](#)

How to help at home: Shape and Space

Measure circles around your home. Find circular objects (plates, cans, wheels) and measure the distance around (circumference) and across (diameter). Divide circumference by diameter, it should be close to 3.14 every time. [See the curriculum.](#)

Calculate areas of real spaces. Measure a room, garden bed or piece of paper and calculate its area. If it's a triangle or circle, use the formula your child learned. [See the curriculum.](#)

Draw with tools. Use a ruler, compass and protractor to draw perpendicular lines, parallel lines and circles. Ask your child to explain what each tool does. [See the curriculum.](#)

Plot points on a grid. Draw a coordinate grid on paper and ask your child to plot points like (2, 3), (1, 4) or (2, 3). Then ask them to move a point by translating, rotating or reflecting. [See the curriculum:](#) [1](#), [2](#).

How to help at home: Statistics and Probability

Analyze data together. Collect data on something your child cares about: heights of family members, daily temperatures, or scores from a game. Find the mean, median, mode and range. Discuss which number best describes the data. [See the curriculum.](#)

Notice outliers. If you find an outlier in your data (a value very different from the rest), calculate the mean with and without it. Ask your child how much it changes the average. [See the curriculum.](#)

Create a circle graph. Ask your child to survey family members about their favorite food, sport or colour, then draw a circle graph to show the results. [See the curriculum.](#)

Predict and test probability. Before flipping a coin 20 times, ask your child to predict how many heads they will get. Then flip and count. Compare the prediction to the actual result. [See the curriculum:](#) [1](#), [2](#).

List all outcomes. If your child rolls two dice, ask them to list every possible combination (1+1, 1+2, and so on). This builds understanding of sample space. [See the curriculum.](#)

