



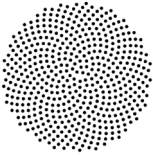
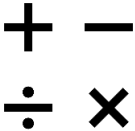


Tips for Supporting Math Home Learning for Secondary Students

Though home learning success may look different during a time when we are all redefining our roles, remember that we are all in this together! Here are **simple tips and reminders for helping secondary students learn math at home**:

	<p>Students develop proficiency in math over time by making sense of problems and persevering in solving them. Where have you seen some recent opportunities for your student to make sense of problems and persevere in finding a solution in his/her math work? When you observe your student doing his/her math work, does your student work thoughtfully or does your student try to finish as quickly as possible? Does your student try to make sense of the answer in terms of the question or is your student satisfied with any answer? At home, you can help your student improve his/her math performance by encouraging him/her to make sense of problems and persevere in solving them. *</p>
	<p>Students also develop proficiency in math over time by practicing the skill of reasoning. Many math problems ask your student to use his/her reasoning skills. One practical way to encourage your student to practice the skill of reasoning is to ask your student to explain a complicated problem from his/her math work. Ask him/her to show you how the concepts in the problem are represented symbolically in an expression, in an equation, on a number line, on a coordinate graph, etc. As a parent, this can be a useful activity for your student even if you don't feel confident in the mathematics yourself. You should be able to tell if your student understands the math ideas by the confidence he/she has when explaining his/her math work. *</p>
	<p>Giving your student opportunities to construct viable arguments and critique the reasoning of others is another practical way to develop your student's proficiency in math. When you observe your student doing his/her math work, does he/she make and investigate conjectures? Use information to construct logical arguments and justify his/her conclusions? When your student reads or hears the argument or reasoning of another person on a math problem, can he/she determine whether their argument makes sense? Ask thoughtful questions to improve or clarify their reasoning? To help your student continue to develop his/her math proficiency, create some everyday life math situations at home and ask your student to practice his/her ability to construct arguments and/or critique the reasoning of others. *</p>
	<p>Giving your student opportunities to model with mathematics is yet another practical way to develop his/her math proficiency. Encourage your student to solve problems in everyday life using mathematics. Ask your student to draw a diagram, write an expression or equation, or graph a math situation he/she finds in everyday life.</p>
	<p>Students develop proficiency over time by finding patterns. Some practical ways to give your child opportunities to practice finding patterns are: exploring patterns created by numbers such as multiples, factors, and x and y coordinates on a coordinate plane; making or finding a pattern of some kind and asking your student to describe the pattern he/she sees; and asking your student to share a pattern he/she recently discerned in his/her math work and describe it.*</p>
	<p>For middle school students specifically: Giving your student opportunities to become fluent with different math skills is another way to help your student develop his/her math proficiency. This can be done by playing games involving math facts (such as War and Dice games) and practice problems asked verbally or written. Some math skills with which middle school students should become fluent are: dividing fractions by fractions; dividing multi-digit numbers using the standard algorithm; adding, subtracting, multiplying, and dividing multi-digit decimals using the standard algorithm; and adding, subtract, multiplying, and dividing positive and negative numbers (whole numbers, fractions, and decimals).</p>