

## **How to Help Your Student with Homework**

The main goal of 7th grade math is for your child to develop a deep understanding of the mathematics we study. Over the past three to four decades, a growing body of research from the cognitive sciences is showing that people/kids learn better and hold on to information longer when they develop their own understanding from experiences they have with mathematics. The previous model of where teachers showed how to solve a problem and then students practiced that method on similar problems is not nearly as powerful as when students are the thinkers, figuring out the problems and developing their own understanding. The significance of this for teachers and parents is that children will have a much stronger understanding of mathematics when we don't necessarily "show them" how to do a problem, but instead support them through questions that guide them to figure out the answer on their own.

It is important that students conceptually understand a mathematical process before learning an algorithm or formula. Once the conceptual framework has been laid, they definitely need to learn the formula and become proficient with it. But they will have a much better grasp of the formula if they know why it works. Teaching the algorithm too soon can actually hinder a student from having a deep understanding of the concept, and it is through this deep understanding that students gain confidence and begin to see mathematics as something they can do and use as a tool in real life. Good questions and good listening will help children make sense of mathematics, build self-confidence, and encourage mathematical thinking and communication. A good question opens up a problem and supports different ways of thinking about it. Here are some questions you might try; notice none of them can be answered with a simple "yes" or "no." You might print this list to have readily available during homework discussion time.

### **Getting Started**

- What do you need to find out?
- What do you need to know?
- How can you get the information?
- Where can you begin?
- What terms do you understand or not understand?
- What are some similar problems you have solved that would help?

### **While Working**

- How can you organize the information?
- Can you make a drawing (model) to explain your thinking?
- Are there other possibilities?
- What would happen if?
- Can you describe an approach (strategy) you can use to solve this?
- What do you need to do next?
- Do you see any patterns or relationships that will help solve this?

### **Reflecting About the Solution**

- How do you know your solution is reasonable?
- How did you arrive at your answer?
- How can you convince me your answer makes sense?
- What did you try that did not work?
- Can the explanation be made clearer?

### **Responding (helping your children clarify and extend their thinking)**

- Tell me more.
- Can you explain it in a different way?
- Is there another possibility or strategy that would work?
- Help me understand this part....

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