



---

# STANDARDS FOR MATHEMATICAL PRACTICE

## 8 HABITS TO DEVELOP CRITICAL THINKERS & CONFIDENT PROBLEM-SOLVERS

---

### **MP1 – Make sense of problems and PERSEVERE in solving them.**

**Questions you can ask during homework time to encourage MP1**

- What do you know about this math problem right now? <sup>1</sup>
- What do the symbols and/or the vocabulary mean?
- What steps did you take to solve this problem? <sup>1</sup>

---

### **MP 2 – REASON abstractly and quantitatively.**

**Questions you can ask during homework time to encourage MP2**

- Explain how you worked this problem out. <sup>1</sup>
- Explain the steps or the strategy you used to solve the problem. <sup>2</sup>
- Explain how you arrived at this solution in another way. <sup>4</sup>

---

### **MP 3 – CONSTRUCT viable arguments and CRITIQUE the reasoning of others.**

**Questions you can ask during homework time to encourage MP3**

- Is there anything you forgot to do when you solved this problem? <sup>1</sup>
- Convince me that your strategy for solving a problem makes sense. <sup>2</sup>
- How do you know that your answers are correct? <sup>1</sup>

---

### **MP 4 – MODEL with mathematics.**

**Questions you can ask during homework time to encourage MP4**

- How can you organize information to solve this math problem? Will a list or table or a formula help? <sup>2</sup>
  - What picture might you draw to show this math problem in a different way?
  - Show me using a diagram or drawing.
-



---

## **MP 5 – USE appropriate TOOLS strategically.**

### **Questions you can ask during homework time to encourage MP5**

- What tools do you have from class that might help you?
- Explain how a tool you used helped you solve a problem.
- Now that you've used a calculator, how do you know the calculation is correct?

---

## **MP 6 – ATTEND to precision.**

### **Questions you can ask during homework time to encourage MP6**

- Should you add any measurement units to this problem?
- Did you check your math problem twice to be sure you have the right answer?<sup>1</sup>
- What are some new math vocabulary words you are learning this week?

---

## **MP 7 – LOOK for & MAKE USE of structure.**

### **Questions you can ask during homework time to encourage MP7**

- What math rules did you use to solve these math problems?
- Is there anything you already know or see in the shape or diagram that can help you identify the answer to the problem?<sup>3</sup>
- Are there any patterns that you notice?

---

## **MP 8 – LOOK for and EXPRESS regularity in repeated reasoning.**

### **Questions you can ask during homework time to encourage MP8**

- Are there shortcuts you can take to solve this problem?
- Do you notice any similarities between this problem and others you've done before?
- What patterns do you notice when trying to solve this problem?

---

### **Sources:**

<sup>1</sup> From "The Journey Through Middle School Math" by Karen Mayfield-Ingram with Alma Ramirez. From the EQUALS program at the Lawrence Hall of Science, at the University of California, Berkeley. ©2005 The Regents of the University of California.

<sup>2</sup> From "Parent Involvement and Awareness: Helping at Home with Mathematics Homework" by Paul Giganti Jr., CMC Math Festival Program

<sup>3</sup> From "Tips for Families – Homework Help", <http://www.nctm.org/resources/content.aspx?id=2876>

<sup>4</sup> From "Suggestions for Homework Help", <http://connectedmath.msu.edu/parents/tips.shtml>