



The Mathematics Coaching Program
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MCP Principal Links

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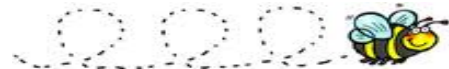


Teacher and Coach Relationships

Our program is designed so that the teachers and coaches are team members. Each coach works with three teachers for a six-week period. Our studies have shown that it takes at least six weeks to change or impact a teachers teaching practice. The coaches also should be upholding a teacher-coach sense of confidentiality. Coaches should not share information about the teacher with the administrator and vice versa.

Administrator SharePoint Website

MCP utilizes Microsoft Share-Point as a management tool for communication and data collection. There is a site specifically designed for administrators which can be accessed at <http://collaborate.csnp.ohio-state.edu/sites/mcpadmins>. If you are new to MCP and have not used our SharePoint site before, you will need a username and password to log in. Please contact mcp_coaching@osu.edu for technical support.



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How much time is too much time?

Administrators, teachers, and even coaches have expressed concern about what the appropriate amount of time is to spend on an individual problem. Consider the problem: We have three boxes and 60 items. How many items could go in each box? Without explicitly telling the students that they are actually doing division, the students figure out how to do it. The MCP model champions the idea that if children are using their own thinking on a time consuming, rich problem, they are doing and learning more than if they complete multiple algorithmic problems. As children become accustomed to the MCP approach to mathematics, they will gain speed because they know how to think about problems. The concern should not be how much time they are taking, but if they are actually understanding the problems.



Let our Students THINK!

The coaches in our program are teaching backwards from tradition and are focused on the learning of mathematics. Research tells us that only 20% of students actually learn the mathematics. The students included in that 20% who do learn the mathematics struggle to explain why they do something. School is a step-by-step process for them and that is how they move through the education system. MCP wants the students to be able to do the thinking rather than teachers telling them ways to complete the work. That is our goal. We help them use multiple approaches to mathematics and let them share. When they are able to share, it expands their thinking and even enlightens them sometimes. It is imperative that the students think. Once allowed to think freely, they are able to take that knowledge and apply it to the OAA problems.



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PROBLEM OF THE MONTH

Ask yourself *how you would solve the problem and how you think the students would solve this problem?* Then consider the data at the bottom of the page about how a sample of students solved the problem.

This problem was given to both 5th graders as a post test and 6th graders as a pretest.

Some passengers got on a bus. At the first stop, $\frac{2}{5}$ of them got off and $\frac{1}{5}$ of the original number got on.

A). What is the smallest number of passengers that could have been on the bus before the bus reached the first stop? Please explain your answer.

B). If the bus can carry no more than 42 passengers, what are the possible number of passengers that could have been on the bus before the bus reached the first stop? Please explain your answer.

5th and 6th Grade Student Results

Score	Student Response Category	5th grade post	6th grade pre
0	Only a number; adding, subtracting fractions; percentages	176	51
1	Multiples of 5 (excluding 5)	40	16
2	Answer 5 with reasoning	10	2
NA	No answer.	9	8

Dominant responses for part A: Dominant responses for part

- Added $\frac{2}{5} + \frac{1}{5}$ to get either $\frac{3}{5}$ or $\frac{3}{10}$
 - Multiplied either $2 \times 5 = 10$ or $3 \times 5 = 15$
- B:
- $42/5 = 8\text{r}2 = 8$
 - $42/3 = 14$
 - $42/2 = 21$
 - $2/5 = 20$ or $1/5 = 10$

Problems to Stimulate Children's Thinking

Complete the sequence: $1=3, 2=3, 3=5, 4=4, 5=4, 6=3, 7=5, 8=5, 9=4, 10=3, 11=?, 12=?$

How many eggs can you put in an empty basket?

In a certain country $\frac{1}{2}$ of $5 = 3$. If the same proportion holds, what is the value of $\frac{1}{3}$ of 10 ?

A merchant can place 8 large boxes or 10 small boxes into a carton for shipping. In one shipment, he sent a total of 96 boxes. If there are more large boxes than small boxes, how many cartons did he ship?

What weighs more - a pound of iron or a pound of feathers?

Why is the longest human nose on record only 11 inches long?

Jake weighs half as much as Joe, and John weighs three times as much as Jake. Together, they weigh 720 pounds. How much does each man weigh?

The illiterate of the future will not be the person who cannot read. It will be the person who does not know how to learn.
- Alvin Toffler