



The Mathematics Coaching Program
1945 North High Street, Arps Hall 285
Columbus, Ohio 43210

Patricia Brosnan, Ph.D., Executive Director
Azita Manouchehri, Ph.D., Associate Director
Timothy McKeny, Ph.D., Associate Director
Lucia Flevares, Ph.D., Assistant Director

MCP Principal Links

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Administrator SharePoint Website

MCP utilizes Microsoft SharePoint 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/default.aspx>. 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.

Remaining PD Sessions

Below, you will find a table with the remaining 2013-2014 professional development dates for the year. Remember that all coaches are expected to attend all sessions. We look forward to seeing you at the next professional development session!

Dates	Columbus PD Sessions	Facilitator Small Group Sessions
February	20, 21; All day PD for all	One and one half days with facilitator groups - Times and days TBD***
March	3, 4; All day PD for all	One and one half days with facilitator groups - Times and days TBD***
April	10, 11; All day PD for all	One and one half days with facilitator groups - Times and days TBD***
May	7, 8, 9; All day PD for all Wednesday-Friday	Facilitator site visit completions, other details as needed.

Tell me and I'll forget; Show me and I may remember; Involve me and I'll understand.
- Chinese Proverb

Effective Questioning

In our project, we have seen teachers display very effective questioning and encouraging students to question each other. When a question is asked, the follow-up is pretty astounding. Follow-up conversations are important and also very necessary to be sure that everyone understands and to bring the information full circle. When a student asks a question, other students are included in the conversation. Questions like, "What do you think about what ___ just said? Do you agree/disagree? Why or why not?" can be very helpful in facilitating a discussion. Marian Small's book on open ended questions may also assist teachers in good questioning techniques.

Healthy Frustration

In mathematics, there is a difference between understanding and formulating concepts. One way to help students to better understand a concept is to offer examples and ask students to draw a picture of what the examples mean. Some students find answers but cannot explain how they arrived at the answer. Students need time to gather their own ideas. Students need time to struggle. Real mathematical work is accomplished with perseverance and trying new things. Frustration is healthy and a part of mathematical practice. It is important to focus on how students solve problems - not just on answers. Students like intrigue and it is the formula for engagement.

Please visit us at <http://mcp-coaching.osu.edu/> for more information!

Closing Lessons

Time is of the essence when teaching. We, at MCP, are sure that without a time limit, you could teach all day. We think that it is important to know how to bring lessons to a close: pulling from previous lessons and connecting it to the current lesson, facilitating a short ending discussion, or even setting a reminder five minutes before class is scheduled to let out to make sure you have enough time to bring all the information full circle.





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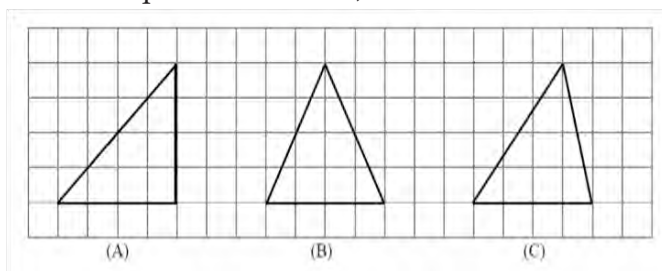
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PROBLEM OF THE MONTH

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 4th graders as a post-test and 5th graders as a pre-test.

What is the area of each of the triangles in the grid? Please explain how you arrived at your answers. (Each small square has an area of 1 square centimeter.)



Explain a different way of determining the area of each figure. Explain why you think this method works.

4th and 5th Grade Student Results

Score	Student Response Category	Results
0	Only a number	86
1	Right answer with insufficient reasoning or wrong answer with promising strategy	128
2	Right answer with sufficient reasoning	10
NA	No Answer.	18
Average	.7069	

The most common method used to solve this problem was to count full squares and then count partial squares. Most students did not have a different way of determining the area of each figure.

Students who answered this question correctly generally:

- Used whole numbers to label each full square, and then used the same number to label partial squares that would create a full square
- Matched partial squares using arrows, circles, shapes, or shading
- Used fractions other than $\frac{1}{2}$ to approximate partial squares ($\frac{1}{4}$ and $\frac{3}{4}$, for example)

Most commonly, students who answered this question incorrectly:

- Counted every full and partial square as one (common answers were 10, 12, and 13)
- Counted each partial square as $\frac{1}{2}$ regardless of whether its area was a half or not
- Counted only the whole squares inside the triangles, and did not count partial squares at all

