



## Training Video<sup>1</sup>

The MathPartners training video includes 14 segments that show mathematics tutors working with students in grades 2 through 5 on Mathpartners activities, as well as 3 segments that show tutors engaged in training activities.

Descriptions of the 15 video segments that are included on the MathPartners Mentoring Video are found below. We are grateful to the Harvard University tutors from the Harvard House and Neighborhood Development program who agreed to be part of these videos, as well as to their program director, Judy Kokesh. We would also like to thank the students from the Cambridge Public Schools in Massachusetts for their help in creating these videos.

### **Introducing Area with Pentominoes (9 minutes 32 seconds)**

*Grades 3-5 Geometry and Measurement Activity 5: Area*

The student solves a problem involving different shapes that have the same area.

This activity is intended to help develop spatial reasoning while building an understanding of the concept of area. (Further work by this same student on area and perimeter can be seen in the segments titled **Area** and **Perimeter**.)

### **Hundreds Chart: Introducing Mystery Patterns (4 minutes 43 seconds)**

*Grades 3-5 Number and Operation Activity 1: Explorations on a Hundreds Chart*

Using a number array called the Hundreds Chart, the student works to identify number patterns, which engages her in working with number concepts such as factors and divisibility.

### **Introducing Function Machines (10 minutes 22 seconds)**

*Grades 3-5 Patterns and Functions Activity 2: Function Machines*

The tutor introduces the student to the mathematical concept of function, creating a pre-algebra context in which the student can practice mental arithmetic and numerical problem solving.

### **The Crossing Off Factors Game (9 minutes 4 seconds)**

*Grades 3-5 Number and Operation Activity 1: Explorations on a Hundreds Chart*

Tutor and student play a game on the Hundreds Chart which allows the student to practice problem solving, factoring whole numbers, and mental arithmetic, and allows the tutor to notice areas of the student's computational difficulty.

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**Working with Two Students (3 minutes 55 seconds)**

*Grades 3-5 Number and Operation Activity 1: Explorations on a Hundreds Chart*

Students create number patterns on the Hundreds Chart, each trying to identify and describe the other's pattern.

**Area (12 minutes 40 seconds)**

*Grades 3-5 Geometry and Measurement Activity 5: Area*

The student works to solve a problem in spatial visualization: how can twelve different shapes, each with area 5 square units, be placed together to fill a rectangle with area 60 square units? This leads to work on computing the area of rectangles. (An earlier tutoring session with this same child can be seen in the **Introducing Area with Pentominoes** video segment. This student is also seen working with perimeter in the **Perimeter** video segment.)

**Perimeter (4 minutes 34 seconds)**

*Grades 3-5 Geometry and Measurement Activity 5: Area*

The tutor introduces the student to the concept of perimeter and how to figure the perimeter of different rectangular shapes. The student then compares the relationship of area and perimeter in the figures. (An earlier tutoring session with this same child can be seen in the **Introducing Area with Pentominoes** video segment. This student is also seen working with area in the **Area** video segment.)

**Function Machines: Mystery Machines (3 minutes 31 seconds)**

*Grades 3-5 Patterns and Functions Activity 2: Function Machines*

The tutor uses the pre-algebra tool of function machines and when he realizes the student is struggling with basic multiplication, he changes his emphasis.

**Tic-Tac-Add to 15 (4 minutes 29 seconds)**

*Grades 3-5 Number and Operation Activity 9: Quick Ideas*

The tutor uses a number game intended to help the student practice basic facts and mental arithmetic.

**Multiples of Three and Five (3 minutes 12 seconds) and Looking for Primes (4 minutes 8 seconds)**

*Grades 3-5 Number and Operation Activity 1: Explorations on a Hundreds Chart*

A child who has used the Hundreds Chart before to work with number patterns and the concept of factors (see **Hundreds Chart: Introducing Mystery Patterns and The Crossing Off Factors Game**) engages in two more activities that extend her work to the concept of multiples (in **Multiples of 3 and 5**) and to prime numbers (in **Looking for Primes**).

**Filling in a Hundreds Chart (6 minutes 30 seconds)**

*K-2 Number and Operation Activity 5: Explorations on a Hundreds Chart*

With a second grader, the tutor uses the Hundreds Chart to help him notice and describe elementary number patterns. The activity becomes the occasion to practice basic computational strategies.

**Pre-Assessment Example A (3 minutes 42 seconds) and Pre-Assessment Example B (7 minutes 33 seconds)**

*Grades 3-5 Number and Operation Pre-Assessment Questions 1 and 4*

A tutor uses a MathPartners pre-assessment with a fifth-grader, paying attention to how the student is thinking about the tasks she presents so that she can later determine which MathPartners materials will be most useful for this student.

**Tips for Tutors (2 minutes 28 seconds)**

A school volunteer coordinator gives an overview of tips for tutors to tutors attending a training session.

**A Uniform Approach to Misbehavior (3 minutes 53 seconds)**

A school volunteer coordinator leads a discussion to help tutors set consistent groundrules for student behavior.

**What You Can Do About Misbehavior (8 minutes 14 seconds)**

A school volunteer coordinator leads a discussion about consequences for student misbehavior.