

# 4MAT 4 Geometry Poster Series

About Learning, Inc. introduces

# 4MAT<sup>®</sup> 4 Geometry

## Materials Resources

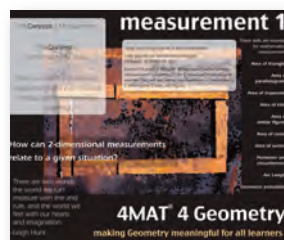
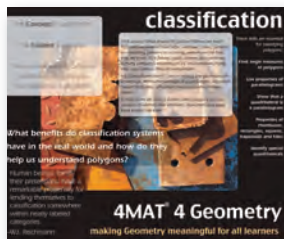
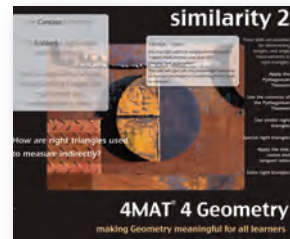
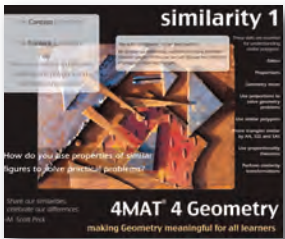
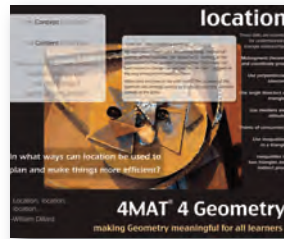
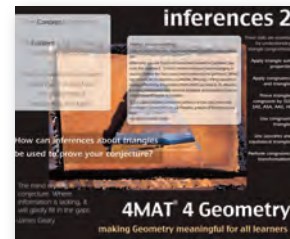
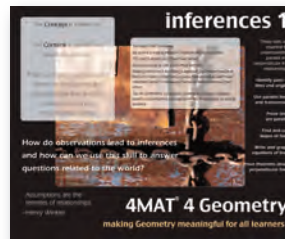
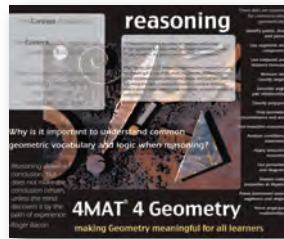
Developed by Geometry teachers  
and based on the 4MAT<sup>®</sup> Method!

Teacher's Guide

Student Activity Book

Unit Plan Posters

Classroom Resource List



The Classroom Materials Bundle and Classroom Implementation Package include a beautiful set of 11 four-color 18"x22" posters that correspond with each of the 4MAT 4 Geometry conceptual units. Each concept encompasses multiple geometry standards.



### What students are saying...

"I think the rotating stations helped me the most. Because of the moving, I stayed focused. Also we reviewed when we were done, so I knew I understood it." –Karen L.

"I did a very good job understanding the four points of concurrency because we made cut-out activities. I pay attention when I have something to look at, it is so much easier to understand." –Brittany L.

"I think the most interesting of our projects was the human triangle with string. It was, in my opinion, the most visual of all the projects and that is how I like to learn." –Kevin W.

"I learn best on partner worksheets and quizzes. I can work together with my partner to find the correct answer. It's interesting to compare answers if we do a problem separately. I learn from my mistakes, by having my partner correct me and explain how to solve a certain problem." –Ashley M.



About Learning Inc. 800.822.4628  
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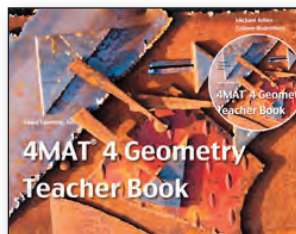
## 4MAT 4 Geometry - A Whole New Way of Learning Geometry

4MAT 4 Geometry includes a comprehensive set of training materials and educational resources for helping create more dynamic and engaging Geometry instruction.

### What do I need to Get Started Now?

The program includes everything a teacher needs, just add the textbook and you're ready to go!

- Teacher's Guide
- Student Activity Book
- Unit Plan Posters
- Classroom Resource List



### 4MAT 4 Geometry Teacher's Guide

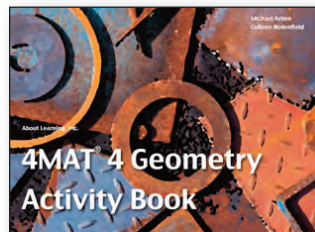
This 251-page Teacher's GuideBook includes

comprehensive guidance in how to orchestrate 4MAT 4 Geometry in the Classroom, along with one copy of the Student Activity Book. 4MAT 4 Geometry uses eleven over-arching concepts to engage students in more meaningful and interactive methods that promote the real world application and use of Geometry. The corresponding Geometry content is then nested into these larger concepts to help students make stronger connections to content.

Price: \$74.75 Order Code: GEOTB

## 4MAT 4 Geometry Student Activity Book

The 4MAT 4 Geometry Student Activity Book is a 397-page book that provides scores of ideas for engaging students in more creative and meaningful tasks that involve the use of Geometry. This book is not intended to replace your current textbook, but rather to provide teachers with numerous ideas for creating more engaging activities for students as they work to master content. You will be amazed at how well students respond to these interactive and dynamic activities.



### Geometry Vocabulary Study

This Activity Book provides a unique unit by unit Vocabulary study based upon Frayer's Model. Vocabulary graphic organizer pages are provided for each unit.

Price: \$16.00  
Order Code: GEOSB

### About Learning Wauconda, IL 60084

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### What are the classroom material costs?

A classroom set of 30 student workbooks, including a teacher's guide and a set of 11 classroom posters for \$632.50.

### Do I need to be trained?

While we recommend training for those with the means and the time, this program is designed so any Geometry teacher can begin immediate implementation.

### What if I have further questions?

Please call About Learning at 800-822-4628 (4MAT) or visit our website:

[www.aboutlearning.com](http://www.aboutlearning.com).

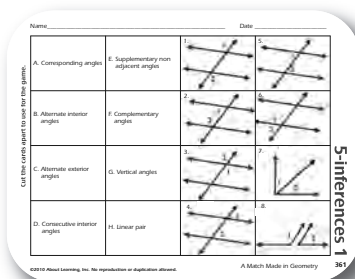
## 4MAT 4 Geometry Training for Teachers

For those schools or school districts interested in using 4MAT 4 Geometry in their classrooms, About Learning offers a 2-day training workshop.

This training provides comprehensive guidance in how to use 4MAT 4 Geometry to enhance Geometry instruction. It includes two days of intensive instruction on how to use this program to help transform Geometry instruction.

Participants receive hands-on practice in all the instructional activities comprising the course, a conceptual guide to teaching Geometry instruction in ways that students find more meaningful, and fully scripted guidance in moving students through the key concepts comprising Geometry instruction.

Upon completion, participants are fully prepared to use this program in their classrooms. 4MAT Trainers who attend are also able to train other teachers in their system how to teach this innovative new program.



A Match Made in Geometry cut-apart cards

## 4MAT 4 Geometry Frequently Asked Questions

### What Makes 4MAT 4 Geometry different?

4MAT 4 Geometry is a complete system for teaching Geometry in a whole new way.

Concept based

Designed to appeal to the needs of diverse learners

Differentiated instruction strategies built in

Rigorous, standards-aligned content

### What do I need to get started now?

The program includes everything a teacher would need to start immediately - just add your own textbook and you're ready to go!

Teachers Guide with specific activities and schedules

Student Activity Book

Classroom poster set

A complete resource list of classroom materials needed for implementation is presented in the 4MAT 4 Geometry Teacher Book.

## 4MAT 4 Geometry Classroom Bundle

The special Classroom Materials Bundle includes 30 student Activity Books, Teacher's Guide and one set of 11 unit plan posters. This is a great starter set for trying 4MAT 4 Geometry in the classroom!

Price: \$632.50    Order Code: GEO-30

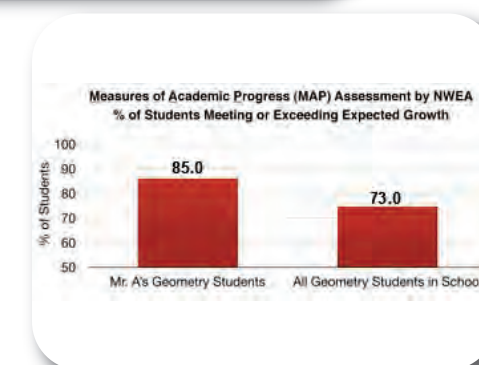
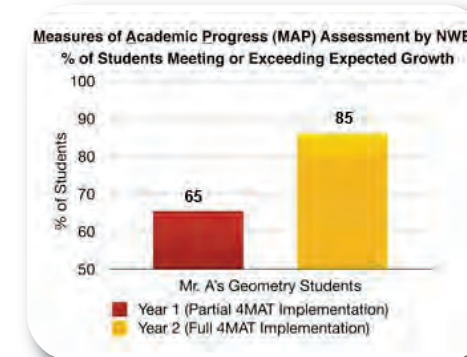
## 4MAT 4 Geometry Research Results

NWEA's computerized adaptive tests are called Measures of Academic Progress, or MAP. When taking a MAP test, the difficulty of each question is based on how well a student answers all the previous questions. AS the student answers correctly, questions become more difficult. If the student answers incorrectly, the questions become easier. MAP is built on 30 years of research and refinement, and adapts to the child in real-time as the test progresses for a pinpoint picture of learning achievement and readiness.

In 2006-2007, there were 63 students enrolled in Geometry where partial 4MAT implementation occurred. Fifty-four of these students had taken the MAP test in the Spring of 2006 and were retested in the Spring of 2007. Of these fifty-four, 65% met or exceeded the typical growth. This is based on the 2005 normative data that was done by NWEA. There were 194 students in traditional Geometry classrooms in the

same school of which 165 students had tested both seasons (Spring of 2006 and 2007). 70% of these 165 students either met or exceeded the typical growth.

In 2007-2008, there were 84 students enrolled in the Geometry class where full 4MAT implementation occurred. Seventy students had taken the MAP test in the Spring of 2007 and were retested in the Spring of 2008. Of these seventy students, 85% met or exceeded the typical growth. There were 162 students in traditional Geometry classrooms in the same school in which 142 students had tested both seasons. 73% had either met or exceeded the typical growth.



# 4MAT<sup>®</sup> 4 Geometry

## reasoning

Why is it important to understand common geometric vocabulary and logic when reasoning?

### Essential Skills for communicating geometrically

- Identify points, lines, planes
- Use segments and congruence
- Use midpoint and distance formulas
- Measure and classify angles
- Describe angle pair relationships
- Classify polygons
- Find perimeter, circumference and area
- Use inductive reasoning
- Analyze conditional statements
- Apply deductive reasoning
- Use postulates and diagrams
- Reason using properties of Algebra
- Prove statements about segments and angles
- Prove angle-pair relationships
- Student Activity Book pages 1-48
- Teacher Book pages 1-20



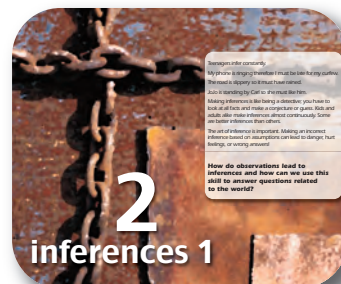
## inferences 1

How do observations lead to inferences and how can we use this skill to answer questions related to the world?

### Essential Skills for understanding parallel and perpendicular line relationships

- Identify pairs of lines and angles
- Use parallel lines and transversals
- Prove lines are parallel
- Find and use slopes of lines
- Write and graph equations of lines
- Prove theorems about perpendicular lines

Student Activity Book pages 49-66  
Teacher Book pages 21-36



## measurement 2

How can 3-dimensional measurements relate to a given situation?

### Essential Skills for 3-dimensional measurement

- Explore solids
- Surface area of prisms and cylinders
- Surface area of pyramids and cones
- Volume of prisms and cylinders
- Volume of pyramids and cones
- Surface area and volume of spheres
- Explore similar solids

Student Activity Book pages 305-316  
Teacher Book pages 159-174



11 measurement 2

"Cody, will you get me 3 from the basket?"  
Cody goes to the basket and then gets confused. "3 what?" he asks.  
Easy! The point of this card: When would we be asked to measure something in 3 dimensions? (length, width, and height) This one will look at measurements on the faces of 3-dimensional shapes and figures.  
How can 3-dimensional measurements relate to a given situation?



ABC Project Rubric

	Date & Hour _____			
	Advanced 4	Proficient 3	Novice 2	Developing 1
Content accuracy	All facts are accurate.	All but one fact are accurate.	Two to three facts are accurate.	More than three facts are accurate.
Attractiveness and organization	The ABC project has exceptionally attractive formatting and well-organized information.	The ABC project has attractive formatting and well-organized information.	The ABC project has workable information.	Like other ABC books in this series, the ABC book is well-organized and attractive.
Spelling and proofreading	No spelling errors remain after a peer review.	No more than ONE spelling error remains after a peer review.	No more than THREE spelling errors remain after a peer review.	More than three spelling errors remain after a peer review.
Required elements	The project includes all required elements (text, illustrations, and equations).	All but ONE letter of the alphabet has the required elements.	All but two or three letters of the alphabet have the required elements.	More than three letters of the alphabet are missing required elements.
Performance level	Student self-assessment: _____	Teacher assessment: _____	Teacher assessment: _____	Teacher assessment: _____

7-reasoning  
45

Movement Unit Thinking Cube

Cut out the Thinking Cube and fold and glue to form a cube. Roll the cube and use Activity Book pages 222-223 to answer the questions and problems posed on the cube. Do as many as your teacher instructs you to do.

1. List all the different types of transformations. (Activity Book p. 222)

2. Create your own model of composition without an argument. Use examples of the different types of transformations. Describe them. (Activity Book p. 222)

3. Recommend a strategy that can be used to find image points of a figure that has been translated without actually graphing the preimage and image. (Activity Book p. 222)

4. If you know the scale factor of a dilation, explain how to determine if an image is larger or smaller than the preimage. (Activity Book p. 222)

5. Have A and B represent two cities who need water. A pumping station is located along a major highway of an image is larger or smaller than the preimage. (Activity Book p. 222)

6. Compare and contrast the differences between rotations and translations. (Activity Book p. 222)

5-movement  
385

Movement Transformation Project

4-connections  
225

# 4MAT<sup>®</sup> 4 Geometry

## connections

How do you apply the connections among circles, lines, segments and the angles they form to the world?

### Essential Skills for understanding circle relationships

- Use properties of tangents
- Find arc measures
- Apply other angle relationships in circles
- Find segment lengths in circles
- Write and graph equations of circles

Student Activity Book pages 243-264  
Teacher Book pages 133-144



## measurement 1

How can 2-dimensional measurements relate to a given situation?

### Essential Skills for mathematical measurement

- Area of triangles
- Area of parallelograms
- Area of trapezoids
- Area of kites
- Area of similar figures
- Area of circles
- Area of sectors
- Perimeter and circumference
- Arc Length
- Geometric probability

Student Activity Book pages 265-304  
Teacher Book pages 145-158



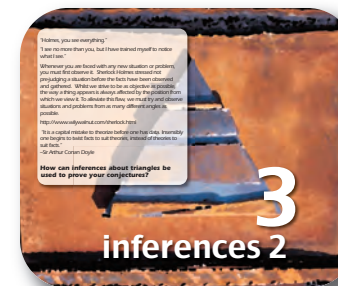
## inferences 2

How can inferences about triangles be used to prove your conjectures?

### Essential Skills for understanding triangle congruence

- Apply triangle sum properties
- Apply congruence and triangles
- Prove triangles congruent by SSS, SAS, ASA, AAS, HL
- Use congruent triangles
- Use isosceles and equilateral triangles
- Perform congruence transformation

Student Activity Book pages 67-92  
Teacher Book pages 37-50



## location

In what ways can location be used to plan and make things more efficient?

### Essential Skills for understanding triangle relationships

- Midsegment theorem and coordinate proof
- Use perpendicular bisectors
- Use angle bisectors of triangles
- Use medians and altitudes
- Use inequalities in a triangle
- Inequalities in two triangles and indirect proof

Student Activity Book pages 93-112  
Teacher Book pages 51-68



# 4MAT<sup>®</sup> 4 Geometry

## similarity 1

How do you use properties of similar figures to solve practical problems?

### Essential Skills for understanding polygons

- Ratios
- Proportions
- Geometry mean
- Use proportions to solve geometry problems
- Use similar polygons
- Prove triangles similar by AA, SSS and SAS
- Use proportionality theorems
- Perform similarity transformations

Student Activity Book pages 113-146  
Teacher Book pages 69-82

## similarity 2

How are right triangles used to measure indirectly?

### Essential Skills for determining lengths and angle measurements in right triangles

- Apply the Pythagorean Theorem
- Use the converse of the Pythagorean Theorem
- Use similar right triangles
- Special right triangles
- Apply the sine, cosine, and tangent ratios
- Solve right triangles

Student Activity Book pages 147-182  
Teacher Book pages 83-96

## classification

What benefits do classification systems have in the real world and how do they help us understand polygons?

### Essential Skills for classifying polygons

- Find angle measures in polygons
- Use properties of parallelograms
- Show that a quadrilateral is a parallelogram
- Properties of rhombuses, rectangles, squares, trapezoids and kites
- Identify special quadrilaterals

Student Activity Book pages 183-200  
Teacher Book pages 97-112

## movement

How do you interpret movement geometrically in the world?

### Essential Skills for understanding geometric transformations

- Translate figures and use vectors
- Use properties of matrices
- Perform reflections
- Perform rotations
- Apply compositions of transformations
- Identify symmetry
- Identify and perform dilations

Student Activity Book pages 201-242  
Teacher Book pages 113-132

