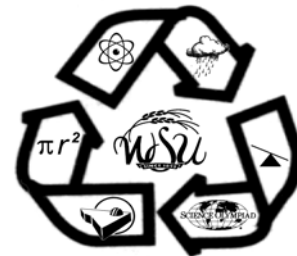


Math Activities for Your Classroom



from the
WSU Fairmount Center

for Science and Mathematics Education



The Fairmount Center has several mathematics kits available for check out and classroom usage. The kits have been assembled as supplemental material to regular mathematics curriculum. Each kit contains a variety of materials including manipulatives and teacher activity/resource books. The kits have been designed with the busy teacher in mind and require little or no preparation. Each kit includes a Teacher's Guide containing kit inventory, overview, helpful hints, Kansas math standards alignment, and outside resources from the Internet. There is no charge to use a kit, a teacher only needs to pick it up and return it to the Fairmount Center for Science and Mathematics Education at Wichita State University. For information regarding the availability of math activity kits phone 316-978-3191.

AlgeBlocks



This math lending kit contains manipulatives to help students learn abstract algebraic concepts through concrete modeling.

Students can model a broad range of algebraic concepts representing whole numbers and integers. In this kit you will find everything you need to set up a hands-on algebra lab. There are enough sets of AlgeBlocks for up to 34 students working in pairs. (grade recommendation: 6-12.)

Attribute Blocks

Attribute logic blocks are designed to teach basic math concepts such as equivalence and



difference. The simple attributes of these manipulatives (shape, color, size, and thickness) make them ideal for games and activities that involve problem solving and critical thinking skills. Teacher resource books included in the kit contain a variety of individual and group activities. (grade recommendation: K-9.)

Base Ten Blocks

Use base ten blocks to develop your students' critical-thinking skills and understanding of number sense, computation, place value including decimals and measurement. This kit



contains 8 sets of base-ten blocks, mats, stamps and overhead materials. The teacher's resource material includes a variety of individual and group activities. (grade recommendation: K-6.)

CuisenAire Rods

CuisenAire Rods are a collection of rectangular rods of ten colors, each color corresponding to a different length. All of the mathematical operations may be done using these manipulatives. These models are also effective for decimals, fractions, geometric and measurement investigation as well as logical reasoning skills. (grade recommendation: K-8.)



Factor Blocks

Factor Blocks™ are designed to help students understand and visualize number relationships and number theory concepts such as factors and multiples (including the greatest common factor and the least common multiple), prime numbers and fractions. The three-dimensional aspect of Factor Blocks™ allows students to conceptualize geometrical concepts such as perimeter, area, volume, scale, ratio and proportion. (grade recommendation: 4-8.)



Fraction Circles



Fraction Circle manipulatives are a set of pie-shaped fraction pieces modeling halves, thirds, fourths, fifths, sixths, eighths, tenths, twelfths and one whole.

These activities are to encourage students to build a mental image of fractions and to develop language that they can use to think and talk about fraction concepts. (grade recommendation: 2-8.)

Fraction Factory

Fraction Factory manipulatives are a set of rectangular fraction pieces modeling halves, thirds, fourths, fifths, sixths, eighths, tenths, twelfths and one whole. This kit provides many of the same activities as fraction circles. (grade recommendation: 2-8.)



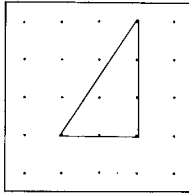
To reserve a math kit, phone 316-978-3191

GeoBlocks

GeoBlocks are hardwood blocks in various metric sizes and shapes. Primary students build patterns and three-dimensional constructions while older students investigate volume, surface area, fractions and dimensionality. Resource materials are a series of activity cards making these activities perfect for centers! (grade recommendation: K-8)

GeoBoards

Each kit contains geoboards for a classroom of 30 students. The boards are 2-sided with 25 pegs in a rectangular array on one side and



17 pegs arranged in a circle on the other. Geoboards are excellent for teaching the properties of polygons, congruence, symmetry, angles, area and perimeter, patterns, fractions, coordinate graphing, irrational numbers and lengths of line segments. (grade recommendation: K-9.)

Geometry

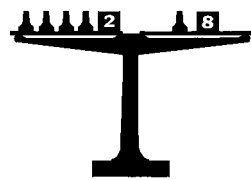
The Geometry kit includes a strong focus on the development of careful reasoning and proof using definitions and established facts. Much of the physical content of this kit is based upon 3 dimensional, non-Euclidean geometry. Manipulatives within this kit are mainly 3 dimensional: geometric solids and volume sets. Measurement tools within the kit include compasses and protractors. (grade recommendation: K-9.)

Graphing



Students of all ages need to be able to gather information, organize data, and display it in ways that will answer their questions about the information. This kit will make it easier for teachers to offer the kinds of lessons that will further these skills. This kit also contains 30 white erase boards with centimeter grid markings for making graphs. (Recommended grades K-12)

$$4X + 2 = X + 8$$



Hand-on Equations®

Hands-on Equations® is a method of teaching linear equations ($2X + 2 = 16$) to elementary students by using manipulatives to set up the equation in a concrete manner. Students then solve the equation through the use of "legal moves." Hands-on Equations® is divided into three levels of difficulty. (grade recommendation 3-8)

Legos

Lego building kits provide a natural incentive for students to be involved in their own learning. The models that can be created from these kits integrate math and science concepts and are easily assembled. The kit includes 15 Dacta sets complete with a motor and batteries. (Recommended grades: 4-9)

Math Fact Mastery



Some students have typically had a difficult time learning their basic math facts. This is critical for success in math,

however it can be quite repetitive and boring. This kit addresses the need for practicing the basic facts by giving the teacher a variety of ways to help the students with their drill and practice. Contents include: Learning Wrap-ups, School House Rock video, Mad Minute timed practice sheets and other fun tools to supplement fact mastery. (grade recommendation: K-6.)

Math Fun Kit

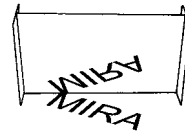
This kit is perfect for enrichment and fun! It includes many games that involve mathematic reasoning. Games included in this kit are: Tower of Hanoi, Mastermind, Othello, Mancala, Rubik's cube, Rush Hour and others. (grade recommendation: K-6.)

Math Measurement

This kit includes a variety of measurement tools and activities. Tools include: measuring tape, trundle wheel, platform scale and rulers. The activity books have activities for the primary student up to middle school grades. Most of the activities are hands-on and practical. Additional measurement tools can be found in the Geometry kit. (grade recommendation: K-6.)



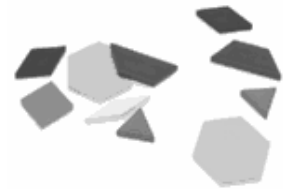
MIRA



The Mira kit is designed to assist teachers as they teach geometry. The Mira device is a red transparent plastic tool

with the reflective quality of a mirror. The highly polished and transparent surface makes the device ideal for teaching line and angle bisection, symmetry, congruence, slides, turns and flips. The Mira can be used extensively for all grade and ability levels. (grade recommendation: K-6.)

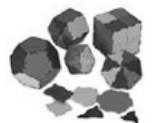
Pattern Blocks



Pattern blocks encourage the investigation of relationships among shapes. They help children to explore many mathematical topics including congruence, similarity, symmetry, area, perimeter, patterns, functions, fractions and graphing. The resource books within this kit are for primary grade levels through junior high. Many of the upper level activities are quite challenging! (grade recommendation: K-6.)

Polydron

Polydrons™ are colorful shapes capable of being together, edge to edge, by means of a unique clip hinge. The activities in the resource books encourage students to investigate many aspects of shape and space. (grade recommendation: K-6.)



Probability

The modeling and measurement of probabilities are fundamentals of mathematics that can be applied to the world around us. However few people have a good grasp of the nature of probability. This kit provides many activities for all grade levels researching and investigating probability events. (grade recommendations: 1-9)



Spherical Geometry

This kit is primarily for upper level students. The clear plastic sphere is a practical model for teaching geometry beyond the traditional plane. Students can compare and contrast spherical relationships with those of Euclidean geometry thus deepening their understanding of traditional geometry. (grade recommendation: 10-12.)

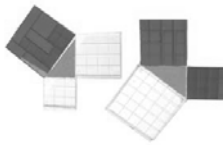


Tangrams



Tangrams are good tools for developing spatial reasoning and for exploring fractions and a variety of geometric concepts, including size, shape, congruence, similarity, area, perimeter and the properties of polygons. This kit contains a set of tangrams for 30 students. (grade recommendation: K-6.)

Proofs of Pythagoras



The models in this kit can be used to show at least 8 different proof of the Pythagorean theorem. The clear plastic models and colored tiles provide an excellent visual demonstration of this concept. (grade recommendation: K-6.)

Statistics



This kit allows for practical application of statistical data collection. As students gather information in the

classroom and make comparisons of the data, they discover statistics are an integral part of daily life, and such statistics can help them draw mathematical conclusions about the world around them. (grade recommendation: K-6.)

The ability to assemble these math activity kits and purchase the materials they contain was made possible by a grant from the Boeing Company.

Instructional Math Games

These games are available for check out by calling 316-978-3191. If you would like to make your own versions of these games, the templates for these and other math games are available in a book. Call 316-978-3191 for information on how to order the book.

Multiplication Mania – This game lets students use a gameboard and a special deck of cards to work on their multiplication facts 1-9. (Grades 3 and up)

Multiplication/Division Softball – This game will give students drill and practice with long division and expanded multiplication problems using 2, 3 and 4 digits. (grades 4 & up)

Quad – This game will review all basic operations of whole numbers. Students will have to problem solve multiple ways to determine a feasible answer. (grades 4 and up)

Integer Infatuation – This game lets students use a gameboard and a special deck of cards where positive numbers are represented by the black cards and negative numbers are represented by the red cards. They must determine which of the integers is the greatest. (grades 6 and up)

Fraction Face-Of – This game lets students use a gameboard to match equivalent fractions. (grades 5 and up)

Race To Reduce – This game lets students use a gameboard and a special deck of cards to build a fraction and then to put it into lowest terms. (grades 5 and up)

Fraction Softball – This game uses a softball diamond gameboard or your classroom walls to simulate a softball game where the batter must either answer operations of fractions or change them to a different fraction form in order to advance on the bases for his or her team. (grades 6 and up)

Serious Series – This game can be played individually or in small groups. A student can compete against individual time or against an entire classroom. The student will take 9 fraction cards and must put them in chronological order least to greatest as quickly as possible. (grades 4 and up)

Oops! – This card game will help students change from improper fractions to a mixed number and back. It's formatted after the card game "Old Maid." (grades 3 and up)

Rolling Operation – This game will help students identify answers to all operations of fractions. They must use strategy to find the most points to win. (grades 5 and up)

Book It! – This game is played using cards and finding books of equivalent fractions. It is a quick playing game of draw. (grades 4 and up)

L.C.M. Madness – This game lets students use a gameboard and a special deck of cards to enhance the skill of finding Least Common Multiples. (grades 4 & up)

G.C.F. Frenzy - This game lets students use a gameboard and a special deck of cards to find the Greatest Common Factor. (grades 4 and up)

Graphing Calculators and Calculator Based Labs

Secondary math and science teachers: step into using Graphing Calculators and Calculator Based Labs (CBLs)! The Fairmount Center has all the tools that you will need to get your class using these learning tools. A complete classroom set of TI-83 Graphing Calculators with or without CBLs can be borrowed for classroom checkout. If you aren't ready to turn your class loose on these tools, a Teacher Pack is available for loan for you to use and explore before your students do. The following probes are available for use with the CBLs: light meter, temperature, voltmeter, microphone, motion detector, low-g accelerometer, student force sensor and pH meter. Also available are single carbon dioxide, dissolved oxygen, and turbidity probes. For additional information about the CBLs and the activities you can do with them, check out our CBL website at: webs.wichita.edu/facsme/cbl



The TI-83s can be checked out with or without the CBLs for a two week period. Included with the calculators is a CD-ROM of nearly 500 science and math activities your students can do. To reserve a kit, call 978-3191. There is no charge to use these kits.

Math Activity Kit Quick Guide by Grade Level

Kit	Grade												
	K	1	2	3	4	5	6	7	8	9	10	11	12
Algebra													
AlgeBlocks							X	X	X	X	X	X	X
Hands-On Equations				X	X	X	X	X	X				
Factoring													
Base Ten Blocks	X	X	X	X	X	X							
Factor Blocks					X	X	X	X	X				
Fractions													
Fraction Circles			X	X	X	X	X	X	X				
Fraction Factory			X	X	X	X	X	X	X				
Geometry													
GeoBlocks	X	X	X	X	X	X	X	X	X				
GeoBoards	X	X	X	X	X	X	X	X	X	X			
Geometry	X	X	X	X	X	X	X	X	X	X			
Graphing	X	X	X	X	X	X	X	X	X	X	X	X	X
MIRA	X	X	X	X	X	X	X						
Pattern Blocks	X	X	X	X	X	X	X						
Polydron	X	X	X	X	X	X	X						
Proofs of Pythagoras	X	X	X	X	X	X	X						
Tangrams	X	X	X	X	X	X	X						
Probability and Statistics													
Probability	X	X	X	X	X	X	X	X	X	X			
Statistics	X	X	X	X	X	X	X						
Problem Solving / Critical Thinking													
Attribute Blocks	X	X	X	X	X	X	X	X	X	X			
Legos				X	X	X	X	X	X	X			
Additional Kits													
CuisenAire Rods	X	X	X	X	X	X	X	X	X				
Math Fact Mastery	X	X	X	X	X	X	X						
Math Fun Kit	X	X	X	X	X	X	X						
Math Measurement	X	X	X	X	X	X	X						