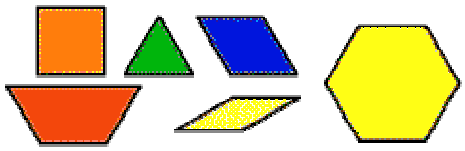
Pattern Blocks



Patterns blocks always contain the following shapes: green triangle, blue rhombus, orange square, red trapezoid, beige diamond, and yellow hexagon.

Patterns blocks are used for: Patterning, grouping, fractions, and tessellations.

Resources:

Exploring with Pattern Blocks: Grades 4-8. Sandra Clarkson. Vincent Altamura. Addison Wesley. ISBA 0201480298

Investigating with Pattern Blocks. Marcia Millar. White Plains, NY: Cuisenaire Company of America Inc. 1995.

Math Discoveries with Pattern Blocks: grades K-1. Shirley Hoogeboom. Alsip, IL: Ideal School Company. 1994.

Math Discoveries with Pattern Blocks: grades 2-3. Shirley Hoogeboom. Alsip, IL: Ideal School Company. 1994.

Mathematics with Manipulatives: Pattern Blocks (Video Kit). Agincourt, ON: Distributed by Gage. 1989.

Cooperative Problem Solving with Pattern Blocks. Judy Goodnow and Shirley Hoogeboom. Creative Publication. 1991.

Just for Pattern Blocks. Carol Alexander, Ruth Colton, Carolyn O'Donnell. Creative Publications. 1996. ISBN 1-561078-99-9

Web-sites:

http://mason.gmu.edu/~mmankus/Pblocks/Fractions.htm#tools
http://teacher.scholastic.com/lessonrepro/lessonplans/instructor/blockactiv.htm

On-line Activities:

www.arcytech.org/java/patterns/patterns_j.shtml

Black Line Masters:

www.teachvision.com/lesson-plans/lesson-6175.html

Attribute Blocks

Attribute Blocks always contain five different shapes in three different sets of colours and are of two different thickness'.

Attribute blocks are used for sorting, classifying, patterning and numeration.

Resources:

Critical and Creative Thinking with Attribute blocks. Bob Willcutt. Pacific Grove, CA: Critical Thinking Books and Software. 1998.

Math Discoveries with Attribute Blocks. Judy Goodnow. Alsip IL: Ideal School Supply Company. 1995.

Cooperative Problem Solving with Attribute Blocks. Judy Goodnow and Shirley Hoogeboom. Creative Publications. 1991.

Hands-On Attribute Blocks. 1986. Creative Publications. ISBN 0-88488-317-5

Web-sites:

www.bgsu.edu/colleges/edhd/programs/ASPECT/bull.html
www.iit.edu/~smile/ma9117.html
http://webserv1.oneonta.edu/faculty/thomasrl/chapter4.pdf

Base 10 Blocks

Base 10 blocks are wood or plastic units. You can make your own from paper or glue beans to sticks.

Base 10 blocks are used for: place value, numeration, whole number operations, decimal operations, metric measurement concepts, symmetry, area/perimeter and fractions.

Resources:

Base 10 Number Concept Set (Kit). Oak Lawn, IL Ideal School Supply. Distributed by Scholar's Choice. London, Ontario. 1987.

Just for Base 10. Carol Alexander, Ruth Colton, Carolyn O'Donnell. 1996. Creative Publications. ISBN 1-561079-00-6

Mathematics with Manipulatives: Base 10 Blocks (Video Kit). Agincourt, ON: Distributed by Gage. 1989.

Math Discoveries with Base 10 Blocks: Grades 1-3. Judy Goodnow. Alsip IL: Ideal School Supply Company. 1994.

Cooperative Problem Solving with Base 10 Blocks. Judy Goodnow and Shirley Hoogeboom. Creative Publications. 1991.

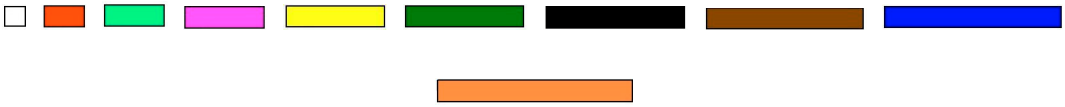
Web-sites:

http://mason.gmu.edu/~mmankus/whole/base10/baseten.htm
www.ideas.wisconsin.edu/ideas_resource.cfm?rid=3999

On-line Activities:

www.learningbox.com/base/10/
www.monroe.k12ct.us/~etc/funANDgames.htm

Cuisenaire Rods



Cuisenaire rods are devices for inventive mathematical activities. They are referred to by the first letters of the colour name. W= white, r = red, g = green, y = yellow, d = dark green, k = black, n = brown, e = blue, o = orange.

Cuisenaire rods are used for: addition, subtraction, multiplication and division of whole numbers, factors, powers and exponents, fractions, ratio and proportion, measurement, bar graphs, distribution, and algebra.

Resources:

Using the Cuisenaire Rods: a photo/text guide for teachers. Jessica Davidson. New Rochelle, NY: Cuisenaire Company of America. 1969.

Mathematics With Manipulatives: Cuisenaire Rods (Video Kit). Agincourt, ON: Distributed by Gage. 1989.

From Here to There with Cuisenaire Rods: Area, Perimeter and Volume. Grades 4-9. Patricia Davidson and Robert Willcut. Cuisenaire Company of America.

Idea Book for Cuisenaire Rods at the Primary Level. Patricia S. Davidson. Learning Resources. Cuisenaire Learning Experiences Series.

Intermediate Idea Book for Cuisenaire Rods. Patricia S. Davidson. Learning Resources. Cuisenaire Learning Experiences Series.

Web-sites:

www.nifl.gov/nifl.ann/2001/0045.html
www.lessonplanspage.com/MathFractionsCuisenaire34.htm

On-line Activities:

www.edbydesign.com/btcount.html

Colour Tiles

Color Tiles

Colour tiles are always green, red, blue and yellow squares.

Colour tiles are used for patterning, counting, place value, addition, and subtraction, measurement, geometry, graphing and probability.

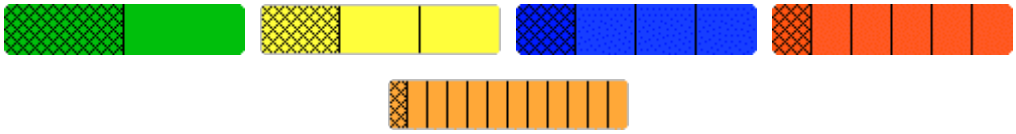
Resources:

Color Tile Math. Olga Gonzales-Granat. Vernon Hills, IL: Learning Resources. 1995.
Mathematics with Manipulatives: Color Tiles (Video Kit). Agincourt, ON: Distrubted by Gage. 1989

Web-sites:

http://step.k12.ca.us/activities/fractions/color-tiles/activities/overview.html

Fraction Bars



Fraction bars are usually plastic bars or strips of paper that have various fraction amounts on them.

Fraction bars are used for measuring and showing a quantity less than a unit.

Web-sites:
http://mason.gmu.edu/~mmankus/talks/bars/fbar1.htm

Black Line Masters:
www.teachervision.com/lesson-plans/lesson-6190.html

Counters



Counters are any collection of similar items that can be used for counting. For example: buttons, poker chips, beans, marbles, etc.

Counters are used for numeration, creating graphs, classifying, sorting, matching, and whole number operations.

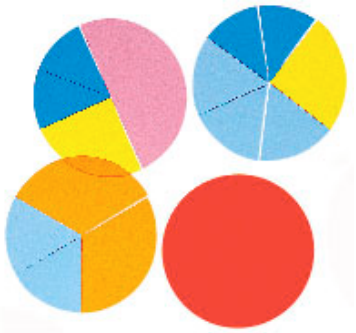
Resources:

Just for Teddy Bear Counters. Carolyn O'Donnell and Cynthia Reak. Creative Publications. 1996. ISBN 1-561078-97-2

Web-sites:

www.lessonplanspage.com/MathCounting/Colors23.htm
www.lessonplanspage.com/MathCounting/OrderingNumberK1.htm

Spinners or Fraction Circles



Spinners are circles that have been proportionately sectioned, with each section representing a number or fraction and have an "arm" for spinning.

Spinners are used for fractions and probability and in some games to determine the number of moves a person may make.

Resources:

Just for Fraction Circles. Carol Alexander, Ruth Colton, Carolyn O'Donnell. 1996. Creative Publications. ISBN 1-561079-01-4

Fraction Manipulatives (Activity Sheets). Faculty of Education, Queen's Library. Audio-visual files.

Fraction circles; beginning fraction; skill building activities and games. Vernon Hills, IL: Learning Resources. Distributed by Louise Kool and Galt. 1998.

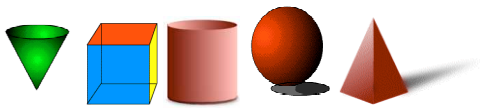
Data, Chance and Probability Activity Book. Grades 1-3. Graham Jones and Carol Thornton. Learning Resources Inc. 1993.

Data, Chance and Probability Activity Book. Grades 4-6. Graham Jones and Carol Thornton. Learning Resources Inc. 1993.

Web-sites:

www.shodor.org/interactivate/activities/spinner3/index.html

3D Geometrical Shapes



3D geometrical shapes include rectangular prisms, square based pyramids, cubes, triangular prisms, cylinders, cones, spheres, triangular based pyramids.

3D geometrical shapes are used for classifying, sorting and patterning.

Resources:

Activities in 2 & 3 Dimensional Geometry. Ernest Woodward & Thomas Hamel.

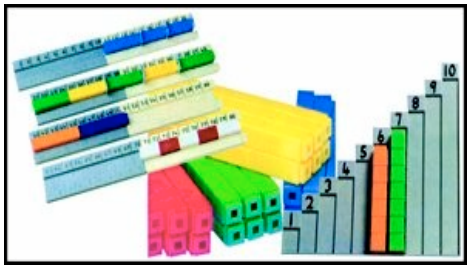
Web-sites:

www.lessonplanspage.com/MathArt2D3DsahpesFromToothpicsChick-Peas48.htm

Black Line Masters:

www.teachervision.com/lesson-plans/lesson-6203.html

Unifix Cubes



Unifix Cubes are plastic interlocking cubes in ten different colours.

Unifix cubes are used in exploration and investigation of patterning, sorting and classifying, number operations and measurement.

Resources:

Unifix One Step at a Time: Number Concepts (Kit). Libby, Hollombe. Carson, CA: Lakeshore Curriculum Materials. 1979.

20 Thinking Questions for Linker Cubes. Kelly Stewart, Kathryn Walker and Cynthia Reak.

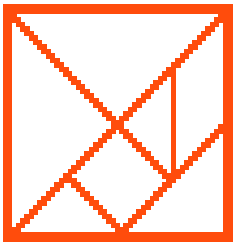
Web-sites:

www.public.iastate.edu/~storms/Interlocking_Activities.html

www.creativeclassroom.org/ma00aplus/math.html

www.lessonplanspage.com/MathNumberMatchUnifixIdeaK.htm

Tangrams



Tangrams are a seven piece interlocking set of geometrical shapes.

Tangrams are used for shapes, geometry, symmetry, congruency, similarity, and area.

Resources:

Co-operative Problem Solving with Tangrams. Thornhill, Ont: Creative Publications. 1989.

Tangram Treasury Books A, B & C. Jan Fair. White Plains, NY: Cuisenaire Company of America. 1987.

Tangrams in Action: Grades K-4. Lincolnshire IL: Learning Resources Inc. 1992.

Cooperative Problem Solving with Tangrams. Judy Goodnow and Shirley Hoogeboom. Creative Publications. 1991.

Just for Tangrams. Carol Alexander, Ruth Colton, Carolyn O'Donnell. 1996. Creative Publications. ISBN 1-561079-03-0

Web-sites:

http://mathforum.org/trscavo/tangrams/activities.html

www.leon.k12.fl.us/Public/SabalPalmAchrpages/grade4/tangram.htm

On-line Activities:

http://enchantedmind.com/tangram/tangram.htm

Number Line

A number line is a sequence, designated by one of a series of symbols or words called numerals. It can be made from paper or plastic and have both negative and positive integers represented.

A number line is used for measurement, direction, numeration, whole number operations, integers, decimals, odds, evens, and fractions.

Resources:

Walking the Line: Activities for the Ti-73 Number Line. Christine A. Browning and Dennis St. John.

Web-sites:

www6.funbrain.com/linejump/index.html

Black Line Masters:

www.abcteach.com/Math/mathTOC.htm
www.teachervision.com/lesson-plans/lesson-6191.html

On-line Activities:

www.ambleside.schoolzone.co.uk/ambleweb/mentalmath/numberlines.html

Hundreds Chart

A hundreds chart is a 10 square X 10 square chart listing the numbers 1- 100 in their correct numerical order.

A hundreds chart is used for number sense, numeration, whole number operations, and patterning.

Resources:

100 Activities for the Hundred Number Board. Sandra Pryor Clarkson. Idea. 1985.
Hundred Board Activities. Grades 2-6. Carson-Dellosa Publishers.

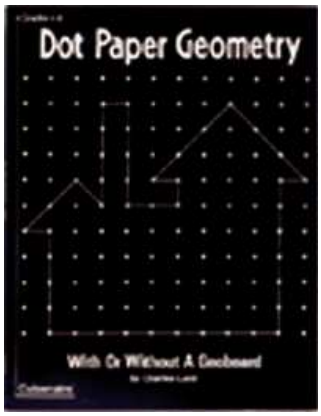
Web-Sites:

http://teachers.net/lessons/posts/662.html
www.msdwt.k12.in.us/Info/PDFs?Grade%202Stanl.pdf
www.pacificnet.net/~mandel/Math.html

On-line Activities:

www.ambleside.schoolzone.co.uk/ambleweb/mentalmaths/countersquare.html

Dot Grid



Dot grid is a sheet of paper containing dots that are equally spaced in lines and rows. Dot grid can come in different scales, for example, 1 cm, 2cm, etc.

Dot grid is used for measurements, relationships and area.

Resources:

Visualized Geometry: A van Hiele Level Approach. Ernest Woodward and Thomas Hamel. J. Weston Walch Publishers.

Dot Paper Geometry. Skill Building Geometry and Measurement Activities. Charles Lund. New Rochelle, NY: Cuisenaire Company of America. 1980. ISBN 0914040871

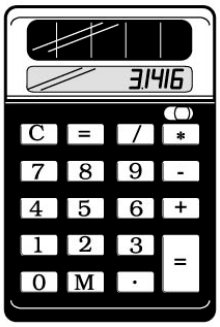
Web-sites:

http://unite.ukans.edu/explorer/explorer-db/rsrc/810013045-81ED7D4C.2PDF

Black Line Masters:

www.teachervision.com/lesson-plans/lesson-6187.htm

Calculators



Calculators are electronic instruments that perform various mathematical functions.

Calculators are used for all types of math.

Resources:

Co-operative Problem Solving with Calculators. Judy Goodnow and Shirley Hoogeboom. Creative Publications. 1991.

Kids 'n' Calculators: How to Use the Calculator as a Teaching Tool (K-6). Dr. Marion Cross and Peggy Morrow. Exclusive Education Products. 1993.

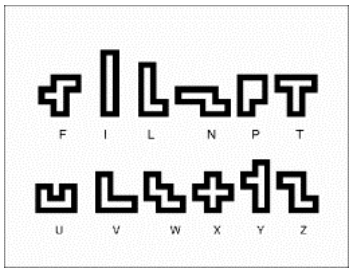
Learning Math With Calculators: Activities for Grades 3-8. Len Sparrow and Paul Swan.

Uncovering Mathematics with Manipulatives and Calculators. Jane F. Schielack and Dinah Chancellor. ISBN 1-886309-00-0

Web-sites:

www.col-ed.org/cur/math/math06.txt
www.lessonplanspage.com/MathAdditionSubtractionCalculators28.htm

Pentominoes



Pentominoes are flat shapes formed from five (pente = 5) unit squares. The squares must touch each other along an edge – not at a corner. Not counting mirror images or rotations there are 12 different shapes named by the capital letter they represent.

Pentominoes are used for area, transformations, and congruency.

Resources:

Problem Solving with Pentominoes: Grades 1-4 Activity Book. Vernon Hills, IL: Learning Resource Inc. 1992.

Math Discoveries with Pentominoes. Grades 1-3.

Try It! Pentominoes. Grades 4-8. Marjorie Duby. Cuisenaire Company of America. SE6-0201-87220-X

On-line Activities:

www.enchantedmind.com/puzzles/pentamino/pentam.htm

Geoboards

Geoboards are square or round boards that have raised pegs, which are equally spaced apart both in lines and rows, so that elastic bands can be attached in various shapes.

Geoboards are used for patterning, shapes and geometry.

Resources:

Mathematics With Manipulatives: Geoboards (Video Kit). Agincourt, ON: Distributed by Gage. 1989.

Geoboard (Kit). London, Ont. Distributed by Scholar's Choice. 1993.

Geoboards in Action (Kit). Scarborough, ON: Distributed by Kool and Galt. 1992.

Geoboard Activities. Ernest Woodward & Thomas Hamel. Portland Maine: J. Weston Walch. 1994.

Try It! Geoboards. Ryan McElduff and Michael Oberdorf. Cuisenaire Company of America. SE6-0-201-87218-8.

Just for Geoboards. Carol Alexander, Ruth Colton, Carolyn O'Donnell. 1996. Creative Publications. ISBN 1-561079-04-9

Web-sites:

www.lessonplanspage.com/MathAreaPerimeterWithGeoboards78.htm

Black Line Masters:

www.teachervision.com/lesson-plans/lesson-6196.htm

Analogue Clock

Analogue Clocks are clocks that have the hour and minutes as well as the minutes written in increments of five.

Analog clocks are used for learning to tell time by the hour, minutes and seconds.

Resources:

Let's Tell Time. Olga Gonzales-Granat.

Web-sites:

www.lessonplanspage.com/MathWhatTimeIsIt12.htm
www.pacificnet.net/~mandel/Math.html
www.educate.org.uk/teacher_zone/classroom/numeracy_23.htm
www.edu.gov.on.ca/eng/document/curricul/activity/day9/d9-g1-me.html

On-line Activities:

www.ambleside.schoolzone.co.uk/ambleweb/mentalmaths/clock.html

Coins

Coins are always pennies, nickels, dimes, quarters, loonies and toonies.

Coins are used for learning value, numeration and simple whole number operations.

Resources:

Fun with Money Activity Book. Carol Thornton and Judith Wells.

Rolling in the dough: Money games for kids. 1998. Box Cars and One-eyed Jacks Publications.

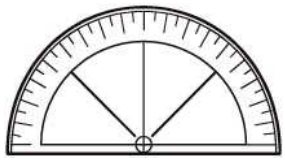
Web-sites:

www.harlan.k12.ia.us/mrsc/money_activities_that_work.htm

http://mathcentral.uregina.ca/RR/database/RR.09.96/andrews1.html

www.ed.gov/Pubs/parents/Math/mathhome.html

Protractor



Protractors are a measuring device, usually made from plastic. You can make your own by photocopying a protractor on to heavy plastic (such as overhead pages)

Protractors are used for measuring angles.

Web-sites:
www.edu.gov.on.ca/eng/document/curricul/activity/day7/d7-g7me.html

Black Line Masters:
www.teachervision.com/lesson-plans/lesson-6230.htm

On-line Activities:
www.ambleside.schoolzone.co.uk/ambleweb/mentalmaths/angleshapes.html

Mira

Mira's are plastic devices, which when placed beside an image, show that image's reflection.

Mira's are used for symmetry, slides, flips, and rotations.

Resources:

Gateway to Geometry. A School Program For Teachers Using the Mira. Norm Gillespie. Willowdale, ON: Mira Math Company. 1995.

Mira Activities for the Middle Grades. Norm Gillespie. Willowdale, ON: Mira Math Company. 1995.

Mira Activities for the Senior Grades. Norm Gillespie. Willowdale, ON: Mira Math Company. 1995.

Geometric Construction and Investigations with a Mira. Grade 6-Adult. Ernest Woodward and Thomas Hamel. J. Weston Walch Publishers. ISBN 0-21736-906.

Image Reflector Geometry. Grades 1-6.

Mirror Explorations. Grades 1-5. Peggy McLean. 1993. ISBN 1882293010

Web-sites:

www.ship.edu/~eisen/Grade6-8/constructions/construction.htm

Dice

Dice are plastic or foam cubes with dots representing the numbers 1-6 on each side. The opposite sides of dice always add up to seven.

Dice are used for number sense, whole number operations, probability, as well as games.

Resources:

Dice Works: Using Special Dice. Grades K-9
Box Cars and One-eyed Jacks. Grades 1-9

On-line Activities:

www.ambleside.schoolzone.co.uk/ambleweb/yahtzee/index.html
www.shodor.org/interactivate/activities/race/index.html
www.shodor.org/interactivate/activities/racing/index.html
www.shodor.org/interactivate/activities/dice/index.html

Bundle Sticks

Bundle sticks are usually homemade from Popsicle sticks, coffee sticks or straws and are bundled with an elastic into groups of tens and hundreds.

Bundle sticks are used for number sense, whole number operations, and place value.

Resources:

Try It! Popsicle Sticks. Charles Lund. Cuisenaire Company of America. SE6-0-201-87221-8

Compass

A safety compass is a measuring instrument made from plastic.

A compass is used for taking measurements and describing circles.

Other Useful Web-sites:

www.etacuisenaire.com
http://mason.gmu.edu/~mmankus/Handson/manipulatives.htm
www.tcdsb.on.ca/eternal/departments/math/EQAO.htm#Manipulatives (EQAO Math Manipulatives for Grade 3/6 Assessment.)
http://209.15.142.32/cat197_morel.htm
www.pleasanton.k12.ca.us/pleasanton/MathWeb/Grade7/Probability/ProbabilitTOC.html
www.mathforum.org/ncsm/NCSMPublications/2000/pdf/CMTR_Elem_List.pdf
www.k111.k12.il.us/King/math.htm#-----
www.mathsatwork.com/links_children.html
www.tenet.edu/teks/math/resources/con2man.html