Visual Spatial Learners

High Block Design Scores
From Rebecca L. Mann

A few prominent Visual Spatial Thinkers

Albert Einstein
Thomas Edison
Leonardo da Vinci

<u>Strengths of Visual Spatial Learners</u>

Visual Spatial Learners are adept at:

Puzzles & mazes
Block Counting – 3D arrays with hidden blocks
Visual Transformations
Envisioning a folded & cut piece of paper when opened
Spelling words forward and backwards
Getting around in unfamiliar territory
Reading charts, maps, diagrams
Picturing objects from different angles
Recalling a series of numbers/letters
Numerical relations & mathematical reasoning
Pulling everything apart
Discovering visual models of reality
Finding problems

Visual Spatial Learners often enjoy:

Blocks
Boxes
Construx™
Computers
Daydreaming
Gears
Legos™
Mazes
Movies
Puzzles
Tinker Toys
Taking stuff apart

Visual Spatial Learners are:

Holistic Learners who:
Perceive relationships between parts and the whole
Have trouble attending to details
Can't grasp isolated facts until the big picture is in view

"Aha" Processors who:
Understand all or nothing, once the "Aha" occurs, learning is relatively permanent
Often cannot explain the steps of their thinking
Detest routine, repetitive tasks and do not learn by rote memorization

Creative, they:
Arrive at surprising conclusions
Have amazing imaginations and often have imaginary playmates
Make up rich stories but can't always write them down
May do great drawings and be elaborate doodlers but have awful handwriting

Reflective
They need extra thinking time therefore; they can appear to be lazy or to be daydreaming

Perceived as:
Unwilling to fit into time schedules or routines
Careless – Regularly forgetting homework; if it is done, handwriting may be illegible
Reluctant to take risks

Highly sensitive & hypersensitive to their environment such as:
Clothing – "the sweatpants kids"; may chew on their clothes
Noise – they have poor listening skills but keen hearing, get more info than they can sift out; can hear the "lights"
Emotions – Good at reading people and can sense a teacher's anxieties and ambivalence

Readers who:
Have better reading comprehension than decoding skills
Tend to skip over words but still get the thrust of the story – May never be good oral readers
Prefer reading heavily illustrated material

Strategies for Teaching Visual Spatial Learners

The Whole Picture

Explain major concepts so child understands instructional goal
Allow opportunities for inductive learning
Provide real life scenarios – service oriented projects are good
Discovery Learning – tell the child the goal of the instruction and let him figure out a way to get there
Use a multidisciplinary emphasis

Hands On – Minds On

Provide manipulatives and create hands on activities
Encourage the student to make models

Visualize

Show everything – use overhead or white board, color is better than chalkboard
Encourage the child to visualize lists, patterns, and situations
-Ask child if he can create a picture of the topic
Have student construct, draw, or make visual representations
Ask yourself, "How would I teach this concept to a deaf child?" (auditory)
Use Venn Diagrams and graphic organizers, teach students how to use them

Technology

Encourage the use of computers for learning and teach keyboarding early
Encourage use of Inspiration or Kidspiration

Increase the Difficulty

Do not force the student to succeed at easier material before trying difficult work
Emphasize mastery of higher level concepts instead of perfection of simpler ones

Use

Color
Mnemonics
Humor
Meaningful material
Venn Diagrams
Rhythm
Music
Emotion
Fantasy
Manipulatives

Color (check for color blindness)
Have the child use highlighters to highlight directions or key concepts
Color coordinate everything that has to do with one subject
    i.e. purple math book cover, purple notebook, purple portfolio, etc.
Use overheads or white boards with a variety of color; categorize by color
    i.e. subjects one color, verbs another
Have the visual spatial child create his own flashcards in color
    i.e. 6 X 7 in black, answer below in red 42
Copy worksheets and study guides on colored paper, it is easier to keep organized and easier on the eyes
    i.e. all tests in yellow paper, all assignments in another color or math in green, reading in blue, etc.

Mnemonics
For Mnemonics to be effective…
    The funnier the better
    Make images 3D and/or moving
    Exaggerate
    Make images colorful
    Uses as many senses as possible

During Lectures
Pause during verbal presentation to allow words to register
Allow student to tape record lectures
Encourage child to take notes in pictorial format
    i.e. webbing, graphic organizers
Emphasize concepts not details, (dates)
Distribute handouts, don't expect these students to take dictation

Foreign Language
Classroom instruction can be difficult
Total immersion in a language is much more effective
Good at Sign Language

Spelling
Draw configurations of words on graph paper (these kids need to **see** the word shape)
Write each word on a card in color

Writing
Visualize the entire sentence before writing it
Tape record written work and then transcribe
Use webbing to formulate ideas
Grade ideas (content) and mechanics separately

Math

Give chance to devise own method of problem solving
Avoid drill and repetition – No Timed Tests
Do five hardest problems on the page and go on if successful
Multiplication table
    -Look for patterns in multiplication charts 5678 is 56=7x8 and 4x9=6x6
Teach within the context of entire number system
Division – give divisor, dividend & quotient then let child figure out the system

Reading

Oral reading – A visual spatial child may never be a good oral reader
    Get to the child before she makes a mistake so word won't imprint incorrectly
    The student may tire easily and lose concentration
Decoding – Sight words, not phonics – can't hear the vowel sounds
Comprehension – Good speed readers since they don't read every word
    Get content first, then scan for details
    Study captions and graphics in texts
        Read first and last sentence of each paragraph
        Skim material 4 times vs. reading slowly once
Junior Great Books is terrific program for these kids

Organization

Color code calendars, assignments, books and supplies
Use an hourglass to visualize the passage of time
Make sure they have watches that are reliable
Teach them to "take a picture" of assignments as they are given
Help them learn to look up to recall side to remember what is they need to do
Teach them how to create priority lists and schedules
    -they may not like it, but it is essential survival skill!!!

Teacher/Student Interaction

Teach the child to become a spy (on the right students), notice what is going on in the classroom – take cues from classmates
Institute a moment of silence – let students visualize (create a video in their mind) what they will need for homework
Reduce unpredictable noise – music works well (walkman)
Use wait time – allow time for the child to translate the spoken word to images
Let the child completely finish answering even if she appears off target as she may get there

*Discipline in private and be nonjudgmental – negative message will cause them to shut down

*Encourage the child's strengths; don't dwell on his weaknesses

*Believe in these children, they may be the future Edisons and Einsteins of the world

Effective Materials for use with Visual Spatial Learners

Attribute blocks
Base ten Blocks
Fraction bars
Geoboards
Pattern Blocks
Tangrams
Geoblocks
Pentominoes
Soma Cubes
Puzzles
Legos™
Construx™
Mindbenders
Logic Problems
Gears
String Art
Strategy Games
Three dimensional geometric shapes
Destination Imagination
Odyssey of the Mind
Set, The Game of Visual Perception

Resources – Books

Silverman, L. (2002). *Upside-Down Brilliance: The Visual Spatial Learner*. Denver: DeLeon Publishing.

Gardner, H. (1993). *Multiple intelligences: the theory in practice*. New York, NY.: Basic Books.

West, T.G. (1991). *In the mind's eye: visual thinkers, gifted people with learning difficulties, computer images, and the ironies of creativity*. Buffalo, NY.: Prometheus Books.

Eberle, R. (1997). *Scamper: Creative Games and Activities for Imagination Development*. Prufrock Press.

Articles

Mann, R.L. (2005). Gifted students with spatial strengths and sequential weaknesses: An overlooked and under-identified population. *Roeper Review, 27*(2), 91-96.

Mann, R.L. (2001). Eye to Eye: Connecting with Gifted Visual-Spatial Learners, *Gifted Child Today Magazine, 24*(4), 54-57.

Silverman, L.K. (1989). The Visual-Spatial Learner. *Preventing School Failure, 34*(1), 15-20.

Web Sites of Interest for Visual Spatial Learners

http://www.inspiration.com/home.cfm
Inspiration is an integrated diagramming and outlining program that allows students to organize their thoughts in either a concept mapping format and then click a button to see the outline format, or vice versa.

http://www.gifteddevelopment.com/
Linda Kreger Silverman, Ph.D., The Gifted development Center, 1452 Marion St, Denver, CO 80218
Linda Silverman has written numerous articles , copies of which may be ordered by assessing the website for The Gifted Development Center or by writing and requesting a catalog of publications.

http://www.graphic.org/
The Graphic Organizer
Some links from this page you might find useful for the use of Graphic Organizers:

Ready to Print Graphic Organizers with novel studies
Graphic Organizers – Many types presented as teacher directions
Write Design – Examples of Graphic Organizers
How to effectively Organize a Paper using a Graphic Organizer – a seven step approach
Organization Patterns – A basic guide for the 5 paragraph essay

http://www.puzzlecraft.com/solutions/pent/pentom/pentomin.html
The Pentominoes Page

Pentominoes have some very interesting mathematical properties providing an endless array of challenging puzzles. For the puzzle buff, a pentominoes set will provide many hours of entertainment.

http://www.eduplace.com/math/brain/index.html
Brain Teasers

Brain Teasers which are both entertaining and mentally challenging. Each Wednesday evening they provide one new Brain Teaser at each of three grade ranges.

http://math.rice.edu/~lanius/Lessons/
Cynthia Lanius Mathematics Lessons
Terrific math related activities, including; Blocks/Fractions, Million $ Mission, Calendar Fun, Power Cards, Polyominoes, Geometry Outline, A Fractals Unit, I Love Calculus, Slope as Rate of Change, Dueling Pinwheels, The Hot Tub, and more

http://www.mindtools.com/memory.html
Memory techniques and mnemonics – A thorough collection of mnemonic strategies.

http://www.bonus.com/ (go to Imagine then to Illusions)
Optical Illusions, Spiral Illusions, Magic Eye Puzzles, Spot the Differences and more. Go to Explore and How It Works – 46 things to do (try the robot).
(This sight is blocked on Watertown School District internet, but I checked it at home and it is a worthwhile web page.)