

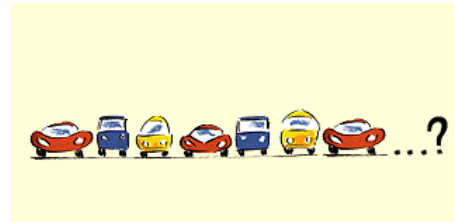


Visual Learning, Children and Math

"Red, blue, yellow, red, blue yellow, red, ..."

"What comes next?"

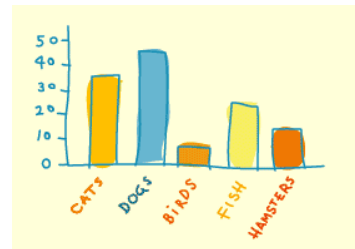
"Blue."



"Dogs are the most popular pet in our class."

"How do you know that?"

"Because the dog bar is higher than all the others."



Kids are accomplished visual learners. From the time they're infants, they learn to make sense of the world through visual cues. Soon, they are able to discern and understand patterns. And by kindergarten, many kids can grasp abstract concepts such as interpreting quantitative data presented in bar graphs. Long before children can read—or even speak many words—they are able to assimilate visual information with ease.

What is Visual Learning?

Visual Learning is about absorbing information from illustrations, photos, diagrams, graphs, symbols, icons and other visual models. It is about making sense of complex information quickly—literally being able to comprehend ideas at a glance.



If you try explaining the concept of "half-ness" with words alone, it takes a while. But if you show an illustration of a half-full (half-empty) glass, or two equal-size piles with the same number of objects in each, then the meaning of "half-ness" is immediately clear. Looking for a restroom? Chances are that the familiar stylized icons of a man and woman will help guide the way to the correct door. A sign warning "Curvy Road Ahead" isn't nearly as powerful as the image of the wavy line next to it. And an icon of a truck pointed downhill at a dangerous angle certainly gets the message across quickly that the highway grade is about to get very steep.



But symbolic graphics are just the simplest form of Visual Learning. Visual Learning strategies can be used to show how something works, demonstrate abstract ideas, and teach new concepts.

Graphic design plays a key role in Visual Learning by providing the structure for organizing information. Everything from the choice of colors, to the selection and placement of illustrations helps make the information accessible, easy to "get," and aesthetically pleasing.

Where Did Visual Learning Come From?

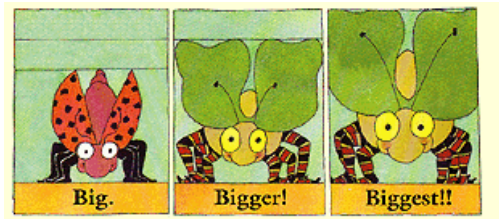
From earliest times, people have used visual displays to communicate. Drawings on cave walls could convey information better than words alone. Later, civilizations developed sophisticated symbolic systems to record data and express ideas. And throughout history, painting and sculpture have been used to teach and reinforce cultural and religious traditions.

Helping Your Kids Be Better at Math

Today, Visual Learning continues to be an integral part of our communication process. From billboards, newspapers, magazines and television, to movies, video games, junk mail and the Internet, we are constantly bombarded with images demanding immediate attention: "Look at me! React! Get my message!" We've come to rely on graphs, charts and diagrams to help us distill vast amounts of data that otherwise we couldn't even hope to process in ten lifetimes. Learning how to navigate quickly through this daily visual barrage has made us fluent visual learners. Mathematics has often been called a "universal language," transcending cultural and

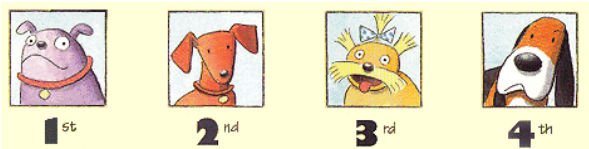
linguistic differences. This in part explains why so many math concepts seem to lend themselves to a visual explanation. Through visual displays, children can easily explore topics such as:

Size relationships—Which is smallest? Which is the biggest?



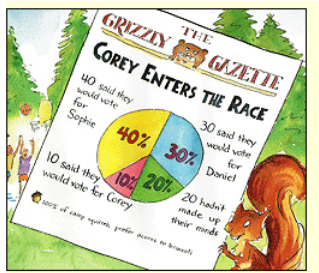
from *The Best Bug Parade*

Order—Who's first? Who's third?



from *Henry the Fourth*

Percentage—Who's in the lead?



from *The Grizzly Gazette*

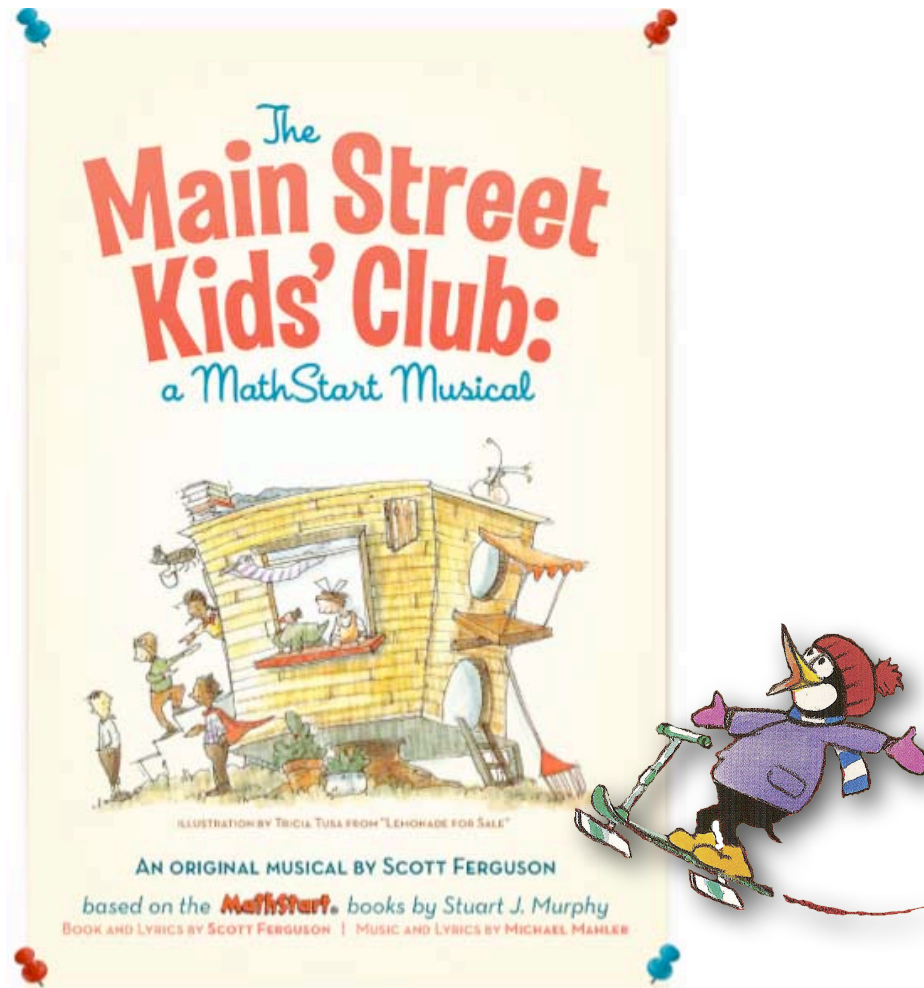
Through visuals, children are able to compare quantities easily, and figure out which items belong in a set and which don't. They can learn about area and symmetry. And they can develop strategies for everything from estimating, to counting money and making change. Indeed, many important mathematical concepts—such as comparison, scale, dimension, direction, shape, and perspective—are first experienced visually.

Visual Learning is a powerful teaching tool, both for kids who are natural visual/spatial learners, and for children with limited language proficiency. In fact, by using Visual Learning strategies, we can increase the learning potential of all children.

— **Stuart J. Murphy**

Math. Visual Learning & a Beat!

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