How to Buy

Flip-Chip materials can be purchased directly from the author. Write to Flip-Chip Math Services, 103 Thomas Street, Olympia, Washington, 98502 or email @flipchipmath.com

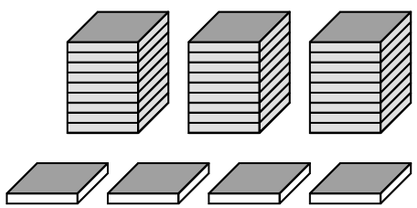
Training

Steven Kant is available for consulting or training work. Write to arrange for classroom demonstrations, teacher-training workshops, or assistance with the Flip-Chip materials.

PRICES

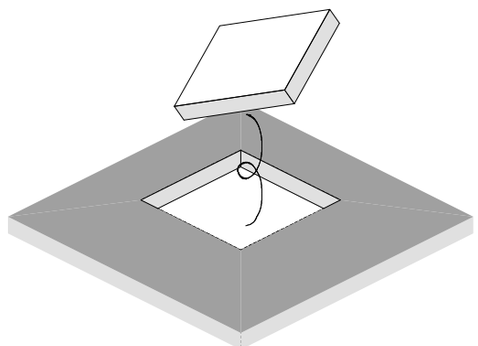
	1 – 10	11 or more
***Flip-Chip Algebra*: Book Only**	$30.00	$25.00
***Flip-Chip Essentials*: Book Only**	$12.00	$10.00
Basic Manipulative Kit	$5.00	$3.50
Extension Kit	$5.00	$3.50
***Flip-Chip Algebra* and Basic Kit**	$34.00	$27.00
***Flip-Chip Essentials* and Basic Kit**	$16.00	$12.00

(Prices do not include shipping and handling)



Learning Algebra with our Eyes and Hands

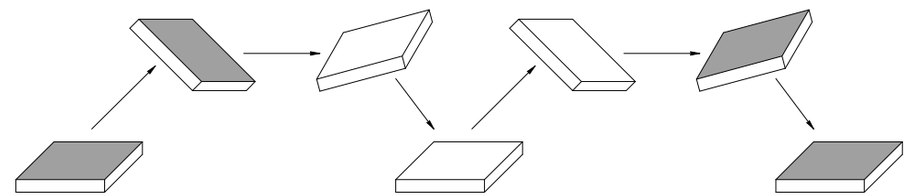
Flip-Chip™ Algebra



A New Way of Learning Algebra

There is a world of arithmetic and algebra that we can learn and teach with our eyes and hands. There are no boring rules to memorize, no lengthy drill on meaningless techniques. Instead, the concepts are presented with real objects and pictures.

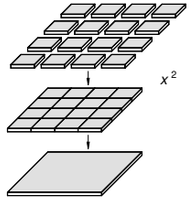
*This is **Flip-Chip Algebra** — an inexpensive and effective way to learn algebra naturally. Students easily master the concepts and techniques by an understanding of real-world objects rather than by the traditional method of rote memory.*



Flip-Chip Algebra

Each new concept is introduced with the help of simple cardboard chips. Every symbol such as x or x^2 and every technique from multiplying fractions to the quadratic formula is illustrated with pictures and learned with exercises using chips.

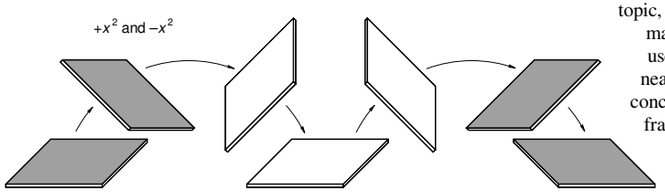
As the student learns to understand the physical ideas, the symbolic language becomes easy to remember and use.



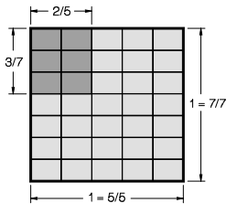
It's More Fun

Most people dislike algebra because it seems to be a meaningless collection of rules and procedures; with the traditional approach, there is no creativity, no discovery, and no real challenge to our abilities.

With *Flip-Chip Algebra,* each topic becomes an exciting and active adventure as we discover the ways that numbers and



Multiplying fractions



variables work. Everyone enjoys the real understanding that results from doing their own thinking.

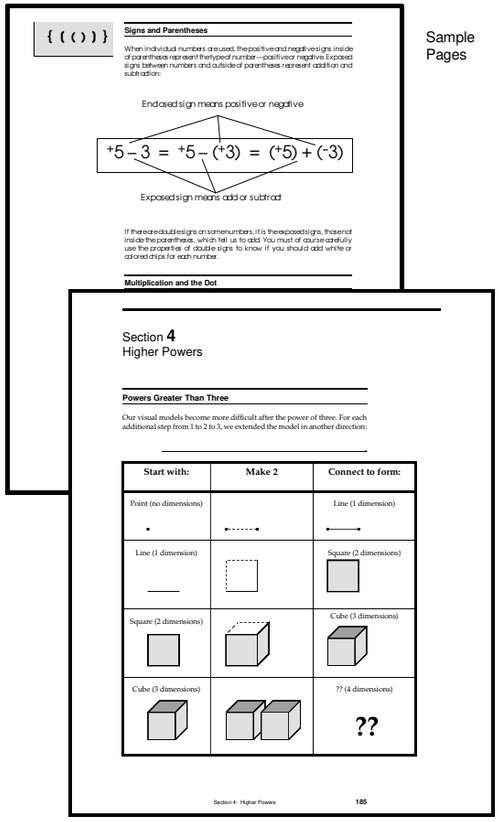
It's More Effective

Most students have difficulty with algebra. Only a very small proportion of adults can remember any algebra at all; most have no desire to do so.

The traditional system of teaching algebra is based on the memorization of rules through lengthy drill and practice. For most people, it simply does not work.

Flip-Chip Algebra is different. The pictures are not just decoration. The interesting ideas are the basis of the text, not just for enrichment.

Sample Pages



{ (( )) }

Signs and Parentheses

When individual numbers are used, the positive and negative signs inside of parentheses represent the type of number—positive or negative. Exposed signs between numbers and outside of parentheses represent addition and subtraction:

Enclosed sign means positive or negative

$^{+}5 - 3 = {}^{+}5 - (^{+}3) = (^{+}5) + (^{-}3)$

Exposed sign means add or subtract

If there are double signs on some numbers, it is the exposed signs, those not inside the parentheses, which tell us to add. You must of course carefully use the properties of double signs to know if you should add white or colored chips for each number.

Multiplication and the Dot

Section **4**
Higher Powers

Powers Greater Than Three

Our visual models become more difficult after the power of three. For each additional step from 1 to 2 to 3, we extended the model in another direction:

Start with:	Make 2	Connect to form:
Point (no dimensions)		Line (1 dimension)
Line (1 dimension)		Square (2 dimensions)
Square (2 dimensions)		Cube (3 dimensions)
Cube (3 dimensions)		?? (4 dimensions)

Section 4: Higher Powers 185

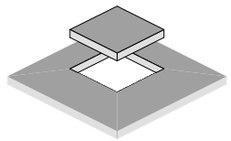
It's Affordable

Flip-Chip Algebra is more than just a supplement — it's a complete course in algebra. Unlike some materials that are only meant to illustrate one topic, this book and manipulatives can be used to demonstrate nearly all of the concepts of arithmetic, fractions, variables, equations, polynomials, and even the quadratic formula. The book is inexpensive; the materials cost only a few dollars per student. If you are interested in manipulatives but cannot afford the other expensive kits, *Flip-Chip Algebra* is the answer.

It's for Everyone

Flip-Chip Algebra has been used with people from 10 to 50 years old.

x and $-x$



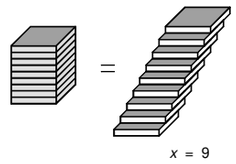
Even young children can solve equations or factor polynomials in a few hours. People with no previous algebra background are impressed by how easy and fun algebra can be. Adults who are rediscovering the subject are excited by learning and understanding concepts that have been frustrating for many years.

It's Easy to Read

The book is full of pictures and is set in large type. Instead of long explanations or lines of formulas, there are clear pictures and diagrams. Students who will not read traditional texts find that Flip-Chip Algebra is comfortable and easy to read.

Positive and Negative Numbers

The chips have two sides: one is white and the other is a bright color. The colored side up is positive, the white side is negative, and each type cancels the other. That's all there is to it!



$x = 9$

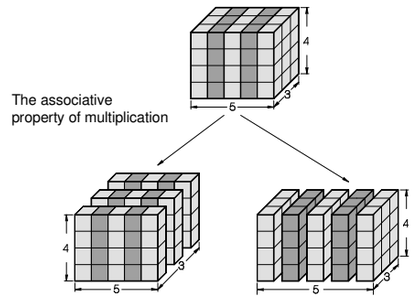
Equations

Stacks of chips or long bars stand for the unknown x. Equations are pictured with each side as a collection of chips; they are solved by removing chips equally from each side.

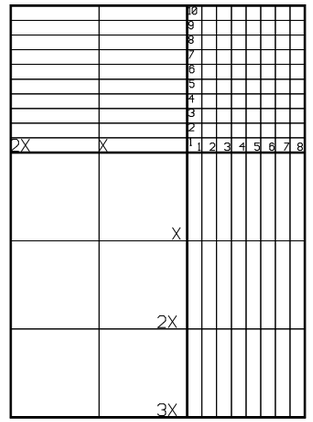
Properties of Numbers

Forget about memorizing complex patterns of symbols. Each property is represented by a simple pattern of chips.

The associative property of multiplication



Grid for factoring, multiplying, and dividing of polynomials



Polynomials

Multiplying and factoring are done by building and measuring rectangles.

Schools

Flip-Chip Algebra is appropriate as a class text for secondary and college levels.

Teachers

The book is helpful for teachers at all levels. The techniques can be used in elementary school, secondary schools, or college. *Flip-Chip Algebra* can be used as a training manual for teachers who are teaching young students.

Home

The easy level of the book also makes it ideal for home use. Teach your children or teach yourself.

Other Resources

Flip-Chip Essentials is a short algebra text suitable for younger students or as a supplement to a traditional text. The Extension Kit allows for demonstration of multiple variables and the Pythagorean Theorem.

The unknown x