

Who should use this book?

- Elementary-aged students who are learning basic math operations
- Essentials students, parents, and tutors, to use in community or at home
- Challenge students needing to improve speed and accuracy in math
- Challenge directors seeking games for math review in seminar
- Any student interested in competing in the National Number Knockout event

Why should high school students use a book about basic math?

When a student has a sure foundation in their rudimentary math abilities, they will be able to bud, blossom, and finally flourish in rational thought. The games presented in *Quick Flip Arithmetic* will help build that foundation for any student who feels inadequate when faced with calculus or trigonometry.

What will my student learn?

- How to calculate with speed and accuracy
- How to apply math operations singly and in combination
- How to work with fractions, mixed numbers, and exponents
- How to turn the study of math into a fast, fun game

How should I use this book in my home school?

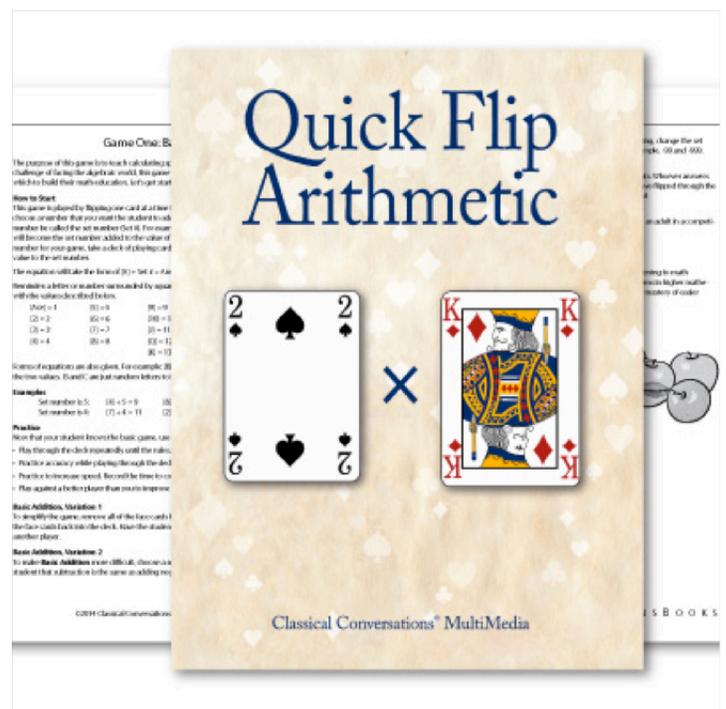
The games of *Quick Flip Arithmetic* have been designed with the expectation that the student will use the tool of repetition, playing the games over and over again until mastery is achieved. The book is not a textbook in which the learner works through a problem and then never does it again; the learner is to repeat what is necessary to learn. Keep a timer on hand and log your student's best times on the Time-to-Beat Score Sheet in case a quick student wants to play against the clock. Students are encouraged to play the games in groups, but individual play confirms calculating ability.

Do I need to use a particular math curriculum alongside this book?

Math textbooks are just collections of contrived problems. A deck of cards weighs less than a textbook and has infinite variations of equations. Providing ideas for equations and variations for practicing calculating is the purpose of this book. As you play these games in tangent with a math text, you will begin to see many other ways to use cards to drill a set of 52 equations. It is beyond the scope of this book, but we have even used playing cards to come up with formulas of lines to graph and for coefficients in binomials. The quick flip of cards allows us to even practice algebraic calculations.

Do I need any additional materials to use this book?

The games require only a standard deck of cards—aces through kings—and an enthusiastic competitive spirit. You may wish to use a timer as well. Any kitchen timer or stopwatch will do.



Who should flip the cards?

Initially a parent or teacher is flipping the cards if they are teaching a younger student the game, but these games can easily be played alone. A student might be reading *Quick Flip Arithmetic* to practice multiplication and improve his speed. A good idea is to leave a deck of cards in the car or book bag so the student can make up math equations and flip cards any time he needs to wait on someone.

How do I determine the value of face cards (ace, king, queen, jack)?

The introduction of *Quick Flip Arithmetic* contains an explanation of card values.

Ace = 1

Jack = 11

Queen = 12

King = 13

Of course, as a parent or teacher, you are free to choose your own system or take the face cards out altogether. *Quick Flip Arithmetic* does not use the joker cards.

What is National Number Knockout?



National Number Knockout is a national calculating competition. Children 9-14 years old can enter to win a \$10,000 Grand Prize as well as \$2000 for the champion's teacher. The game is a simple way to teach your child speed and accuracy in calculating whether they are interested in competing or not.

National Number Knockout is played on a six by six grid of numbers. The classic N2K board contains the numbers 1 to 36, but the board can contain any variation of 36 numbers. Three dice are rolled. The student must incorporate all three numbers that are rolled, employing addition, subtraction, multiplication, division, roots, and exponents, in such a way that the result is a number on the board. All three numbers must be used once, but cannot be used more than once. If more than one numeral one is rolled, the student is given an automatic re-roll. As the student generates equations to solve for each number, they cross the number off of the board. Students are given sixty seconds to generate as many equations as possible with unique answers.

The deadline to submit a scouting video for the 2015 competition is February 27, 2015. The national competition will take place May 7, 2015, in Orlando, Florida.

Go to NationalNumberKnockout.com to learn more.