The Benefits of Chess!
(Partial Summary - excerpted and condensed!)

- Chess contributes to reading and math readiness...
- Chess helps develop memory and encourages the development of thinking skills ... analysis ... logical thinking ... scientific thinking ... problem solving ... and visual thinking or "visualization" ...
- Chess helps develop focus, concentration, and increased attention span...
- Chess helps improve scholastic performance ... homework ... tests ... written assignments ... reading. The fact that chess is also "fun" to play helps this process.
- Chess develops and strengthens the ability to perform under "time pressure." ... lowering of "test anxiety."
- Chess helps develop imagination and creativity and helps to increase foresight and visualization.
- Chess helps build character and self-esteem! ... Healthy self-esteem comes from knowing that you can do hard things, because you really have done them.
- Chess fosters independence, reinforces personal responsibility and teaches the acceptance of consequences ... no "luck" in chess ... no "hidden moves" ... no teammates helping you play.
- Chess requires learning the truth about being a "Winner" or "Loser". ... The individual loss of a game is ... an opportunity for learning and future growth. Properly taught, competition is about attitudes ... Being a "winner," or a "loser," is an overall attitude not a specific outcome.
- Chess progress requires learning from one's mistakes ... develops self-motivation ... encourages study and improvement.
- Chess is an inter-generational, cross-cultural, social activity...
- Chess demonstrates that hard work results in success...
- Chess is an inexpensive, lifetime, individual activity. Chess doesn't require a team, or a sunny day ... or a lot of expensive equipment ... or a special location ... You don't have to quit when you reach a certain "age," or are "past your prime." Chess may be played seriously ... or just for fun, ... If you can't find a nearby human opponent there's always the Internet or any of dozens of chess computer-programs.
- Chess is a lifetime group activity as well. ... there are many organized group chess activities ... thousands of chess clubs with organized team events as well as more traditional tournaments.
STUDIES

In a 1973-74 Zaire study conducted by Dr. Albert Frank, employing 92 students, age 16-18, the chess-playing experimental group showed a significant advancement in spatial, numerical and administrative-directional abilities, along with verbal aptitudes, compared to the control group. The improvements held true regardless of the final chess skill level attained. [1], [2], [7]

In a 1974-1976 Belgium study, a chess-playing experimental group of fifth graders experienced a statistically significant gain in cognitive development over a control group, using Piaget’s tests for cognitive development. Perhaps more noteworthy, they also did significantly better in their regular school testing, as well as in standardized testing administered by an outside agency which did not know the identity of the two groups. Quoting Dr. Adriaan de Groot: ...``In addition, the Belgium study appears to demonstrate that the treatment of the elementary, clear-cut and playful subject matter can have a positive effect on motivation and school achievement generally..." [1], [3], [7]

In a 1977-1979 study at the Chinese University in Hong Kong by Dr. Yee Wang Fung, chess players showed a 15% improvement in math and science test scores. [4]
A four-year study (1979-1983) in Pennsylvania found that the chess-playing experimental group consistently outperformed the control groups engaged in other thinking development programs, using measurements from the Watson-Glaser Critical Thinking Appraisal and the Torrance Tests of Creative Thinking. [1], [4], [5], [6], [7], [23]

The 1979-1983 Venezuela “Learning to Think Project,” which trained 100,000 teachers to teach thinking skills and involved a sample of 4,266 second grade students, reached a general conclusion that chess, methodologically taught, is an incentive system sufficient to accelerate the increase of IQ in elementary age children of both sexes at all socio-economic levels. [1], [7], [8], [9], [10]


According to a two-year study conducted in Kishinev under the supervision of N.F. Talisina, grades for young students taking part in the chess experiment increased in all subjects. Teachers noted improvement in memory, better organizational skills, and for many increased fantasy and imagination (Education Ministry of the Moldavian Republic, 1985). [1], [7]

In his 1986 pilot study, Dr. Ferguson found that it is possible to enhance achievement by focusing on individuals' modality strengths, creating an individualized thinking plan, analyzing and reflecting upon one's own problem solving processes, sharing his/her thinking system with peers, and modifying the system to integrate other modalities. [1], [7], [12]

During the 1987-88 "Development of Reasoning and Memory through Chess," all students in a rural Pennsylvania sixth grade self-contained classroom were required to participate in chess lessons and play games. None of the pupils had previously played chess. The pupils significantly improved in both memory and verbal reasoning. The effect of the magnitude of the results is strong (eta 2 is .715 for the Memory test gain compared to the Norm). These results suggest that transfer of the skills fostered through the chess curriculum did occur. [1], [7], [13]

A 1989-92 New Brunswick, Canada study, using 437 fifth graders split into three groups, experimenting with the addition of chess to the math curriculum, found increased gains in math problem-solving and comprehension proportionate to the amount of chess in the curriculum. [14]
A 1990-92 study using a sub-set of the New York City Schools Chess Program produced statistically significant results concluding that chess participation enhances reading performance. [15], [16], [23]

"Playing Chess: A Study of Problem-Solving Skills in Students with Average and Above Average Intelligence," a study by Philip Rifner, was conducted during the 1991-1992 school term. The study sought to determine whether middle school students who learned general problem solving skills in one domain could apply them in a different domain. Data indicated that inter-domain transfer can be achieved if teaching for transfer is an instructional goal. [17]

During the 1995-1996 school year, two classrooms were selected in each of five schools. Students (N = 112) were given instruction in chess and reasoning in one classroom in each school. Pupils in the chess program obtained significantly higher reading scores at the end of the year. It should be noted that while students in the chess group took chess lessons, the control group (N = 127) had additional classroom instruction in basic education. The control group teacher was free to use the "chess period" any way he/she wanted, but the period was usually used for reading, math or social studies instruction. The control groups thus had more reading instruction than the chess groups.

Even so, the chess groups did better on the reading post-test; therefore, the gains in the chess groups were particularly impressive. [18]

In a 1994-97 Texas study, regular (non-honors) elementary students who participated in a school chess club showed twice the improvement of non-chess players in Reading and Mathematics between third and fifth grades on the Texas Assessment of Academic Skills. [19], [20]

Researchers and educators have questioned what causes this growth. The Venezuelan study claimed: "Chess develops a new form of thinking, and this exercise is what contributes to increase the intelligence quotient." [10] More recent researchers speculate that it is the growth of new synaptic connections. Chess promotes the growth of dendrites!

Why does chess have this impact? Briefly, there appear to be at least seven significant factors: 1) Chess accommodates all modality strengths. 2) Chess provides a far greater quantity of problems for practice. 3) Chess offers immediate punishments and rewards for problem solving. 4) Chess creates a pattern or thinking system that, when used faithfully, breeds success. The chess playing students had become accustomed to looking for more and different alternatives, which resulted in higher scores in fluency and originality. 5) Competition. Competition fosters interest, promotes mental alertness,
challenges all students, and elicits the highest levels of achievement (Stephan, 1988). 6) A learning environment organized around games has a positive affect on students' attitudes toward learning. This affective dimension acts as a facilitator of cognitive achievement (Allen & Main, 1976). [21]

**Instructional gaming is one of the most motivational tools in the good teacher’s repertoire.** Children love games. Chess motivates them to become willing problem solvers and spend hours quietly immersed in logical thinking. These same young people often cannot sit still for fifteen minutes in the traditional classroom. 7) Chess supplies a variety and quality of problems. As Langen (1992) states: ""The problems that arise in the 70-90 positions of the average chess game are, moreover, new. Contexts are familiar, themes repeat, but game positions never do. This makes chess good grist for the problem-solving mill."

**FACTS**

Chess is part of the curricula in nearly 30 countries. In Venezuela, Iceland, Russia and other countries, chess is a subject in all public schools. [8]

In Vancouver, BC, the Math and Chess Learning Center, recognizing the correlation between chess playing and math skills development, has developed a series of workbooks to assist Canadian students in math. [42]

In Harriet Geithmann's article "Strobeck, Home of Chess,'; The National Geographic Magazine, May 1931, pp. 637-652, we find that this medieval village in the Harz Mountains of Germany has taught the royal game in its public schools for years. Chess began in Strobeck in 1011. [37]

In "Chessmen Come to Life in Marostica," The National Geographic Magazine, November 1956, by Alexander Taylor, pp. 658-668, we see an Italian town reviving a romantic legend of the Middle Ages, in which suitors played chess for the hand of a lady fair. [43]

The mathematics curriculum in New Brunswick, Canada is a text series called Challenging Mathematics, which uses chess to teach logic and problem solving from grades 2 to 7. Using this curriculum, the average problem-solving score of pupils in the province increased from 62% to 81%. The Province of Quebec, where the program was first introduced, has the highest math grades in Canada, and Canada scores better than the USA on international mathematics exams. [19], [20], [40]
Former U.S. Secretary of Education Terrell Bell encouraged knowledge of chess as a way to develop a preschooler's intellect and academic readiness. [39]

The State of New Jersey passed a bill legitimizing chess as a unit of instruction within the elementary school curriculum. On December 17, 1992, New Jersey Governor Jim Florio signed into law a bill to establish chess instruction in public schools. A quote from the bill states "In countries where chess is offered widely in schools, students exhibit excellence in the ability to recognize complex patterns and consequently excel in math and science..." [41]

Funding for chess activity is available under the "Educate America Act" (Goals 2000), Public Law 103-227, Section 308.b.2.E.: "Supporting innovative and proven methods of enhancing a teacher's ability to identify student learning needs and motivating students to develop higher order thinking skills, discipline, and creative resolution methods." The original wording of this section included "such as chess" and passed Senate that way, but the phrase was deleted later in Conference Committee. [19]

**ANECDOtal MATERIALS**

Several articles discuss chess as a tool to assist children of all levels.

Dr. Stefurak, a cognitive neuropsychologist, stated that "chess instruction informs the mind and the emotions in such a way as to structure an emergent mental circuit where motivation and ability multiply to produce achievement in chess and school and life." [23]

In December 1996, Arman Tajarobi wrote: "For the past three years, I've been a witness to an experiment held in 24 elementary schools in my town: The school board allowed these schools to replace an hour of math classes by a chess course each week for half of their students. For three consecutive years, the groups who received the chess formation have had better results in math than those who did not. This year (the fourth year), the school board has allowed any school that wants to provide its students with a chess formation to do so." [35]

John Artise (B.S., M.A.) draws upon his years of psychological research in chess to identify the contribution chess makes in education and learning. He identifies four areas of growth: memory improvement, logic, observation and analysis, and operant conditioning. "Chess and Education," John Artise. [31]

The chess program funded by Oakland (California) Youth at Risk program proves to be an effective vehicle for saving troubled youth. [32]
Chess program in the troubled East Harlem district, New York, also rescues kids from drugs and gangs. [33]

Saratoga Springs editorial: "Chess is the last best hope for this country to rescue its skidding educational system and teach the young generation the forgotten art of nurturing an attention span." [34]

In his book "Your Child's Intellect," former U.S. Secretary of Education Terrell Bell encourages some knowledge of chess as a way to develop a preschooler's intellect and academic readiness (Bell, 1982, pp. 178-179). [44]

WHAT DO EDUCATORS SAY?

``Not only have the reading and math skills of these children soared, their ability to socialize has increased substantially, too. Our studies have shown the incidents of suspension and outside altercation have decreased by at least 60 percent since these children became interested in chess.''

--Assistant Principal Joyce Brown at the Roberto Clemente School in New York, 1988 [25]

Dr. Fred Loveland, superintendent of the Panama City schools, voiced his opinion: "Chess has taught my students more than any other subject." [26]

The article "Chess Improves Academic Performance" from the NY School Chess Program features a number of testimonies from school principals, including: "Not only have the reading and math skills of these children soared, their ability to socialize has increased substantially, too. Our studies have shown that incidents of suspension and outside altercations have decreased by at least 60% since these children became interested in chess." [27]

``It's the finest thing that ever happened to this school. ...chess makes a difference...what it has done for these children is simply beyond anything that I can describe." [27]

``I see them (students) able to attend to something for more than an hour and a half. I am stunned. Some of them could not attend to things for more than 20 minutes." -- Jo Bruno, Principal, P.S. 189 [27]

Dr. Calvin F. Deyermond, Assistant Superintendent for Curriculum and Instruction for the North Tonawanda City School District, wrote: "Chess develops intellectual, esthetic, sporting, decision making, concentration, and perseverance skills. We have seen the effects of this wonderful game in our classroom and as an extracurricular activity. Not only is it mentally challenging but it attracts not only gifted pupils but also students at all levels of learning. Many students who have been experiencing problems, particularly in
mathematics and reading, sometimes demonstrate remarkable progress after learning chess." [28]

Rob Roy of Connecticut: ``Children with special problems can also learn chess. I taught a successful course for emotionally and educationally disadvantaged children in the Waterbury schools and used chess as a way for them to learn and practice self-control. It was like turning on switches in their heads. You see the child looking at a problem, breaking it down, and then putting the whole thing back together. The process involves recall, analysis, judgment and abstract reasoning." [38]

Public School 68 in the Bronx noted standardized scores increased 11.2% in reading and 18.6% in math during the 1994-95 school year. Principal Cheryl Coles wrote: ``As encouraging as our scores are, the benefits of our Chess Education Program far exceeded anything that these scores could ever hope to indicate. There were significant outgrowths in varying degrees in all curriculum areas. Such as: increased enthusiasm for learning, increase in general fund of knowledge, increase in pupil attendance, increase in self-confidence, increase in parent involvement, etc." [29]

Beulah McMeans, a guidance counselor at Morningside Elementary School in Prince George's County, MD, uses chess ``to help raise the self-esteem and higher order thinking skills for young students, particularly those at risk." [30]

``Intuitively, I feel what the kids learn from chess carries over to their everyday lives. The change shows up in their improved critical thinking and problem solving. It gets kids to think for themselves." -- Fred Nagler, Principal, P.S. 123 [27]

**WHAT DO STUDENTS SAY?**

"Chess has significantly increased my logical and mathematical skills. In fact, because of the effect of chess, I am going to major in mathematics and computer science in college, both of which utilize the aforementioned skills." Matthew Puckett [45]

The skills chess offers to those who play it are gold mines. It teaches the faithful players how to approach life. It teaches people that are having dilemmas that here is more than one answer to a problem. While your adversary is looking at the issue through a single point, you as the great chess player that you are, can take a step back and look at the picture through many points." Sultan Yusufzai [45]
Because of chess, I feel that my life has been enriched both mentally and socially. I have improved my critical thinking skills in everyday life through chess." Brandon Ashe [45]

WHAT DO PARENTS SAY?

Andrew Rozsa, psychologist, speaking of his gifted son: "He has had real social and behavioral difficulties since he was 18 months old... He was thrown out of several schools... Things became pretty bad at about age 9 ... Nothing seemed to work, nothing. ... Today he is a straight A student and his behavior problems are minimal (but not trivial). ... Sorry, no control subjects, no double blind, no defined independent variables (actually there are two: chess and age).

Nonetheless, I think that the great improvements we have seen are, to a large extent, due to chess." [36], [38]

``Chess is one of the most meaningful things I've ever seen enter this school system." Dee Estelle Alpert

``I want to see chess introduced into the curriculum, right alongside math, music, and art." Oscar Shapiro [27]

CONCLUSION

At the 40th World Chess Congress in 1969, Dr. Hans Klaus, Dean of the School of Philosophy at Humboldt University in Berlin, commented upon the chess studies completed in Germany: "Chess helps any human being to elaborate exact methods of thinking. It would be particularly useful to start playing chess from the early school days ... Everybody prefers to learn something while playing rather than to learn it formally...it produces in our children an improvement in their school achievements. Those children who received systematic instructions in chess improved their school efficiency in different subjects, in contrast with those who did not receive that kind of instruction." [22]

Because of the overwhelming research demonstrating the benefits of chess and because of the brain research theorizing the growth of dendrites, chess should be integrated into the school curriculum at the primary level.

Chess is a new way of solving the old problem of poor education. From the streets of Harlem to Venezuela's public schools the sport of kings has been implemented as an effective tool for teaching students to utilize their higher
order thinking skills and to strive to overcome personal problems to reach their full potential. In light of these facts it is not unreasonable to imagine chess as a broader part of schools in America. Chess could very well be one of the missing components for America to regain its place at the top for educating its young people.

WHY SHOULD YOU PLAY CHESS? WHAT ARE THE BENEFITS?

Source: link expired

**Chess is a game for people of all ages.** You can learn to play at any age and in chess, unlike in many other sports, you don't ever have to retire. Age is also not a factor when you're looking for an opponent -- young can play old and old can play young.

**Chess develops memory.** The chess theory is complicated and many players memorize different opening variations. You will also learn to recognize various patterns and remember lengthy variations.

**Chess improves concentration.** During the game you are focused on only one main goal -- to checkmate and become the victor.

**Chess develops logical thinking.** Chess requires some understanding of logical strategy. For example, you will know that it is important to bring your pieces out into the game at the beginning, to keep your king safe at all times, not to make big weaknesses in your position and not to blunder your pieces away for free. (Although you will find yourself doing that occasionally through your chess career. Mistakes are inevitable and chess, like life, is a never-ending learning process.)

**Chess promotes imagination and creativity.** It encourages you to be inventive. There are an indefinite amount of beautiful combinations yet to be constructed.

**Chess teaches independence.** You are forced to make important decisions influenced only by your own judgment.

**Chess develops the capability** to predict and foresee consequences of actions. It teaches you to look both ways before crossing the street.

**Chess inspires self-motivation.** It encourages the search of the best move, the best plan, and the most beautiful continuation out of the endless possibilities. It encourages the everlasting aim towards progress, always steering to ignite the flame of victory.
Chess shows that success rewards hard work. The more you practice, the better you'll become. You should be ready to lose and learn from your mistakes. One of the greatest players ever, Capablanca said, "You may learn much more from a game you lose than from a game you win. You will have to lose hundreds of games before becoming a good player."

Chess and Science. Chess develops the scientific way of thinking. While playing, you generate numerous variations in your mind. You explore new ideas, try to predict their outcomes and interpret surprising revelations. You decide on a hypothesis, and then you make your move and test it.

Chess and Technology. What do chess players do during the game? Just like computers they engage in a search for the better move in a limited amount of time. What are you doing right now? You are using a computer as a tool for learning.

Chess and Mathematics. You don't have to be a genius to figure this one out. Chess involves an infinite number of calculations, anything from counting the number of attackers and defenders in the event of a simple exchange to calculating lengthy continuations. And you use your head to calculate, not some little machine.

Chess and Research. There are millions of chess resources out there for every aspect of the game. You can even collect your own chess library. In life, is it important to know how to find, organize and use boundless amounts of information. Chess gives you a perfect example and opportunity to do just that.

Chess and Art. In the Great Soviet Encyclopedia chess is defined as "an art appearing in the form of a game." If you thought you could never be an artist, chess proves you wrong. Chess enables the artist hiding within you to come out. Your imagination will run wild with endless possibilities on the 64 squares. You will paint pictures in your mind of ideal positions and perfect outposts for your soldiers. As a chess artist you will have an original style and personality.

Chess and Psychology. Chess is a test of patience, nerves, will power and concentration. It enhances your ability to interact with other people. It tests your sportsmanship in a competitive environment.

Chess improves schoolwork and grades. Numerous studies have proven that kids obtain a higher reading level, math level and a greater learning ability overall as a result of playing chess. For all those
reasons mentioned above and more, chess playing kids do better at school and therefore have a better chance to succeed in life.

**Chess opens up the world for you.** You don't need to be a high ranked player to enter big important competitions. Even tournaments such as the US Open and the World Open welcome players of all strengths. Chess provides you with plenty of opportunities to travel not only all around the country but also around the world. Chess is a universal language and you can communicate with anyone over the checkered plain.

**Chess enables you to meet many interesting people.** You will make life-long friendships with people you meet through chess.

**Chess is cheap.** You don't need big fancy equipment to play chess. In fact, all you may need is your computer! (And we really hope you have one of those, or else something fishy is going on here.) It is also good to have a chess set at home to practice with family members, to take to a friend's house or even to your local neighborhood park to get everyone interested in the game.

**CHESS IS FUN!** Dude, this isn't just another one of those board games. No chess game ever repeats itself, which means you create more and more new ideas each game. It never gets boring. You always have so much to look forward to. Every game you are the general of an army and you alone decide the destiny of your soldiers. You can sacrifice them, trade them, pin them, fork them, lose them, defend them, or order them to break through any barriers and surround the enemy king. You've got the power!

To summarize everything in three little words: **Chess is Everything!**

**NOTES**


[26] Dr. Fred Loveland personal communication.


[28] Personal letter from Dr. Calvin F. Deyermond, Assistant Superintendent for Curriculum and Instruction for the North Tonawanda City School District.


[31] John Artise, ``Chess and Education."

[32] San Jose Mercury News, 4-3-96.


[35] Arman Tajarobi, e-mail from December, 1996.

[36] Andrew J. Rozsa, Birmingham, Alabama, Newsgroup e-mail.

[38] ``Check Mates,'' Fairfield County Advocate, Mar. 20, 1989.


[40] Chess'n Math Association, Canada's National Scholastic Chess Organization, 1681 Bayview Avenue, Toronto, Ont. M4G 3C1 (web page at www.chess-math.org/)


[42] Math and Chess Puzzle Centre, 3550 West 32 nd Avenue, Vancouver, BC V6S 1Z2 (Web page at www3.bc.sympatico.ca/mathchess/)


[45] Scholar-Chessplayer Outstanding Achievement Award Applications.
First of all, Math provides the building blocks and foundation that children will need throughout their lives. If you think that the basics are adding, subtracting, multiplying and dividing - think again! Today, we live in an information age where it's reported that information is doubling at a rate less than every two years. The basic skills need to function in the workplace today are decision making, problem solving, critical thinking and deductive and inductive reasoning along with the ability to make judgements and good estimates. We haven't loved math but we've certainly loved our games. That's when Chess comes into the picture.

Chess is a game that requires problem solving. Math requires problem solving, it makes good sense then to become a good problem solver means you'll do better in math. Chess (and other games) require a mental workout, thinking ahead, planning, being systematic, and determining the outcomes of certain moves. Chess moves can't be memorized, weakness in math often stems from an over emphasis on memory skills instead of thinking skills. Research studies have indicated that students playing chess have improved problem solving skills over the group that have not been involved in the playing of chess. Ollie LaFreniere, the Washington Chess Federation's statewide Coordinator for Scholastic Chess, said in a Seattle Post-Intelligencer interview on May 31, "Chess is the single most powerful educational tool we have at the moment, and many school administrators are realizing that." There are also studies that indicate that many students' social habits improved when playing chess.

The late Faneuil Adams (president of the American Chess Foundation (ACF). believed that chess could enhance learning, especially for the disadvantaged. He with the ACF founded the Chess in Schools Program which initially began in New York's Harlem School district. Early in the program, the focus was on improving math skills for adolescents through improved critical thinking and problem solving skills. Remarkably "test scores improved by 17.3% for students regularly engaged in chess classes, compared with only 4.56% for children participating in other forms of enriched activities."

The ACF reports that chess improves a Child's:

- Visual memory
- Attention span
Spatial reasoning skills
Capacity to predict and anticipate consequences
Ability to use criteria to drive decision making and evaluate alternatives

Many countries are following suit. In Canada, a growing number of elementary schools have incorporated chess into the regular school curriculum. Looking specifically at Quebec, 10 years ago their math scores were the lowest in the country. Chess became a school subject and now the children in Quebec have the highest average math scores in Canada.

**Overcoming Math Phobia through Chess**

Why is it when we ask the majority of people what they think of math or if they're good at math, they immediately show a look of distaste? Think of what happens when a group of people are at a restaurant and the bill comes on one check instead of on separate checks. Usually, you'll hear 'here, you figure it out, I was never any good at math.' I'm sure you've been in this situation yourself at times. However, do they ever say, here you figure it out - I can't read. When we take a look at why people don't like math, we're told it's because it makes them feel stupid, or that they just don't understand it because there are too many rules, formulas and procedures to remember. But, can you think of a situation where there are rules, procedures and such that we enjoy? Games!!! Perhaps if our math instructors treated math like a game, more individuals would excel and would like mathematics. A more favorable attitude in math leads to better performance. Let chess pave the way to better math scores and improved problem solving strategies!

http://math.about.com/od/reference/a/chess.htm 09/08/08
Chess Spreads Through Schools Across America

Educators tout game's benefits to scholarship, citizenship

By Steve Holgate
Washington File Special Correspondent

Portland, Oregon -- The children, aged 5 through 11, crowd around tables or lie on their bellies on the floor, talking, laughing and letting their legs bounce in that jittery way kids have. The noise and energy levels in the large room are close to what you might expect from kids on recess or having a classroom party.

The nearly 60 kids, who have stayed after school to crowd into the library of Raleigh Park Elementary School near Portland, Oregon, are members of the school’s chess club. Few of the club members will be winning, or even entering, any tournaments. But these kids -- 15 percent of the school’s 400 students -- are becoming better students, learning something about themselves and having fun.

Formerly the refuge of nerds, dweebs, wonks and misfits, chess has become one of the hottest activities in schools across the United States. The chess programs, however, are not designed to turn out more grand masters or produce a new American world chess champion. Educators promote chess for the impressive academic gains it brings to students.

Playing chess improves mathematics and problem-solving skills of even the youngest players while developing their ability to make difficult choices, think logically and plan ahead. Academic progress in one California school district improved measurably within 20 days of introducing chess into the classroom. A Seattle school official has said, “Chess is the single most powerful educational tool we have at the moment.”

No one has firm numbers on how many kids have taken up the game in recent years, but one academic has said that there has been “a veritable explosion of young chess players” across the United States.

Unlike most explosions, though, this one originates from many points at once. Just as the United States has no national school system, there is no federal office pushing chess. Individual schools interested in having a chess club generally look for support from one of a number of nonprofit organizations, made up of private citizens who have dedicated themselves to promoting chess in the schools.

One of the oldest of these organizations is the United States Chess Federation (USCF), founded in 1939. It facilitates the formation of school chess clubs across the country.
and organizes five nationwide youth chess tournaments every year, says Jerry Nash, the USCF’s scholastic director.

Nash says that youth membership in the federation has jumped from 12,000 to 46,000 in the last 15 years. The national youth chess championships have also been setting impressive numbers, with a record 5,300 kids competing in last year’s quadrennial SuperNationals tournament.

LOCAL PROGRAMS

Other programs are more local. One of the most successful is New York City’s Chess in the Schools, which brings chess instruction to tens of thousands of children from kindergarten to eighth grade in 120 schools in low-income neighborhoods. The program provides each child with a chess set and a chess booklet published by the organization. But its most important contribution might be its 40 teachers, who visit each of the schools once a week, providing in-class instruction and often staying long after the last school bell has rung to help strengthen school chess clubs.

Chess in the Schools also organizes weekly citywide tournaments that draw upwards of 500 children, some as young as 5 years old. Organizers plan to double the program’s size in the coming academic year, according to Marley Kaplan, the program’s president and chief executive officer.

One of the newer chess organizations, First Move, founded in Seattle in 2000, takes a different approach. Instead of bringing chess instructors from the outside into the classroom, First Move trains the teachers to play chess well enough to teach it to their students, according to Wendi Fischer, a vice president of First Move. First Move has designed a curriculum to make the game a part of the formal program of instruction for second- and third-graders.

“Kids don’t think about what they’re learning. ... They’re just having fun,” Fischer said. First Move has been adopted by a number of large school districts across the country, including Seattle, Philadelphia and San Diego.

LIFE LESSONS

This rapid growth no doubt pleases First Move’s founder, the entrepreneur and philanthropist Erik Anderson, who believes that the lessons learned from chess as a child have helped him throughout his life.

Anderson's belief in the character-building aspects of chess is shared with many of those who promote chess in the schools. Jerry Nash of the USCF talks of how the game raises self-esteem and helps young kids mature.

“The players must shake hands, be courteous to their opponents. They have to learn to
persevere,” he says.

Marley Kaplan of New York's Chess in the Schools says the program “teaches kids how to win gracefully and how to learn from defeat.” It also builds a sense of responsibility. “Whatever happens across a chessboard is yours,” Kaplan says, “win or lose.”

Some even see a democratizing element in the great game. First Move’s Wendi Fischer says, “Chess has a way of leveling the playing field. Kids who don’t interact with each other very often will play chess with each other.”

The “A” student will play with the top athlete. The child from a poor family will play the child from a rich family. “This is especially important,” Fischer says, “in schools with lots of non-English speakers. They don’t have to communicate verbally.” Kaplan of Chess in the Schools adds, “It doesn’t matter what age or gender or religion you are. Players are equals when they face each other across the board.”

Meanwhile, back among the kids at Raleigh Park Grade School near Portland, Brian Enneking, a businessman, volunteers his time as the club’s chess instructor. He is one of thousands of men and women who are not part of any national organization, but simply want to help kids play chess. He talks about his days with a local high school team that went on to win the national championship, and asks himself, “What can I do for society? What can I do to give back a bit?”

In fact, he has found his answer among the dozens of kids sitting at the grade school library tables or lying on the floor playing chess, becoming, though they would probably not realize it, better students and better citizens.

(The Washington File is a product of the Bureau of International Information Programs, U.S. Department of State. Web site: http://usinfo.state.gov)
Why Offer Chess in Schools?
By Chessmaster Jerry Meyers YouthChess.net

1) History
Chess is a classic game of strategy, invented more than 1500 years ago in India. Legend has it that the ruler of India asked his wise men to devise a way to teach the children of the royal family to become better thinkers and better generals on the battlefield. Chess was the result. In the centuries since its invention, chess has spread to every country in the world. While countless other games have died out, chess lives on. In the United States, it has received endorsements by many educators, ranging from Benjamin Franklin to former U.S. Secretary of Education, Terrell Bell. In Western Pennsylvania, more than 70 schools and a dozen libraries offer chess programs, reaching several thousand students each year.

2) Academic Benefits
We have brought chess to the schools because we believe it directly contributes to academic performance. Chess makes kids smarter. It does so by teaching the following skills:

- **Focusing** • Children are taught the benefits of observing carefully and concentrating. If they don't watch what is happening, they can't respond to it, no matter how smart they are.

- **Visualizing** • Children are prompted to imagine a sequence of actions before it happens. We actually strengthen the ability to visualize by training them to shift the pieces in their mind, first one, then several moves ahead.

- **Thinking Ahead** • Children are taught to think first, then act. We teach them to ask themselves “If I do this, what might happen then, and how can I respond?” Over time, chess helps develop patience and thoughtfulness.

- **Weighing Options** • Children are taught that they don't have to do the first thing that pops into their mind. They learn to identify alternatives and consider the pros and cons of various actions.
• **Analyzing Concretely** • Children learn to evaluate the results of specific actions and sequences. Does this sequence help me or hurt me? Decisions are better when guided by logic, rather than impulse.

• **Thinking Abstractly** • Children are taught to step back periodically from details and consider the bigger picture. They also learn to take patterns used in one context and apply them to different, but related situations.

• **Planning** • Children are taught to develop longer range goals and take steps toward bringing them about. They are also taught of the need to reevaluate their plans as new developments change the situation.

• **Juggling Multiple Considerations Simultaneously** • Children are encouraged not to become overly absorbed in any one consideration, but to try to weigh various factors all at once.

None of these skills are specific to chess, but they are all part of the game. The beauty of chess as a teaching tool is that it stimulates children's minds and helps them to build these skills while enjoying themselves. As a result, children become more critical thinkers, better problem solvers, and more independent decision makers.

3) **Educational Research**

These conclusions have been backed up by educational research. Studies have been done in various locations around the United States and Canada, showing that chess results in increased scores on standardized tests for both reading and math. A study on a large scale chess program in New York City, which involved more than 100 schools and 3,000 children, showed higher classroom grades in both English and Math for children involved in chess. Studies in Houston, Texas and Bradford, Pennsylvania showed chess leads to higher scores on the Watson Glaser Critical Thinking Appraisal and the Torrance Tests of Creative Thinking.

4) **Social Benefits**

In the schools, chess often serves as a bridge, bringing together
children of different ages, races and genders in an activity they can all enjoy. Chess helps build individual friendships and also school spirit when children compete together as teams against other schools. Chess also teaches children about sportsmanship - how to win graciously and not give up when encountering defeat. For children with adjustment issues, there are many examples where chess has led to increased motivation, improved behavior, better self-image, and even improved attendance. Chess provides a positive social outlet, a wholesome recreational activity that can be easily learned and enjoyed at any age.

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Author's Note: My name is Jerry Meyers. I am a chessmaster, and I have been running chess classes and tournaments for kids for about 12 years. I am scholastic director for the Pittsburgh Chess Club, and I run my own organization called Western PA Youth Chess. Thanks to my activities, Pittsburgh has become a very active City for youth chess activities. We have about 1800 kids with USCF ratings, and countless others still waiting to play in their first tournament. I enjoy teaching chess in schools, and I believe it helps kids become stronger thinkers. My article just gives a few suggestions about how chess helps kids become smarter.

http://chess.about.com/library/weekly/aa05a08a.htm 01/05
Further research is needed to shed light on the relationship between cognitive and academic improvements, to evaluate the role of potential moderators and confounds, and to understand the role, if any, of placebo effects and game elements non-specific to chess. Chess improves concentration. Source: The Effect of Playing Chess on the Concentration of ADHD Students in the 2nd Cycle. Source: The benefits of chess in education. We have brought chess to the schools because we believe it directly contributes to academic performance. Chess makes kids smarter. It does so by teaching the following skills. Instructional gaming is one of the most motivational tools in the good teacher’s repertoire. Children love games.