

How Children Learn With Board Games



- Skills Learned by Playing Board Games
- Beliefs and Myths About Learning
- Research on Board Games
- How to Improve Learning Through Play
- Choosing the Right Game at Every Age

How Children Learn with Board Games

By

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Chapter 1

Skills Learned by Playing Games

One of the best features of board games is that it presents a perfect way for adults and children to spend time together. Playing games is an easy and excellent way to spend time in an unhurried and enjoyable way. Board games are also rich in learning opportunities, as they satisfy a child's competitive urges and the desire to master new skills and concepts, such as:

- ◆ Number and shape recognition, grouping, and counting
- ◆ Letter recognition and reading
- ◆ Visual perception and color recognition
- ◆ Gaining of confidence and self-esteem
- ◆ Eye-hand co-ordination and manual dexterity

Games do not need to be overtly academic to be educational. Just by virtue of playing them, board games can teach important social skills such as communication, sharing, waiting, taking turns, and enjoying interaction with others. Board games can foster the ability to focus, and lengthen a child's attention span by encouraging the completion of an exciting, enjoyable game.

Even simple board games like *Chutes and Ladders* can teach life skills, such as "Your luck can change in an instant, either for the better or for the worse." The message inherent in board games is: "Never give up. Just when you feel despondent, you might hit the jackpot and ascend up high, if only you stay in the game for just a few more moves". Persistence is an important lesson for life.

Board games have distinct boundaries. As we live in a complex society, children need clear boundaries to feel safe. Board games can

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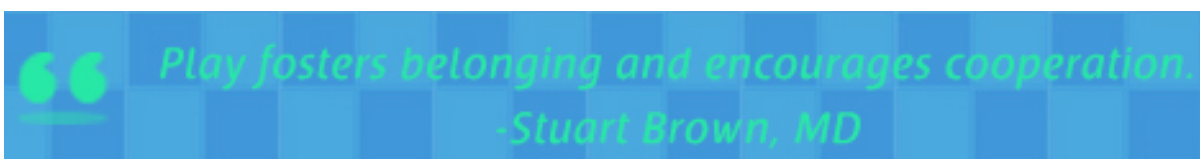
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help your children weave their wild and erratic side into a more organized and mature one, much as tennis and soccer may do later. Learning to stay within the boundaries, such as not intruding on another person's space, is a skill crucial to leading a successful social life.

There are many benefits to playing board games, including having fun, learning and bonding with family members. The skills that children learn while playing games are valuable, as they learn how to work as part of a team and how to think quickly. Additionally, board games provide children with the opportunity to problem-solve, anticipate and remember, which are all important skills for learning.

When choosing a board game to play as a family, ensure it is appropriate for the age and ability level of your child. It is important for the game to be challenging, but not so challenging it invokes frustration.

Children often learn best when in a playful environment, and it is a shame that when children enter school, it seems we strip away the fun and believe that learning occurs through explicit instruction and formal homework. In addition, when children enter school many parents feel that learning is something that they may no longer have a place in, as it becomes the domain of school. Board games can traverse these barriers and enable fun to be a learning experience.



Board Games Help Children Focus

Board games offer your child many good things, for as well as being fun, they also help with skills such as paying attention, following rules, and taking turns.



- ◆ Look for games with themes that will appeal to your child. For example, at certain ages, children enjoy games that are about animals than games that are about money.
- ◆ Encourage younger children to count as they move around the board, or to name the colours they see on the game board. Children usually enjoy the chance to show off what they know.
- ◆ Let your child use his thinking skills once he knows the game: "What do you think will happen if we draw this card?" "Which space should I move to now?"

These tips will help your children to become good sports:

- ◆ Explain that rules are an important part of the game and encourage them to follow them.
- ◆ Remind them often that nobody wins all the time. Some children take losing very hard. So cheer them on when they play fair, follow directions and take turns, just as much as when they win.

Playing board games helps your child develop in the following ways: -

Social Skills

When playing in a group, children learn to wait their turn and to take turns, which are skills necessary for most of life's experiences.

Playing competitive games can help your child learn to be a good loser. Make sure you do not always let your child win the game. Life certainly will not let them win all the time and this is a safe environment to practice becoming a good loser.

The best way to do this is to model being a good loser yourself. When you lose you can verbalize your feelings. For example, "Oh, I didn't win. I wanted to win. Maybe I'll win next time. Congratulations, you played really well".

Numeracy Skills

New research suggests that parents can in fact play an important role in helping their child develop essential numeracy skills in a fun and easy way.

One way to give your child a head start in mathematics is to play board games with them. A child's mathematical ability at the beginning of kindergarten is strongly predictive of their mathematical achievement test scores in later years, even in high school (Duncan et al., 2007 "School readiness and later achievement"). If a child enters school with less numerical knowledge than their peers, they will be disadvantaged throughout their lives.

A study published by Geetha Ramani and Robert Siegler found that the differences in mathematical ability amongst young children in the early years' of school is attributable to experiences with informal learning activities, including board games in their pre-school years.

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This means that young children who have experience with board games are more likely to have stronger numerical knowledge than children who have not had this experience.



Children can start to participate in board games from about the age of three or four years' of age, and parents can tailor the way they play the game and its complexity to suit the age and development of their child.

Playing a board game may seem like a simple activity, but this actually helps develop your child's numeracy skills in many different ways.

Playing Board Games help children in numeracy in these ways:

- ◆ To understand that numbers represent amounts and that they are ordered from less to more (for example, four is more than three because it has more dots on the dice);
- ◆ To recognise numbers (for example, the squares may be numbered and so they get to see the visual or symbolic representation of the amounts);
- ◆ To understand that whole numbers increase in a linear fashion;
- ◆ To introduce the notion of counting on and counting back, which helps with adding and subtracting. For example, if you roll dice and get a six, you move forward six places, or you land on the instruction 'the player must move back five places', which helps with mastering addition and subtraction;
- ◆ To improve their counting skills generally.



Play is our brain's favorite way of learning.

-Diane Ackerman

If you are playing the game with an older child, increase the level of complexity to challenge your child. Usually you would roll the dice and move that number of spaces. However, if you use two dice, you have to either add or subtract the two numbers to find out how many spaces you move (for example, if you were playing the game by adding the dice and rolled a five and one you would complete the sum $5 + 1 = 6$ and move forward six spaces), which provides a more challenging task.

Although the skills listed above may seem quite simple, it is important to remember that the acquisition of skills relies on the mastery of more simple skills. So, if your child is able to understand the basic concepts underpinning numbers, they are better placed to learn further numerical skills that follow.

Communication

Playing games with other people relies heavily on having good communication skills. The child is required to listen and understand the instructions and procedure of the game. This is of course an essential skill for learning.

When you next have a new player join the game (for example, a younger sibling is now old enough to play, or Grandmother comes to visit) ask your child to explain to the new player how to play the game.

As a child gains experience in explaining the rules of the game, he can increase his range of vocabulary and general knowledge.

Approach to Learning

Some children, especially those who struggle with learning, can feel overwhelmed and 'shut down' when presented with a learning or homework task.

Playing a game, however, does not summon the same anxiety, and children are more willing to have a go. Children love to play, and approach play with enthusiasm and zest. This results in an increased motivation and engagement, which is great for learning new things or consolidating skills.

If young children are exposed to numerical concepts and symbols through play in their early years', they are more likely to feel a sense of increased confidence and self-esteem when they are presented with a number problem in class.



Relationships

Young children enjoy playing and interacting with their parents and family members. Playing a board game together is something in which children can look forward to and enjoy, while spending valuable time together as a family.

Playing games together encourages cooperation and teamwork between friends and family members, regardless of how much competition is involved in the actual play, simply because of having to allow each other their own turn. Children actually learn patience, respect for others, along with other social skills more through competitive games than non-competitive because they learn empathy through self-control in a natural way.

All of these skills are crucial to relationship-building throughout a child's life into adulthood - and it's just as simple as letting them play.

Parents as Educators

Quite often parents may feel that they do not have the necessary skills to be able to teach new skills to their children. Some parents therefore assume that learning and teaching are something that occurs within the school context and not at home.

However, generally parents understand that we should read to our children to help develop their literacy skills. But what do we do to help develop their numeracy skills? Quite often mathematics is seen as unfamiliar territory and an area where we may not feel particularly confident.

For example, "I am sure they have changed long division since I was at school so I had better not try to help my child out with that as I will probably only be making it worse for them!" Playing a board game together is a task that is achievable and simple for parents to do, and feel confident in doing, which includes the skill of numeracy.

There are also many home educators who are worried that their children are not learning necessary skills, such as social skills, because they are not enrolled in a school with peers.

This of course, has been proven quite the opposite, and as we have read, children learn more through play than we realize. Through general board games alone children learn math, reading, problem solving, language, strategy, AND social skills. Additionally, there are many games that are specific to subjects such as history and science. So, if you are a home educator who is concerned that your child isn't learning as they "should" - just get some age and skill-appropriate board games, play them, have fun, and worry no more!

A Word About Winning

“

*When playing a game,
the goal is to win, but it is
the goal that is important,
not the winning.*

-Reiner Knizia

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Children take game playing very seriously, because to them it's as important as your job and household is to you. So it's important that we help guide them through the contest in the early years.

When a playing piece falls to a lower level, our children really feel sad; when it rises up high, they are remarkably proud and happy, even if we adults know that it happened only by chance. Therefore, you need to help balance your child's pleasure in playing the game with his ability to manage frustration and deal with the idea of losing.

For 3, 4, and often even 5 year old children, winning is critical to a feeling of mastery. So generally, it is okay to "help" them win until they have at least mastered the concept of the game.

By about the age of 6, children should begin to internalize the rules of fair play, tenuous, as they may seem to a child who is losing a game. Though you may feel the need with some 6 year olds to "amend" some rules to help him to win if you feel the need.

Helping them win, until they've mastered how to play, gives them confidence, but "letting" them win actually lowers their self-esteem. You need to be sensitive to your child's needs and be prepared to be flexible. At the same time you should be careful not to give the impression to your child that he can win every time.

Children gain more confidence when they've accomplished winning on their own and learning to be a good loser and deal with failure is also an essential life skill.

Chapter 2

Beliefs and Myths about Learning

Several of the prevalent myths about learning include: -

- ◆ We learn by listening to experts - Auditory
- ◆ Experience leads to learning - Visual
- ◆ Hands-on learning works best - Kinesthetic

We learn by listening to experts -

Research at Harvard, Kansas State, and elsewhere proves that individuals filter information, hear what they want to hear, and are generally unable to apply information after simply listening.

Studies have demonstrated that by building in pauses into the learning, recall and comprehension is improved. Pauses are a natural part of games, which can be a useful asset in terms of learning.

Experience leads to learning -

How many pennies have you encountered in your lifetime? By the age of thirty, most Americans have had “experience” with about 20,000 pennies. Yet, few can draw both faces of a penny accurately. This shows that experience alone is not enough.

We need to provide meaning and relevance to the experience, and to incorporate ways to provide reflection in order to translate that experience into knowledge or skills.

Paper money provides another good example. Adults and children have considerable experience of using money, by the purchase of goods. Yet that experience in using money does not translate into understanding how to grow, protect, or use money wisely.

Most of us would prefer our children not begin their financial education with a hands-on approach in learning to use credit cards or other plastic alternatives!

Hands-on learning works best -

In studies with Harvard and MIT graduates, all indicated they could use a bulb, wire, and battery to light the bulb. Yet none actually did.

High school science students, after using a socket, battery, and wire to light a bulb, were then unable to take the battery and wire alone to light the bulb.

Researchers concluded that none of these individuals had learned or understood the principles of electricity, in spite of hands-on practice.

The Truth About Learning Styles

Imagine that a teacher tells his pupils that all tests would be "open book". Their expressive faces of astonishment and glee might convey their beliefs that they would be given the gift of an easy "A".

However, to do well, we all require a level of understanding, thinking, synthesizing, applying, and independent reasoning.

The conclusion points to the fact that hands-on and heads-on learning combined works best. Hands-on or heads-on alone is not sufficient. This is where properly designed board games come into their strengths, as they are an effective way of providing this combination.

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Many children lean towards one way through their earliest environment - whether it be auditory, visual, or kinesthetic. So, many educators often handicap the child by gearing their education to fit how they notice the child is already learning. By doing this though, the child's strengths are focused on and then their weaknesses are not strengthened.

Children also go through phases as they grow and learn where they may learn more auditory at age 3 and more visually at age 10, so no one learning style should ever be made prominent through a child's education in order to achieve balance.

Fortunately, children are versatile and they make up for many of their well-meaning educators' shortcomings through play. For young children play is serious business and they learn just as much from playing as they do from structured learning times. The key to a child's education is through a healthy balance, which includes a variety of board games.



Learning via Board Games

Board games are an important tool to provide hands-on and heads-on skill and knowledge development for people of all ages on all subjects. Not only do well-designed games create an engaging atmosphere, they also provide a non-threatening playful, yet competitive, environment in which to focus on content and reinforce and apply learning. In this environment, mistakes are useful and point out what we need to learn.

The board itself provides a visual metaphor to help connect information. Game elements, discussions, and problem solving with fellow team members about the content are vehicles for learning. Subtle pauses help to reinforce learning and insure retention is incorporated into the game. Good questions, problems to solve, and situations to consider, allow players to think through and apply what they learn.

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Effective games serve to organize information in a conceptual framework and to make it concrete. They provide analogies and metaphors to link new information. When played in teams, members learn together; no one ever feels singled out for not knowing an answer. Questions are a natural feature of games, and they help to verify understanding and to signal where more learning is needed.

Games are ideal to accommodate different learning styles. For those who learn best from concrete specifics, games transform abstract concepts into concrete ones. For those who need to begin with the big picture, they are supported by the metaphor of the game itself, and then absorb the detail as the game proceeds.

In addition to requiring critical thinking, team-based board games help to build communication and relationship skills as players work face-to-face to answer questions or solve problems and see that together they often figure out something they thought they did not know. The power of collaboration becomes very powerful and once this skill is learned, it can transform working relationships later on in life.



Chapter 3

Research on Board Games

A growing body of research proves that properly designed team-based board games not only inspire learning, they encourage communication, collaboration and risk taking. They empower players by helping to build self-confidence. The different elements of game design support a wide range of player abilities, and learning translates to behaviour changes.

An independent study by Vigil-Cruz and her colleagues, one a statistician, at a large north-eastern university, proved the impact of The PHARM Game®, which is a board game designed as a learning tool for employees who work in the pharmaceutical industry. Vigin-Cruz, et. al., tested learning effectiveness, retention, and student preferences over three semesters, comparing the board game to other teaching methods.

Two outcome variables were used in the study. The first quantified each student's understanding and knowledge of information in the seven content areas addressed in the game. The second measure qualitatively assessed student perception of the impact of various laboratory-based exercises, and on learning effectiveness and enjoyment.

The outcomes demonstrated that the post-test performance achieved after playing the game was significantly higher than the scores achieved after either the lecture or library assignment.

The game was regularly ranked first by the students as both the most effective and the most enjoyable way to learn. Playing the game, more so than other teaching tools used, significantly enhanced performance on the tests and long-term retention.

This demonstrates that adults enjoy learning when it is perceived as fun, and that the playing of board games can enhance learning.

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Well-designed board games are effective and valuable learning tools, as they create an experience, entertain and engage, present challenges, and promote collaboration and discussion.

This is likely because proper design incorporates all the elements found to promote effective learning. In many ways, well-designed board games can have even more impact on children than on adults, as they are more open to influences, particularly when they are having fun!

Chapter 4

Improving Learning

Pauses aid the Learning Experience

A study by Ruhl, et. al. ("Does Active Learning Work? A Review of the Research"), found that individuals exposed to lectures where the instructor paused for two minutes every 12-18 minutes, did significantly better, both with free recall at the end of the lecture, and also on a comprehensive test 12 days later.

Ruhl and colleagues point out that short lectures are consistent with research indicating the ability to retain information drops significantly after 10-20 minutes. In fact, improvement over the control group was two letter grades.

We can easily see that when it comes to board games, pauses are naturally built in, as players pause to enter into discussion, perhaps on the rules of the game. This very process helps people to absorb the learning experience.

Content and Information Density

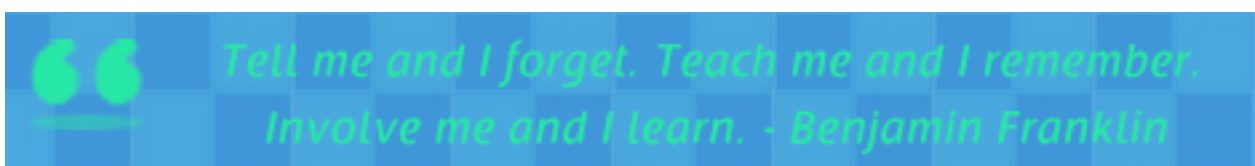
Another study showed that reducing new information in lectures, clearly improved retention both after the lectures and 15 days' later. It was found that lower information density in a lecture reinforces the material. This indicated that games are useful in learning as they can be used to introduce new information in this more gradual way, and therefore with improved impact.

Impact of Previewing

Other researchers found that previewing information significantly impacts learning. To provide a preview, they suggest using an overview to provide a conceptual framework for content and to familiarize learners with the topic. A game board provides such an overview, and introduces children to the concept of looking at the big picture, rather than just getting caught up in the detail. So the game approach encourages involvement and increased retention.

These are the 5 steps in using Previewing in Learning and How Games help:

1. Use a step-by-step (linear) approach beginning with simple, concrete information. Games have clear rules, which forms the ideal structure.
2. Active and frequent checks for understanding. Games instantly show where understanding and knowledge exists or is missing.
3. Illustrate information with multiple examples. Games provide multiple examples that clearly illustrate the lessons and skills needed.
4. Stress important points. The structure of the game both stresses and reinforces the important points.
5. Review information frequently. The activities built into a game provide such a review. A well-designed game offers significant repeat play value. In fact, given the opportunity, students will continue to play and play until they become confident.



Chapter 5

Choosing the Right Game at Every Age

Always check the box to see an appropriate age for players. For example, it may say, "Ages 3 and up." Children will get the most out of games that are geared to their age and skill level.

While in the long run we need to teach values, ethics, academic skills, and the importance of playing by the rules, in the early years the primary goals are helping your child become more self-confident and ambitious and to enjoy playing with others.

If you're playing with more than one child, you can divide the family into teams, giving each player a specific job he can do well. Using Monopoly as an example: A younger child may be responsible for rolling the dice for each player (which he considers very important), and an older child the job of sorting the money and another the job of handing out "Chance" and "Community Chest" cards.

As children approach the age of 5, they have more sophisticated thinking skills and can begin to incorporate and exercise their number, letter, and word knowledge in literacy-based games.

By the age of 6, children may prefer more cognitively challenging games like checkers, and by age 8 chess, which require and help develop planning, strategy, persistence, patience, and critical thinking skills.

Board games make learning exciting for children while helping them develop cognitive and motor skills. Board games are a great way to introduce new skills to pre-schoolers such as matching, sorting, memory, and counting.



*In play a child always
behaves beyond his average age,
above his daily behavior. In play
it is as though he were a head
taller than himself.*

-Lev Vygotsky

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Conclusion

Decades of research on learning and teaching, plus recent experience and testing of board games designed for learning, provide confidence that such games are ideal to encourage, empower, and educate.

Face-to-face games are a critical tool in our arsenal of educational products. Games are valuable supplements to other educational tools. Technology is playing a growing and useful role in education, but just as TV did not eliminate the radio, nor should technology-based learning tools be considered a replacement for those used in face-to-face settings.

Many educational settings in the past have been against designing and using games, but through extensive research educators are finding that games are useful, effective, and enjoyable for all ages. Board games provide many educational and teaching benefits and have proven their value when designed appropriately for learning.

Board games provide exceptional, cost-effective resources. They: -




- ◆ Incorporate all three learning styles
- ◆ Summarize and reinforce important information in an easy-to-grasp format
- ◆ Reduce the time needed to learn, remember, and apply new information
- ◆ Promote discussion, collaboration, and build communication
- ◆ Encourage self-confidence and improve thought processes.



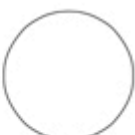


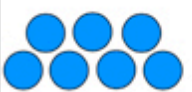


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Practice writing your numbers!




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A Game That Teaches and is Fun to Play!

- teaches colors, basic number sets up to ten and simple geometric shapes.
- combines strategy and chance with the basic principles of Bingo.
- designed for young children but offers enough strategy to hold the interest of older children.
- Spin for a number, then spin for a shape. Make a play, or spin a second time for a better spin combination.
- Match the spin combination with the corresponding shape and number set on the game board.
- Win by scoring five blocks in a row on the game board - vertically, horizontally or diagonally.

Ages 4-10

2-4 players.

GB Games by Berrier

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