

Traditional Malaysian games, for example, are also involving mathematics. Among them, "[Congkak](#)" is the most famous. "Congkak" is a traditional Malay game played with a wooden board and rubber seeds. As players count the number of seeds in each hole, this game requires strategic thinking, calculation and basic arithmetics.



A game of congkak requires strategic thinking, calculation and basic arithmetics.

"[Batu Seremban](#)" is a game in which small objects, mostly rubber seeds, are thrown, and different stages of catches and throws occur. The game involves addition, subtraction and sometimes multiplication as players calculate their scores by assigning numerical values to their performing sequences.



[Source](#)

"[Gasing](#)" is a traditional game where players spin tops and compete to make them spin for the longest time. Physical principles (like momentum and balance, which can be understood by mathematics) are at the heart of this game.



Physical principles (like momentum and balance, which can be understood by mathematics) are at the heart of playing gasing.

“[Sepak takraw](#)” is a popular sport in Southeast Asia, including Malaysia. “Sepak takraw”, where players kick a rattan ball over the net using various acrobatic movements, involves calculating angles, forces and precise trajectory.



Sepak takraw involves calculating angles, forces and precise trajectory.

The [Kolam](#) tradition, popular among Indian communities in Malaysia, beautifully introduces the

concept of ethnomathematics in Malaysia's diverse cultural landscape. These intricate designs blend artistic expression with mathematical principles, showcasing elaborate patterns, symmetrical features, and elements of number theory. This highlights the deep connection between this cultural tradition and mathematical concepts.



Kolam highlights the deep connection between this cultural tradition and mathematical concepts.

In Chinese culture, the game of [Go](#) can be a fun and engaging way to teach mathematics. Go offers a range of activities that can make learning math more enjoyable. By exploring Go's strategies, students grasp the underlying mathematical ideas. Regular practice makes it a familiar and exciting part of their learning routine. As they play, students uncover mathematical treasures, experimenting and learning from trial and error to improve their skills and achieve higher scores.



Playing go allows students to uncover mathematical treasures, experimenting and learning from trial and error to improve their skills and achieve higher scores.

In particular, in the area of Mathematics, game-based learning is supported by a variety of theories. According to [Piaget's theory of cognitive development](#), children acquire knowledge through social interaction with the environment. This knowledge is gained during activities that explore the physical world through learning by playing. Piaget stressed the importance of play for children's cognitive and social development because it involves active participation and continuous interaction with the environment.

The [sociocultural theory of Vygotsky](#) describes how children develop their knowledge through social interaction by playing games with friends and being supported by adults. In addition to acquiring knowledge, children who play in groups or pairs can develop communication skills, personality, and core values. The game plays a fundamental role in developing strategies and a feeling of responsibility for all actions involving each participant's mental, emotional, or physical involvement. The game-based learning of mathematics is founded on [Howard Gardner's theory of multiple intelligences](#). Taking into account students' different strengths in a classroom makes learning experiences more inclusive, interactive and easy to understand. These intelligences include linguistic, logical-mathematical, spatial, bodily-kinaesthetic, musical, interpersonal, intrapersonal, and naturalistic intelligences. Therefore, taking into account students' different strengths in a class will make learning more inclusive, engaging and easy to comprehend.

Lastly, the International Day of Mathematics aims to show that mathematics has a key role in attaining the Sustainable Development Goals (SDGs) set up by the UN, such as quality education and reducing inequalities. "Learning with Math" is not only improving individual cognitive skills, it is also developing psychomotor and emotional abilities. In education, playing with mathematics is aligned with the [Falsafah Pendidikan Kebangsaan](#) (FPK), which aims to produce holistic individuals in terms of physical, emotional, spiritual, intellectual, and character aspects.

So, let's celebrate Pi Day by playing with math and making [learning](#) an exciting experience!

Written by:

Associate Professor Dr Abdul Halim Abdullah

School of Education, Universiti Teknologi Malaysia ([UTM](#))