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**JOHOR
INNOVATION
INVENTION
COMPETITION
AND
SYMPOSIUM
2023**



"Innovation Inspires a Society
to be Critical and Creative"

JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023

"Innovation Inspires a Society to be
Critical and Creative"

Editors-in-Chief

**AHMAD KHUDZAIRI KHALID
NUR INTAN SYAFINAZ AHMAD**



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MARA

**Cawangan Johor
Kampus Pasir Gudang**

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Preface

In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.

This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.

We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.



MATH RIDDLE FOR YEAR 6

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ABSTRACT

Math puzzles offer a distinct approach to practicing mathematics compared to traditional questions. Unlike specific topic-based problems, puzzles often lack clear indications of the required skills. They challenge students to determine their own solution strategies instead of following predefined steps. Puzzles extend advanced students beyond grade-level content without widening curriculum gaps. Most importantly, they provide a glimpse into real-world math applications, allowing practice of important standards and fostering critical thinking and problem-solving skills essential for practical use. This system is targeted to students out there. They can be anywhere and anytime to enhance their ability in math. Math riddles enhance concentration and comprehension by developing the ability to decipher text beyond basic literacy. Reading between the lines, considering context, and comprehending multiple layers of meaning are essential skills that riddles help students cultivate.

Keywords: mathematics, practice, solve, year 6.

1.0 INTRODUCTION

At a basic level, playing the game helps to understand the rules of the game. They can think more strategically and go further. This project aims to train the minds of children, especially at the elementary level, to become more active and effective in counting objects. In addition, it can take up time in the nursery at home and strengthen the relationship between family members.

The project we are doing is a follow-up member of the application family where our application is still the same application as the original creation but we have done a little modification on this application. Our application was originally created to test the level of children by following the given level and the application is not focused on anyone where everyone can try it. So a group of us created this application focusing on children who are in primary school so we changed the level of the question and the background of the application to make it more interesting and the time to answer the question. Here we have some pictures regarding the application we created.

The environment while doing this project is very safe and the equipment to implement this project is sufficient. This project will operate on a computer and the hardware to implement

this project is very sufficient where it only uses hardware such as a monitor, keyboard and mouse. In terms of operating the system, it uses code studio visual software.

2.0 OBJECTIVE

The goal of the Mathematical Puzzle System project is to create a perfect scenario to practice many standards of mathematical practice, especially understanding problems and persevering in solving them.

1. Train children's minds to be more efficient in doing things matter.
2. Learning and understanding how to understand a system more interestingly
3. Engage children and adults in learning mathematics.

3.0 DESCRIPTION OF INNOVATION/METHODOLOGY

The project we're working on is the next member of the app family, where our app is still the same app we originally created but we've made a small change to it . Our app was originally created to test children's level by following certain level and this app is not for anyone but everyone can try it. So a team of us created this app focused on elementary school kids. So we changed the question level and the background of the app to make it more interesting as well as the time it takes to answer the question. Here we have some images related to the app we created.

Users, children or students will start with the display of the figure 1 interface in this system. Where there is a starting button to start the adventure of answering the questions.

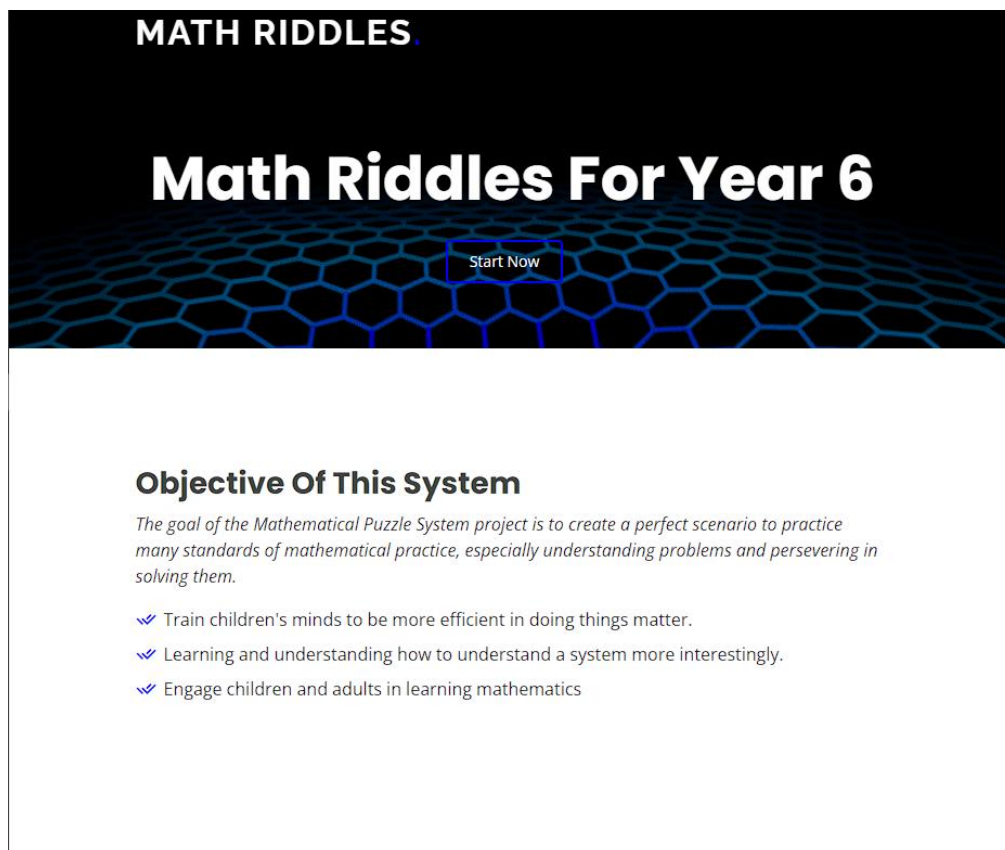


Figure 1: MainPage Interface

Figure 2 provides math knowledge including history of mathematical figures and famous math quotes. user need to press Get Started button to answer math questions in this system.

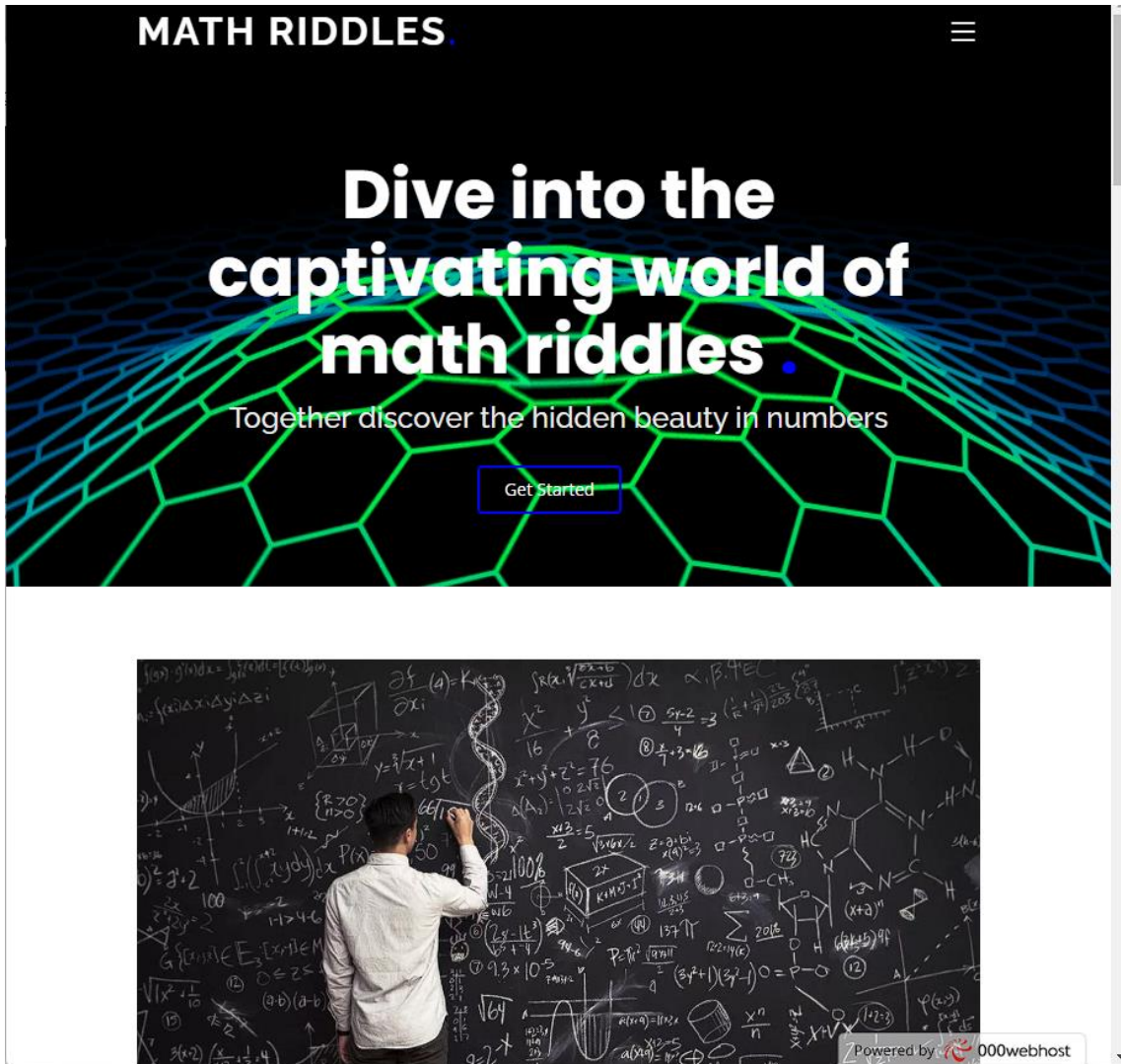


Figure 2: Dashboard Interface

There are several options based on themes and sub-themes that can be selected. Selected topics are taken from textbooks used in school PDPC activities together with their teachers. This way, they will not avoid the subject they are learning at school. Users can choose the topic they want to focus on to enhance their learning in figure 3.

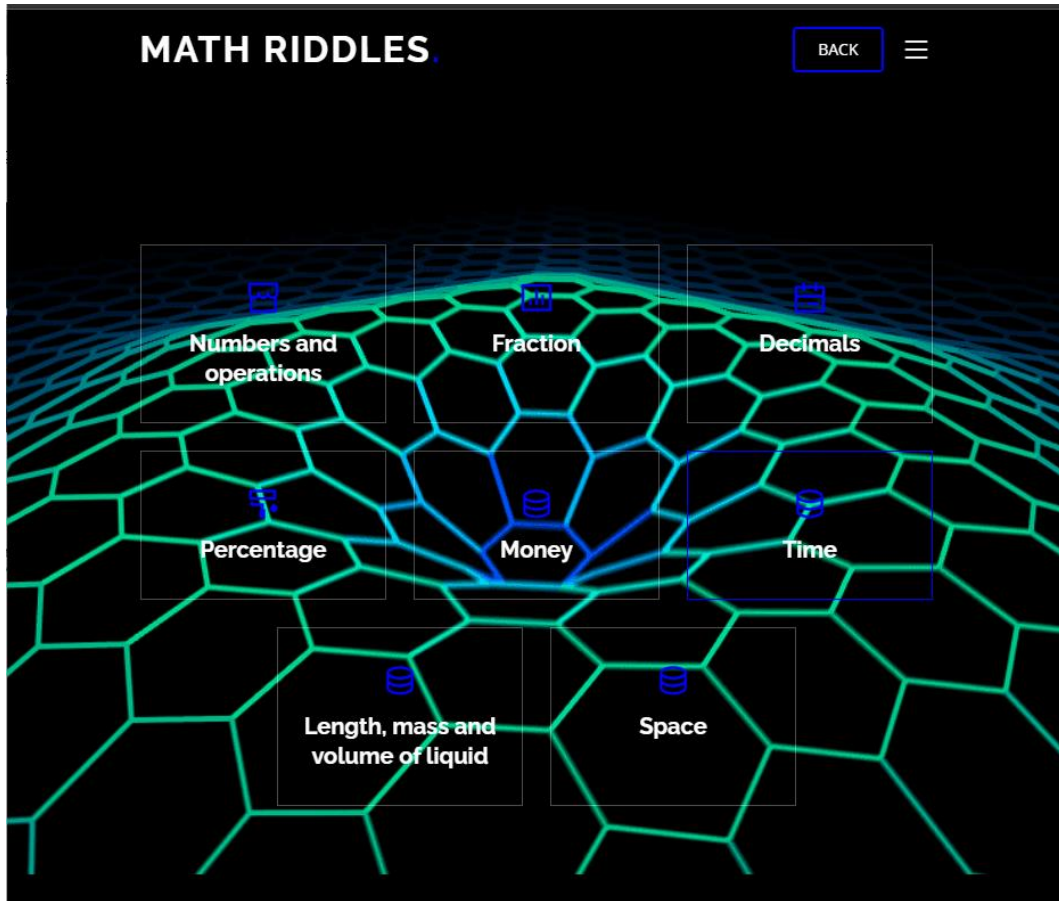


Figure 3: Multiple Topics Interface

Users should read the instructions before starting to answer multiple choice questions. After reading the instructions, users need to press the Start Quiz button to answer the multiple choice questions.

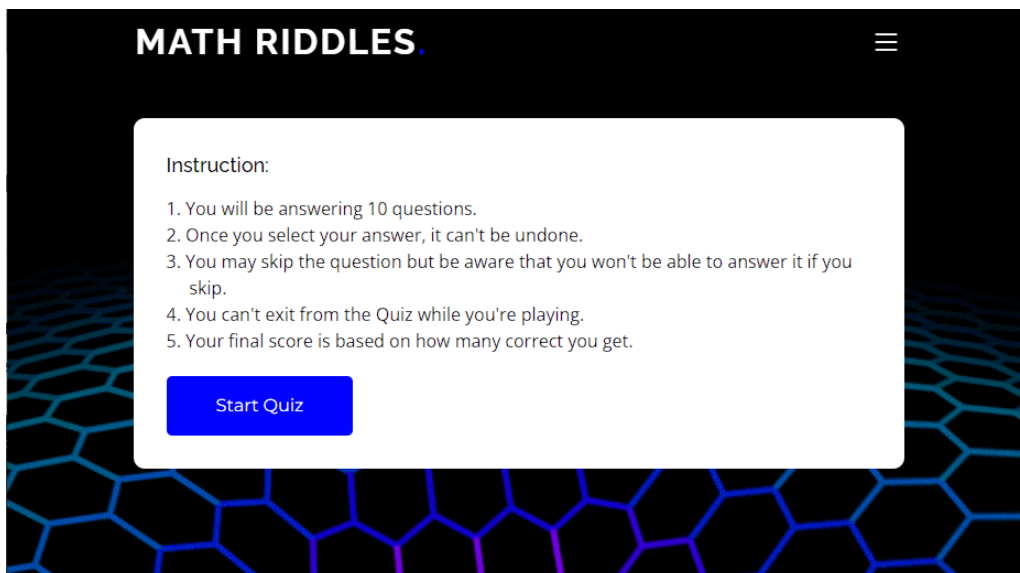


Figure 4 : Quiz Question

4.0 ADVANTAGE/IMPACT/RESULTS/NOVELTY

This system can strengthen your brain. A study from Stanford University found that kids who are good at math use brain regions that also show strong cognitive tasks like visual attention and decision-making. Studies show that the area of the brain that helps you do math is involved in decision making and attention.

Math quiz to help you learn life skills. A person who understands math can understand basic skills such as managing budgets, building interiors, forecasting, and telling time. Math helps you understand expenses, balance bank accounts, and subtract balances, which are important skills as an adult.

5.0 CONCLUSION

In conclusion, Math riddles for children can successfully develop their capacity for critical thought and problem-solving. Kids can discover a passion for mathematics and boost their self-confidence by taking part in entertaining and stimulating activities. Math riddles and other instructional games could be incorporated into a variety of learning environments, with potential benefits that extend beyond the traditional classroom setting. A solid understanding of mathematical concepts means more than just numbers. It helps us see paths to solutions. Equations and word problems need to be considered before determining the best method to solve them. And in many cases, there are ways to arrive at the right answer. Not surprisingly, logical reasoning and analytical thinking improved along with math skills. Logical skills are required at all levels of math education. This is because problems often force us to change our thinking and approach to problems in many ways. The first process we try may not work. We need flexibility and creativity to think of new paths to solutions. And like anything else, this way of thinking becomes stronger with practice. The parts of the brain used to solve math problems seem to work in concert with the parts of the brain that regulate emotions. This shows that practicing math can really help us solve difficult situations. In these studies, the more proficient a person was in numerical calculations, the better they were able to regulate fear and anger. Good math skills can even help treat anxiety and depression.