

Game 'Make 24'

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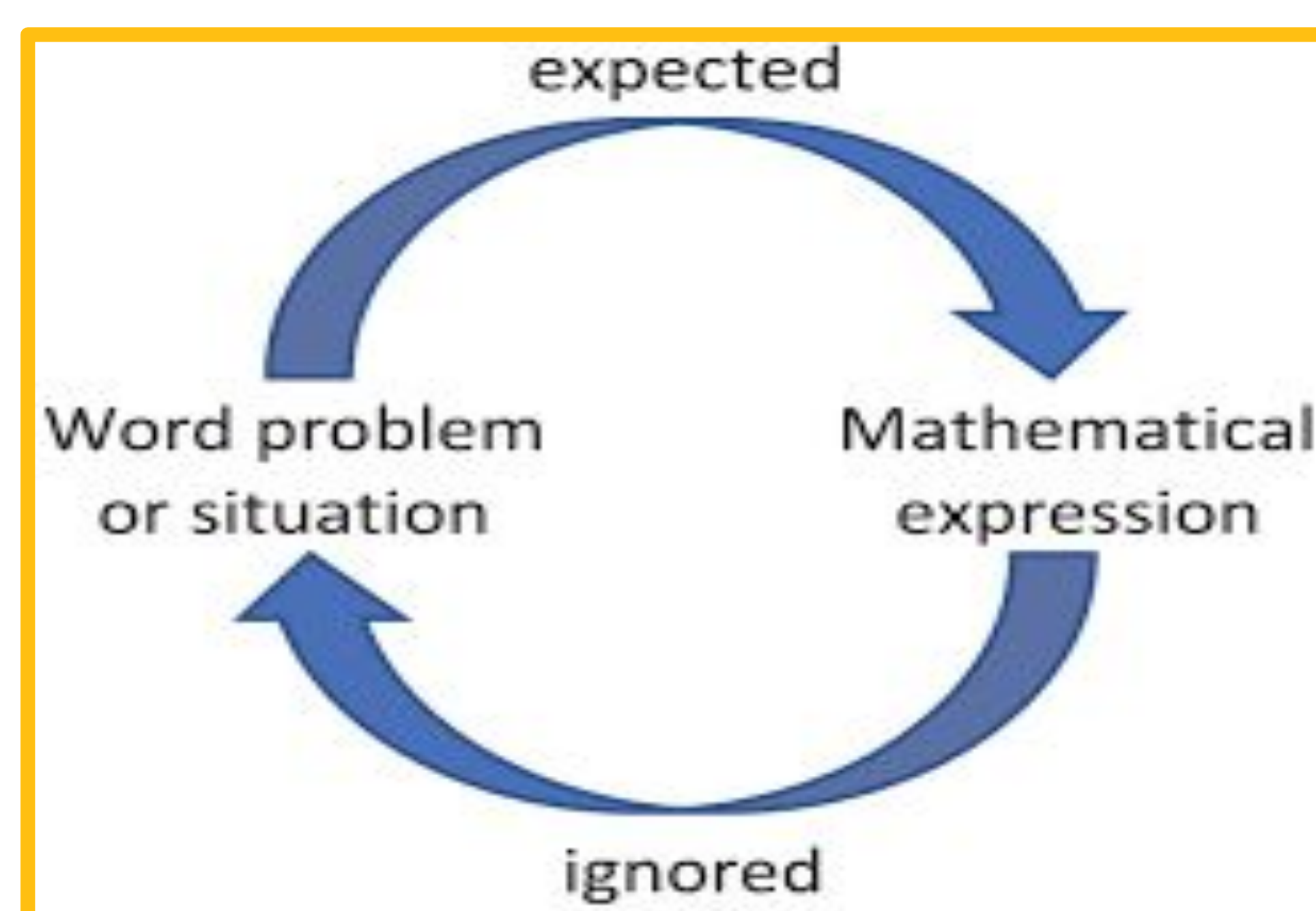


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Introduction

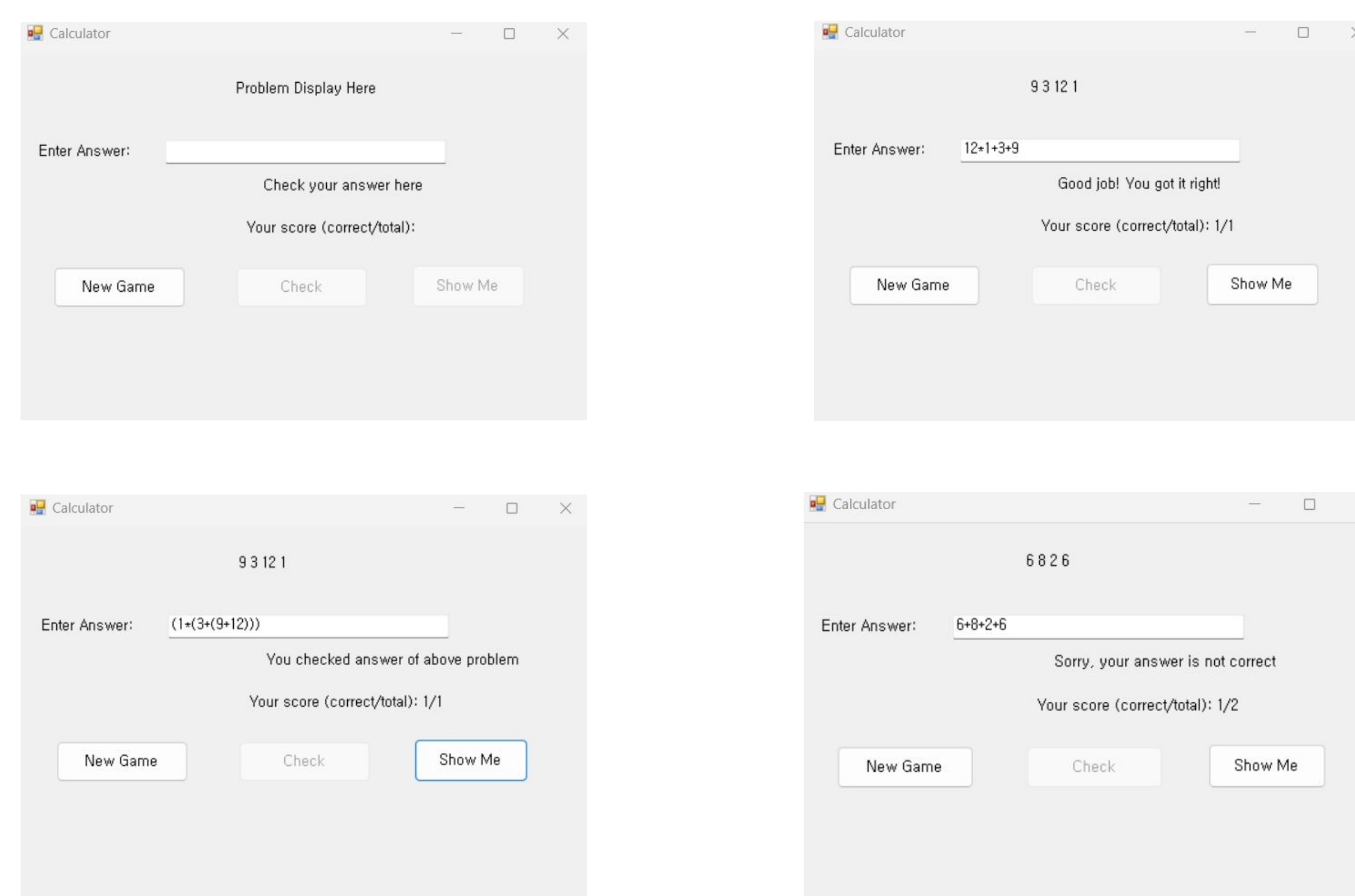
- Basic numerical skills are a must-have in today's world. However, children are not picking up the four basic numerical skills adequately.
- To improve their mathematical skills, they need a way to learn the numerical skills easily.
- "Make 24" is a game for young children who are having a difficult time with basic numerical operations. The game helps children improve their numerical skills by playing this game.



How to Play

- When the New Game button is pressed, the game displays four random numbers between 1 and 13, inclusive.
- The player uses these four numbers to construct an arithmetic expression that results 24 and enters the expression in input field.
- The player can press the "Check answer" button to check the answer. If the player gets the answer right, the player gets 1 point.
- However, if the player gets the answer wrong, the player loses 1 point.
- The player can get the answer by pressing the "Show Me" button, but the player loses 1 point.

Game Interface



Each time the player presses a button, the corresponding message will be given.

Check: When the answer is correct: "Good job!, You got it right"
When the answer is wrong: "Sorry, your answer is wrong."

Show me: "You checked answer of above problem."

Improvement

- Provide four sub games to practice four arithmetic operation skills respectively.
- Display the problem graphically by using playing cards.
- Make the game available for Android and Iphone.

How the game displays a problem

1. The program picks four random numbers between 1 and 13, inclusive.
2. Then the program check if these four numbers can form an arithmetical expression that results 24.
3. If they can, then display these four numbers.
4. Otherwise, go back to Step 1.

How the game checks the player's answer

1. Convert the infix expression to a postfix expression.
2. Evaluate the postfix expression.
3. Compare the results with 24.
4. Display a message accordingly.

References

Sircar, S. (2022, November 21). *Children are not picking up the four basic numerical skills adequately. how to modify the Teachin...* Azim Premji University. <https://azimpremjiuniversity.edu.in/news/2022/basic-math-operations-for-children>

Language

C++ was used to implement the game.