

Maths24

Alignment to CAPS

A Resource for Mathematics Educators

Maths Educational Toys Africa

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Introduction

Understanding how the 24 Game supports South African mathematics education

Maths24 and CAPS Alignment

The 24 Game (Maths24) aligns closely with the South African Curriculum and Assessment Policy Statement (CAPS) for Mathematics by reinforcing key learning outcomes across multiple phases of schooling.

- ✓ Supports core mathematical competencies required at each phase

The game is designed to fit seamlessly within the structure of the CAPS curriculum, helping educators address fundamental mathematical skills. By engaging with the 24 Game, learners develop fluency in fundamental operations and mental strategies—outcomes highlighted as important in the curriculum.

- ✓ Promotes fluency in mental calculation and problem-solving

Incorporating the 24 Game into mathematics lessons is an effective strategy to enhance learners' understanding and retention of key mathematical concepts while maintaining alignment with CAPS objectives.

Foundation Phase (Grades R-3)

Building Mathematical Foundations

CAPS Curriculum Focus

- ▶ Number recognition and counting
- ▶ Basic operations (addition and subtraction)
- ▶ Introduction to multiplication and division
- ▶ Development of mental strategies
- ▶ Problem-solving with concrete materials

Maths24 Game Alignment

- ▶ Encourages fluency in addition and subtraction through repeated practice
- ▶ Introduces multiplication and division in an engaging game format
- ▶ Develops mental calculation strategies through active play
- ▶ Promotes number flexibility and understanding
- ▶ Builds confidence in mathematical thinking

Intermediate Phase (Grades 4-6)

Developing Strategic Mathematical Thinking

CAPS Curriculum Focus

- Order of operations (BODMAS/PEMDAS)
- Multi-step problem-solving
- Mental mathematics strategies
- Number flexibility and manipulation
- Mathematical reasoning and justification

Key Competency

Learners must understand when and how to apply different operations in sequence.

Maths24 Game Alignment

- Reinforces BODMAS through practical application
- Develops strategic thinking and planning
- Promotes flexible number manipulation
- Encourages multiple solution pathways
- Builds mental agility under time pressure

Learning Benefit

Learners experience the power of strategic thinking and discover that multiple approaches can lead to the same solution.

Senior Phase (Grades 7-9)

Building Algebraic Thinking and Abstract Logic

CAPS Curriculum Focus

- ▶ Algebraic reasoning and pattern recognition
- ▶ Transition from arithmetic to abstract thinking
- ▶ Development of mathematical language and notation
- ▶ Problem-solving with multiple strategies
- ▶ Understanding relationships between numbers and operations

Maths24 Game Alignment

- ▶ Develops pattern recognition through exploring number relationships
- ▶ Supports transition to abstract thinking through strategic reasoning
- ▶ Encourages mathematical discourse and explanation of strategies
- ▶ Promotes flexible thinking and multiple solution pathways
- ▶ Builds logical reasoning essential for higher mathematics

FET Phase (Grades 10-12)

Advanced Mathematical Enrichment

CAPS CURRICULUM FOCUS

- ◆ Mathematical literacy and advanced problem-solving
- ◆ Exam readiness and time-pressured calculations
- ◆ Abstract mathematical reasoning and logic
- ◆ Integration of multiple mathematical concepts

The 24 Game serves as enrichment to sharpen mental agility and reinforce foundational skills essential for success in advanced mathematics.

MATHS24 GAME ALIGNMENT

- ◆ Develops rapid mental calculation under pressure—essential for exam conditions
- ◆ Reinforces foundational arithmetic skills that underpin advanced mathematics
- ◆ Enhances strategic thinking and logical reasoning
- ◆ Provides engaging enrichment that maintains mathematical interest and fluency

Key Skills Reinforced Through the 24 Game

Developing Mathematical Competencies



Mental Calculation

Learners must quickly compute using four operations (addition, subtraction, multiplication, and division), building speed and accuracy in mental arithmetic.



Numerical Flexibility

Multiple solution paths encourage creativity and deeper understanding. Learners discover that numbers can be manipulated in various ways to reach the same goal.



Strategic Thinking

Learners plan steps ahead and apply operations in sequence. They develop problem-solving strategies and learn to evaluate different approaches.



Engagement and Enjoyment

The game format promotes active participation and mathematical enjoyment. Learners are motivated to practice and persist through challenges.

CAPS Curriculum Goals Supported

How the 24 Game Aligns with Key Objectives

1 Conceptual Understanding Over Rote Memorisation

The 24 Game encourages learners to understand why mathematical operations work, promoting deeper comprehension rather than memorization of procedures.

2 Learner-Centred Activities and Mathematical Discourse

The game format promotes active participation, collaboration, and discussion among learners, fostering a learner-centered classroom environment aligned with CAPS principles.

3 Assessment for Learning Through Informal Practice

The 24 Game provides informal formative assessment opportunities, allowing educators to observe learner progress and understanding in a low-pressure, engaging context.

4 Mental Math and Problem-Solving Emphasis (Grades 1-9)

The game directly aligns with CAPS emphasis on developing mental calculation strategies and problem-solving skills across the foundation, intermediate, and senior phases.

Practical Classroom Integration Strategies

Effective Implementation Approaches

1 Warm-Up Activity

Use the 24 Game at the beginning of lessons to build fluency and prepare learners' minds for mathematical thinking.

Start with 5-10 minute sessions to activate mental calculation skills and create a positive classroom atmosphere.

2 Group Challenges

Incorporate the game into collaborative activities to foster teamwork and mathematical discourse among learners.

Organize group competitions where learners discuss strategies, explain their thinking, and learn from peers.

3 Assessment Preparation

Apply the game in assessment preparation to reinforce arithmetic skills under pressure and build exam confidence.

Use timed challenges to simulate exam conditions and help learners develop speed and accuracy in calculations.

4 Differentiated Instruction

Adapt the game for differentiated instruction by varying difficulty levels to meet diverse learner needs.

Use larger numbers for advanced learners and smaller numbers for those needing additional support, ensuring all learners experience success.

Conclusion and Recommendations

Implementing Maths24 for Enhanced Learning Outcomes

Key Benefits

- ✓ Enhances learners' understanding and retention of mathematical concepts
- ✓ Aligns seamlessly with CAPS objectives across all educational phases
- ✓ Develops critical skills: mental calculation, strategic thinking, and flexibility
- ✓ Promotes engagement and enjoyment in mathematics learning
- ✓ Supports both formative assessment and skill consolidation

The 24 Game is an effective, evidence-based strategy that transforms mathematics practice into an engaging, meaningful learning experience.

Implementation Recommendations

- ✓ Use as a warm-up activity to build fluency and activate prior knowledge
- ✓ Incorporate into group challenges to foster collaboration and peer learning
- ✓ Apply in assessment preparation to reinforce arithmetic under pressure
- ✓ Adapt for differentiated instruction by varying difficulty levels
- ✓ Integrate regularly into lesson plans for sustained skill development

By strategically incorporating the 24 Game into classroom practice, educators can enhance mathematical competency while maintaining learner engagement and motivation.