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# MATA SA RANG

# Maths Recovery: Moving from intervention to innovation...

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# Power of Early Maths Skills

*A meta-analysis of the results shows that early math skills have the greatest predictive power [of later achievement], followed by reading and then attention skills.*

(Duncan, G. and Dowsett, C., et. al. (2007). [School Readiness and Later Achievement](#). *Developmental Psychology*, The American Psychological Association, Vol. 43, No. 6, 1428–1446.)

# Maths Recovery

Initially developed in Australia the in 1990s as an intervention programme, later adopted as a systemic programme for classroom teachers.

## **Ireland:**

2007 - 2013: MR introduced and implemented in DEIS UB schools.

2011: Pilot in non-DEIS schools in collaboration with Clare EC.

2012/3: *Mata sa Rang* Module 1 (1<sup>st</sup> class)

2013/4: *Mata sa Rang* Module 2 (3<sup>rd</sup> class)

# What is Maths Recovery?

An elaborated body of pedagogical content knowledge related to early number based on research.

Two pillars form the basis of Maths Recovery

- Dynamic, formative assessment
  - Problem-based tasks
  - Not age-related
  - No reading, no writing
- Focused, structured instruction

Instructional approaches suited to in-class, small groups, and individuals.

# Pedagogical Tools

**A cohesive set of pedagogical tools:**

- 1. Assessment schedules**
- 2. Learning Framework in Number**
- 3. Instructional Framework (including procedures)**

# Assessment Schedules

## **Assessments 1.1 and 1.2 include tasks on**

- Early arithmetical strategies
- Base-ten arithmetical strategies
- Number Word Sequences (FNWS/NWA & BNWS/NWB)
- Numeral identification

## **Assessments 2.1 and 2.2 include tasks on**

- Finger/spatial patterns, number relationships

## **Assessments 3.1 and 3.2 include tasks on**

- Early multiplication and division

## **Assessment tasks for 7-11 year olds**

# What does MR look like?

- Number Words and Numerals
- Structuring Numbers 1 to 20
- Conceptual Place Value
- Addition and Subtraction to 100
- Multiplication and Division
- Written Computation



# Mathematising

1. Complexifying arithmetic
2. Distancing the setting
3. Extending the range
4. Formalising arithmetic
5. Organising and generalising number relations
6. Notating
7. Refining computation strategies
8. Structuring numbers
9. Decimalising numbers
10. Unitizing numbers

# Mental calculation

Facile mental calculation relies on **relational thinking** (seeing relationships between numbers) rather than **procedural thinking** (following rules).

# Research...

- ‘The most effective classrooms have a distribution of whole-class, small group, and side-by-side instruction.’

(Pressley, 2006; Taylor, Pearson, Clark & Walpole 2000)

# Maths Recovery Implementation/s

Maths Recovery teaching is suitable for

- individuals
- small groups
- whole class instruction
- in-class applications

or a combination of some or all of these.

# Types of Implementations

**A variety of MR implementations are in place:**

- Maths Recovery (as a DEIS Intervention)
- Mata sa Rang (through the Education Centres)
- Maths Blast (school-based implementation)
- Maths Factor (school-based implementation)

# Maths Blast Vimeo

## Maths Blast Vimeo

Thanks to St. Benedict's & St. Mary's NS, Dublin

<http://vimeo.com/65879867>

# For more information

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