Team Teaching for Numeracy
# Overview of Day

| Session 1 | 9.15 – 10.45 |  
|-----------------------------------------------|
| **• Inclusion** | **• Rationale for team teaching** | **• Models of team teaching** |
| 10.45 – 11.00 | Coffee | |
| **Session 2** | 11.00 – 1.00 |  
| **• Numeracy big picture** | **• Numeracy stations** | **• Video of team teaching in practice** |
| 1.00 – 1.45 | Lunch |  
| **Session 3** | 1.45 – 3.15 |  
| **• Planning for team teaching** | **• Conclusion** |
Team Teaching can help to facilitate active and engaging learning experiences for every child including children with Special Education Needs (SEN).

Team teaching can facilitate actions to build on teachers’ practice identified in school improvement plan.

A variety of learning experiences enhances the understanding of mathematical concepts/skills and allows for differing abilities and learning styles.
Seminar Objectives

• to explore the rationale for team teaching as a means of including children with SEN in the mainstream class setting.
• to explore different models of team teaching.
• to examine team teaching in the context of numeracy.
• to explore planning for team teaching in numeracy.
Rationale for Team Teaching

- allows for greater inclusion of SEN pupils in the mainstream setting
- catering for the diversity of pupil population, their learning styles and abilities
- allows for collaboration between teachers
- additional support can be made available to a whole class group while monitoring and supporting individual pupils.
Inclusion

Inclusion in the Irish context is defined as a process of:

“addressing and responding to the diversity of needs of learners through enabling participation in learning, cultures, and communities, and removing barriers to education through the accommodation and provision of appropriate structures and arrangements” (NCSE, 2010).
Supporting Inclusion

• variety of teaching strategies
• clear learning objectives
• variety of assessment strategies
• content of lessons matched to the needs of the pupils
• multi-sensory approaches
• appropriate materials
• individual pupils’ and class progress monitored.
Inclusion or Integration?

“The learning-support teacher’s room cannot, as a matter of course, be regarded as the most suitable setting for supplementary teaching” (Learning Support Guidelines, 2000).
The story so far ...

- Circular 02/05
- Inclusion of Pupils with Special Educational Needs: Post-Primary Guidelines (DES, 2007)
- Inclusive Education Framework (NCSE, 2011)
- National Literacy & Numeracy Strategy (DES, 2011)
- Chief Inspector’s Report (DES, 2013)
Chief Inspector’s Report (DES, 2013)

“in a number of instances, inspectors advised schools to explore models of in-class support instead of relying exclusively on withdrawal” p. 52
“Schools should ensure that the teaching resources allocated under this model are utilised to maximise student potential to participate in purposeful learning activities within mainstream classes, under the direction of the class teacher” (NCSE, 2014 p.68).
significant positive progress achieved by students in their education as well as in areas of happiness, engagement and independence

need to develop ways to measure and recognise progress made for students with SEN

in most schools pupils with SEN were withdrawn from class for support. The dominant use of withdrawal has been identified in the literature as a limiting approach to providing effective support.
Considerations from IRIS (2015)

“A review of the use of withdrawal of pupils from the mainstream classroom as a method of support and its impact upon the learning and socialisation of pupils should be undertaken and alternative approaches such as team teaching promoted and developed” (NCSE, 2015, p.10).

• project identifies need for continuous development in CPD in relation to team teaching.
What is Team Teaching?

Essentially it is characterised by:

• two or more professionals working together in a classroom (DES, 2007)

• instruction occurs within the same physical space (Cook, 2004)

• sharing of teaching responsibilities including planning, instruction and student assessment (Dieker, 2006).
What is my Experience of Team Teaching?
Building the Team

• professional conversations
• aims
• defining of roles
• timeframe
• weekly review
• assessment (pre & post)
• voice of the child.
Models of Team Teaching

- Lead and Support Teaching
- Station Teaching
- Alternative Teaching
- Parallel Teaching
Station teaching

- Children
- Rotate
- Stations
- From
Teacher A instructs

Teacher B supports/monitors

Lead and support teaching
Parallel Teaching

Teacher A: same content

Teacher B: same content
Alternative Teaching

Teacher A: Teaches large group

Teacher B: Consolidates learning with small group
Levels of Collaborative Relationships

- Co-Existing
- Co-Working
- Co-Instructing
- Co-Teaching
Parental Information

- parents of children with SEN/EAL need to be informed of the commencement of team-teaching

- a child who is receiving supplementary teaching/resource hours/language support will not necessarily receive all of that time outside of the class

- continued parental involvement in IEP’s/IPLPs and language programmes.
Coffee Break
How can SSE Support Team Teaching?

The 6 step process

1. Gather the evidence
2. Analyse the evidence
3. Devise school improvement plan
4. Implement and monitor improvement plan
5. Write school self-evaluation report
6. Draw conclusions
The Teaching and Learning Quality Framework

Teaching & Learning

Learner outcomes
- Attainment of curriculum objectives

Learning experiences
- Learning environment
- Engagement in learning
- Learning to learn

Teachers’ practices
- Preparation for teaching
- Teaching approaches
- Management of pupils
- Assessment
Numeracy: The Big Picture

- Specific Competencies
- Key Skills
- Teaching Strategies
- Wider Primary Curriculum

Mathematics
- Strand
- Strand Unit

Reasoning
- Implementing
- Communicating & Expressing
- Integrating & Connecting

Prior Knowledge
- Applying & Problem Solving
- Understanding & Recalling

Environment-based Learning

English

S.E.S.E

The Arts

Group Work

S.P.H.E

P.E.

Peer Learning

Guided Discovery

Differentiation

P.E.

Dialogue

Active Learning

Gaeilge

PDST
Developing Mathematical Skills

- Applying & Problem-Solving
- Communicating & Expressing
- Integrating & Connecting
- Reasoning
- Implementing
- Understanding & Recalling

Booklet p.4, p. 5

(PSMC:1999: 68)
Numeracy Research/Report Findings

- Over-reliance on whole-class teaching
- Over-reliance on textbooks
- Low focus on reasoning and problem solving
- Under-use of concrete materials
- Teacher as sole validator of mathematical ideas
- Insufficient pair and group work
- High focus on procedure and drill
Teachers’ Manuals

Available at www.pdst.ie - Mathematics
Suggested teacher language

Classroom culture

Consolidation Activities

To be aware of

Differentiation

Assessment Pack

Counting in Fractions

Fractions: Teacher’s Handbook
A Guide to Teaching and Learning Fractions in Irish Primary Schools

Primary Resource

ICT

Mathematics
Instructional Framework for Supporting and Developing Mathematical Thinking

Child-centred

Language-based

Strategy-sharing

Eliciting

Supporting

Extending

Pupil self-reflection

Higher-order skills

Revoicing

Teacher not sole validator of mathematical knowledge

Teacher as Facilitator

Instructional Framework for Supporting and Developing Mathematical Thinking
The 6 step process

1. Gather the evidence
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An Approach to Team Teaching in Numeracy - Fractions

- concrete, pictorial, abstract trajectory
- assessment opportunities
- fractions - models for teaching
- fractions activities
- planning for implementation.
Concrete – Pictorial – Abstract (CPA)

Concrete
- cuisenaire
- bears
- vehicles
- cubes
- pie pieces
- lollipop sticks
- geoboards
- counters
- paper folding

Pictorial
- dotted paper
- number lines
- empty number lines (ENL)
- pupil representations

Abstract
- fractional notation
- numbers written in words or digit form
- mathematical symbols
Models for Fractions

- Linear
  - ENL
  - paper strips
  - string
  - cuisenaire rods
  - distance on a number line

- Area
  - geoboards
  - pie or rectangular pieces
  - hundredth wheels
  - paper strips
  - dotted paper

- Set
  - vehicles
  - bears
  - buttons
  - counters
  - cubes
  - coloured lollipop sticks
The Role of Assessment in Numeracy

Assessment in the Primary School Curriculum: Guidelines for Schools (2007)

Child leads the assessment

Teacher leads the assessment

- self-assessment
- portfolio assessment
- conferencing
- concept mapping
- questioning
- teacher observation
- teacher-designed tasks and tests
- standardised testing

Booklet p.6
Concept Maps
Concept Maps

- 2D figures
  - Shapes with curves
  - Curved and straight sides
    - Only curved
      - Inside and outside curves
    - Only outside curves
  - Curved and straight sides
  - Three-sided shapes
  - Four-sided shapes
    - Two sides parallel
      - Two pairs of parallel sides
      - Angles not all equal
      - All angles equal
  - Shapes with only straight sides
    - Five-sided shapes
    - Six-sided shapes
The Purpose of Journal Writing

• to provide a vehicle for writing about thinking as a way of learning
• identify challenges pupils are facing in their learning which may help direct future instruction
• to increase student’s awareness of how they learn and remember
• to provide a context for recalling previous learning and summarising present learning.

Booklet Appendix 2
Station Activities

Linear Model
Paper Strips

Set Model

Area Model

Cuisenaire Activity
Booklet p.20

Hundredth Wheel
Booklet p.21

Geoboards
Assessment Activity

Using the activity at your station, decide on an assessment approach which would

• inform teaching and learning

• give your pupils an opportunity to reflect on their learning in fractions

Booklet p.6, p.7
Reflections on Classroom Practice

• what are the elements of good practice relating to team teaching?
• what good practice in relation to numeracy are teachers highlighting?
• what skills are the pupils demonstrating?
Lunch
Planning for Numeracy

What areas need to be considered in your plan for numeracy?

• content knowledge and concepts
• skills
• assessment
• differentiation including IEP targets
• methodologies and teaching approaches
• maths language
• resources.

Booklet p.12
Teachers’ Manuals

Available at **www.pdst.ie** - Mathematics
Planning Activity

• agree on a target class
• devise a four week overview for the intervention using PDST manuals
• use planning template.
Reflection

- how did you find this planning activity?

- what will you take from today to inform team teaching in your school?
Short-term Plans

Place Value, Decimals & Percentages: Teacher’s Handbook
A Guide to Teaching and Learning in Irish Primary Schools

Ready, Set, Go - Maths
A practical handbook for teachers by Eunice Pitt

www.pdst.ie
Key Elements for Success

• shared commitment to team-teaching
• on-going communication and monitoring
• gradually build on what works well
• pupil feedback
• celebrate success.
TEAMWORK

“Snowflakes are one of natures most fragile things but look at what they can do when they stick together.”

Verna M. Kelly