

Numeracy Fundamentals – August 2005

Dan Peter, K-8 Mathematics Consultant, Dufferin Peel Catholic District School Board

In this address, Dan Peter looks at the information contained in the *Expert Panel Report* and the layout of the revised Ontario Curriculum. He talks about the importance of making problem-solving the mainstay of mathematical instruction, and discusses the critical elements of the learning environment. Assessment in mathematics is highlighted and appropriate resources are identified. The session concludes with Peter applying many of these ideas in mathematical activities.

Contact:

For more information on numeracy, visit the Literacy and Numeracy Secretariat website at www.edu.gov.on.ca/eng/literacynumeracy/

Segments:

- 1...Introduction
- 2...Teaching Through Problem Solving
- 3...The Learning Environment
- 4...Assessing Effectively
- 5...Resources
- 6...Math Activities

1...Introduction

(Length: 3 minutes)

Synopsis:

Peter outlines the topics to be addressed during his presentation.

2...Teaching Through Problem Solving

(Length: 3 minutes)

Synopsis:

Peter highlights the importance of teaching through problem solving and the stages through which a typical lesson would progress.

Look for the following:

- Importance of teaching through problem solving
- Stages of a lesson
- Layout of the revised curriculum

After viewing Segment 2:

- How will you ensure the problem solving instructional technique is occurring in the classroom?

3...The Learning Environment

(Length: 9 minutes)

Synopsis:

Peter addresses the importance of talk in the classroom environment, how to read a math problem and big ideas in mathematics.

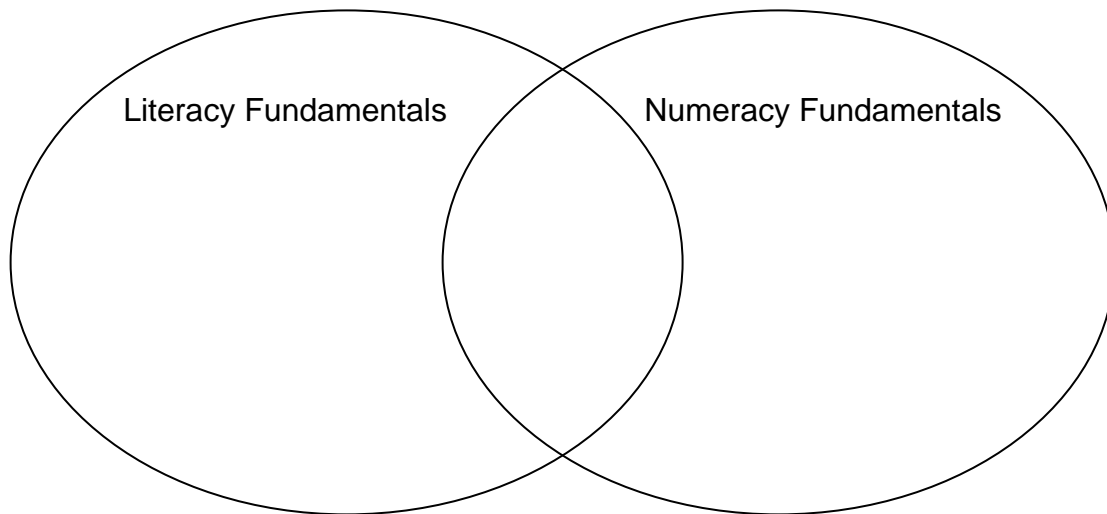
Look for the following:

- Mistakes are opportunities
- Equity
- The importance of talk
- Reading a math problem
- Using manipulatives
- Big ideas

After viewing Segment 3:

- Use a graphic organizer to illustrate the similarities and differences between literacy fundamentals and numeracy fundamentals in an effective classroom environment.

Sample Graphic Organizer:



4...Assessing Effectively

(Length: 2 minutes)

Synopsis:

Peter highlights that the purpose of assessment is to create learning.

Look for the following:

- Focused observation
- Anecdotal notes
- Feedback

After viewing Segment 4:

- Generate a list of the types of assessment that should be occurring in the classroom.
- Why is focused observation so important?
- What techniques can be employed to record focused observations?

5...Resources

(Length: 1 minute)

Synopsis:

Peter identifies the resources that your teachers should possess.

Look for the following:

- Guide for Effective Instruction
- Early Math Strategies
- Teaching and Learning Mathematics
- Leading Math Success
- Think Literacy – Cross-curricular approaches
- TIPs documents

6...Math Activities

(Length: 35 minutes)

Synopsis:

Peter takes participants through a variety of math activities that demonstrate the techniques he introduced in the previous segments.

Look for the following:

- Think, Pair, Share activity
- A variety of strategies for adding a number
- Teaching through problem solving
- Models of early primary lessons
- Early diagnostic activity – the number 5
- Estimation strategies
- Use of ten frames in addition and subtraction
- Hundreds charts and hundreds carpets
- Debriefing
- Long division and a better algorithm

After viewing Segment 6:

Brainstorm various ways that you can implement and use these methods and activities in the classroom.