

## Speech, Language and Communication (SLCN) in Secondary schools

### j) Functional use of Language: Maths language

#### Maths Language

A lot of mathematics is based on problem solving, which involves thinking skills. Thinking skills require academic language.

Children/young people with difficulties with speech, language and communication need to explore and have opportunities to develop their understanding and use of language in the context of mathematics.

#### Characteristics

Confusion over the meaning and use of words with multiple meanings

Limited awareness of more abstract concepts (i.e. time, estimation etc.)

Has problems generalising meaning of words to a range of contexts

Finding it difficult to recall exact words stored in the memory

Difficulty acquiring basic concepts

Confusion when vocabulary used is vague - "just a minute" "soon" "later"

Inappropriate use of vocabulary

Confusion between similar words-"forty"/"fourteen"

Weak understanding of word roots "bi, semi etc."

Difficulty explaining processes using the language of mathematics

Difficulty answering open ended questions.

#### Possible skills affected

##### Word Problems

Weak explanation of method used to solve a mathematical process

Difficulty sequencing a mathematical application correctly

Using correct terminology to describe/label a mathematical operation

Difficulty in following instructions using precise mathematical terms i.e. "give me an odd number"

Poor performance in mental maths test and written exams

Do not respond to questions asked in class

#### Strategies:

##### Whole School/General

Adopt a systematic approach for introducing new vocabulary across the school.

##### Teacher

Use a multi-sensory approach for the teaching and learning of core language

Highlight key vocabulary at the beginning of a lesson and how to apply it to a task by modelling an example

Display key vocabulary with additional visual cues

Develop essential language and thinking skills to facilitate access to the curriculum

Encourage students to gain confidence in using new terminology at an oral level before working at a written level.

Promote and develop clear thinking skills through talking

Allow extra time for students to process verbal information

Use a range of questioning techniques for finding out relevant information

## Support Staff

Simplify words used and always explain meaning in a familiar context before focusing on more specific meaning

Pre-teach and regularly review key vocabulary in topic areas

Use visual materials to support new vocabulary.

Teach explicitly the “language of learning” words- estimate, predict, compare, contrast etc.

Give opportunities to say and use new vocabulary as well as teach meaning in context

Link new words to existing knowledge so that students gain greater awareness of learning links between words, concepts and processes

Use questioning techniques for exploring mathematical concepts and processes

Demonstrate how to use equipment such as a number line, a ruler appropriately

Support the students to salient words/details in word problems

Use a range of methods for recording information - writing frameworks, Venn diagrams, flow charts etc.

Use colour coding for highlighting key information

Create packs of key equipment for student to use - (ruler, compass, 100 square, cue cards with basic facts etc.)

## Student

Record core vocabulary using visual materials to support understanding and use of new words

Store words in topic areas for reference and revision purposes

Revise words regularly using different games and activities

Highlight key words and use cue cards to increase your confidence in learning basic facts.

Ask an adult if you do not understand what a word means or what to do to follow a given instruction

## Linked Resources:

Beck I, McKeown, M and Kucan L (2002) Bringing Words to Life Robust Vocabulary Instruction - The Guilford press

Locke A (1995) “Putting words together” part of Living Language – “Abstract Vocabulary Checklist”

Gallow C. (2009) Getting to Grips with Word Problems - QEd Publications

Grauberg E. (1998) Elementary Mathematics and Language Difficulties - Whurr Publishers  
How to develop language for thinking in KS3 mathematics and science - The Basic Skills Agency  
How to use keywords effectively - The Basic Skills Agency  
Talking Maths - developing speaking and listening in the language of Mathematics – (2010)  
Liverpool Mathematics Team