|  |  |  |
| --- | --- | --- |
| **PROBLEM SOLVING STRATEGIES Suggested Scope & Sequence**  It is vital that we develop the problem solving skills of students in Mathematics.  The ability to solve problems involves the application of previously acquired mathematical skills and processes in a variety of contexts.  Problem solving strategies should follow the modelled, guided, independent structure.  A new strategy may take several weeks to achieve mastery.  **Good Problem Solvers**   * Are risk takers * Display persistence and determination * Have acquired a set of strategies for solving problems * Can apply those strategies * Can restate problems in a meaningful way   **Classroom Environment**    The classroom environment plays an important role in enhancing the development of successful problem solving strategies. The teacher facilitates this by:   * Establishing an atmosphere that encourages risk taking * Explicitly teaching/modelling a full set of problem solving strategies which are used frequently by teacher and students * Encouraging all attempts * Providing discussion/reflection time for sharing successful strategies, solutions and problems * Providing opportunities for success * Adapting problems for all ability levels * Encouraging team work * Praising all serious attempts * Being enthusiastic and positive * ‘Raising the bar’ * Timetabling problem solving e.g. a lesson a week for 2 terms; could relate to the core content   **SUGGESTED SCOPE AND SEQUENCE**  **Teachers should not be limited to the suggested strategies for each Stage.** | | |
|  | **STRATEGIES** |  |
| Early Stage 1 | Locate Key Words | * Check for useful information |
| Act ir out | * Using concrete material, people etc |
| Drawing a diagram | * Picture * Make a Model |
| Looking for patterns |  |
| Think carefully |  |
| Stage 1 | Locate Key Words |  |
| Trial and Error | * Guess and Check |
| Estimate | * In both measurement and number problems |
| Draw a diagram | * Picture * Make a Model * Table * Chart * KWL Chart |
| Act it out | * Using concrete materials/people |
| Looking for patterns |  |
| Simplifying the problem | * Find small parts of a big problem |
| Visualisation Skills | * Manipulating etc especially in Space |
| Listening Comprehension | * RIC Listening Comprehension |
| Stage 2 | Think Carefully |  |
| Locate the Key Words |  |
| Trial and Error | * Guess and Check/ assume a solution |
| Act it out | * Using concrete materials/people |
| Looking for patterns |  |
| Estimate |  |
| Working Backwards |  |
| Drawing a Diagram | * Venn * Make a Model * Table * Chart * KWL chart |
| Using a Table |  |
| Making an organised list |  |
| Simplifying the problem | * Find small parts of a big problem |
| Visualisation Skills | * Especially in Space problems |
| Use a calculator |  |
| Listening Comprehension | * RIC Listening Comprehension |
| Analysing & Investigating |  |
| Stage 3 | Locate a Key Words |  |
| Trial and Error | * Assume a solution |
| Estimate |  |
| Using a Table |  |
| Making an organised list |  |
| Looking for patterns |  |
| Act it Out | * Using concrete materials/people |
| Working Backwards |  |
| Visualisation Skills | * especially in Space |
| Drawing a diagram | * Venn * Tree * Make a Model * KWL chart * Other Quality learning tools where applicable |
| Simplifying the problem | * Find small parts of a big problem |
| Think Logically |  |
| Use a calculator |  |
| Listening Comprehension | * RIC Listening Comprehension |
| Analysing & Investigating |  |

**HIGHLY RECOMMENDED RESOURCES- Already in the School**

* ***All You Need to Teach Problem Solving*** *Peter Maher* ***Yrs 5-8, 8-10 and 10+***  *(Macmillan)- modelled lessons and task cards*
* ***Solve That Problem*** *Sharon Shapiro* ***Middle and Upper***  *(Blake Education)- modelled lessons and task cards*
* ***Tables Strategies- Paul Swan***
* **Open ended questions- Lilburn and Sullivan**
* **Think Tank Box of Cards- Origo, Stage 3**

**Books to be purchased-Jenny’s Classroom , Orange 1800 045 586**

* ***Listening Comprehension*** *Graham Beals**(Prim-Ed)*
* ***Jigsaw Maths*** *Chris Linthorne & Brian Doolan (Firefly press)*

**RESOURCES**

* ***See Library Collection list*** *( included in your folder)*