5-8 Action Research Project 2013
Bridport Primary School Plan

Over arching goals:
How does the consistent use of strategies that make thinking visible across Grades 5-8 improve students’ comprehension and problem solving abilities?

Teachers will develop shared pedagogies across the 5-8 area in relation to the teaching of comprehension strategies & problem solving strategies

Bridport Goal:

- Students will use comprehension strategies to develop a greater understanding of mathematical word problems.
- Students will improve their ability to solve complex maths problems including proportional reasoning.
- Teachers will develop an understanding of the link/correlation between the comprehension strategies and the strategies of problem solving

Target:

- Students’ scores on PATMaths and NAPLAN will show value added improvements.
- Students will indicate that they are more confident in solving maths problems.
- Teachers will indicate they have a greater understanding of how to teach problem solving skills.

Strategies

- Teachers will develop a problem solving framework that would support students. I.e. Newman’s and steps & strategies of problem solving
- Teachers will develop a bank of problem solving strategies. I.e. Guess & check, working backwards etc.
- Teachers will explore and list the reading comprehension strategies that would support a student’s understanding of a mathematical problem
- Teachers will review and incorporate the roles from literacy circles into numeracy circles to help solve a math problem
- Teachers will teach children to work in cooperative groups or teachers will establish cooperative group structures within the class.
- Students will work together to solve problems involving proportional reasoning, using a variety of strategies. Students will use discussion to evaluate the strategies they have used, and to identify which strategies were most useful.
- Students will build up a bank of problem solving strategies and understand their application and relevance to a particular problem. (Teachers will encourage students to use broaden their use of strategies).
- The problems posed to students will link with the Australian Curriculum.
Newman’s Framework:

1. Read the problem
2. Make sense of the problem – students retell the problem in their own words
3. Identify the maths components of the problem – making sense of the maths
4. Solve the problem using a variety of strategies, apply the processes.

Problem Solving framework:

Roles: chn have cards defining the expectations of each role
reader & decoder - using a maths dictionary
summariser – retells the problem in own words
image maker – represents the problem using a drawing or materials
transformer – makes links to maths, what maths is involved?

From a question:

- Use Newman’s Framework & the various roles- students need to read & unpack the problem/ brainstorm the strategies
- Children work together to solve the problem and then record solution and strategies used on individual sheet
- Any child may be asked to share the answer (builds in accountability) explain how the problem was solved.
- Students then evaluate the effectiveness of the different strategies

Data collection tools

- Journals – children will record their thoughts about maths - i.e. How do they feel about maths? What strategies do they know? Children will continue to record throughout the duration of the project.
- Teacher journal – teachers will record their reflections along the way, including observations.
- Surveys of teachers & students
- PATMaths – October 2012 data compared to October 2013 data
- NAPLAN
- Video
- Kim Beswick – tasks/tests.

Connections to Scottsdale High School & other network primary schools

- Develop shared language/understanding
- Consistency of strategies used to assist student transition