ELEMENT 3.4

Domain 3 - Develop Expert Mathematics Learners

Element 3.4 - Promote dialogue as a means of learning

The following suggestions for practice are extracts from the 'Transforming Tasks' module on the Leading Learning resource:

Strategy From Closed to Open

Technique **Different perspectives:** Have students explore different points of view.

Level	Before	After
Primary	Answer these questions: 4 x 3, 7 x 3, 9 x 3 etc up to 12 x 3	Think about how you would sort the following multiplication questions into three levels of difficulty: Harder, medium, easier: 1 x 3, 2 x 3, 3 x 3 etc, up to 12 x 3  • Deal out the x3 cards and work in a group to place each card in the place that best describes its difficulty for you. Do you all agree? • Take turns to move a card to a different section if you think it has a different level of difficulty for you. Explain why you find it hard/easy. Did anyone find their opinion changed when listening to the ideas and reasoning of others?
Secondary	Answer these questions: Half of 32 0.25 x 68 ¼ of 48 ¼ of 32 32 x 0.5 ½ of 32 68 divided by 4 48 x 0.25	Individually, sort the following questions into at least two groups of your own choosing. Half of 32 0.25 x 68 ¼ of 48 ¼ of 32 32 x 0.5 ½ of 32 48 x 0.25 68 divided by 4 In pairs, share your individual thinking and try to find at least one more way to sort this collection of questions. Share your thinking with another pair. Share your thinking with the class. • Did anyone else sort the questions in the same ways as you? • Did anyone else sort the questions differently from you? • Why might they have sorted their questions like this? Check with the students who presented that grouping. Summarise the connections that have been made.

How do you think the technique Different perspectives might support *Element 3.4 - Promote dialogue as a means of learning?*

There are many ways to articulate this relationship. One response to this question has been provided on the next page.

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How does the technique Different perspectives support *Element 3.4 - Promote dialogue as a means of learning?*

Sharing perspectives usually lends itself to purposeful student dialogue. Using the technique of inviting students 'different perspectives', facilitates all students engaging in the dialogue, as the dialogue is not dependent on knowing information. The dialogue is only denepnent on students having an opinion, which they usually do! Once students are engaged in dialogue they have opportunities to:

- learn from each other
- communicate their thinking and in doing so become aware of the depth of understanding that they do/ don't have.

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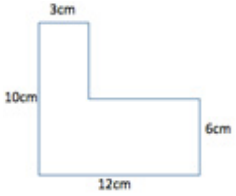
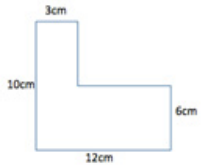
The following suggestions for practice are extracts from the 'Transforming Tasks' module on the Leading Learning resource:

Strategy From Closed to Open

Technique **Many pathways:** Ask for one problem to be solved in **multiple ways**, rather than multiple problems in **one way**.

Level	Before	After
Primary	Calculate: 39 + 43	Find at least two different ways to do the calculation: 39 + 43 Share your methods with another student. Together, try to identify at least three different methods. • Identify which method is the most efficient for this calculation. • Identify which methods are best for mental calculation. • Identify if some methods would be better than others for addition sums with larger values.
Secondary	**Calculate the area of this shape:** 	Calculate the area of this 'L' shape in at least two different ways. • Share your methods with another pair of students. Work together to try to identify at least three different methods. • Do you think that one method was easier, or more effective, than another method? Why? • Would one of your methods be more efficient than another if the shape was like this one? Why/why not?  

How do you think the technique Many pathways might support *Element 3.4 - Promote dialogue as a means of learning?*

There are many ways to articulate this relationship. One response to this question has been provided on the next page.

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How does the technique Many pathways support *Element 3.4 - Promote dialogue as a means of learning?*

Challenging students to identify 'many pathways' to a solution, will not automatically lead to the use of purposeful learning dialogue. However, once students have attempted to generate multiple pathways, teachers can use this opportunity to promote purposeful dialogue. Teachers can intentionally design processes through which students explain the pathways they have identified and rationalise if/why their different processes all work. Students need to be challenged to explore where the similarities and differences in their approaches lie.