

4.2 Element 4.2 - Connect learning to learners' lives and aspirations

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

**Strategy****Tell to Ask****Technique****Student voice:** Ask students to decide how they might do this best.

Level	Before	After
Primary	<ol style="list-style-type: none"> 1. Symmetry worksheet: 2. Draw two items of clothing, one symmetrical and one asymmetrical. 3. Describe two objects from the natural environment, one symmetrical and one asymmetrical. 4. State two modes or transport, one symmetrical and one asymmetrical etc. 	<p>The teacher poses a selection of questions, such as these:</p> <ul style="list-style-type: none"> • Clothing. Symmetrical or not? • Nature. Symmetrical or not? • Modes of Transport. Symmetrical or not? • Symmetry- Necessary/unnecessary/useful or not? (Don't limit your thinking to line symmetry. You could consider rotational symmetry etc.) <ol style="list-style-type: none"> 1. Choose one of the questions above, or suggest a question that will enable you to show your understanding of symmetry. 2. How will you find out? 3. How will you show your ideas? 4. How will you work: individually, with a partner, or in a small group?
Secondary	<p>Assessment Surface Area Test</p> <p>1. Calculate the surface area and volume of:</p>	<p>How could you demonstrate the depth of your understanding about calculating surface area? Enabling prompts:</p> <ul style="list-style-type: none"> • Think of a context that you would like to apply this learning in. • Think of all of the skills that you'd like to be able to demonstrate. (Teacher can support the development of this list) • Think about the resources that you could use. • Do you want to develop your collaboration skills through working on a joint project, or do you want to work independently? • Share your ideas with the whole group, in case someone else likes your idea too. • Remember that connections to other maths topics or other learning areas can be made. (Negotiate)

How do you think the technique **Student voice** might support *Element 4.2 - Connect learning to learners' lives and aspirations*?

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



ELEMENT Domain 4 - Personalise and Connect Mathematics Learning

4.2

Element 4.2 - Connect learning to learners' lives and aspirations

**How does the technique *Student voice* support *Element 4.2 - Connect learning to learners' lives and aspirations*?**

Empowering student voice in learning supports students to learn to make choices that will enable them to:

- do their best
- develop as a learner
- bring their interests or aspirations to the choices they make etc.

Benefits in learning become obvious through considering the pattern of behaviour following the opportunity for students to have voice in their learning. Typically:

- students appreciate an opportunity to have choice in learning and therefore engage readily in the creation of a question, or way of working
- students become invested personally in that learning through having the opportunity to create their question or approach to learning
- stick with challenges and are more resilient when problems arise due to being personally invested in question.

A critical element of empowering student voice in learning, involves the teacher providing enough time/support/provocation to enable the students to establish a question that is of genuine interest to them and is appropriately challenging. Students, who haven't been used to having a voice in their learning won't, necessarily, know how to respond when they are given the opportunity to have genuine input into their learning. They may need support and time to learn to identify what their aspirations are, to expand their interests etc.

The Primary Years example contains provocations that initiate student contributions, however students still require time to connect with a question.

To support the Secondary Years example teachers could use a selection of images or objects to inspire students





NB. Occasionally teachers identify the Primary Years 'before' task as providing student voice, as the question allows the students to identify the items. Whilst this is certainly offering some choice, it is NOT what is meant by student voice. The 'after' task, offers the student the option of creating their own question, rather than using any of the questions provided. It then offers them the opportunity to decide how they will go about their learning and how they will communicate their learning. This is what is meant by student voice.

ELEMENT Domain 4 - Personalise and Connect Mathematics Learning

4.2 Element 4.2 - Connect learning to learners' lives and aspirations

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

**Strategy****From Procedural to Problem Based****Technique****Students identify the problem to solve:** Give additional information that is not required to do the task.

Level	Before	After
Primary	<p>This giant model koala is so big that it has a shop built inside of it. How many times taller is the koala than the little girl?</p> 	<p>Look at this photograph. What questions do you have? Sort your questions into mathematical and non-mathematical questions.</p> <p>Which mathematical question would you like to solve? The teacher can, of course, identify the question or when appropriate provide opportunities for different groups of students to work on different questions.</p> 
Secondary	<p>My four-wheel drive car is 240 cms wide. My city car is 165 cms wide. Express the ratio of the width of the four-wheel drive to the city car.</p> 	<p>Look at this photograph. What questions come to mind?</p> <p>Sort your questions into mathematical and non-mathematical questions.</p> <p>Which mathematical question would you like to solve? The teacher can, of course, identify the question or when appropriate provide opportunities for different groups of students to work on different questions.</p> 

How do you think the technique **Students identify the problem to solve might support *Element 4.2 - Connect learning to learners' lives and aspirations*?**

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



ELEMENT Domain 4 - Personalise and Connect Mathematics Learning

4.2 Element 4.2 - Connect learning to learners' lives and aspirations



How does the technique **Students identify the problem to solve** support *Element 4.2 - Connect learning to learners' lives and aspirations*?

Using stimuli of local, national or international issues that relate to students' interests and supporting them to formulate their own questions can facilitate personal connections to their mathematics learning. Alternatively, stimulating curiosity with a photograph, short film or a story can engage students in asking questions for which mathematics can be applied to provide a solution or solutions. A large supply of images and films for use with mathematics topics can be found at: <http://blog.mrmeyer.com>. Look for '101 questions' for still images and 'Three-Act Math' for video stimulus.

Facilitating students engaging in the creation of the problem to solve supports them to 'take the learning personally'. When learners 'take the learning personally' it connects more readily to their immediate aspirations.