

In Maths-for-Life we use the term ‘closure’ to indicate drawing a part of the lesson together to ensure a shared understanding of the mathematics that is taking place.

Closure could take place at any point in the lesson but is particularly important towards the end where we want students to leave the classroom feeling that they have progressed in their understanding. There is a risk with lessons based around dialogue and cognitive conflict that as teachers we ignore the students’ need for clarity.

Reviewing of the task that took place should be seen as the pre-cursor to closure. This is most effective when the focus is on the methods used – not just on the answer. It is most powerful when different methods are shared and a common understanding of mathematical structure shared.

## What makes a good closure phase?

### **1. Understand the original problem**

A return to the initial problem (or context of the original problem) allows students to feel that the lesson had purpose and highlights the importance of the work covered.

### **2. Understand implications for exam questions**

An exam style question helps students to see how the activities and reasoning that they have undertaken during the lesson can help them in an exam.

### **3. Understand how the work has developed mathematical thinking**

The mathematical purpose of the task should be shared as part of the reflection. This requires that the teacher has had clarity throughout the lesson on what the purpose has been. This can then be linked to the learning moments that took place.

## Teacher Actions

The following are good principles for encouraging collaborative dialogue during closure and whole group discussion.

Action	Reason
Listen before interrupting	Listen to the what the students are actually saying. It is all too easy to interrupt with a predetermined agenda, diverting attention from their ideas.
Join in, don't judge	Try to listen as an equal member of the class rather than as an authority figure. When teachers adopt judgmental roles, students tend to try and 'guess what's in the teacher's head' rather than try to think for themselves.
Ask students to describe, explain and interpret	The purpose of any teacher intervention is to increase the depth of reflective thought. Challenge students to describe and explain by asking questions such as: <ul style="list-style-type: none"><li>• <i>can you say what that means?</i></li><li>• <i>can you show us why you're thinking that?</i></li></ul>
Make students do the thinking	Many students are experts at making their teachers do the work. They know that if they 'play dumb' long enough, then the teacher will eventually take over.  If a student says that he or she cannot explain something, ask another student in the group to explain, or ask the student to choose some part of the problem that they can explain.  When a student asks the teacher a question, don't answer it (at least not straight away). Ask someone else in the group to do so.