

- Ask questions that require students to evaluate their work and/or justify, reason or generalise at their current level of mathematical development. These types of questions can challenge all students, but they have a particularly significant role in challenging our more mathematically able students.
  - Explain why...
  - Can you explain why this might not always or will always be the case?
  - How can we be sure that this is always the case?
  - Try to find other possibilities?
  - Explain to me why you think this is the most efficient solution/method?
- Asking students to pose questions and/or design their own problems, for themselves and their peers to engage with.

## Providing Effective Formative Feedback

Feedback to students on how they can improve their learning is considered an essential component to move their learning forward. Feedback can be written or given orally and is most effective when:

1. The focus of the feedback is on how the student can improve their learning.
2. The feedback does not emphasise the gap between the student's performance and learning intention(s) for the lesson(s).
3. The feedback is focused on the quality of the student's work, related to agreed success criteria, identifies successes and achievements,

and details suggestions for improvement.

4. The student is given time to address the specifics of the given feedback.
5. The feedback prompts student thinking and encourages persistence by focusing on skills, understanding and/or the key learning.

A useful strategy in providing effective feedback is comment-only marking. The teacher provides between one and three comments that emphasise ways for the students to improve their work/learning. The feedback should be clear and concise and should avoid making judgement on the student's work/learning. The effectiveness of comment only marking can be enhanced by linking feedback to established success criteria. It can be used as a strategy to develop self and peer assessment. Telling a student that there are two out of five answers incorrect and asking students to identify errors either individually or in pairs is, for example, one possible starting point for them in becoming independent and self-reflective learners.

## Self and Peer Assessment

Self and peer assessment are proven strategies that can help develop students into independent learners and encourage them to take responsibility for their learning. Asking students to assess their own work using success criteria, identify areas of their work that require attention, or work in pairs to mark and give feedback might be useful classroom strategies.

An tSraith Shóisearach do Mhúinteoirí  
**JuniorCYCLE**  
 for teachers

# Formative Assessment in Mathematics

*Quick Reference Guide*



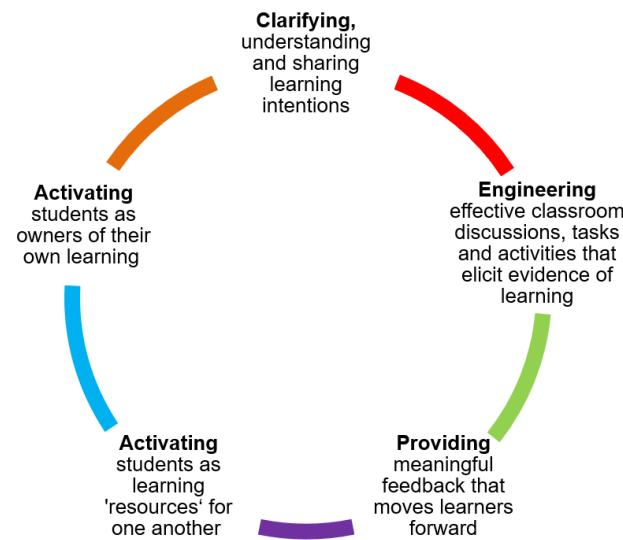
## Formative Assessment

The Framework for Junior Cycle (2015) notes that formative assessment, complemented by summative assessment, will be a key feature of Junior Cycle.

Assessment is formative when either formal or informal procedures are used to gather evidence of learning *during* the learning process and used to adapt teaching to meet the needs of students. The process supports teachers and students in collecting information about student progress and, where necessary, to make adjustments to the teacher's approach to instruction and the student's approach to learning.

There are five broad and interrelated pillars underpinning formative assessment. They are:

- Clarifying, understanding, and **sharing learning intentions**.
- Engineering **effective classroom discussions**, tasks and activities that elicit evidence of learning.
- Providing **feedback that moves the learning forward towards deeper subject understanding**.
- **Self and peer assessment**
  - Activating students as learning resources for one another.
  - Activating students as owners of their own learning.



## Learning Intentions

Learning intentions make clear to the student what they should know, understand and be able to do in a lesson or series of lessons. Sharing learning intentions is important as it helps to ensure that all of the students are clear about what they are going to learn, and where it connects with their prior learning. Learning intentions should be written in language that the student can understand and are developed (initially) by the teacher and shared with the student.

If learning intentions are the destination for the student, then success criteria are the sign posts along the journey. Success criteria allow students to develop a better understanding of what successful learning might look like.

## Classroom Dialogue

Rich and purposeful classroom dialogue is an essential component of engaging students with their learning.

Teachers can promote students' mathematical thinking and discussion using carefully planned and designed lessons. Some useful strategies/activities to support purposeful classroom dialogue may include:

- Same and Different
- Agree, Disagree, Depends
- Always, Sometimes, Never
- Card Sorts
- Card Matching
- Prediction

Teachers can encourage students to express themselves using effective questioning and active listening. Some useful classroom strategies may include:

- Increased wait time.
- No hands up.
- Follow up on answers (correct and incorrect).
  - 'Can you explain your answer?'
  - 'How did you find that out?'
  - 'Why do you think that?'
  - 'What made you decide to do it that way?'
- Convert some closed questions to open questions.