

Using the Curriculum Progress Tools in mathematics and statistics in years 9 and 10

This document provides school leaders with a high-level overview of a recommended approach to implementing and using the Curriculum Progress Tools in mathematics and statistics in years 9 and 10. It describes three steps:

- Step 1: Get familiar with the underlying purposes of the Curriculum Progress Tools
- Step 2: Understand and use the LPFs
- Step 3: Understand and use PaCT

Further information and resources to support schools to understand and implement the tools are provided on the Curriculum Progress Tools website. Each page includes a guide which indicates the resources that are most likely to be helpful in particular contexts.

Step 1: Get familiar with the underlying purposes of the Curriculum Progress Tools

The Curriculum Progress Tools are two separate tools that work together to strengthen teachers' knowledge of how students' learning of mathematics develops and to track students' progress and achievement in the mathematics and statistics learning area of the New Zealand Curriculum (NZC).

Give teachers an overview of both tools before you focus on using either of them in any depth. This allows teachers to understand how they work together to support students to make progress in mathematics and statistics. Emphasise that the LPF supports teachers' **understanding** of what progress looks like in key aspects of mathematics and statistics from year 1 to year 10, while PaCT uses the LPF for **tracking** the progress of individual students on those aspects and against the curriculum.

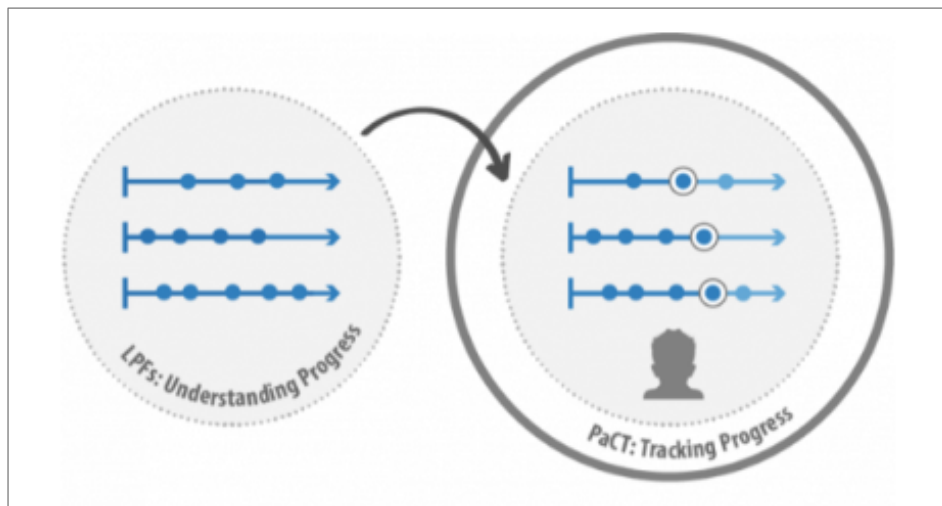


Figure 1: The LPFs are used as the underlying maps in PaCT

These webpages and their guides support schools to undertake step 1:

Learn about the LPFs, <https://curriculumprogressertools.education.govt.nz/lpfs/learn-about-the-lpfs/>

Learn about PaCT, <https://curriculumprogressertools.education.govt.nz/pact/learn-about-pact/>

It is suggested that this step could be undertaken at one or two workshops.

Step 2: Understand and use the LPFs

Start by exploring the mathematics framework of LPFs. The mathematics framework provides a big-picture view of the significant steps that students take as they develop their expertise in mathematics and statistics from year 1 to year 10. The framework illustrates students' using their knowledge and skills in eight key aspects of mathematics and statistics. The eight aspects of the framework cover the breadth of the mathematics and statistics learning area and emphasise making sense of mathematical ideas and reasoning mathematically. The framework illustrates progress by showing how students respond when problems become more complex.

While the NZC expects that most students in years 9 and 10 will be working within levels 4 and 5 of the curriculum it is likely that teachers will have students in their classes who are achieving at lower curriculum levels. The LPFs provide teachers with a clear picture of the knowledge and skills that students at lower levels are able to use when solving mathematical problems and engaging in statistical investigations. This enables teachers to ensure that their programme appropriately caters for the range of student capabilities.

The illustrations highlight rich teaching and learning activities in everyday classroom programmes and their annotations provide useful prompts about what to notice as students solve problems. The set of illustrations at a signpost represents the breadth of knowledge and skills at that place on the progression. Teachers can use the illustrations to check that they are fully covering the aspect in their teaching and learning programme.

Teachers can also use the mathematics framework to consider the breadth of their mathematics and statistics programme. The framework provides a way for teachers to check that they are planning for a comprehensive coverage of the learning area.

This webpage and its guide supports schools to undertake step 2:

Understanding the mathematics framework,

<https://curriculumprogresstools.education.govt.nz/lpfs/understanding-the-mathematics-framework/>

Experience suggests that the time taken to understand and use the LPFs will depend on teachers' mathematical knowledge and may take up to a year. Because teachers need to understand all eight aspects of the mathematics framework, we suggest that several workshops are held across of the course of the year, with each workshop focused on developing understanding of one or two aspects. Teachers could work in small groups to lead the workshops, and support their colleagues to unpack the aspects.

Once teachers understand the mathematics framework they will be well positioned to make efficient judgments in PaCT.

Step 3: Understand and use PaCT

The Progress and Consistency Tool (PaCT) guides teachers to make dependable judgments about students' capability in eight aspects of mathematics and statistics. Teachers use their professional judgment to locate students' achievement at a particular signpost on a progression for each of the eight aspects of the mathematics framework. PaCT then synthesises these judgments into a PaCT scale score which is displayed in relation to the levels of the New Zealand Curriculum (NZC). This score provides dependable progress and achievement information that can be used for a variety of purposes including reporting to parents, designing targeted teaching interventions and planning teaching and learning programmes.

We recommend that teachers make judgments in PaCT on one or more applicable LPF aspects at the conclusion of each "unit" of work. We suggest that they determine which aspects to make judgments on by first considering the opportunities that each "unit" provides for noticing what students know and can do in specific aspects. Once they have noted these opportunities, teachers can consider the opportunities in relation to the

school's reporting cycle. For example, if a school plans to track students' progress against the NZC at the end of term 2, then judgments need to be made in all eight aspects before then.

These webpages and their guides support schools to undertake step 3:

Making PaCT judgments, <https://curriculumprogresstools.education.govt.nz/pact/making-pact-judgments/>

Using PaCT reports, <https://curriculumprogresstools.education.govt.nz/pact/using-pact-reports/>

The process of making judgments could be introduced in one workshop as the process is straight forward once teachers are familiar with the aspects and signposts of the mathematics framework. We suggest that three workshops are scheduled to support teachers to make aspect judgments and confirm overall judgments for the first time.

Workshop 1: Introduce the process of making judgments to all teachers.

Workshop 2: Teachers work in teams or as a department to make aspect judgments for all students in their class.

Workshop 3: Teachers work through the process of confirming overall judgments in a team or department meeting.