

MATHEMATICS CURRICULUM: AUSTRALIA VERSUS SINGAPORE

The Australian curriculum in mathematics is often compared to the mathematics curriculum of Singapore because Singapore students perform well in international studies. This was recently the case in some print media. It is reasonable that the curriculum is looked at, along with teaching practice, teachers' own understanding of the subject, teaching resources such as text books, the role of families and culture considerations. It is, however, also important to correct misunderstandings and misreadings.

At ACARA we have engaged independent experts to analyse the two curricula, and found that there is a considerable level of alignment between the Australian curriculum in mathematics and that of Singapore and other high-performing countries.

The Singapore syllabus provides comprehensive detail about what should be taught and the current version (implemented in an ongoing manner from 2013 for students in their first year of schooling) specifies how teaching should occur.

In contrast, the Australian curriculum provides content achievement standards and allows teachers to be the ones to decide how the content will be taught. This reflects one of the design principles of the Australian Curriculum – that teachers and schools are best placed to choose how to introduce concepts and processes, and how to progressively deepen understanding to maximise the engagement and learning of every student (*The Shape of the Australian Curriculum*, version 4, paragraph 59).

The Australian curriculum covers a broader base of content in Years 1–6 than the Singapore syllabus; for example, probability is a part of the Australian Curriculum from Years 1 to 6 and does not occur in the Singapore curriculum in those years. The Australian Curriculum also introduces concepts using concrete material and informal methods, then formalises techniques over two–three years.

The Singapore syllabus introduces formal techniques early in a student's schooling. An example of this is fractions. Singapore and Australia both introduce the concept of fractions in Year 2. Singapore then introduces formal methods for the four operations in Years 3–5 and finalises work on fractions in Year 6. The Australian curriculum develops concepts using concrete materials in Years 3–5 and gradually introduces formal operations for proper and improper in Years 5–7.

However, there are greater similarities across Years 7–10, and by the end of Year 10 students will have largely covered the same content in Australia as they do in Singapore.