Talking maths with your teenager
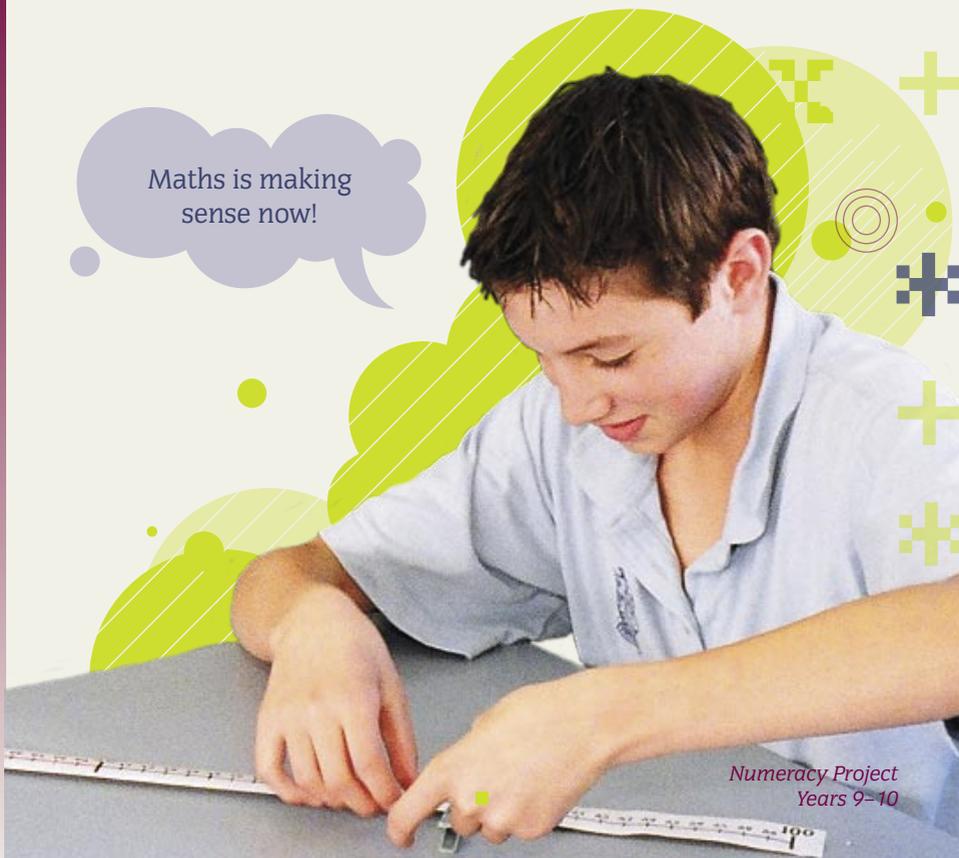
Numeracy Project students are learning new ways to solve mathematics problems.

They still need your support and encouragement.

Maths is making sense now!

Numeracy Project Years 9–10

Your teenager's school is one of a number of schools taking part in the Ministry of Education's Secondary Numeracy Project. (Over time, all secondary schools will have this opportunity.)

The New Zealand Numeracy Development Project aims to improve the quality of maths teaching and to raise the level of student achievement. Research into how people learn mathematics is an important part of this process.

Teachers are learning, too!

Within the numeracy projects

- Students are taught the mental strategies that adults actually use when doing mathematics in real life.

- The emphasis is now on how to get the answer rather than just getting the right answer. Students use equipment, diagrams, and pictures to help them show that they understand.

- There's much more classroom discussion and collaborative work.

- Memorising formal rules is not as important as remembering strategies that help to create an answer.

- Mathematics is more relevant and enjoyable, and students learn how to deal with numbers and mathematical concepts more effectively.

How you can help

- Be positive about what your son or daughter can achieve in mathematics. What you say and do can make a big difference to their success.

- Realise that students may learn different ways for getting the answer to a problem, and while one method may be more efficient in some cases, there is no single "correct" method.

- Share methods for doing problems.

- Ask your son or daughter to explain how (and why) a strategy they are using works.

- Offer to explain your way of solving the problem – and why it works.

Home Activity

Use the following activity to introduce yourself to Numeracy Project strategies.

Rounding and compensating is a numeracy strategy for solving problems such as 272 – 39.

Ask your teenager to explain this strategy to you.

Then:

1. *a.* You each write three problems for which this strategy is useful. Use 3-digit numbers in at least one of these problems.

   b. Work out each other's problems and then discuss how you did each one.

2. *a.* You each write three problems for which this strategy is not so useful.

   b. Discuss why this strategy is not efficient for each of these problems.

   c. Ask your teenager if they can find other ways to solve these problems. Have them explain what they've done.

39 is close to 40, so I'd go 272 – 40 + 1.

18 bales of straw at $3.50 … If I double and halve, that's 9 x 7, so it's $63

Some questions answered

What's wrong with the old way?

The old way was only effective for some students, although many of them still struggled in the senior school. All students benefit from the new approach.

What about the basics?

Students still need to know their basic facts, including adding and subtracting to 20 and times tables up to 10 x 10. Their confidence and success in maths depends on it. However, the way these basic facts are learned is different.

What about calculators?

In years 9 and 10, students should do most calculations in their heads. They should only use pencil and paper or a calculator when the numbers are more complicated.

What about book work?

More discussion work in class means that what is recorded in maths exercise books will change. You will see more informal methods of setting out problems and more explanation from your teenager about what they have learned. Homework is still an important part of the programme.

What about NCEA?

What is being taught, and how it is being taught, is designed to improve student understanding of mathematics. This is specifically aimed at improving students' readiness for, and success in, NCEA.

What's in this for my gifted teenager?

The number strategies are used to develop an understanding of algebra and algebraic thinking – which is critical for success in higher levels of mathematics.

For more information on the numeracy projects, see www.nzmaths.co.nz You can also talk to your school.