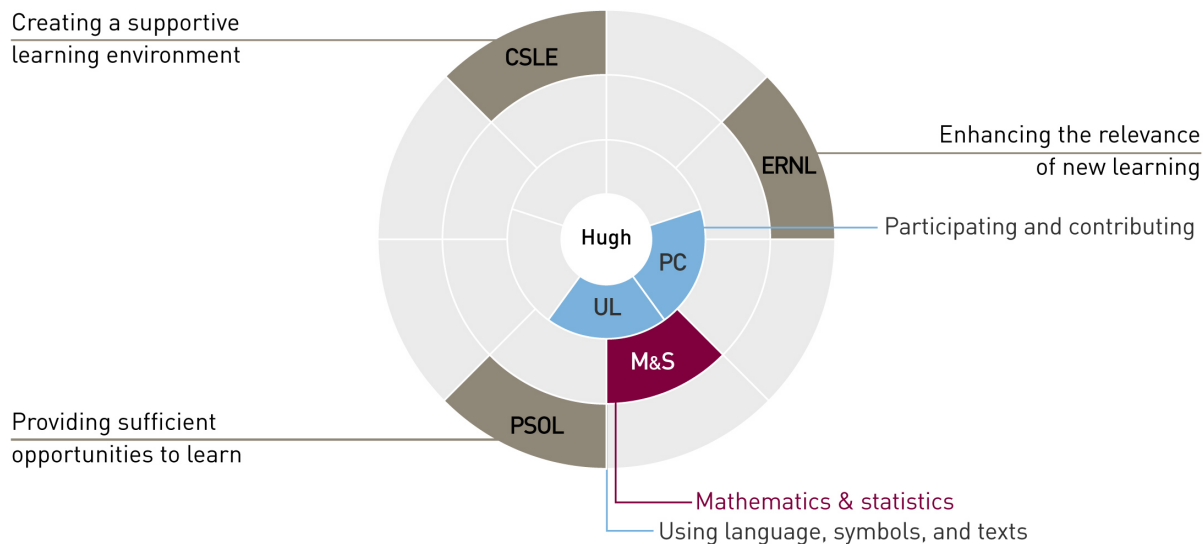


# Hugh's Makaton with mathematics

## Links to the curriculum



## Student background

|               |              |  |
|---------------|--------------|--|
| <b>Name</b>   | Hugh         | Hugh was confident and enthusiastic about coming to intermediate school. |
| <b>School</b> | Intermediate |  |

The transition did not turn out to be as smooth as we had hoped, because while he tried to communicate with teachers, teacher aides and his classmates by gesture and speech, we could not readily understand him. We needed to find an effective shared communication system. We had noticed that Hugh was signing some words, which he had been taught as a young boy.

Hugh's speech-language therapist reviewed all the interventions that had been taken so far and suggested it might be appropriate and effective for Makaton sign language (Makaton) to be introduced to Hugh and all those forming part of his learning community.

Everyone closely connected to Hugh, including his parents, teachers, classmates, and youth group leaders, learned Makaton so that signing was able to provide the base language for his communication and learning.

The use of this form of communication transformed Hugh's ability to interact with all members of his learning environment. Excitingly, within a few months, it also produced some improved clarity in his speech, as well as his recognition of essential written words.

## Four learning stories

- 1. Hugh loves liquorice!** 19 March 2008
- 2. Hugh recognises 50-cents** 24 March 2008
- 3. Hugh lines up at the tuckshop** 4 April 2008
- 4. Hugh earns 50-cents another way** 16 April 2008

Hugh was interested in money and knew it could buy things, but did not know the cost of goods. Sometimes he had been to the tuckshop with 10-cents and could not understand why he was sent away and told he did not have enough money.

Goals in Hugh’s individual education programme (IEP) included knowing how much money he needed for the cost of the tuck shop items, being able to ask for those items and using sign language to help him make purchases.

This string of learning stories shows Hugh learning and communicating using Makaton in mathematics. He shows increasing confidence in asking to purchase liquorice at the school tuckshop with the correct money.

These stories showing the learning planned for Hugh by Chris his teacher and the team were written by Shelley his teacher-aide.

### Hugh loves liquorice!

|                |      |                 |                        |
|----------------|------|-----------------|------------------------|
| <b>Student</b> | Hugh | <b>Date</b>     | 19 March 2008          |
|                |      | <b>Observer</b> | Shelley (teacher aide) |

Hugh liked liquorice and knew it could be purchased at the tuckshop for 50-cents. Hugh and I visited the tuckshop and we taught the staff member the sign for liquorice so she would know what Hugh wanted when he lined up with other children.



Today Kela asked, “What have you come for today Hugh?”

Hugh signed and said he had come for liquorice.

Hugh gave Kela the 50-cent coin I gave him.

Kela understood what Hugh wanted.

### Hugh recognises 50-cents!

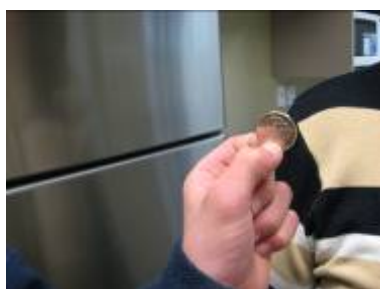
|                |                                 |                 |                        |
|----------------|---------------------------------|-----------------|------------------------|
| <b>Student</b> | Hugh                            | <b>Date</b>     | 24 March 2008          |
| <b>Topic</b>   | How to recognise a 50-cent coin | <b>Observer</b> | Shelley (teacher aide) |

We taught Hugh how to recognise a 50-cent coin.

He could sign 50-cents and speak it clearly. He held his hand in front of his mouth to feel the “f” sound of fifty. The 50-cent coin has a sailing ship on it and this picture, as well as the numeral, helped with recognition. We also made rubbings of the coin, and played snap with these. Any time he correctly identified 50-cents from coins we had, he put it in his money box. After a week of practise, Hugh could pick the 50-cent coin from a pile of different coins. We went to the shop a couple of times to practise.



Hugh asks for liquorice.  
Kela is saying, “50-cents please”.



Hugh gives Kela a 50-cent coin



Hugh with his liquorice!

## Hugh lines up at the tuckshop!

|                |      |                 |                        |
|----------------|------|-----------------|------------------------|
| <b>Student</b> | Hugh | <b>Date</b>     | 4 April 2008           |
|                |      | <b>Observer</b> | Shelley (teacher aide) |



Hugh was gaining confidence with money and was ready to line up with the other students to buy his liquorice.

Today, Hugh asked for the liquorice and gave the correct coin independently.

You are doing well Hugh. Hand over that 50-cent coin!

## Hugh earns 50-cents another way

|                |      |                 |                        |
|----------------|------|-----------------|------------------------|
| <b>Student</b> | Hugh | <b>Date</b>     | 16 April 2008          |
|                |      | <b>Observer</b> | Shelley (teacher aide) |



Hugh's knowledge and confidence with 50-cent coins gave him a base on which we could now build extended understanding of both money and number. Alongside this learning, Hugh was also pursuing Correspondence School work on money. This involved Hugh recognising that putting five 10-cent coins together would make 50-cents, and that those same five 10-cent coins together would work at the tuckshop to buy more liquorice.

Here is Hugh working through one of his money challenges.

## Analysis – what learning is happening here?

### Individual education programme

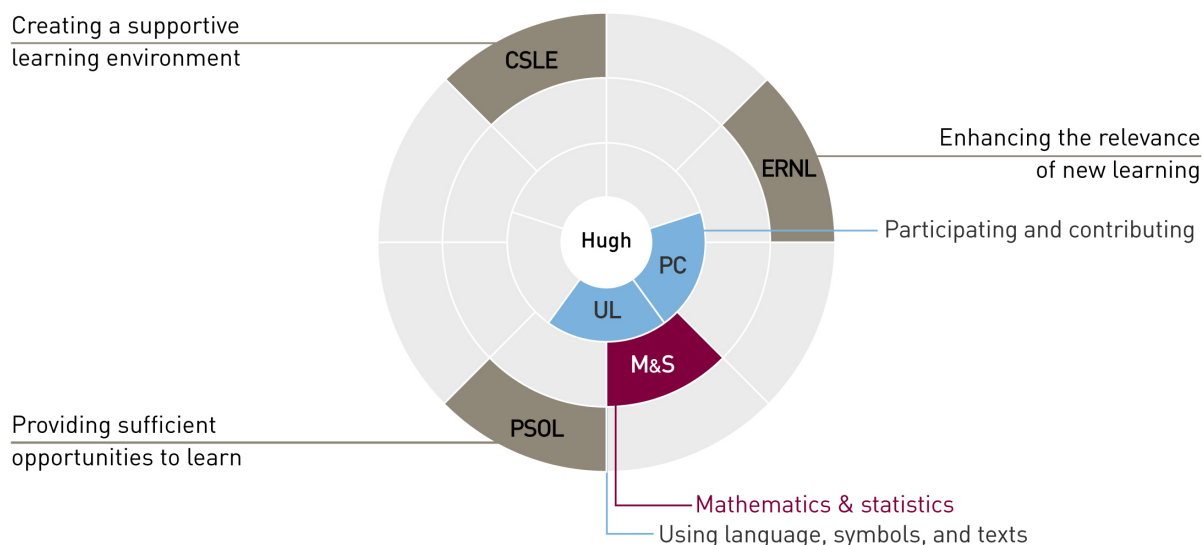
One of the goals in Hugh's individual education programme (IEP) included knowing how much money he needed for the cost of the tuckshop items, being able to ask for those items, and using sign language to help him make purchases.

### Where to next?

The next steps for Hugh will be to:

- recognise other coins and learn their values; for example, the gold coins, and how other coin combinations can make 50-cents
- buy something different at the tuckshop or buy two things, and prepare for this by working out the combined cost of the two items
- use a range of coins to buy in other situations, such as in Hugh's local shop or at Scouts.

## Reflection – what these stories exemplify



### Key competencies

Hugh, through the use of Makaton, participates with other students at the school tuckshop. Hugh loves being part of school life with his peers and can now be involved with confidence in another activity (participating and contributing).

Hugh is using language symbols and texts to sign for his purchase and give the correct coin.

#### How might these stories strengthen Hugh's identity as a learner?

Shopping for a favourite treat is a highly motivating activity for Hugh. This has provided an appropriate vehicle for him to practise his learning (agency) through signing his wants. Initially, this was in the classroom with teachers, teacher aides, and students, both in book work and role play, and subsequently on repeated occasions with the tuckshop staff, using money in different denominations (breadth, continuity, and depth).

For more information on the four dimensions of agency, breadth, continuity, and depth (ABCDs), refer to *Narrative assessment: a guide for teachers*.

### Learning areas

#### Level 1 mathematics and statistics: Number and Algebra: number strategies

The related achievement objective is using a range of counting, grouping, and equal-sharing strategies with whole numbers. Hugh is working towards recognising New Zealand coins and using coins to make totals.

### Effective pedagogy

#### What does this tell us about teaching and learning in this setting?

The teacher and teacher aide used Hugh's interest in money to enable him to develop his communication and numeracy skills within authentic contexts (creating a supportive learning environment).

This new learning was enhanced through practical activities, both in the classroom and at the tuckshop, and Hugh's correspondence work. Varied situations and repeated opportunities for use of new knowledge meant Hugh was given sufficient opportunities to learn.

### **Reflective questions for the reader**

"Have I considered whether there are still other authentic contexts where my students might effectively practise their mathematics?"

"Do I use as full a range of memory prompts as I can to help my students fix and recall their learning (e.g. visuals, symbols, numomics)?"

### **Useful resources**

*Makaton vocabulary development project*: Weblink:  
<http://www.makaton.org.nz/resources.htm>

Bellanca, J. (c1992). *The cooperative think tank II: graphic organizers to teach thinking in the cooperative classroom*. Palatine, Ill.: Skylight.