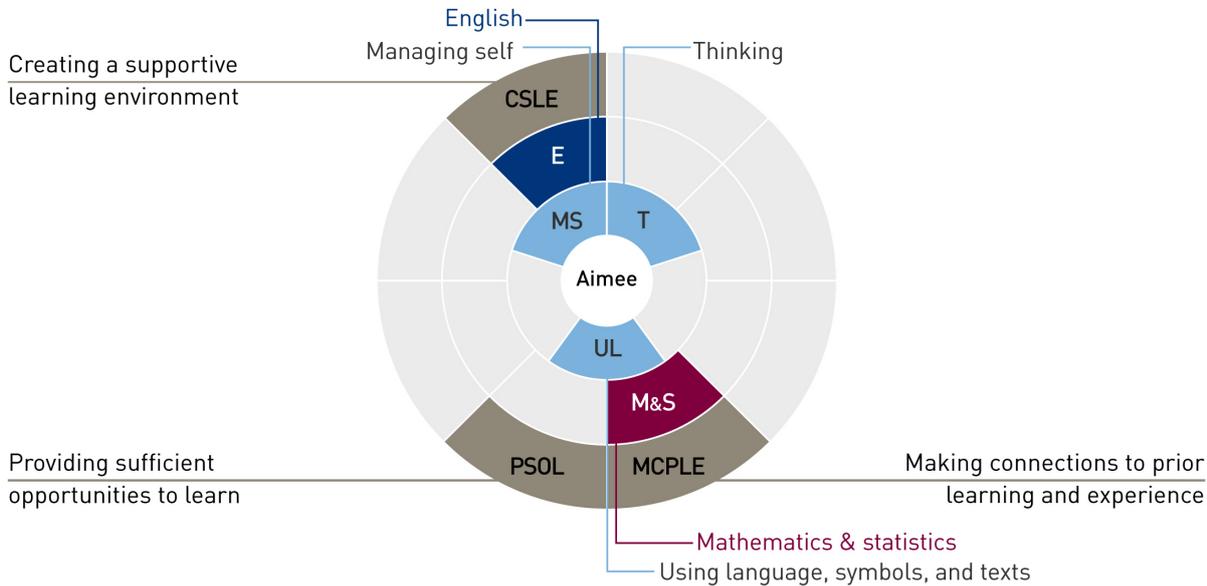


# Aimee makes links with shapes

## Links to the curriculum



## Student background

<b>Name</b>	Aimee	Aimee attends a special education needs school. She has autism and attention deficit hyperactivity disorder (ADHD). Her anxiety can be a real hurdle to learning.
<b>Age</b>	18	
<b>School</b>	Secondary	

With clear routines and expectations in a calm environment, Aimee’s confidence has grown. Aimee’s reading recovery level has progressed from 16 to 20 since 2006. The need for one-to-one attention during concentrated work time in the past has now given way to Aimee’s ability to work without supervision. Shapes are part of the curriculum and it is hoped that in everyday contexts (e.g. shopping, at a party) Aimee may be able to use this skill to identify objects and communicate needs.

## Three learning stories

- 1. Matching shapes to labels and attributes** 13 March 2006
- 2. Relating geometrical shapes to everyday objects** 13 March 2006
- 3. Three-dimensional shapes check-in** 19 March 2007

This string of learning stories shows Aimee is using her problem-solving skills successfully (thinking). Even when the task has proven hard in the earlier lessons, Aimee has persisted and shared her thoughts on what she has learned (managing self). Her positive attitude towards working on her own is evident.

## Matching shapes to labels and attributes

<b>Student</b>	Aimee	<b>Date</b>	13 March 2006 (9.30am)
<b>Topic</b>	Mathematics – geometry	<b>Observer</b>	Meeling (teacher)

Aimee has shown me that she really knows her basic two-dimensional shapes well so I decided to offer her a new challenge. I introduced a set of three-dimensional shapes for her to identify. After describing the shape attributes to her, I wrote them down so that she could read them on her own. We had a few sessions of matching the objects to labelled cards with gradual reduction in prompting.

On 10 March 2006, Aimee got four out of the six three-dimensional shapes correct when asked to match the objects to the described attributes independently. She listened to my feedback attentively when I gave her clues as to why two of them did not match.

Today, I asked Aimee to match the three-dimensional objects to their names. She concentrated on her task without any delay after I laid out the cards for her: cylinder; cone; prism; cube; pyramid; and sphere. Aimee placed all the wooden objects correctly on the corresponding names written on the cards. I was so delighted and Aimee smiled and was obviously pleased with her achievement.



**Footnote:** For one of our weekly experience outside the classroom (EOTC) activities, we went to the Christchurch Botanical Gardens to look at shapes in the children's playground. Aimee knew all the basic two-dimensional shapes.

Aimee was encouraged to spot shapes around her as often as possible, whether she was in or out of the classroom. Jill (teacher aide) reported that Aimee was busy describing shapes she saw while travelling in the van on subsequent outings. The most remarkable one was when Aimee said, "That's a cube!" when she saw the three-dimensional shape on top of a building.

## Analysis – what learning is happening here?

### Links to individual education programme

– Specified learning outcome 3: Become more independent across a range of settings.

Initially, Aimee showed no interest in the new task. As she grew in understanding, her confidence also increased over the weeks. She showed responsibility for her own learning rather than depend on staff to help her all the time.

## Key competencies

### Managing self

– I can be responsible for my own learning.

### Thinking

– I can figure it out.

### Using language, symbols, and texts

- I can listen to others.
- I can show you what I think.
- I can tell you what I think.

## Learning areas

### Level 1 mathematics and statistics: Geometry and Measurement: shape

- Exploring shapes – identify and describe three dimensional shapes.

Aimee has learnt that shapes have corners, straight lines, and curves. By using these attributes described for her and the additional written cues on the cards, Aimee was able to identify the shapes of the three-dimensional objects presented to her.

## Where to next?

### Celebrate and consolidate

We will celebrate Aimee's success and consolidate her knowledge of two-dimensional and three-dimensional shapes, by getting her to identify shapes in everyday life. We will also encourage her to describe shape attributes in her own words.

## Relating geometrical shapes to everyday objects

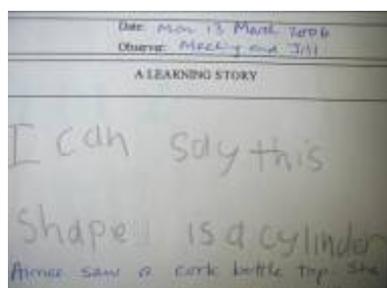
<b>Student</b>	Aimee	<b>Date</b>	13 March 2006 (11.00am)
<b>Topic</b>	Free time	<b>Observers</b>	Meeling (teacher) Jill (teacher aide)

Today, I placed the geometrically shaped resources on the bench and tables in the classroom to see what would happen. We did not get as much done, as I did not want to overload the students. Curriculum delivery is always dependent on how the students are each day to maximise learning.

At about 10.30am, during break time, Aimee saw a red cone that was attached to a cardboard roll. She said, "That's a cone".

I replied, "That's good noticing".

As she wandered around the class, Aimee stopped to look at a cork bottle top. She asked herself out loud, "What is this shape?" to which she replied aloud, "It's a cylinder". Jill and I exclaimed in unison, "That's a learning story!" (The students are familiar with us using that expression and understand that it is a compliment about achievement.)



It was close to story writing time so I suggested to Aimee that she could write her own learning story. Jill gave her some help in phrasing her story so that Aimee could write as independently as possible. Aimee copied the spelling for "cylinder" from the card and she used "My Dictionary" to help her spell "shape".

## Analysis – what learning is happening here?

### Links to individual education programme

- Demonstrate communicative skills and understanding in a variety of ways.

Aimee has demonstrated her communicative skills in both oral and written form in response to the bottle top she saw. She wrote her personal experience by herself in a simple sentence, with the help of her dictionary and the card (see photo in learning story "Matching shapes to labels and attributes").

## Key competencies

### Using language, symbols, and text

- I can tell you what I think.

### Thinking

- I can use what I already know.

### Managing self

- I can be independent.
- I can be responsible for my own learning.

## Learning areas

### Level 1 English: Speaking, Writing, and Presenting: processes and strategies

- Creates texts by using [meaning, structure, visual, and graphophonic sources of information,] prior knowledge, and some processing strategies with some confidence.

### Level 1 mathematics and statistics: Geometry and Measurement: shape

- Exploring shape, identify and describe three-dimensional shapes.

Aimee is relating mathematical concepts to everyday objects. Her grasp of three-dimensional shapes is continually being consolidated by her own self-initiated observation.

## Where to next?

### Celebrate and consolidate

Aimee could consolidate her learning by sorting a variety of everyday objects by their shape attributes. She will be given opportunities to explore shapes around her in and out of school. We could talk to Aimee's Mum about this learning so she could follow this up at home.

## Three-dimensional shapes check-in

<b>Student</b>	Aimee	<b>Date</b>	19 March 2007
<b>Topic</b>	Three-dimensional shapes assessment	<b>Observer</b>	Meeling (teacher)

Last year at school, Aimee learnt about three-dimensional shapes in term 1.

Today, Aimee was given the same shapes and cards as last year and was asked to match the labels to the shapes. Aimee got two correct out of the six. We went through the descriptions as to why they were correct.

For the other shapes, I flipped the cards over to enable her to read the descriptions by herself. I gave her some hints about the basic two-dimensional shapes that each of the three-dimensional blocks have, and used words like curves, straight sides, corners, and a sharp point.

Aimee was left to figure out how each set of descriptions would match the three-dimensional geometrical shapes. When she had finished matching, Aimee was very pleased with herself, as she got them all correct. She was then instructed to turn over the card to read the label for each of the shapes.



Correct matching at:

- first attempt – cone and sphere
- second attempt – cone, sphere, cylinder, cube, pyramid, and prism.

**Excellent work!**

**Footnote:** We made different shaped hats for Melissa’s birthday party later in the year (2007). Aimee replied immediately and excitedly, “Cones!” to her classmates when I asked the class what they were. On 19 September 2008, I rearranged the tables and Aimee noticed the change. I asked, “Do you know the new shape?” She said, “Hexagon.” Wonderful!

## Analysis – what learning is happening here?

### Link to individual education programme

- To be okay about making a mistake.

Aimee is showing more confidence when problem-solving. She responded very well to my assurance that she could take as much time as she needed.

Specific learning objective 3: Maintain her independence across a range of settings at school.

## Key competencies

### Managing self

- I can make a mistake and be ok about it.

Aimee also knows it is okay to flip the cards to read the descriptions if she is stuck.

### Thinking

- I can use what I already know.

Aimee is learning to be more independent in applying her thinking skills. This was evident in her ability to self-regulate when presented with a challenging task.

## Learning areas

### Level 1 mathematics and statistics: Geometry and Measurement: shape

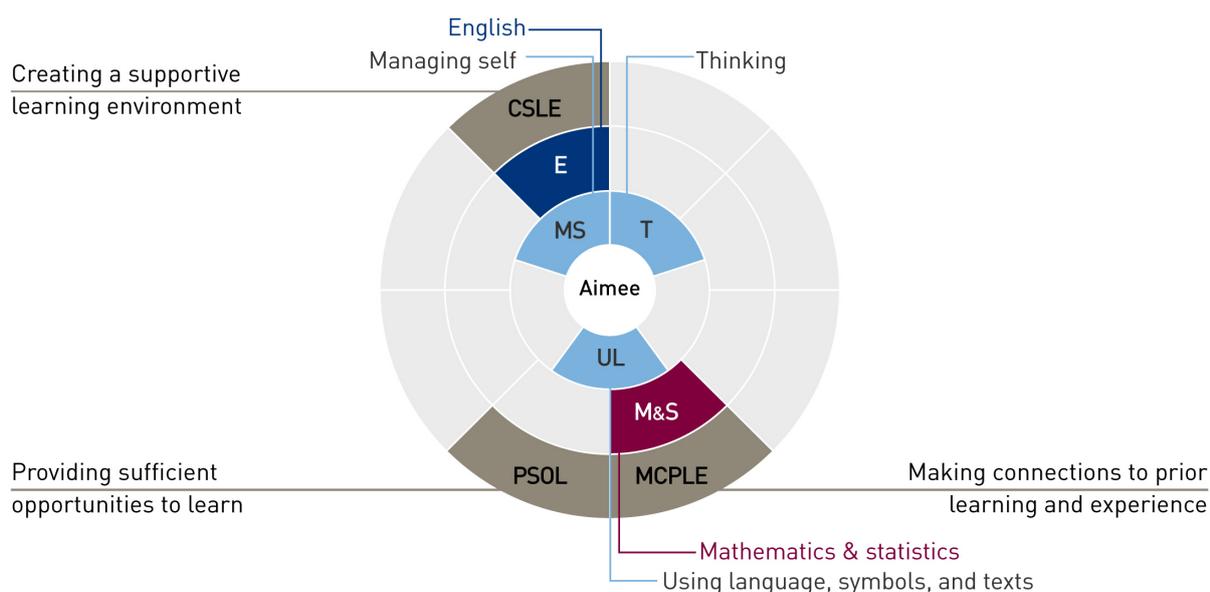
- Exploring shapes – identify and describe three-dimensional shapes.

## Where to next?

### Celebrate and consolidate

Aimee will need ongoing formative assessment on the three-dimensional shapes until she has really consolidated her learning. Meanwhile, she will be encouraged to explain her reasoning on how she figures out what the shapes are when she identifies them in everyday life.

### Reflection – what these stories exemplify



## Key competencies

Aimee was able to figure out what attributes constituted each shape and was able to apply what she had learned to everyday objects she saw around her (thinking; using language, symbols, and texts). Aimee showed strengths in managing self by persevering with challenging tasks and using the resources available to her.

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

Aimee was able to use her knowledge of the attributes of two-dimensional shapes to assist her understanding of three-dimensional shapes. She was proud of her learning and happy to share it with others verbally and in a learning story (agency). In the course of over a year, Aimee retained her learning (continuity) within the classroom and applied her knowledge during community outings (breadth). Aimee was able to tell staff and her classmates (depth) what shapes were when asked.

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

Aimee's learning can be mainly linked to the geometry and measurement strand. She was able to figure out in her mind what shapes the everyday objects were.

## Level 1 English

When Aimee communicated her thoughts in both oral and written form and read the shape and attribute cards, she was demonstrating strengths in the Speaking, Writing, and Presenting and Listening, Reading, and Viewing strands.

### Effective pedagogy

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

Having clear expectations and routines are essential for Aimee. Understanding her special education needs and knowing her as an individual have been crucial to her positive response to learning opportunities. Teacher aides are trained in both academic and behaviour support to assist in creating a conducive learning environment. Aimee is supported by her family and regular home-school communication, including the sharing of learning stories, has promoted effective teaching (creating a supportive environment).

Aimee used her prior knowledge of two-dimensional shapes to facilitate her learning of three-dimensional shapes (making connections to prior learning and experience). By going out in the community, Aimee was able to apply what she had learnt in the classroom further afield. Leaving resources out for Aimee to notice in her free time enabled learning to occur at her own pace, and when she was in a calm frame of mind (providing sufficient opportunities to learn).

#### Reflective questions for the reader

"What learning environment do you create to maximise/optimize learning for your students?"

"How do you get your support staff on board with effective pedagogy?"

"What steps do you take to gain your students' trust?"

"How well do you understand your students' needs and scaffold their learning?"

#### Useful resources

Janney, R., & Snell, M. E. (c2004). *Modifying schoolwork (2nd ed.)*. Baltimore: P.H. Brookes Pub.

Mitchell, D. (2008). *What really works in special and inclusive education: using evidence-based teaching strategies*. Abingdon [England]: Routledge.

Scheuermann, B., & Webber, J. (c2002). *Autism: teaching does make a difference*. Australia; Belmont, CA: Wadsworth Thomson Learning.

Wagner, S. (c2002). *Inclusive programming for the middle school student with autism/Asperger's syndrome: topics and issues for consideration by teachers and parents*. Arlington, TX: Future Horizons, Inc.