Year 9 Algebra (NZC: NA4.7, NA4.8, NA5.7, NA5.8)

**9.9 Use algebra skills when solving problems**

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| --- | --- | --- |
| **Achievement** | **Achievement with Merit** | **Achievement with Excellence** |
| Use algebra skills when solving problems | Use algebra skills, using relational thinking, when solving problems | Use algebra skills, using extended abstract thinking, when solving problems |

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[Simplifying Like Terms (Addition and Subtraction) 2](#_Toc486847186)

[Simplifying Multiplication 2](#_Toc486847187)

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# Finding Like Terms

**Do this as a drag and drop matching exercise**

ab = ba

a + b = b + a

# Simplifying Like Terms (Addition and Subtraction)

a + a = 2a

a + 2a = 3a

2a + 3a = 5a

3a + 4a + 5a = 12a

8a – 2a = 6a

8a + 3a – 2a = 9a

And some that give negative answers

a + a + b = 2a + b

etc.

And some with some subtractions

Including some negative answers

# Simplifying Multiplication

Sd

# Simplifying Division (Fractions)

sd

# Identities

a + 0 = a

a + 1 = a+1

a + a = 2a

a x 1 = a

a x 2 = 2a

a – 0 = a

a – 1 = a-1

a – a = 0

a / 1 = a

a / 2 = a/2

# Expanding

One set of brackets – 2 terms inside

3 terms inside

# Factorising

One set of brackets – 2 terms inside

3 terms inside

# Substitution

One variable

2 Variables

# Solving Equations

Max 2 step

# Forming Equations

Max 2 step from problems

# Teaching Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Lesson 1** | **Lesson 2** | **Lesson 3** | **Lesson 4** |
| **1** | Regular Shapes and Triangles | Quadrilaterals | Solids and Nets | Properties of Solids |
| **2** | Isometric Drawing and Side Views | Isometric Drawing from Side Views | Reflection and Translation | Enlargement and Rotation |
| **3** | Angles on a Line and Angles at a Point | Vertically Opposite Angles and Angles in a Triangle | Catch up Day | Give out assessment |
| **4** | Working on assessment | Working on assessment | Working on assessment | Working on assessment |
| **5** | Assessment due in – start next topic |  |  |  |

Note: for this topic we gave out an open ended assignment looking at modular housing and the different layouts that could be formed, linking this to isometric drawing, symmetry and rotation, the costings of these different layouts and students needed to produce an advertising brochure for a suburb based off these modular homes.