

Fill It Up: Learning Progression Frameworks Judgments

Observations of students during this unit can be used to inform judgments in relation to the Learning Progression Frameworks. The following tables give guidelines.

Judgments relating to Multiplicative Thinking

To find the number of square metres in an array...

The student:	Likely set
counts by ones.	Set Two
uses skip counting or repeated addition.	Set Three
uses basic multiplication facts or simple deriving strategies.	Set Four
use basic facts with place value where one factor is a single digit number.	Set Five
recognises the equivalence of expressions using the commutative, distributive and associative properties.	Set Six

Judgments relating to Patterns and Relationships

To find further members in the sequence of growing gardens...

The student:	Likely set
draws the next garden pattern by building on the previous one with some elements of structure correct.	Set Two
notices what is changing and uses similarity and difference to create the pattern of gardens for Years 1 – 4.	Set Three
notices the number of squares that must be added to the Year 4 garden to get the Year 5 garden.	Set Four
organises the data for the sequence in a table to predict further areas using differences.	Set Five
connects the Year number to parts of the pattern, e.g. Year 4 has a 5 x 4 interior rectangle, and uses this to structure further gardens in the sequence.	Set Six

Judgments relating to Algebraic Thinking

To represent their strategy for finding the area of a given garden...

The student:	Likely set
writes repeated addition equations, e.g. $5 + 5 + 5 + 5 + 5 + 5 = 30$, $30 + 4 + 4 = 38$.	Set Two
writes equations using a combination of addition and multiplication, e.g. $5 \times 4 + 4 + 4 + 5 + 5 = 38$.	Set Three
recognises equivalence in different ways to record areas, e.g. $6 \times 5 + 2 \times 4 = 4 \times 5 + 2 \times 5 + 2 \times 4$ or $7 \times 4 + 2 \times 5 = 4 \times 5 + 4 \times 2 + 2 \times 5$.	Set Four
uses letters to record connections between year and parts of the pattern, $y + 3$ for the length and $y + 2$ for the width.	Set Five
uses an algebraic equation to connect any year to the area of the garden, e.g. $a = (y + 3) \times (y + 2) - 4$. Note that the equation should reflect their structuring of the pattern.	Set Six

Judgments relating to Measurement Sense

To find the area of a given garden or part of a garden ...

The student:	Likely set
uses an informal unit, e.g. beans, counters to measure flat space but does not recognise the need for identical units and iteration.	Set Two
recognises that squares are used to measure area with no gaps or overlaps.	Set Three
structures an array in either rows or columns and uses skip counting and/or repeated addition to find the number of units.	Set Four
uses multiplication of length by width to calculate the area of a single array.	Set Five
combines the areas of sections in a garden to find total area using multiplication and addition.	Set Six