**Strand:** Patterning and algebraic reasoning  
**Band:** Primary years  
**Standard:** 2  
**Year Level:** 4

**Key Idea**  
Students identify, describe, construct, represent and predict patterns and relationships when working with data, measuring and calculating. They relate these patterns and relationships to their everyday lives. [F] [Id] [T] [KC1] [KC2] [KC6]

Students employ everyday language and mathematical symbols to represent and communicate their generalisations about mathematical situations and structures. [Id] [C] [KC2]

**Outcome**  
2.9 Searches for, represents and analyses different forms of spatial and numerical patterns, and relates these to everyday life. [F] [Id] [T] [KC1] [KC2]

2.10 Represents and communicates patterns with everyday and mathematical language, including symbols, sketches, materials, number lines and graphs. [C] [KC2]

**Task/Activities**  
1. Explore the number patterns arising from the construction of different sized square shapes  
2. Recognise and represent square numbers in a numerical context.  
3. Produce appropriate spoken and written mathematical terminology for square numbers.  

**Examples of evidence towards achievement of outcomes**  
Students:  
- Draw and model square numbers pictorially.  
- Record a variety of square numbers.  
- Recognise ‘change pattern’ in order to predict the next square number.
Square Numbers

\[
\begin{align*}
1 \times 1 &= 1 \\
2 \times 2 &= 4 \\
1 + 3 &= 4 \\
3 \times 3 &= 9 \\
1 + 3 + 5 &= 9 \\
4 \times 4 &= 16 \\
1 + 3 + 5 + 7 &= 16 \\
5 \times 5 &= 25 \\
1 + 3 + 5 + 7 + 9 &= 25
\end{align*}
\]

Draw the next three or four square number in the sequence.
What is the addition in each of these?