**Square Perfection!**

A **perfect square** is a number that can be written as the product of two equal integers.

For example, 144 is a perfect square because it can be written as 12 × 12.

1. Write all the perfect squares from 1 to 100. (Hint: You should find 10 of them.)
2. (a) Is 400 a perfect square? Why or why not?
3. Is 60 a perfect square? Why or why not?
4. An array is an arrangement of objects. If we have 16 squares, we can arrange them in a variety of arrays:



1. What arrays can be made for 6 objects?
2. What arrays can be made for 36 objects?
3. What arrays can be made for 25 objects?
4. For which of the numbers 16, 6, 36 and 25 were you able to make a **square** array?
5. Why, then, do you think we call these numbers "perfect squares"?
6. (a) A square has an area of 49. What is the **side length** of the square?
7. A square has an area of 81. What is the **side length** of the square?
8. What is the **mathematical relationship** between the area of a square and its side length?
9. (a) In question 1, you listed the first 10 perfect squares. Write them again here. Find a

 **pattern** in the numbers - how do we get from one perfect square to the next?

(b) Challenge: Try to determine how this pattern works.