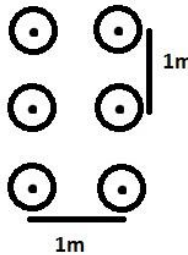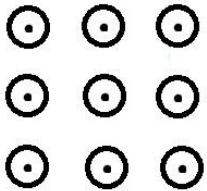| Seeds	
Problem wording	A farmer is going to plant potato seeds in his field. The first day he plants three seeds in a straight line, spaced at 1 metre from one to the next (as in the figure on the right). On the second day he plants three more seeds in a line parallel to and 1 metre away from the one he planted the day before, with the seeds again at 1 metre from one another. 1. After the third day, the field looks like this: a) How many squares can we draw on the third day with each seed as a vertex to a square? Draw them on the field and calculate the area of each square. b) We call the order of a seed the number of squares that has one of its vertices in that seed. What is the order of each seed? What is the sum of the orders of all the seeds? 2. The farmer continues to plant three seeds a day in the same arrangement as described. After the fourth day: a) How many squares can we draw with each seed as a vertex to a square? Draw them on the field and calculate the area of each square. b) What is the order of each seed? What is the sum of the orders of all the seeds? 3. If the farmer keeps on planting for 100 days, answer the following questions and explain how you found them. a) How many squares can we draw with each seed as a vertex to a square? What would the area of each square be? b) What is the sum of the orders of all the seeds? 4. Answer the following questions and explain how you found them when the farmer plants seeds for 'n' days ('n' can be any number of days). a) How many squares can we draw with each seed as a vertex to a square? What would the area of each square be?

	b) What is the sum of the orders of all the seeds?
Purpose	- To identify regularities. - To recognise geometric properties. - To generalise and express functional relationships. - To detect characteristics associated with mathematical talent.
Suggestions for classroom delivery	The questions should be posed gradually. Students should answer each question individually and then discuss it with classmates in breakout groups. Students should discuss the possible existence of squares supported on one of the vertices. Based on specific examples, students should identify the functional relationship between number of days and number of squares. They should relate the sum of orders to the number of squares. Students should be encouraged to express the functional relationship preferably using n to refer to any number of days.