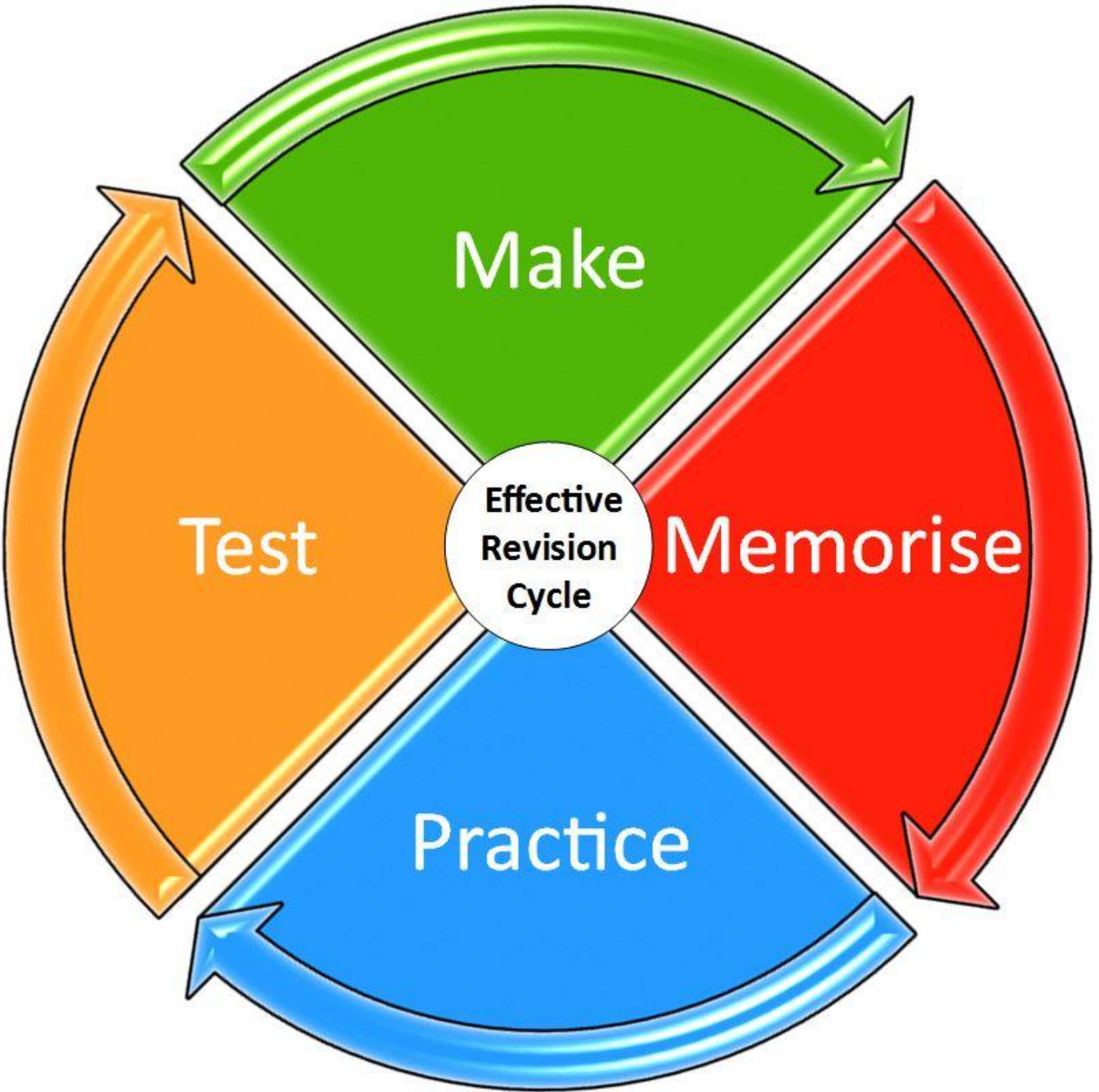


# Effective Revision Cycle?



18 Here is a sequence of patterns made with counters.



pattern number 1



pattern number 2



pattern number 3

(a) Find an expression, in terms of  $n$ , for the number of counters in pattern number  $n$ .

.....  
(2)

Bayo has 90 counters.

(b) Can Bayo make a pattern in this sequence using all 90 of his counters?

You must show how you get your answer.

(2)

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(Total for Question 18 is 4 marks)

Question	Working	Answer	Mark
18 (a)		$3n + 1$	M1
			A1
(b)		No (supported)	C1
			C1

Mark	Notes
M1	for a method to deduce the $n$ th term, eg. $3n + k$ , where $k$ is an integer or $k$ is omitted or for $n = 3n + 1$
A1	for $3n + 1$ oe (accept $n$ replaced by another letter)
C1	for using (their expression in (a)) = 90 or shows that 88 or 91 is in the sequence
C1	for an answer of "No" and a convincing argument eg. pattern number 30 has 91 counters or $(90 - 1) \div 3 (= 29.66\dots)$ or shows that the next term after 88 is 91 Note: no ft from (a)

