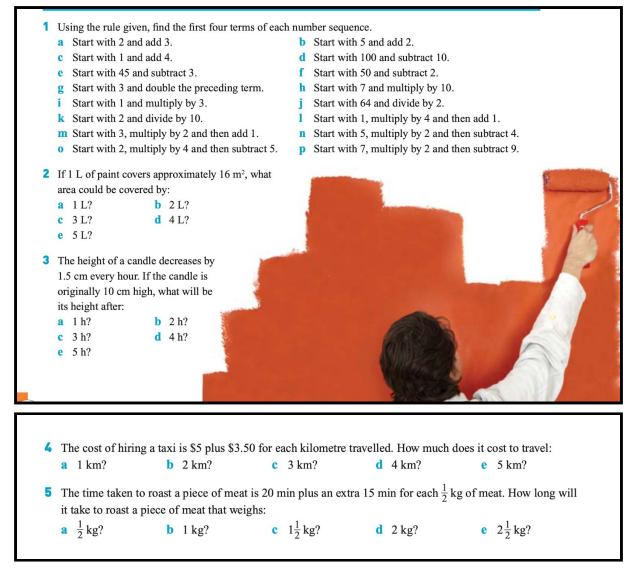
Walt complete number patterns and find the rule for each pattern Success Criteria I can understand the sequence of the pattern given and make up a rule

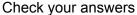
For each of the following nur	1	
i Describe in words how	v the pattern is formed.	
ii Write down the next t	nree numbers in the pattern.	
a 2, 4, 6, 8,	b 4, 7, 10, 13,	c 27, 23, 19, 15,
d 30, 28, 26, 24,	e 90, 80, 70, 60,	f 3, 6, 12, 24,
g 2, 6, 18, 54,	h 3, 30, 300, 3000,	i 1, 0.1, 0.01, 0.001,
j 128, 64, 32, 16,		
2 Find the missing numbers in	the following patterns.	
a 3, 5, <u> </u>	b 2, 5,, 11,	c 4, <u>,</u> 10, <u>,</u> 16
d 30, 26,, 18,	e 51, <u>,</u> 47, <u>,</u> 43	f 2, 10,, 250,
g 2,, 8,, 32	h 625, 125,, 5,	i 800, 400, <u>,</u> 50
j 3,, 300,, 30 000		

Walt Build patterns and create a rule

Success Criteria I know I can create a pattern and a rule associated with the pattern. All patterns have a sequence that can predict future patterns.

-	• EXAMPLE				
a Sta b Sta	a sequence of numbe art with 5 and add 3. art with 1000 and div art with 2, multiply b	Some number patterns nee more than one operation			
a	1st term	2nd term	3rd term	4th term	
	5	5 + 3 = 8	8 + 3 = 11	11 + 3 = 14	
So	the sequence is 5, 8,	11, 14,			
b	1st term	2nd term	3rd term	4th term	
	1000	$1000 \div 2 = 500$	500 ÷ 2 =250	$250 \div 2 = 125$	
So	the sequence is 1000	, 500, 250, 125,			
c	1st term	2nd term	3rd term	4th term	
	2	$2 \times 3 + 1 = 7$	$7 \times 3 + 1 = 22$	$22 \times 3 + 1 = 67$	
So	the sequence is 2, 7,	22, 67,		·	





- **1 a i** Starting with 2, each number is 2 more than the number before it.
 - **ii** 10, 12, 14
 - **b i** Starting with 4, each number is 3 more than the number before it.
 - **ii** 16, 19, 22
 - **c i** Starting with 27, each number is 4 less than the number before it.
 - **ii** 11, 7, 3
 - **d i** Starting with 30, each number is 2 less than the number before it.
 - **ii** 22, 20, 18
 - e i Starting with 90, each number is 10 less than the number before it.
 - **ii** 50, 40, 30
 - **f i** Starting with 3, each number is 2 times the number before it.
 - **ii** 48, 96, 192
 - **g** i Starting with 2, each number is 3 times the number before it.
 - **ii** 162, 486, 1458
 - h i Starting with 3, each number is 10 times the number before it.
 - ii 30 000, 300 000, 3 000 000
 - i i Starting with 1, each number is $\frac{1}{10}$ of (or 0.1 times) the number before it.
 - **ii** 0.0001, 0.000 01, 0.000 001
 - **i** Starting with 128, each number is $\frac{1}{2}$ of the number before it.
 - **ii** 8, 4, 2
- 2 a 7, 11
 b 8, 14
 c 7, 13

 d 22, 14
 e 49, 45
 f 50, 1250

 g 4, 16
 h 25, 1
 i 200, 100

 j 30, 3000
 i 200, 100

EXERCISE 140

1 a 2, 5, 8, 11,		b 5, 7, 9, 11,
c 1, 5, 9, 13,		d 100, 90, 80, 70,
e 45, 42, 39, 36, .		f 50, 48, 46, 44,
g 3, 6, 12, 24,		h 7, 70, 700, 7000,
i 1, 3, 9, 27,		j 64, 32, 16, 8,
k 2, 0.2, 0.02, 0.0	02,	1, 5, 21, 85,
m 3, 7, 15, 31,		n 5, 6, 8, 12,
o 2, 3, 7, 23,		p 7, 5, 1, -7,
2 a 16 m^2	b 32 m ²	c 48 m ²
d 64 m ²	e 80 m ²	
3 a 8.5 cm	b 7 cm	c 5.5 cm
d 4 cm	e 2.5 cm	1

4 a \$8.50	b \$12	c \$15.50
d \$19	e \$22.50	
5 a 35 min	b 50 min	c 65 min
d 80 min	e 95 min	