## CORNERSTONE MATHS

# Algebraic patterns and expressions landmark activity 

## Examples of pupils' work

## Examples are from

- Investigation 2, Q. 1 A B "Describe the pattern's structure and predict the expression for the total number of lights."
- Investigation 2, Q. 1 D E "Explain how the numbers and variables in your pattern are related to the lights in the pattern"


## CORNERSTONE

MATH $\mathbf{S}_{\text {scribe }}$ the pattern's structure and predict the expression for the total number of lights." (Inv 2, Q1 A B)
1)
a) Describe the pattern's structure in words or pictures and how it is different from other patterns you have seen. It might help if you think about the starting pattern and how it grows. (You may wish to use the Step Forward and Step Back to help).
$\underline{L}$ it is difent from other pottensive seen becaseit is an oud shape ane also has two differ t coaler
b) Predict: What do you think the expression to give you the total number of lights (for any pattern of this type) will be?

* The res gonnabexwo diffent expressions but the

E to dar lights is add ration of butnexprestions
1)
a) Describe the pattern's structure in words or pictures and how it is different from other patterns you have seen. It might help if you think about the starting pattern and how it grows. (You may wish to use the Step Forward and Step Back to help).

b) Predict: What do you think the expression to give you the total number of lights (for any pattern of this type) will be?
$E$

$$
8 \times \text { number of nobody }
$$

- What are the pupils noticing?

1) 

a) Describe the pattern's structure in words or pictures and how it is different from other patterns you have seen. It might help if you think about the starting pattern and how it grows. (You may wish to use the Step Forward and Step Back to help).

- The patters structure is different because it has two colours.
b) Predict: What do you think the expression to give you the total number of lights (for any pattern of this type) will be?
- 56

1) 

a) Describe the pattern's structure in words or pictures and how it is different from other patterns you have seen. It might help if you think about the starting pattern and how it grows. (You may wish to use the Step Forward and Step Back to help).


b) Predict: What do you think the expression to give you the total number of lights (for any pattern of this type) will be?
$E(S \times 60 b) \times(3 \times$ warn $)$

## CORNERSTONE <br> MATHS

"Explain how the numbers and variables in your pattern are related to the lights in the pattern" (Inv 2, Q1 DE)
d) Check: Was your prediction correct? [The lights in the Pattern Player would be correctly coloured]. If not, modify your expression.
d) Check: Was your prediction correct? [The lights in the Pattern Player would be correctly coloured]. If not, modify your expression.

2 yes
e) Explain: How the numbers and variables in your expression are related to the lights in the pattern.
$\angle$ They're linked
e) Explain: How the numbers and variables in your expression are related to the lights in the pattern.
Well there is 3 orange blades and
5 green and in my expression it sums


- How will you use the software to enable pupils to respond to this challenging question?

