

Algebraic patterns and expressions landmark activity

Examples of pupils' work

CORNERSTONE MATHS 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 MATHS 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).
 - E it is diferit from other petters, vp soon becase it is an oud share and also has two differ t cooler
 - b) Predict: What do you think the expression to give you the total number of lights (for any pattern of this type) will be? Theres gonnabetwo differit expressions but the to tal light) is add thion of both expressions

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?

8 × number hloda

• 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 patterns structure is different because it has two colocurs.

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).

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

(Sxbob) x (3 + Warry

CORNERSTONE MATHS

"Explain how the numbers and variables in your pattern are related to the lights in the pattern" (Inv 2, Q1 D E)

- d) Check: Was your prediction correct? [The lights in the Pattern Player would be correctly coloured]. If not, modify your expression.
- e yes
- e) **Explain**: How the numbers and variables in your expression are related to the lights in the pattern.
- they're linked

d) Check: Was your prediction correct? [The lights in the Pattern Player would be correctly coloured]. If not, modify your expression.

e la carect!

e) Explain: How the numbers and variables in your expression are related to the lights in the pattern.

« Well there is 3 grange blocks and 5 green and in my expression it says (3 × bob) × (5 × bob) therefore they will change at the some ate and with

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