

embedded rectangles



Figure 1

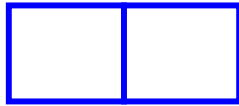


Figure 2



Figure 3

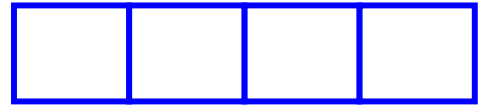


Figure 4

ARITHMETIC TASK

How many rectangles are there in Figure 1?

How many rectangles are there in Figure 2?

How many rectangles are there in Figure 3?

How many rectangles are there in Figure 4?

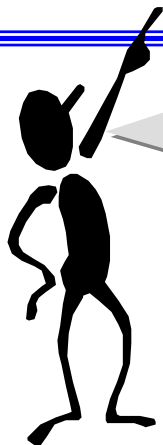
EXTENSION TO ALGEBRAIC THINKING

Do you see a pattern in your answers above? Describe it in words or symbols.
How do you know this works?

Without drawing the next figures in the sequence, predict the number of rectangles in Figure 7. Test your prediction.

Generalization: What can you say about the number of rectangles in any figure?

Teacher Challenge: Write an expression for the number of rectangles in the n^{th} figure.



For teachers to think about...

Why is this task algebraic?

How might your students solve this problem?

What would be their challenges?

What strategies did students use?

What generalizations did they make?

How did they justify their thinking?

How did they model the problem?