

# Barefoot



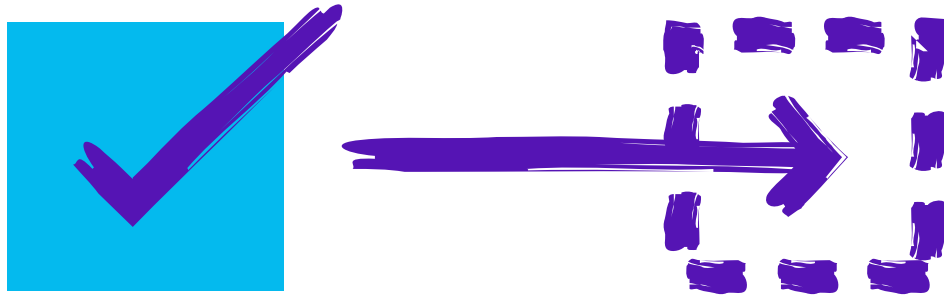
Computing at School

Recommended for  
**ages 7-11**

## 2D Shape Drawings

Using logical reasoning to detect  
and correct errors in algorithms

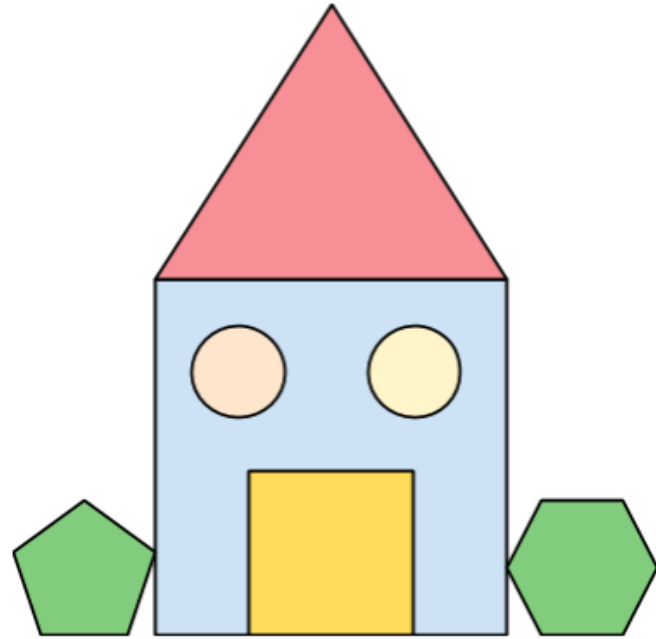
# Today we are learning about...



## Logical reasoning and algorithms

- I can use logical reasoning to detect and correct errors in an algorithm

# Algorithm for drawing a house

Algorithm	Desired outcome of algorithm
<ol style="list-style-type: none"><li>1. Draw a blue square in the centre of your page</li><li>2. Draw an orange equilateral triangle with one edge aligned with the top of the square</li><li>3. Draw two blue triangles inside the square</li><li>4. Draw a yellow square with sides half the length of the first square, inside the first square</li><li>5. Draw a green regular hexagon to the left of the square. The bottom of this shape should be inline with the bottom of the square</li><li>6. Draw a purple regular pentagon to the right of the square</li></ol>	

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# Main task

## Task 1 (10 mins)

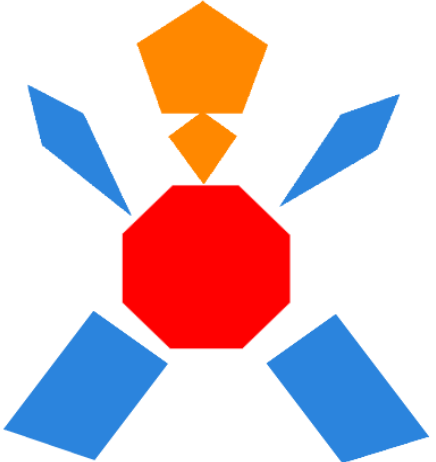
- Fill in a simple drawing made from 2D shapes in the right hand part of the table and write the algorithm for this drawing in the left hand box
- Include 3 deliberate mistakes in your algorithm

## Task 2 (10 mins)

- Sketch out each step of your partners algorithm and use logical reasoning to detect and correct the errors (**Identify, Think, Change**)
- Make changes to the algorithm using a coloured pencil

## Extension

- Can you spot any patterns in the information needed in each step of the algorithm?

Algorithm designer:	Algorithm debugged by:
Learning objective: I can use logical reasoning to detect and correct errors in algorithms.	
Write your algorithm for this 2D shape picture in this box. (Remember to include 3 errors in your algorithm)	Draw your 2D shape picture in the box below.
<p>draw a small orange rectangle at the top of the page</p> <p>then add a green kite underneath</p> <p>next add a hexagon as a body under this</p> <p>add two wide blue trapeziums under the hexagon</p> <p>add a narrow blue kite to the right top of the hexagon</p> <p>add a narrow blue kite to the left top of the hexagon</p>	

# Plenary



## Feedback to your partner

Take turns to feedback to your partner the errors you found in their algorithm.

For each error, explain:

- What error you identified
- How you knew it was an error
- How you have corrected the error
- How you know your correction will work
- Did your partner find all the errors you'd purposefully made?

Did they detect and correct any unintentional errors?





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