

'Creating Measures' Square-ness Task - Example #1

Malcolm Swan

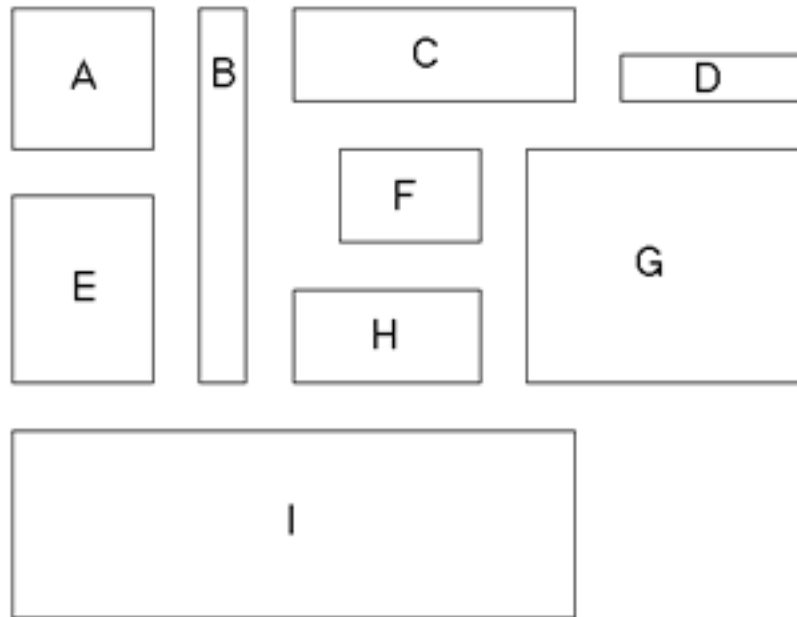
Mathematics Education
University of Nottingham
Malcolm.Swan@nottingham.ac.uk

Jim Ridgway

School of Education
University of Durham
Jim.Ridgway@durham.ac.uk

This problem gives you the chance to:

- criticise a given measure for the concept of "square-ness"
- invent your own ways of measuring this concept
- examine the advantages and disadvantages of different methods.



Warm-up

Use visual judgements to answer the warm-up questions.

Which rectangle *looks* the most square?

Which rectangle *looks* least square?

Without measuring anything, put the rectangles in order of "square-ness."

1. Someone has suggested that a good measure of "square-ness" is to calculate the difference:

Longest side - shortest side

for each rectangle. Use this definition to put the rectangles in order of "square-ness."
Show all your work.

2. Using your results, give one good reason why **Longest side - shortest side** is not a suitable measure for "square-ness."

3. Invent a different way of measuring "square-ness." Describe your method carefully below:

4. Place the rectangles in order of "square-ness" using your method. Show all your work.

5. Do you think your measure is a good way of measuring "square-ness?" Explain your reasoning carefully.

6. Find a different way of measuring "square-ness."
Compare the two methods you invented. Which is best? Why?