

## 'Creating Measures' Steep-ness Task - Example #2

**Malcolm Swan**

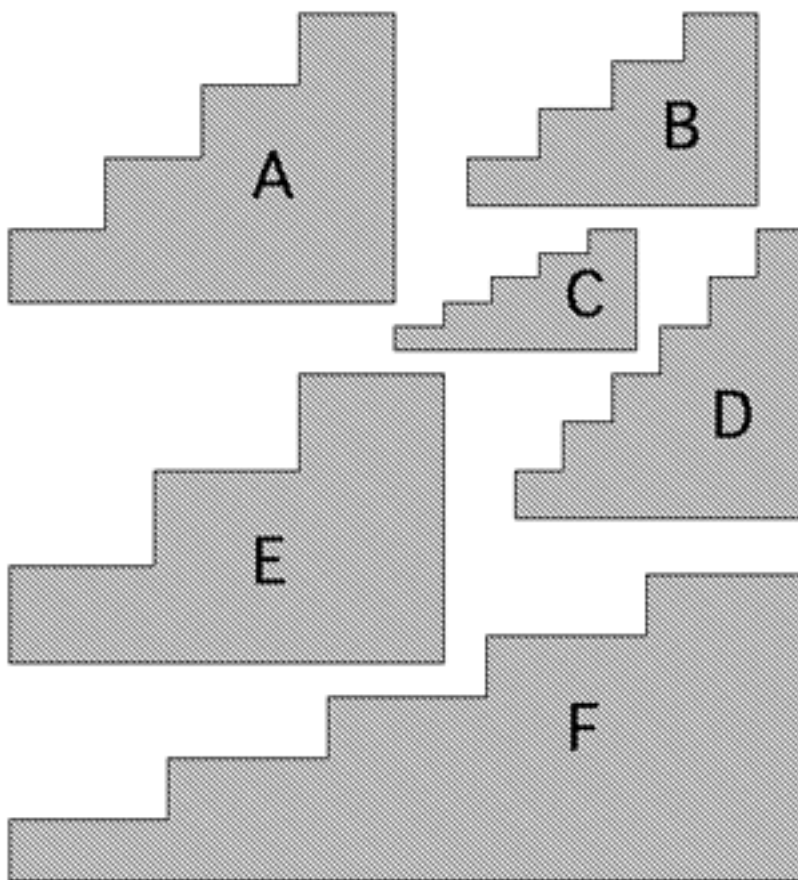
Mathematics Education  
University of Nottingham  
Malcolm.Swan@nottingham.ac.uk

**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 "steep-ness"
- invent your own ways of measuring this concept
- examine the advantages and disadvantages of different methods.



### Warm-up

Without measuring anything, put the above staircases in order of "steep-ness."

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

**Height of step - length of step**

for each staircase. Use this definition to put the staircases in order of "steep-ness."  
Show all your work.

2. Using your results, give reasons why **Height of step - length of step** is not a suitable measure for "steep-ness."
3. Invent a better way of measuring "steep-ness." Describe your method carefully below:
4. Place the staircases in order of "steep-ness" using your method. Show all your work.
5. Do you think your measure is a good way of measuring "steep-ness?" Explain your reasoning carefully.
6. Describe a different way of measuring "steep-ness."  
Compare the two methods you invented. Which is best? Why?