

Numerically Equal Crib Sheet for Parents

This was taken from a pilot scheme and the responses were given by a number of children from different schools. I hope that this helps with any discussion.

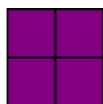
Numerically Equal

Age 7 to 11

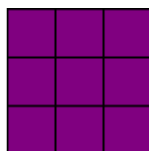
There can be a number of different ways of finding the solution. sketched
Sketching the stages of thinking.



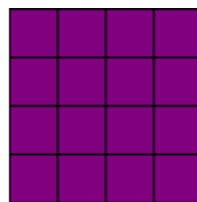
No



No



No



Yes

Use addition to help with the perimeter calculation:

$$4cm + 4cm + 4cm + 4cm = 16cm$$

Change this to multiplication:

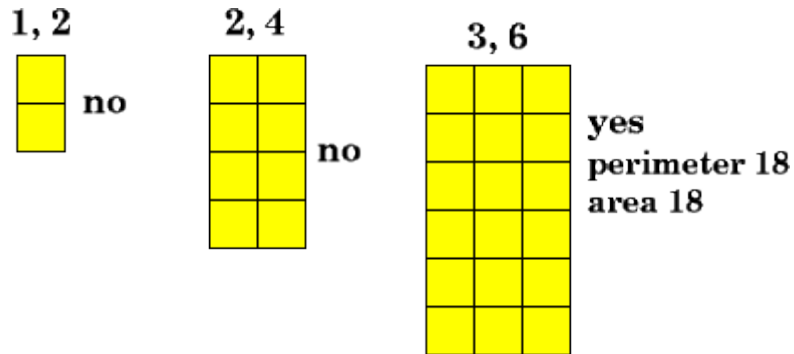
$$4cm \times 4 \text{ (sides)} = 16cm$$

Does this measurement of 4cm work for the area? According to **Annice** and **Grace** in Yarm Primary School, and **Thomas** it does! Backing them up with their answers were **Jade and Marion** both of Tattingstone Primary. Great explanations came from both girls.

Asher had the same idea as a **Franco** of Hazelwood School, London. Franco solved this "within a few minutes by thinking of square numbers and dividing them by 4". He hit upon a 4cm square as one possible answer but remains convinced it is not the only one and has gone to do further investigations on his own! Good for you Franco, let us know of any other solutions your investigations reveal.

There was a second challenge here, finding a rectangle that is twice as long as it is wide and that has an area and perimeter of 18

units. **Daniel** , **Marion** and **Jade** (all of Tattingstone School) had the same strategy that worked very well for each of them. Each drew a rectangle then drew the same size rectangle attached to it and calculated the area. **Jack** shows us a similar way to Marion and Jade's and how he can prove his answer.



Christopher and **James** both explained in words and numbers rather than diagrams:

The perimeter will be $6+3+6+3$ which equals $18cm$.

The area is 6×3 which equals $18cm^2$.