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## 13: Solid Shapes

### **Reflection**

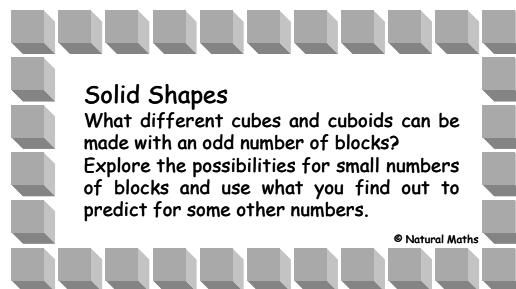
Did you find many cubes that could be made with the blocks?

Why were there so few?

What did you notice about the number of blocks in each layer?

Is it possible to make a cube with an even number of blocks in a layer? Why/not?

Which number of blocks gave you the most possibilities? Why was that?



### **Application**

You can use this activity to:

- introduce or consolidate work with volume
- provide an application of factors
- encourage a systematic approach to exploring solid shapes

### **Extension**

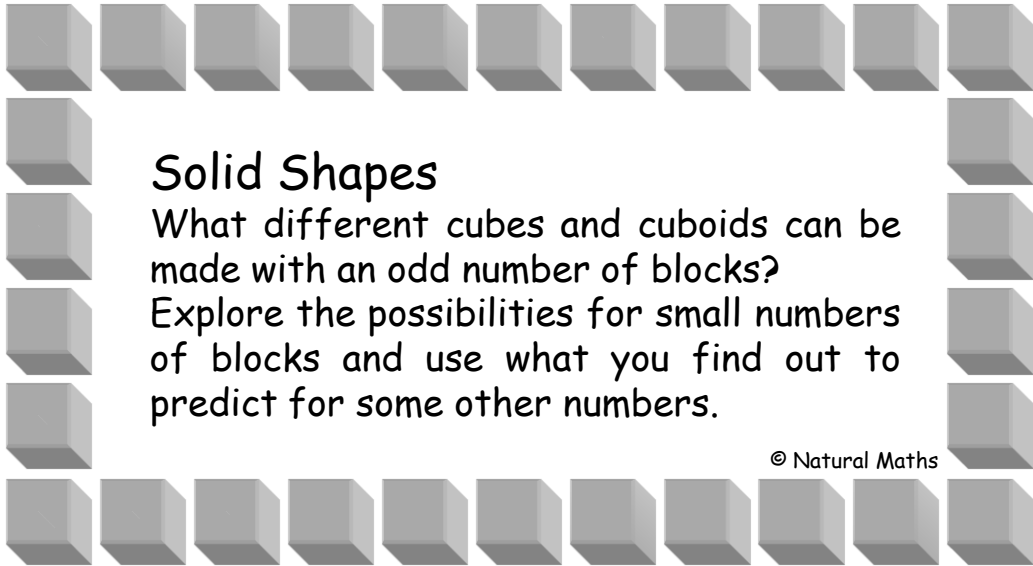
You can increase the complexity of this activity by:

- asking the children to use their discoveries to predict other cubes or numbers that provide a wide range of cuboids
- asking the children to use their knowledge of factors to work out the possibilities before checking them with the blocks
- asking the children to keep a systematic record off the shapes they make for each number

### **Innovation**

You can innovate on this activity as follows:

1. Ask the children to create volume questions for their shapes. For example, “I have three layers in my shape which is four blocks wide. If there are 36 blocks in my shape how deep is it?”
2. Ask the children to ask more open questions. For example, “I can make two different cuboids with less than 20 blocks. Both cuboids are a single block deep. How many blocks might I have?”



## Solid Shapes

What different cubes and cuboids can be made with an odd number of blocks?

Explore the possibilities for small numbers of blocks and use what you find out to predict for some other numbers.

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