**Task One**

You need to work in groups of four

|  |  |
| --- | --- |
| **Isometric drawing**  You have 24 cubes  Use all twenty-four cubes to build a cuboid  Draw an accurate diagram of your cuboid on isometric paper  You must use ruler and pencil  Remember that the paper must be in portrait orientation  C:\stuff\Kangaroo\website\BOTM resources\GFTBringOnTheMaths\images\gsha81.gif  *Label the three visible faces with their area. What is the surface area of your cuboid? What are the units of your answer?* | **Nets**  You have 24 cubes  Use all twenty-four cubes to build a cuboid  Draw an accurate net of your cuboid on one centimetre squared paper  You must use ruler and pencil    *Label each of the six rectangles with their area. What is the surface area of your cuboid? What are the units of your answer?* |
| **Surface area**  You have 24 cubes  Use all twenty-four cubes to build a cuboid  Work out the surface area of your cuboid  What are the units of your answer?  Write down a single calculation that can be used to find the surface area | **Many cuboids**  You have 24 cubes  Use all twenty-four cubes to build a cuboid  Record the three dimensions of your cuboid   |  |  |  | | --- | --- | --- | | **length** | **depth** | **height** | |  |  |  |   Now build a different cuboid and record again. And again …  Find as many different cuboids as you can  Your job is now to be project manager for a team |

**Task Two**

You now need to work in different groups of four. Each group needs to include one person who completed each activity in Task One.

You are going to create a poster which shows information about cuboids that can be built from 24 cubes.

Each different cuboid you find needs an isometric drawing, a net, and a surface area calculation.

The project manager

The project manager has a lot of responsibility:

* You are the only person allowed out of your seat to collect glue, scissors and paper
* You are the only person not allowed to write or draw anything
* You are responsible for making sure that each person in your group is working on a task
* You are the only person allowed to give feedback about a poster at the end of the task

Everyone else:

* If you constructed an isometric drawing in task one, the project manager will now ask you to work on either nets or calculations. No more isometric drawings allowed!
* If you constructed a net in task one, the project manager will now ask you to work on either isometric drawings or calculations. No more nets allowed!
* If you created the calculation in task one, the project manager will now ask you to work on either nets or isometric drawings. No more calculations allowed!

**Finished already?**

* How do you know there no more cuboids that can be built from 24 cubes?
* If the task had given you 35 cubes instead, would it have been easier or harder? Why?
* What if you had been given 48 cubes?