

## Assessing students' work

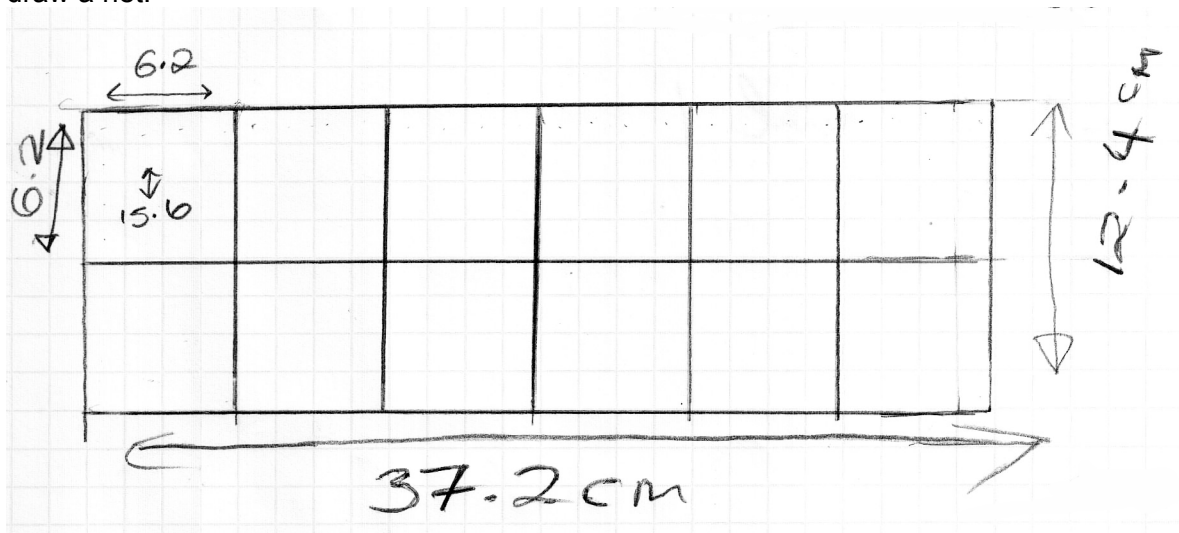
The following descriptions indicate typical levels of performance. After each description is an example of some work at this level.

### Little progress

- **Representing:** Draws a representation of the bottle or box, but not a net. (e.g. may draw a single view from the side or top)
- **Analysing:** May simply take some measurements from the bottle. (e.g. transfers some measurements to a plan view)
- **Interpreting and evaluating:** Can visualise the box from the top or side.
- **Communicating and reflecting:** A simple diagram is drawn with some measurements added

### Sample response: Kat

Kat has drawn a plan view of a suitable box. From the measurements on the plan we can see that Kat has correctly measured the diagram of the bottle. She does not attempt to draw a net.



### Questions for Kat:

Kat could be encouraged to improve her response by asking the following questions:

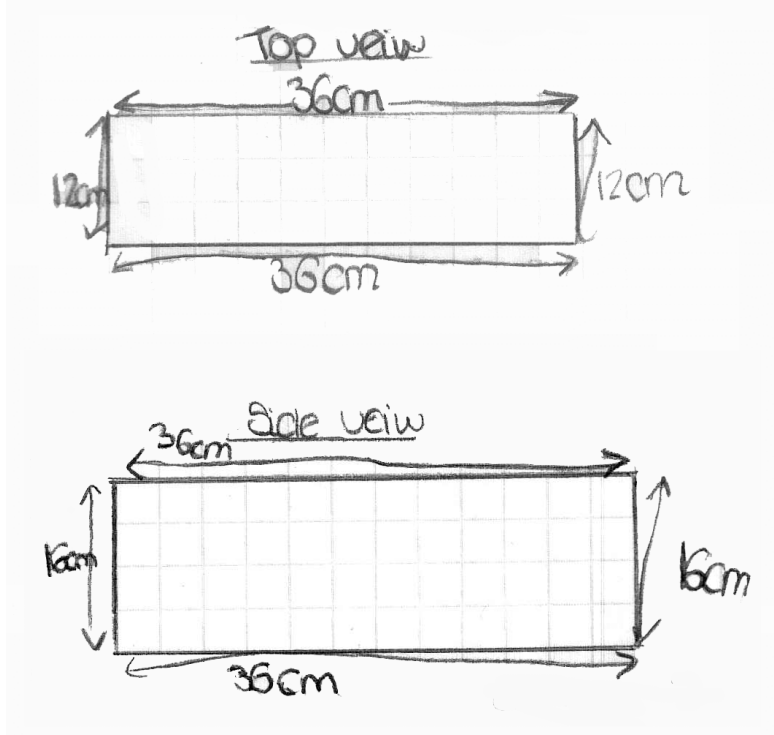
- *Look at one of the boxes I have brought in. How many sides does the box have?*
- *Now unfold the box so that it lies flat. How many different sides does a box have?*
- *Imagine a box that can hold 12 bottles. Which part of the net have you drawn? Now draw the other sides of the box to complete your net.*

### Some progress

- **Representing:** Identifies significant parts of the bottle to measure and formulates some of the parts of a box design e.g. plan and side view
- **Analysing:** Transfers most of the measurements e.g. to top and side view
- **Interpreting and evaluating:** Visualises the box from the top and side.
- **Communicating and reflecting:** Diagram drawn and labelled but it is not a complete net.

*Sample response: Jemma*

From the measurements of the top view and the side view, we can see that Jemma has correctly measured the diagram of the bottle. She does not attempt to draw a net.



Jemma would benefit from unfolding a box so that she can see that the net of a box consists of six rectangles.

*Questions for Jemma:*

Jemma could be encouraged to improve her response by asking the following questions

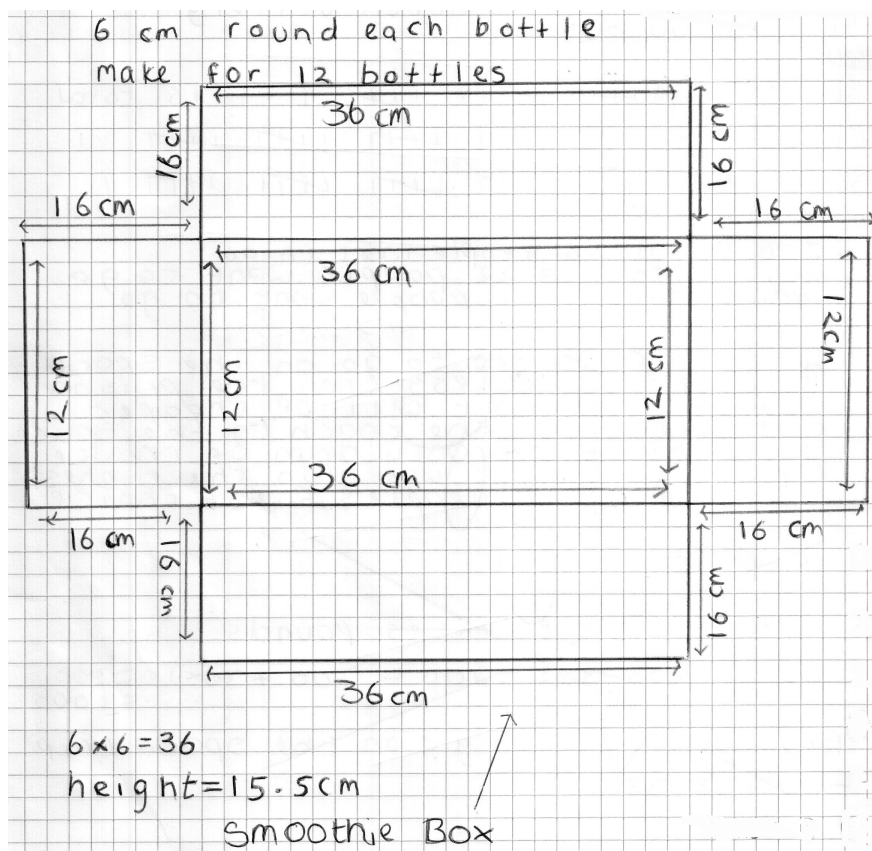
- Imagine a box with the top view and side view you have drawn. How many more sides do you need to draw to complete the net?
- How many **different** sides does a box have?

### Substantial progress

- **Representing:** Identifies the significant parts of the bottle to measure and formulates a box design that may be missing a lid.
- **Analysing:** Translates the appropriate measurements to the box design. though this may be too small or loose fitting.
- **Interpreting and evaluating:** Box design indicates that this may not have been imagined folded and is missing a component such as a lid.
- **Communicating and reflecting:** The box net is clearly drawn and labelled but may not be complete.

Sample response: Aaron

From Aaron's net of an open box, we can see that he has correctly measured the diagram of the bottle provided. He has arranged the bottles in a 2 by 6 array. However, Aaron's package does not have a top.



Questions for Aaron:

Aaron could be encouraged to improve his response by asking the following probing questions:

- *Imagine your net folded. Which sides are covered?*
- *What should be added to the net to complete it?*
- *What other arrangement of bottles could have been used? Would this use more or less material?*

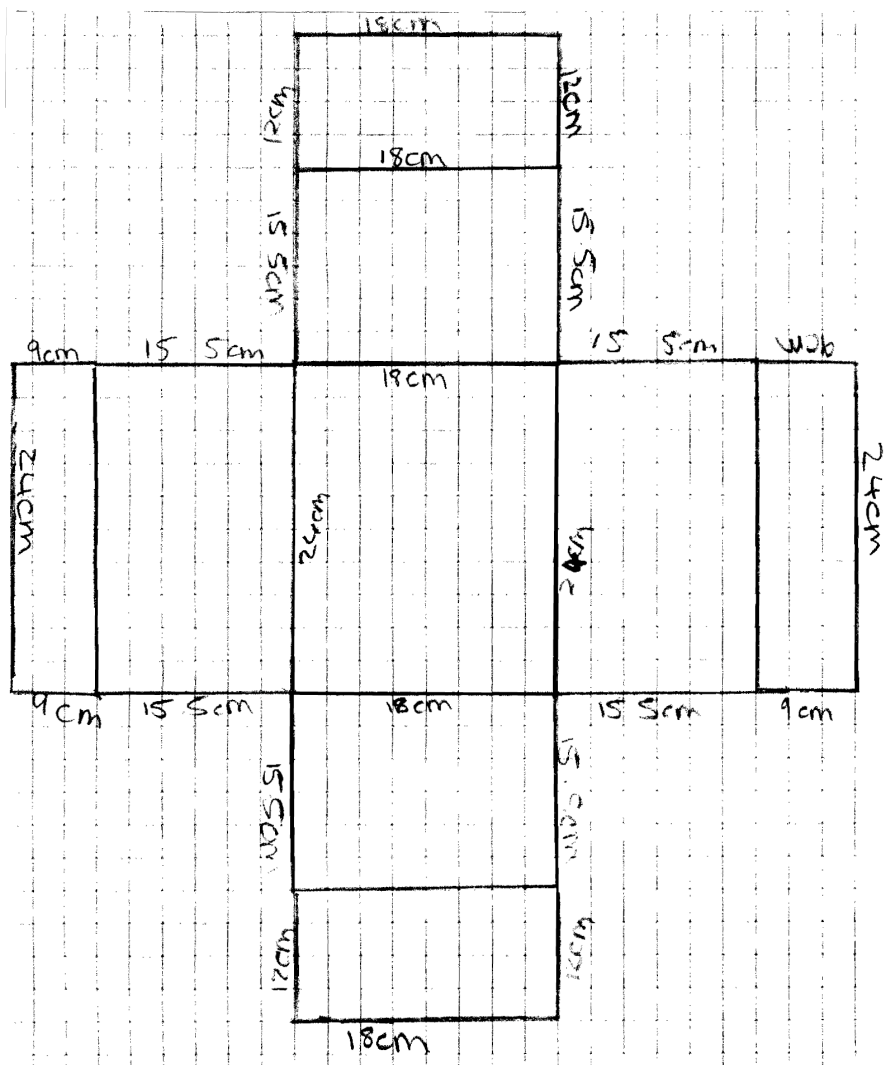
### Task accomplished

- **Representing:** Identifies the significant parts of the bottle to measure and formulates a suitable net for the box.
- **Analysing:** Translates the appropriate measurements to the net for the box.
- **Interpreting and evaluating:** After designing the net, imagines this folded
- **Communicating and reflecting:** The box net is complete, clearly drawn and well labelled

Sample response: Billy

From Billy's net of a closed box, we can see that he has correctly measured the diagram of the bottle provided. Billy's closed box has two tops; one overlaps the other. He has arranged the bottles in a 3 by 4 array.

His diagram clearly shows the dimensions of his net.



Questions for Billy:

Billy could be encouraged to improve his response by asking the following questions:

- *Imagining all the sides folded together, are all sides covered?*
- *If you were to give the net flaps to enable it to be glued together, where would you place them?*
- *Would more or less material be needed for an array of 2 by 6 bottles?*