



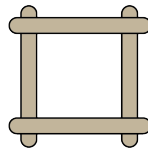
Problem of the Week

Problem A

Crafty Construction

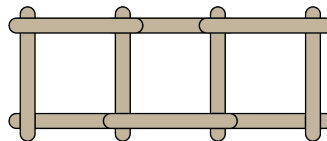
Sam is making square picture frames using popsicle sticks. He has one box of 50 popsicle sticks and wants to make 13 frames.

- (a) Sam plans to make individual frames using four popsicle sticks as shown.



Will he have enough popsicle sticks to make 13 frames? Justify your answer.

- (b) Sam changes his mind and instead of individual frames, he decides to connect the frames in a row. He starts by making a frame using four popsicle sticks, and then uses three popsicle sticks to create another frame attached to this frame. He then uses three more popsicle sticks to create another frame attached to the first two frames, so he has three connected frames, as shown.



Sam plans to continue this process, using three more popsicle sticks for each frame, until he has 13 frames connected in a row. Will he have enough popsicle sticks to make 13 frames? Justify your answer.

- (c) Can you draw another layout of the 13 frames that Sam could have built using at most 50 popsicle sticks? How many popsicle sticks does your layout use?
- (d) Can you draw a layout of the 13 frames that uses fewer than 35 popsicle sticks?