

We purchased the LEGO parts on Bricklink.com. If you've never used Bricklink, an easy way to browse for parts is by going to a larger store. Here's a list of stores in the USA.

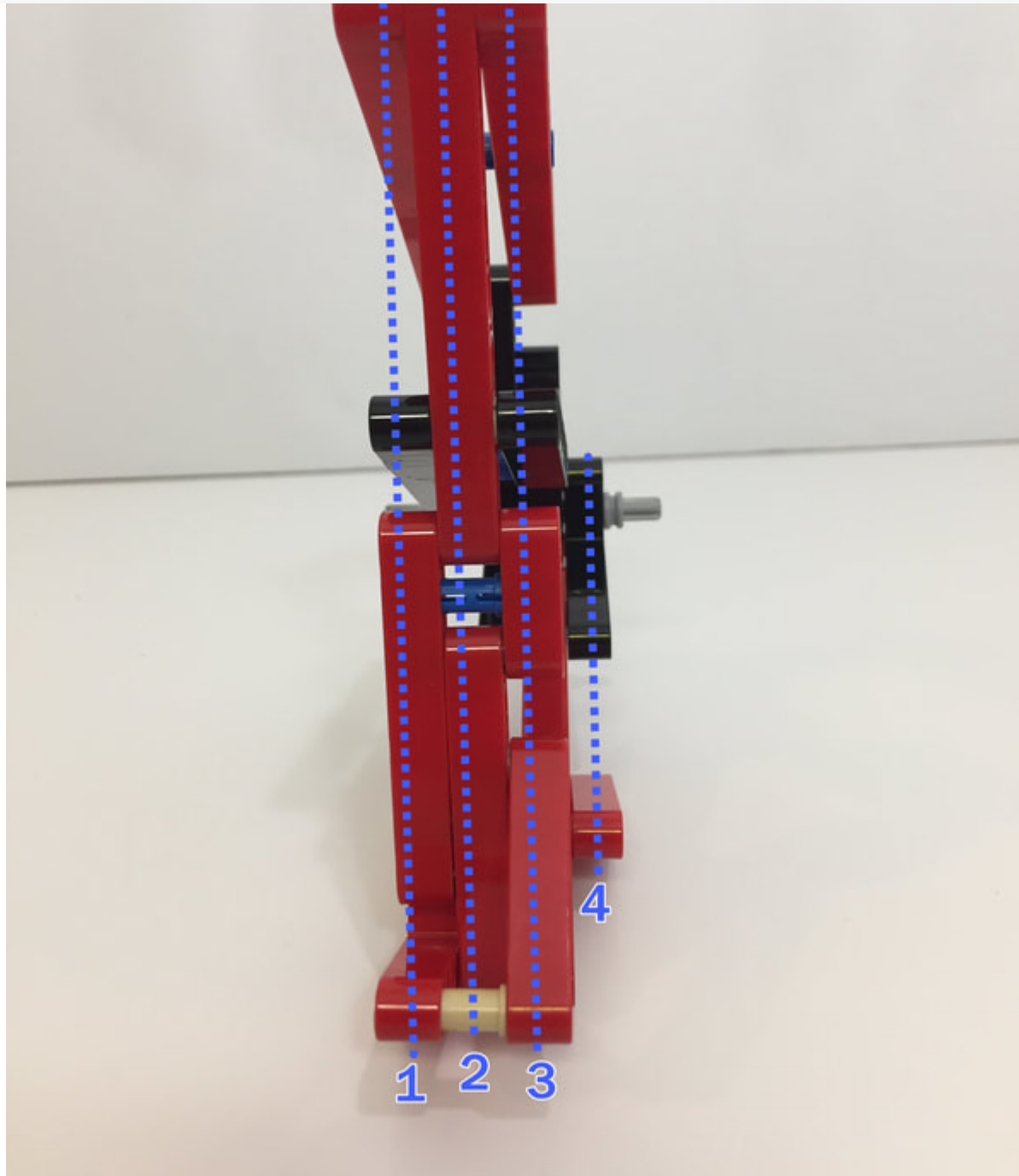
Here are a few more views of how this leg should look when finished:



TrotBot's Leg Mechanism with Retractable Toes



Adding toes smooths TrotBot's gait, allowing 8-legged TrotBots to carry the heavy EV3 brick, or for it to be built in a 6-legged version. Without toes, it has a gait that is too bumpy for the Mindstorms' Brick - bouncing the heavy Brick up and down requires too much



TrotBot vs the Couch



Build Instructions

These instructions build the leg one plane at a time, **starting with Plane 1:**

4 Planes

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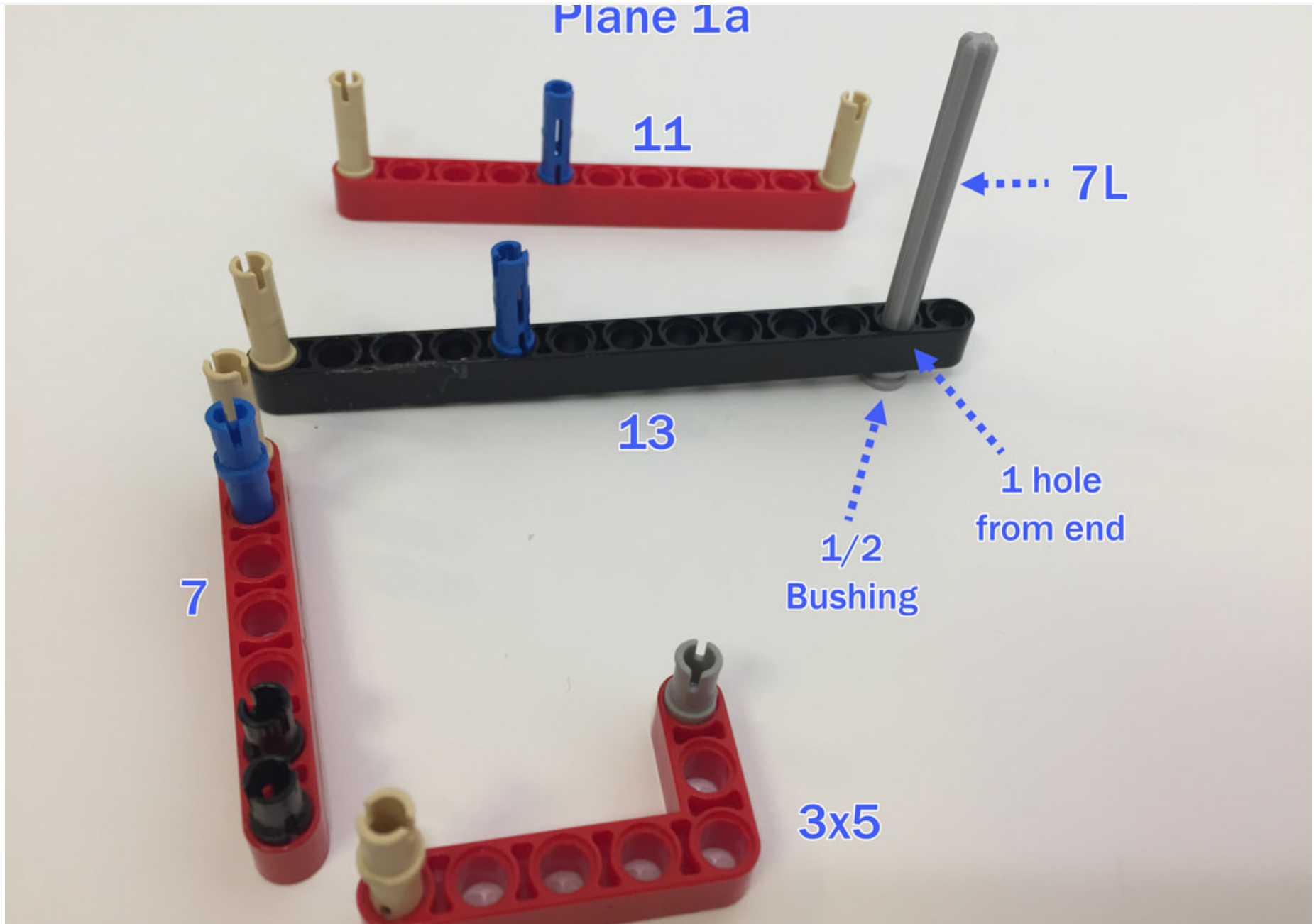
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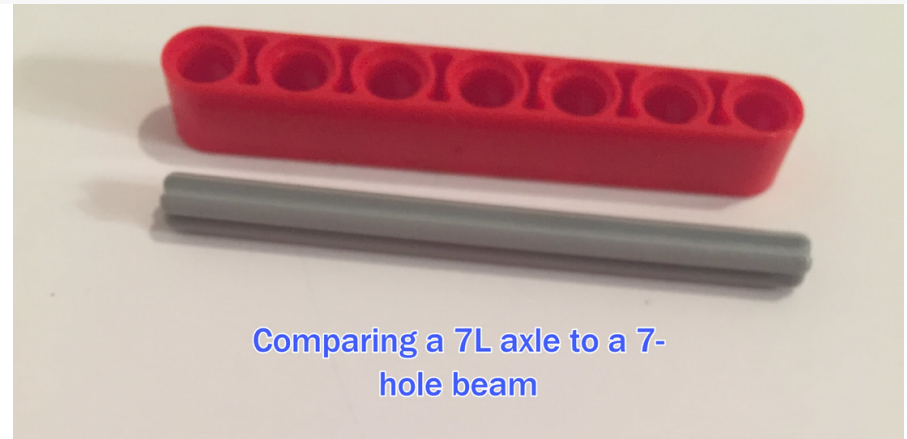
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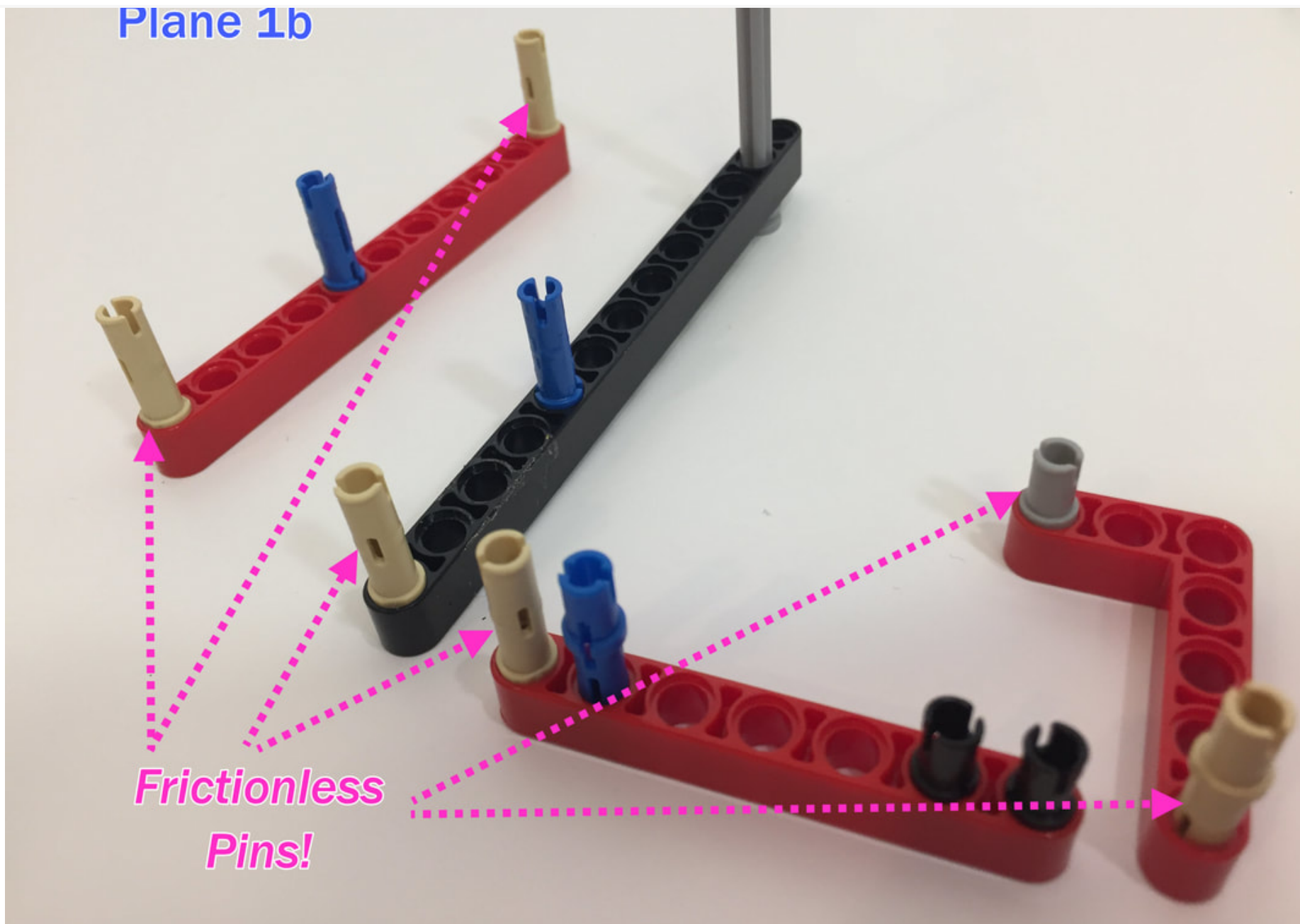
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If you aren't sure which of your axles is a 7L axle, as pictured above, then simply compare it to a beam with 7 holes, as shown to the right.



Plane 1b



Frictionless
Pins!

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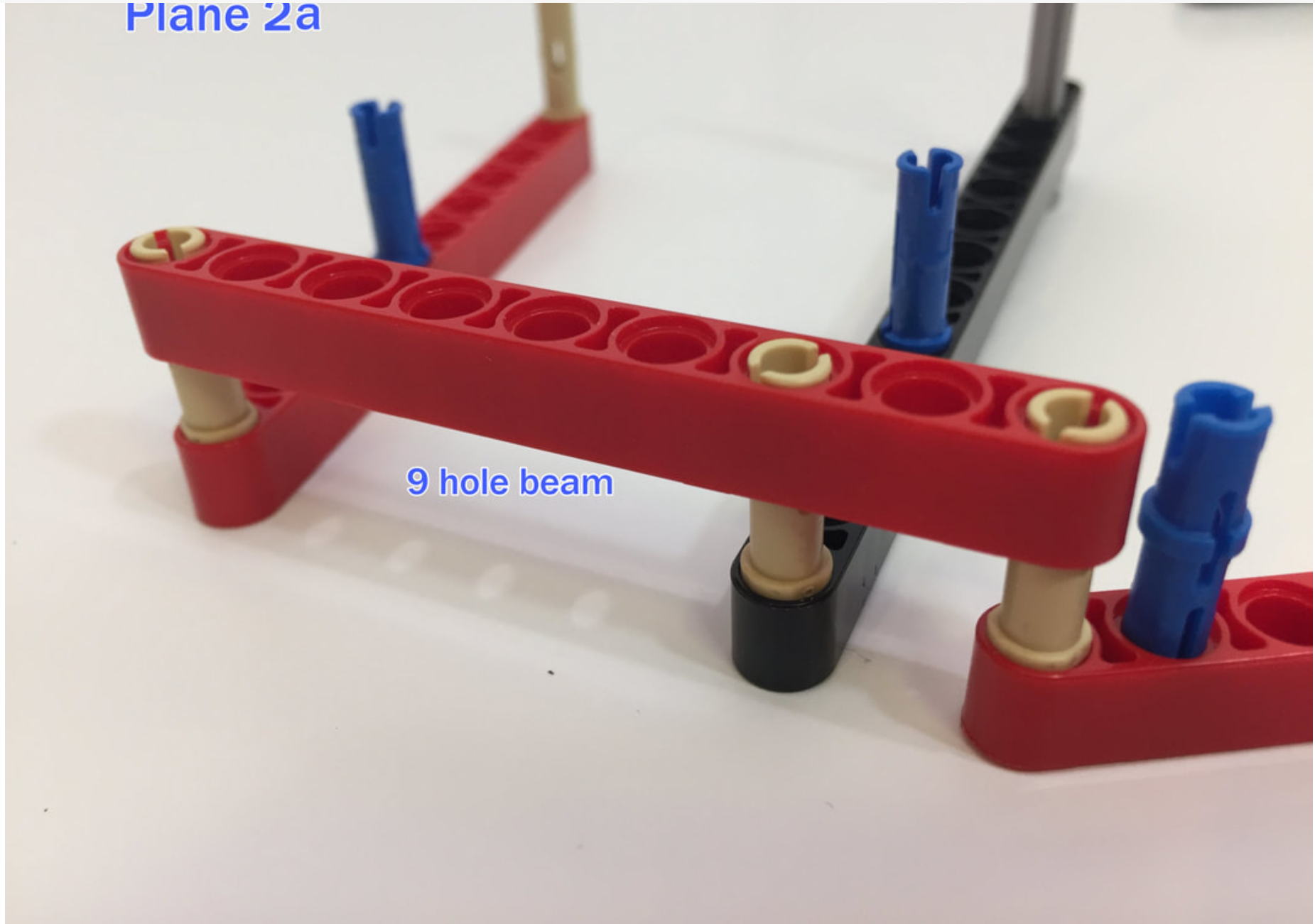
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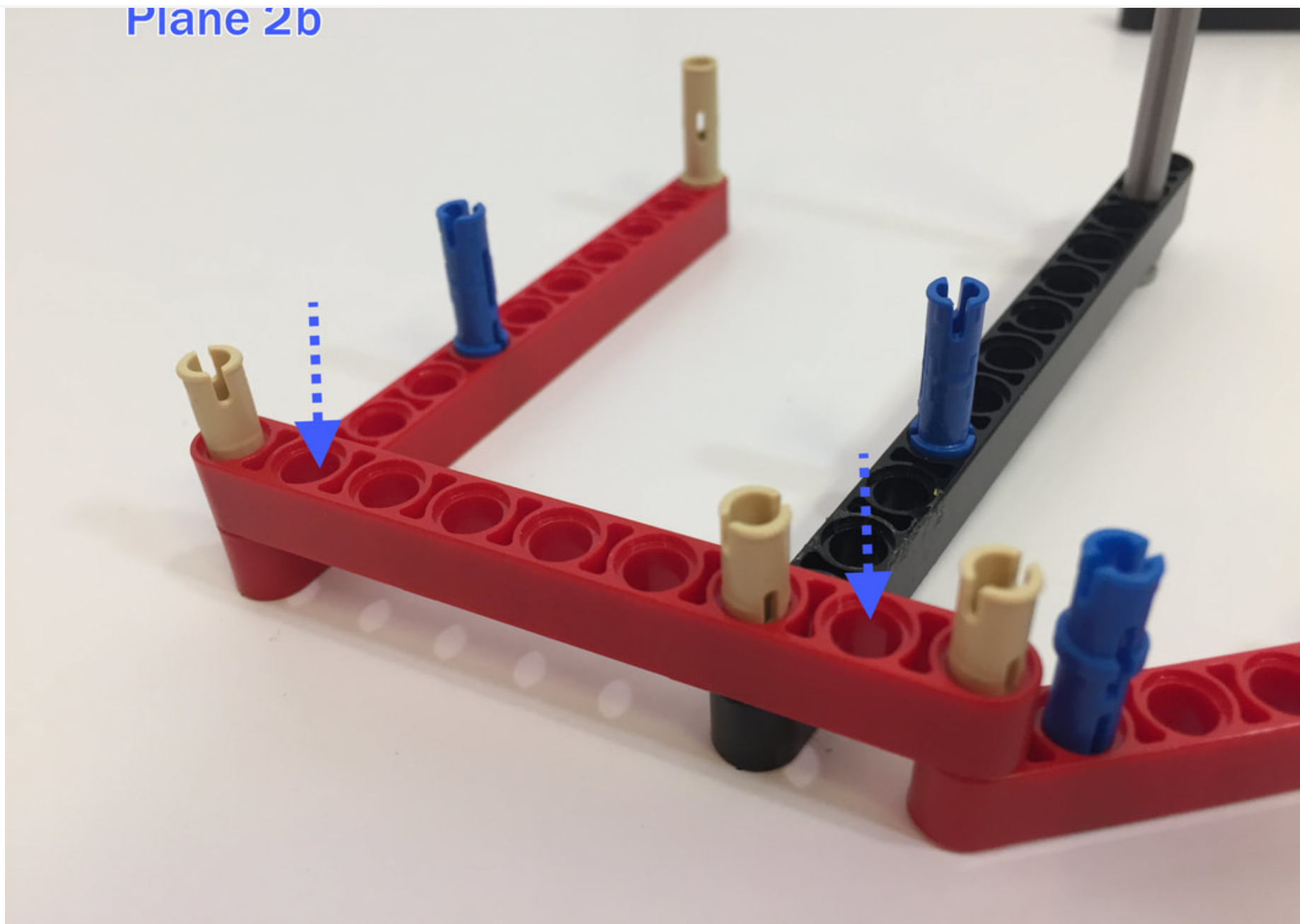
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Plane 2a

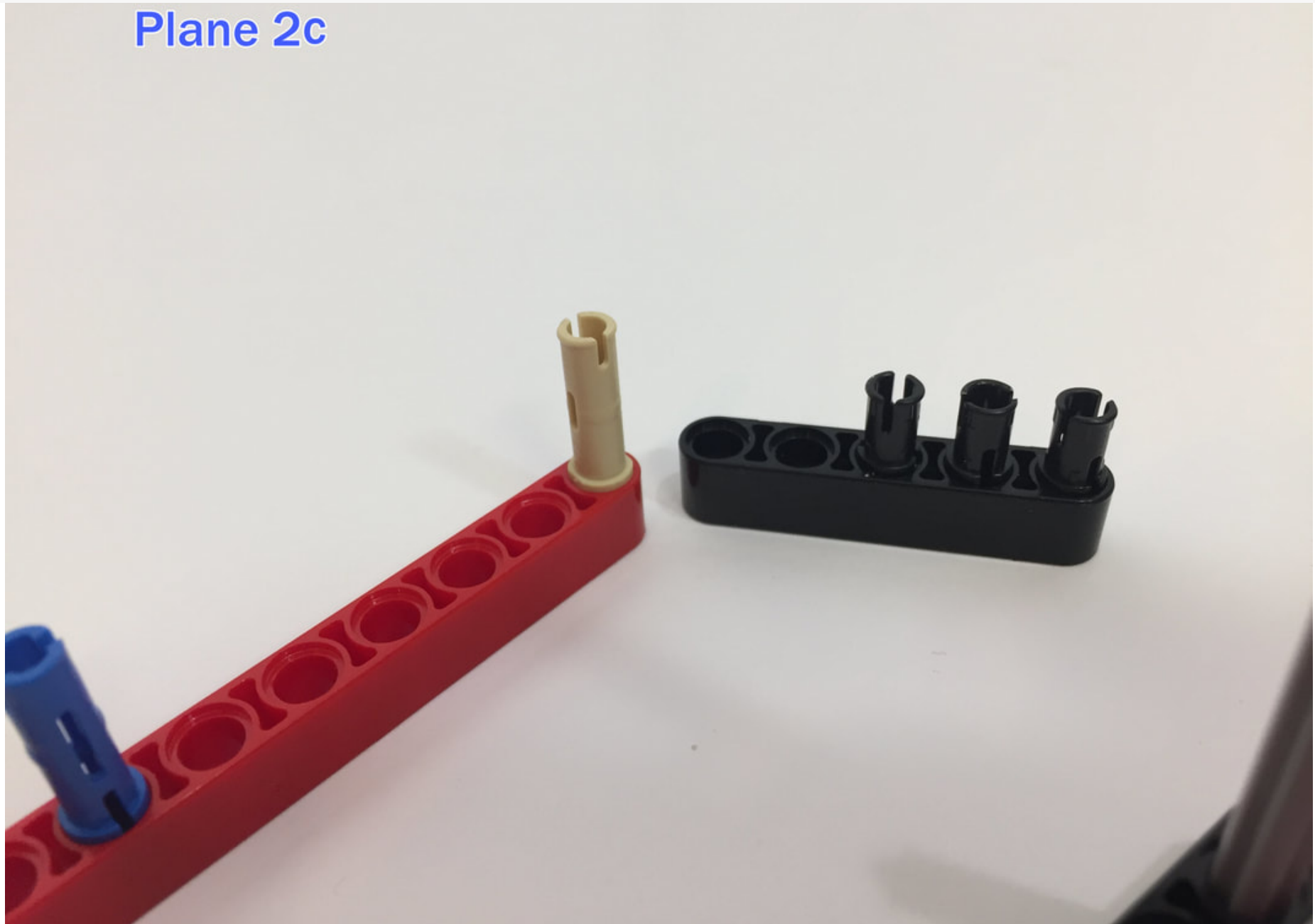


9 hole beam

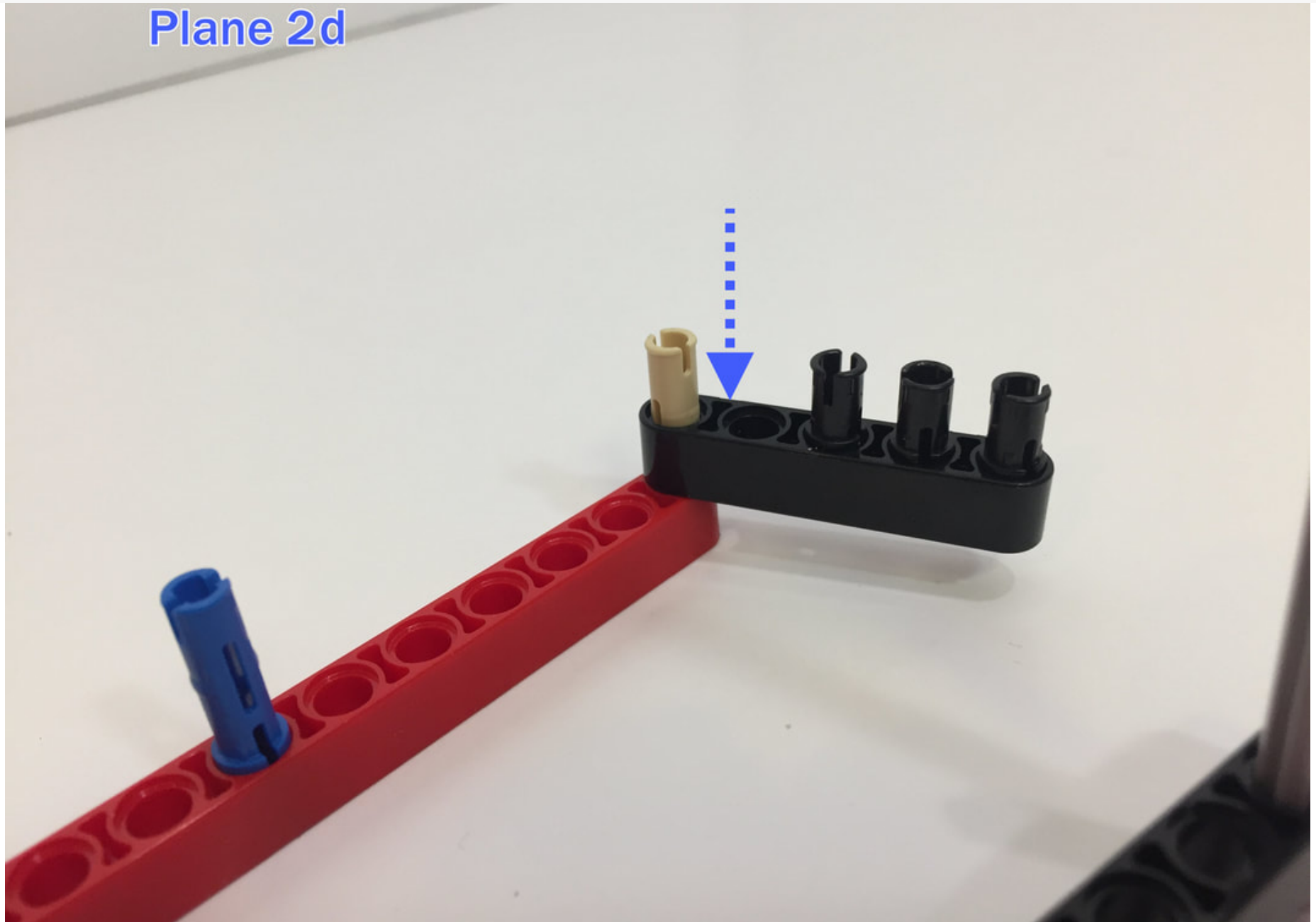
Plane 2b



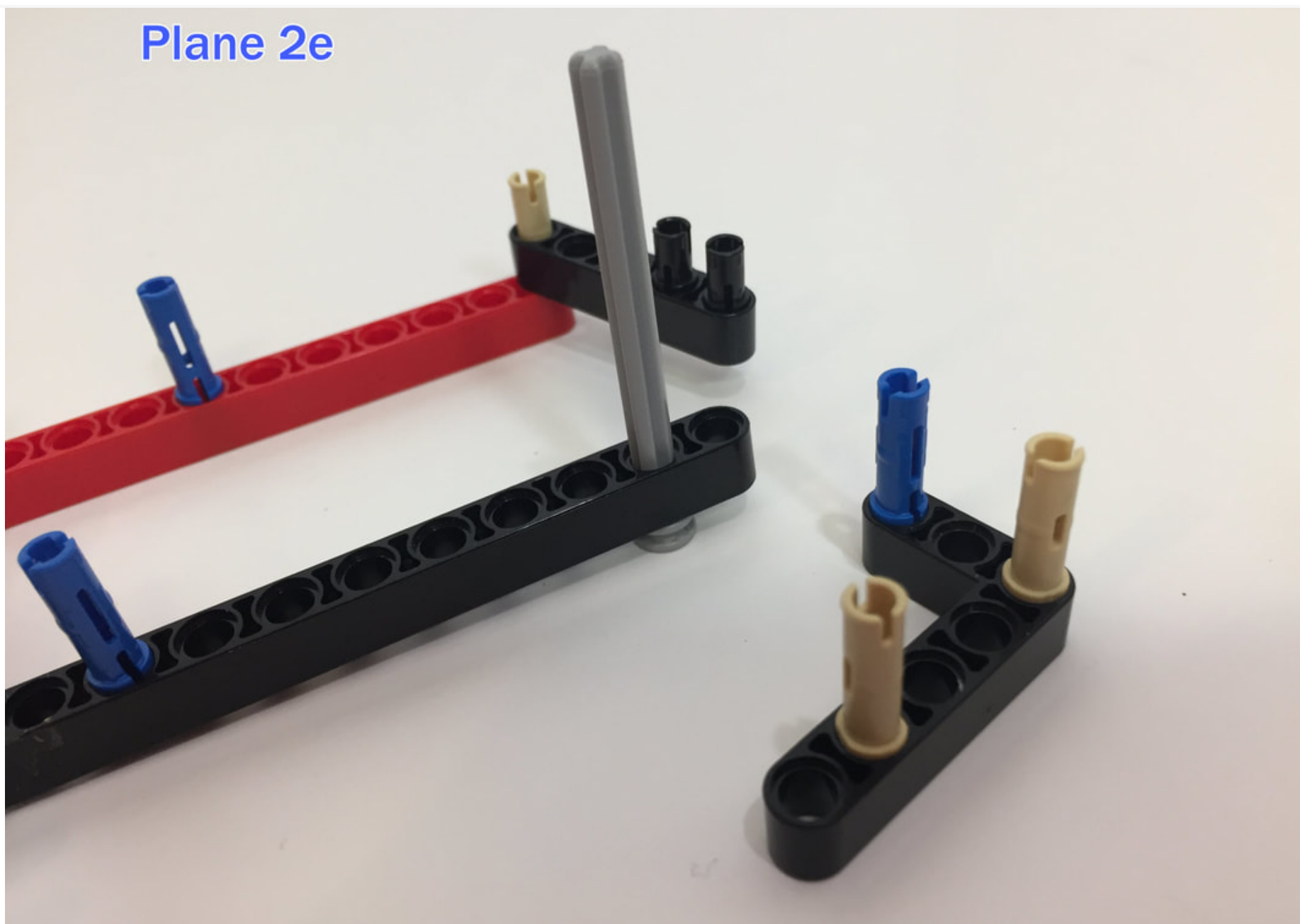
Plane 2c



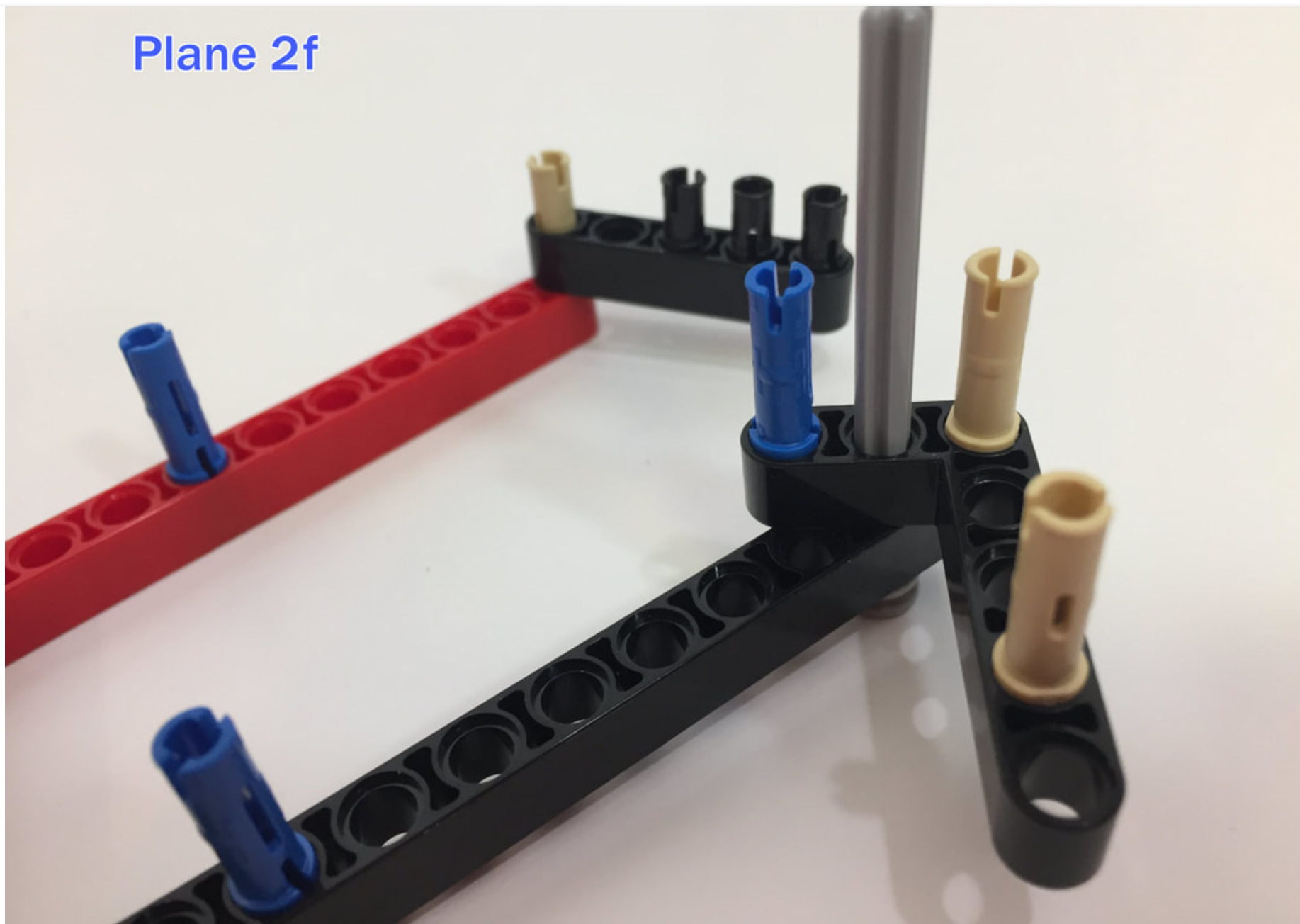
Plane 2d

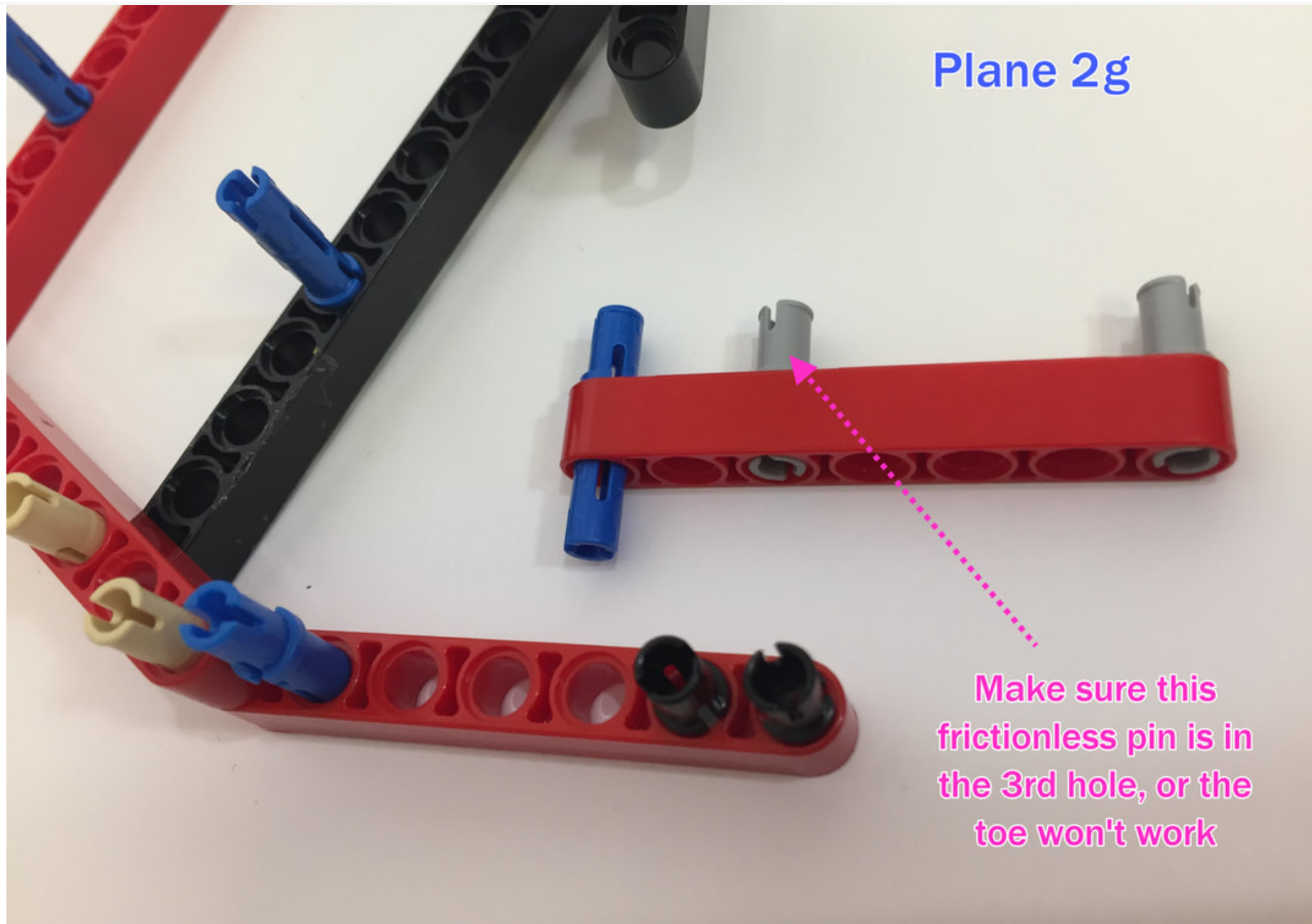


Plane 2e



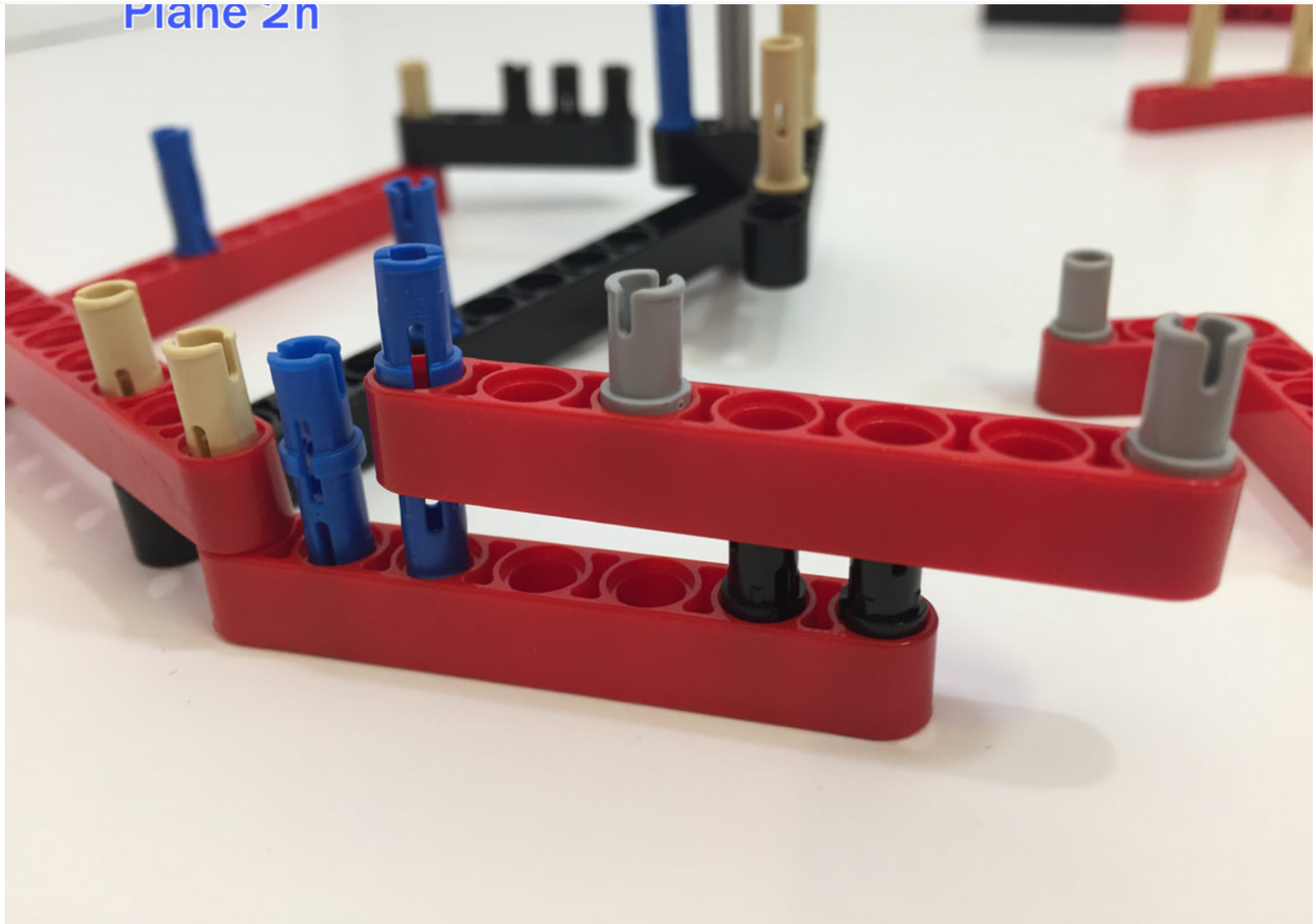
Plane 2f

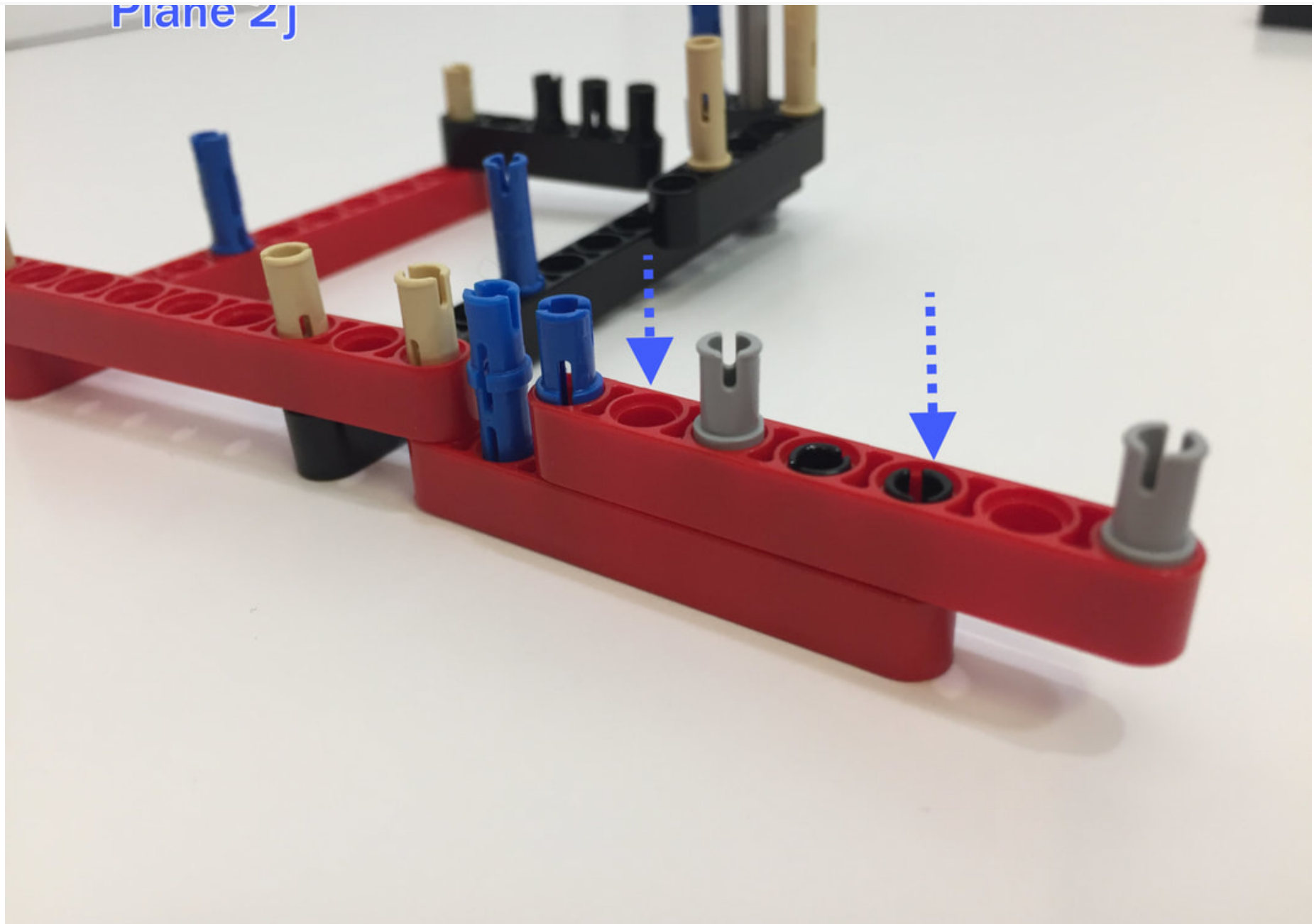




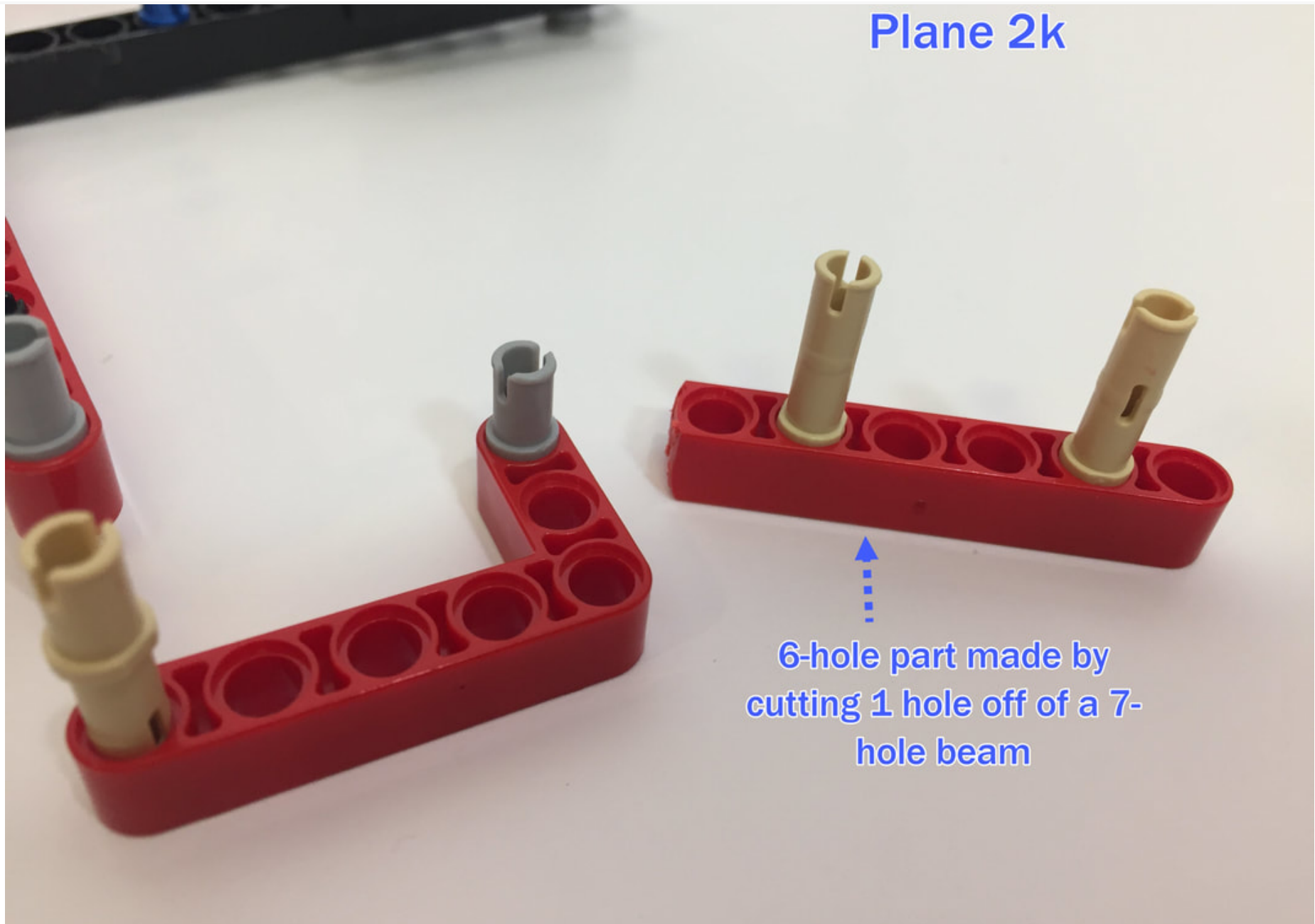
Plane 2g

Make sure this frictionless pin is in the 3rd hole, or the toe won't work

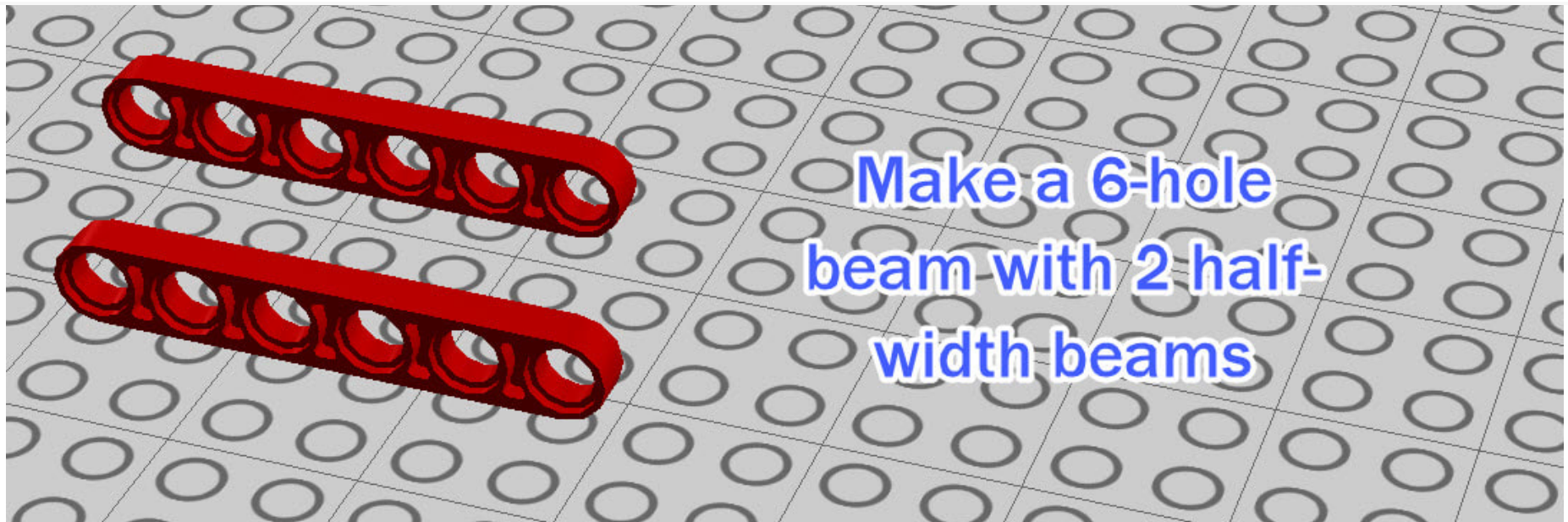




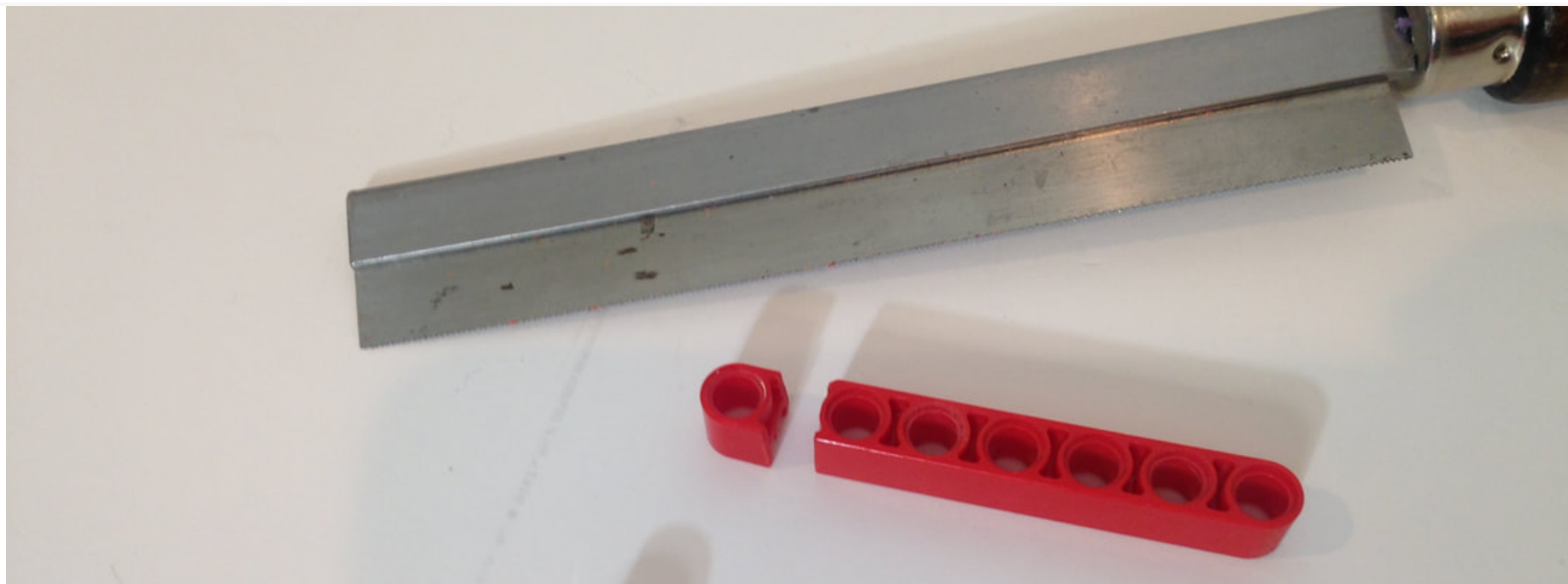
battery box TrotBots are lighter and have enough foot-contact with the ground to walk without toes – like TrotBot Ver 1.



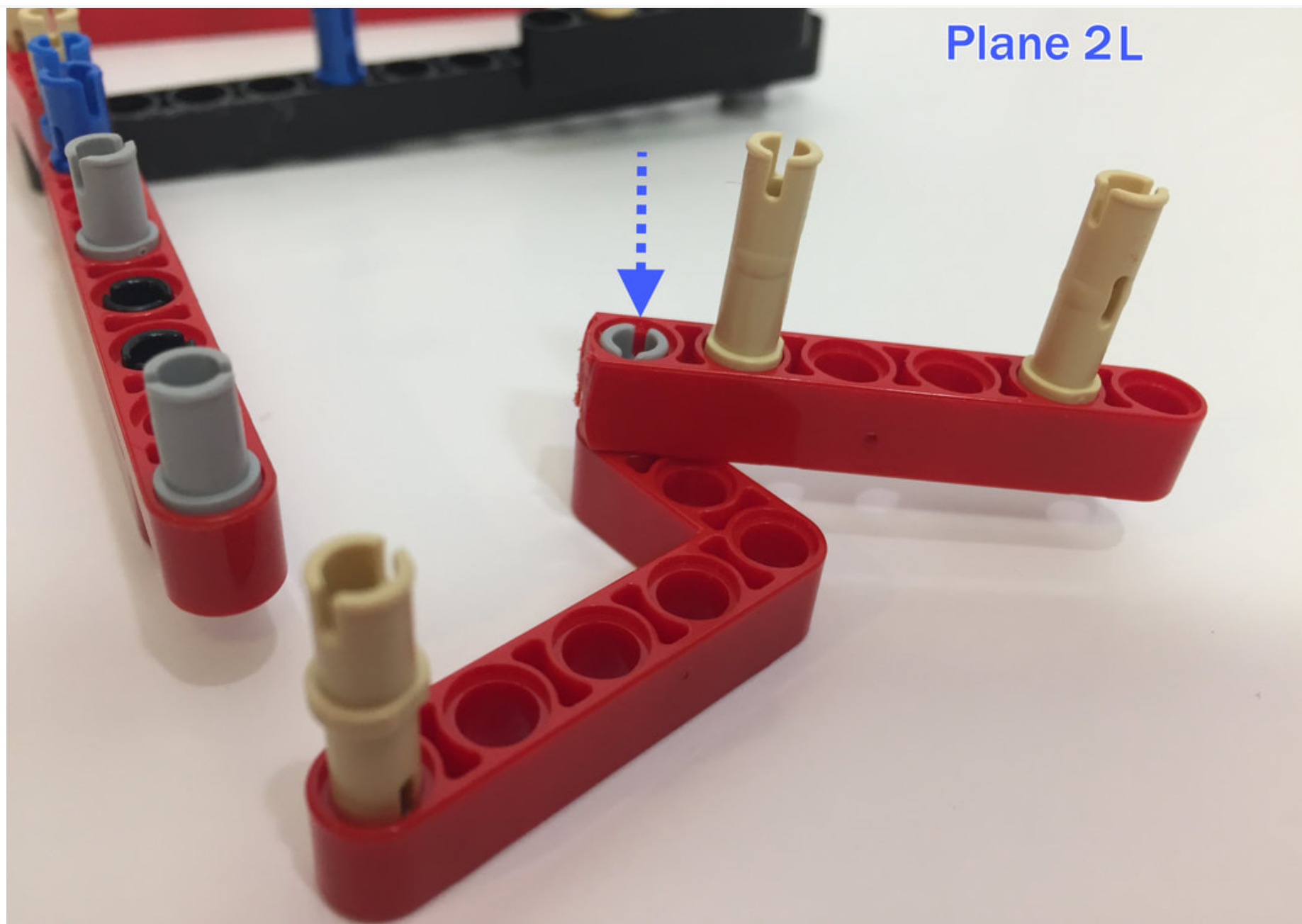
The hobby saw I used to cut this part is shown below

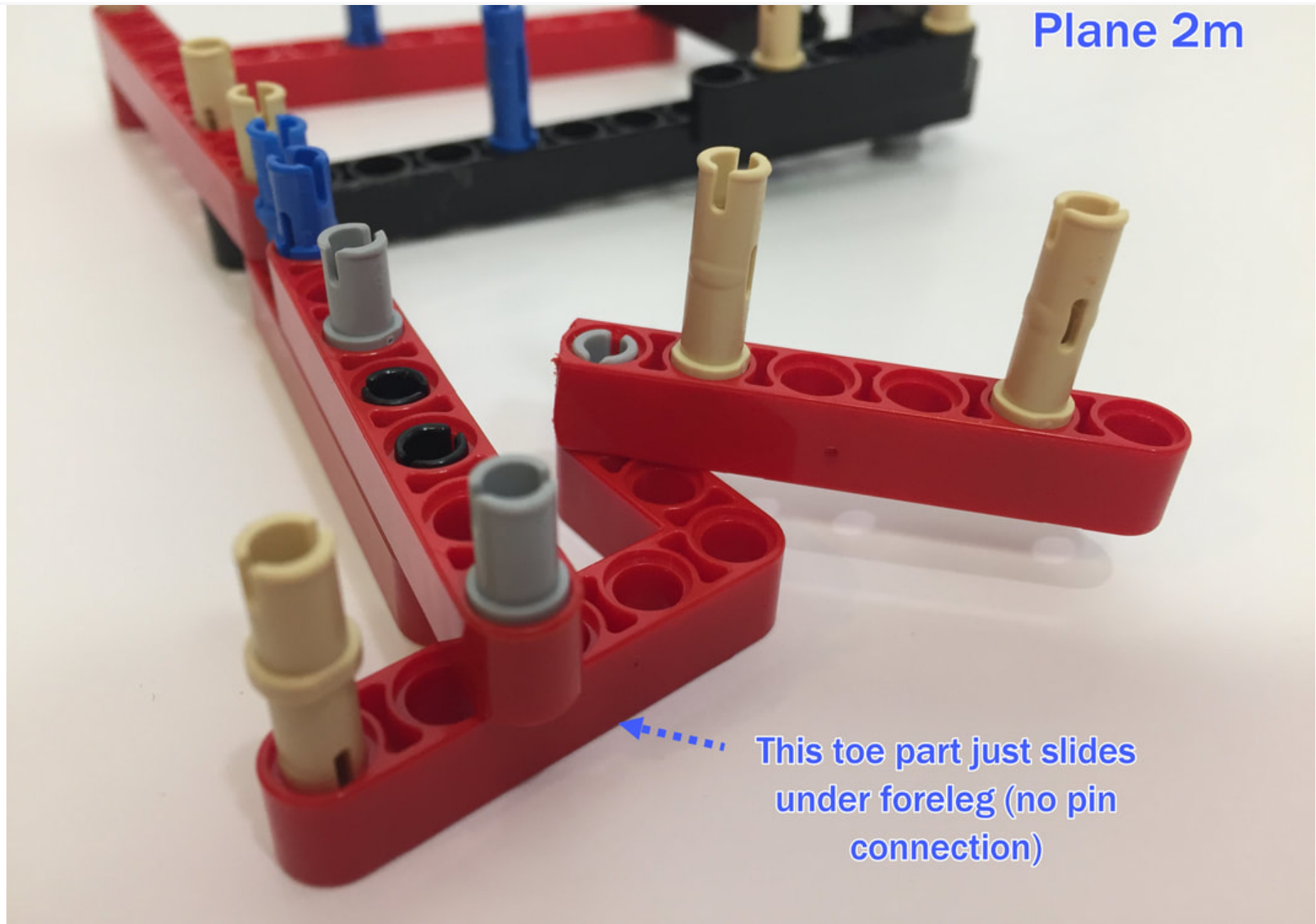


Another option for making a 6-hole beam



Performing a bit of LEGO "surgery" with a hobby saw to make a 6-hole beam. I also lightly filed the cut end to remove plastic debris.





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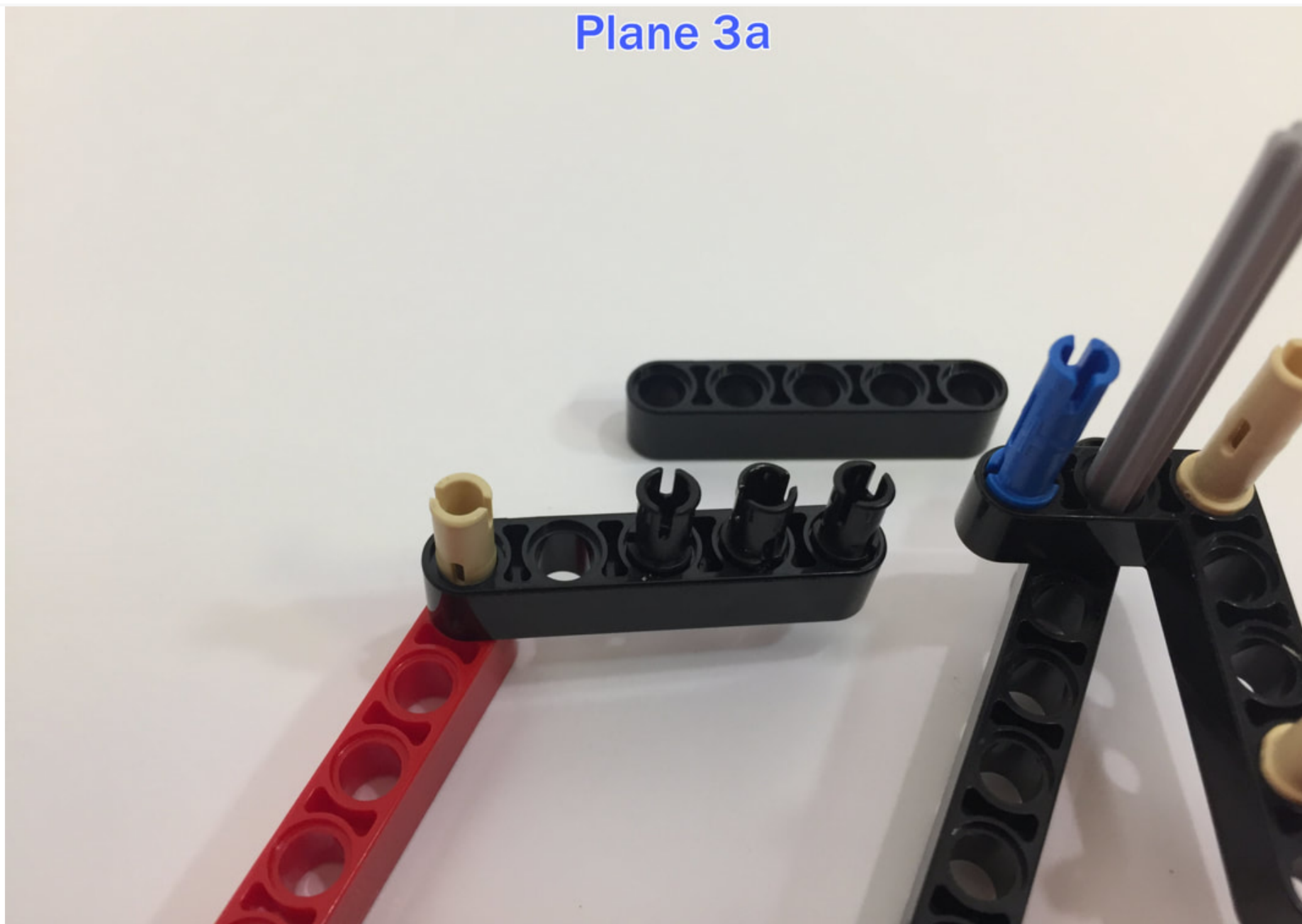
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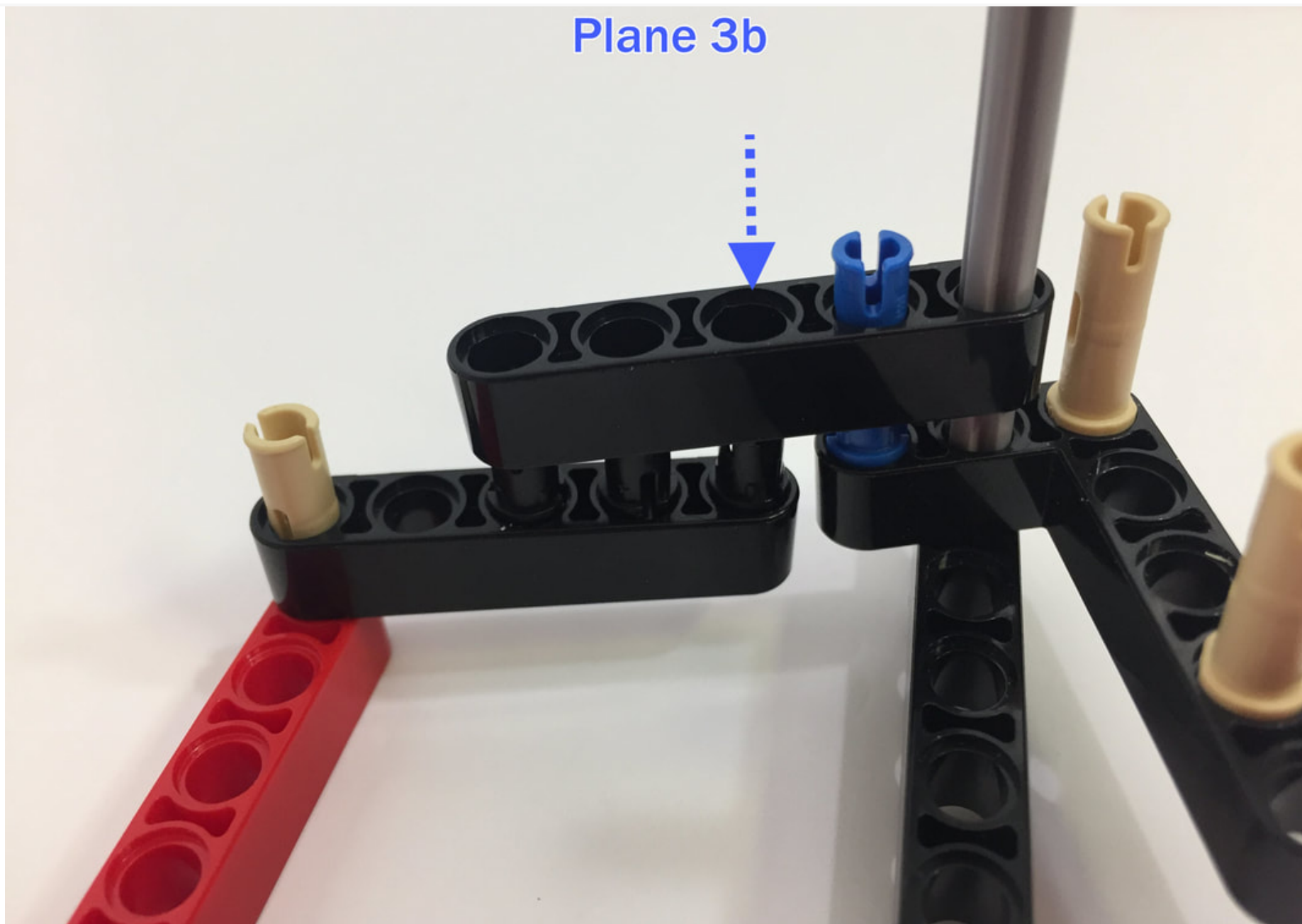
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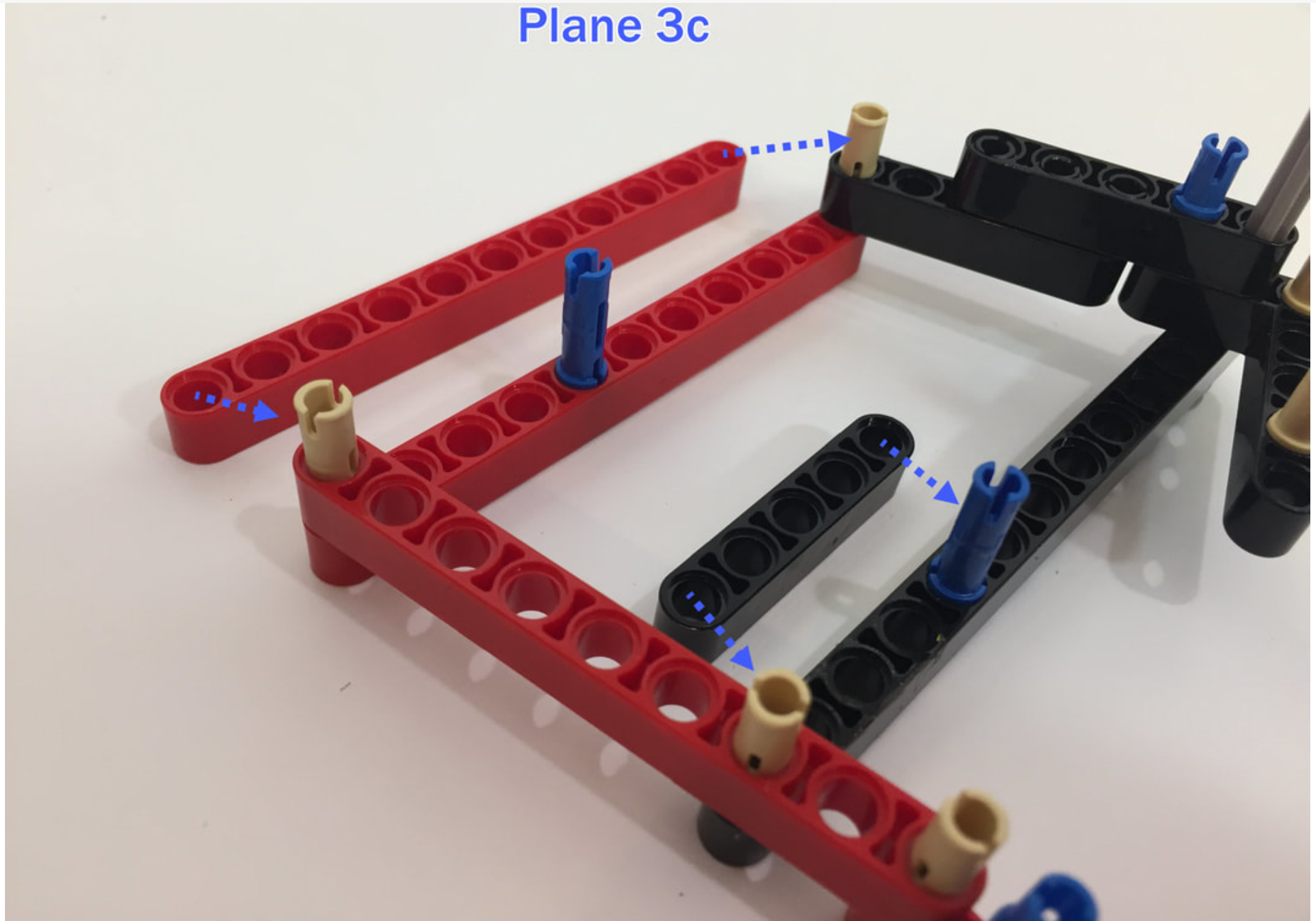
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Plane 3a

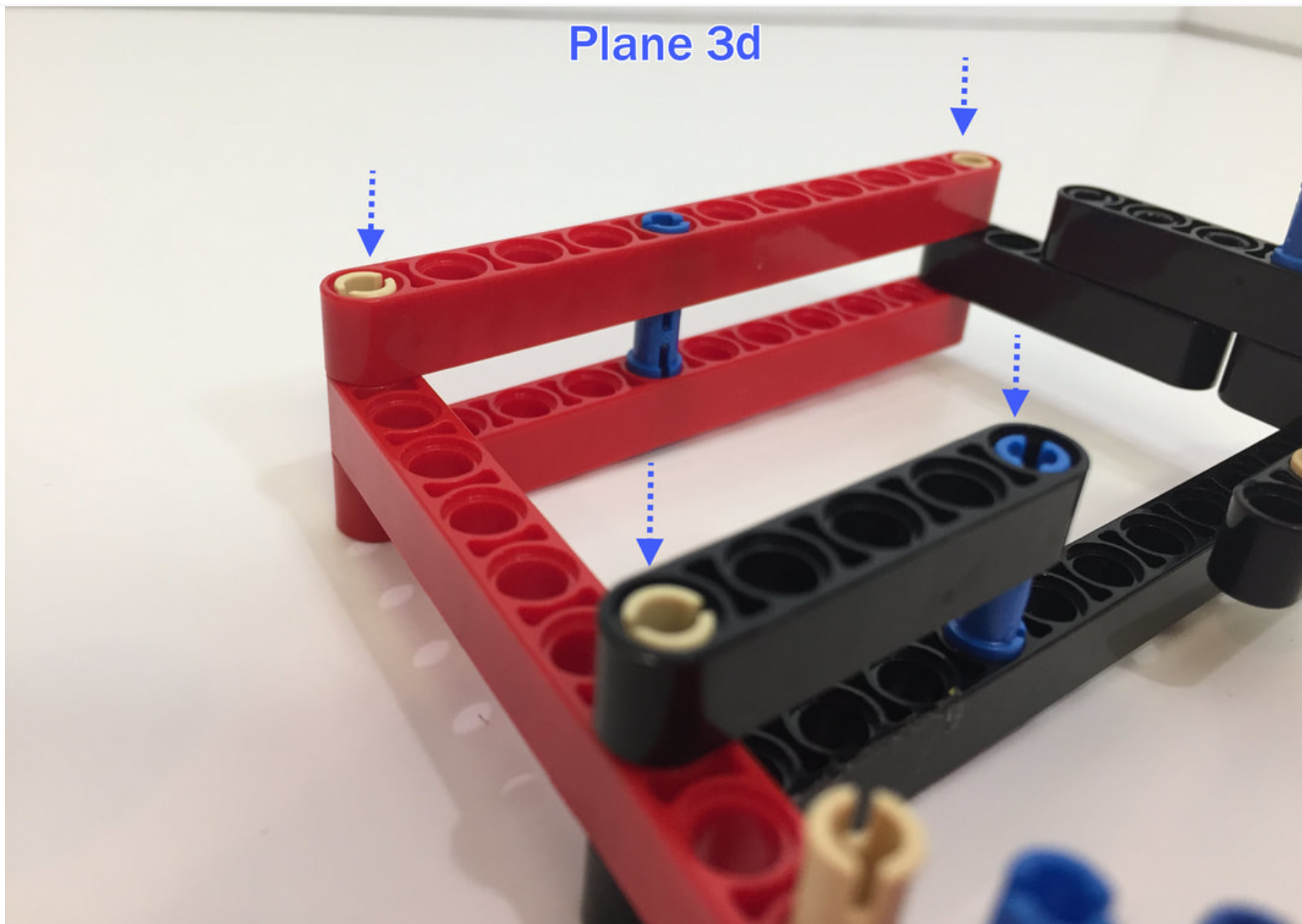




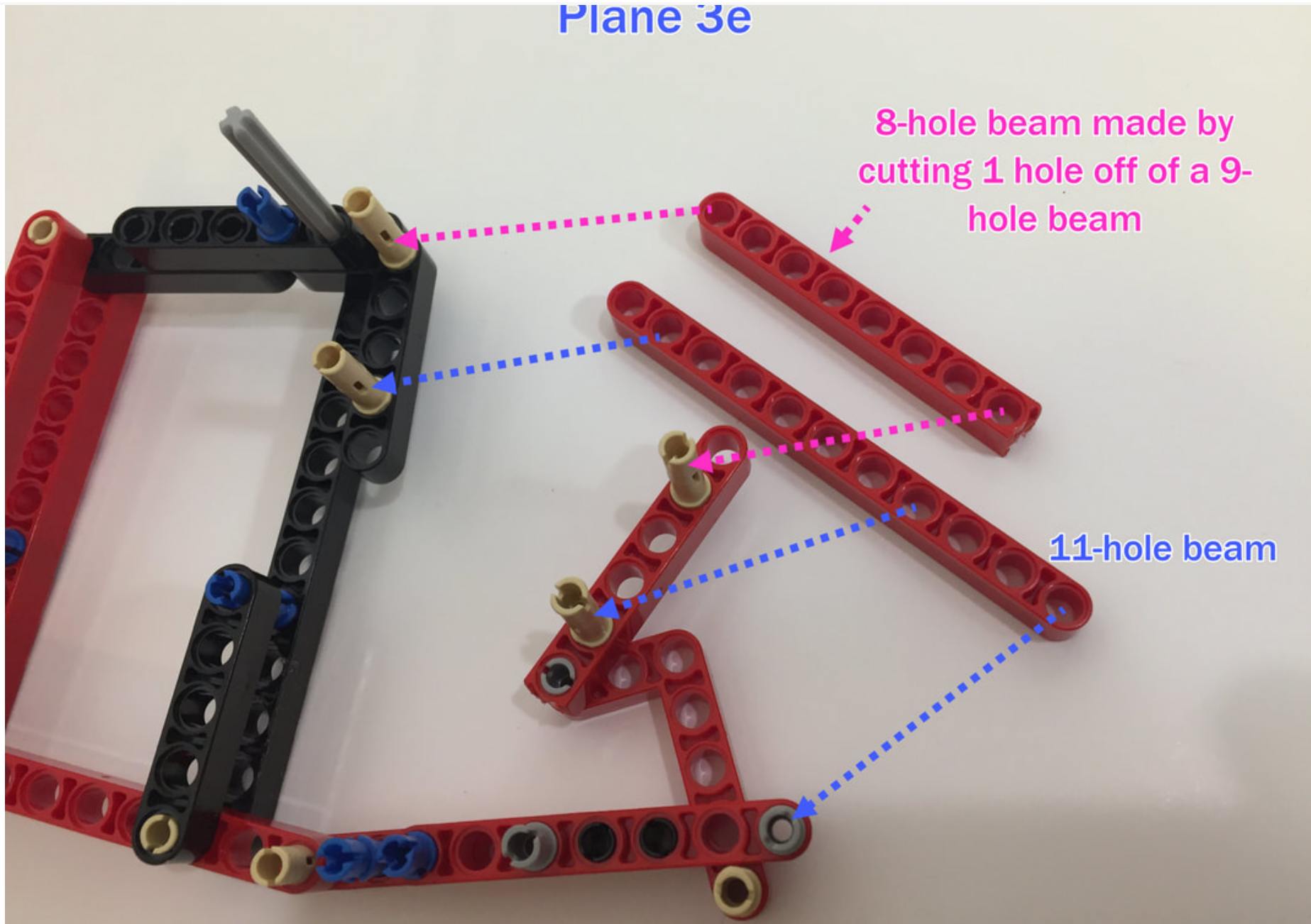
Plane 3c



Plane 3d



Plane 3e



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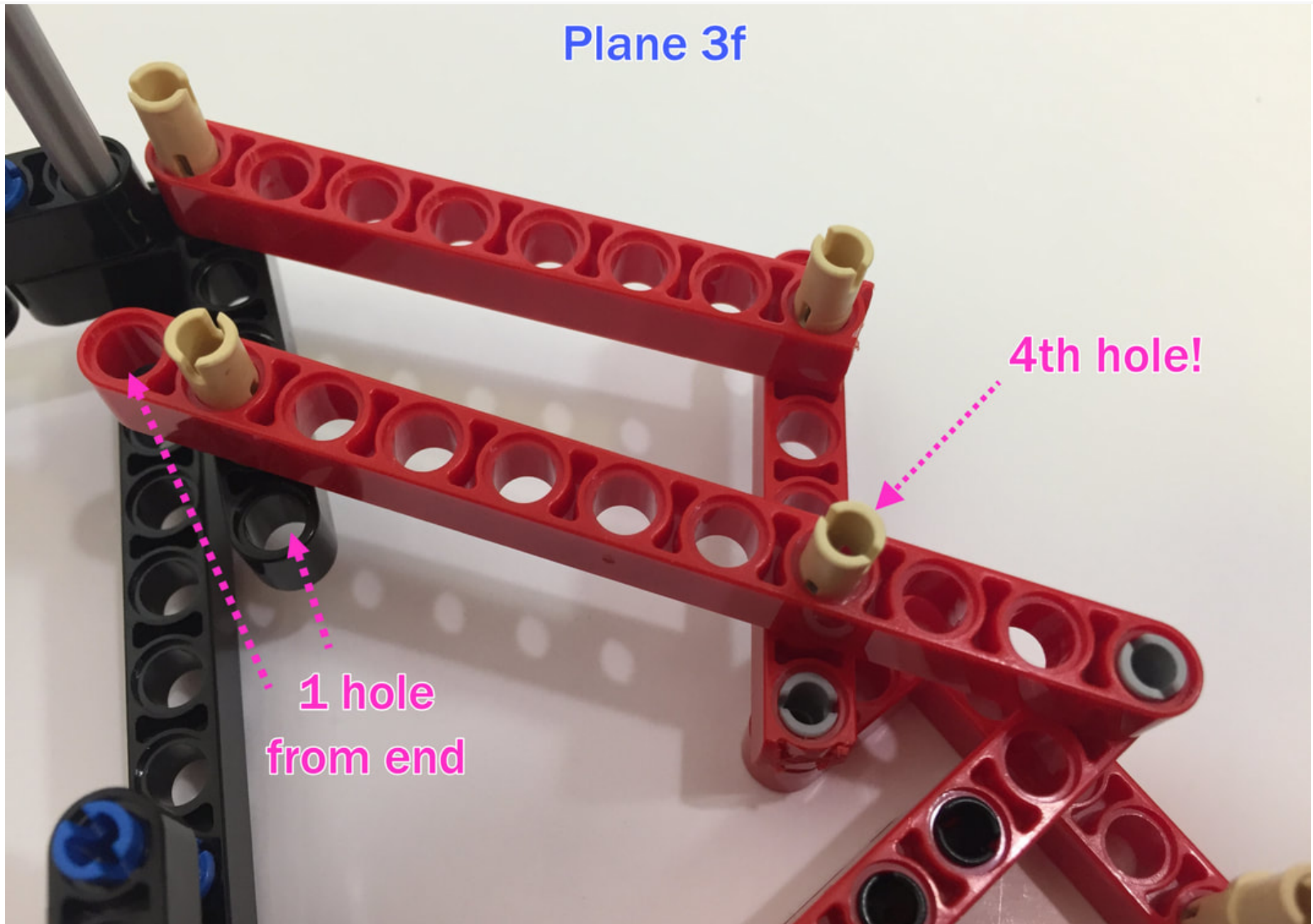
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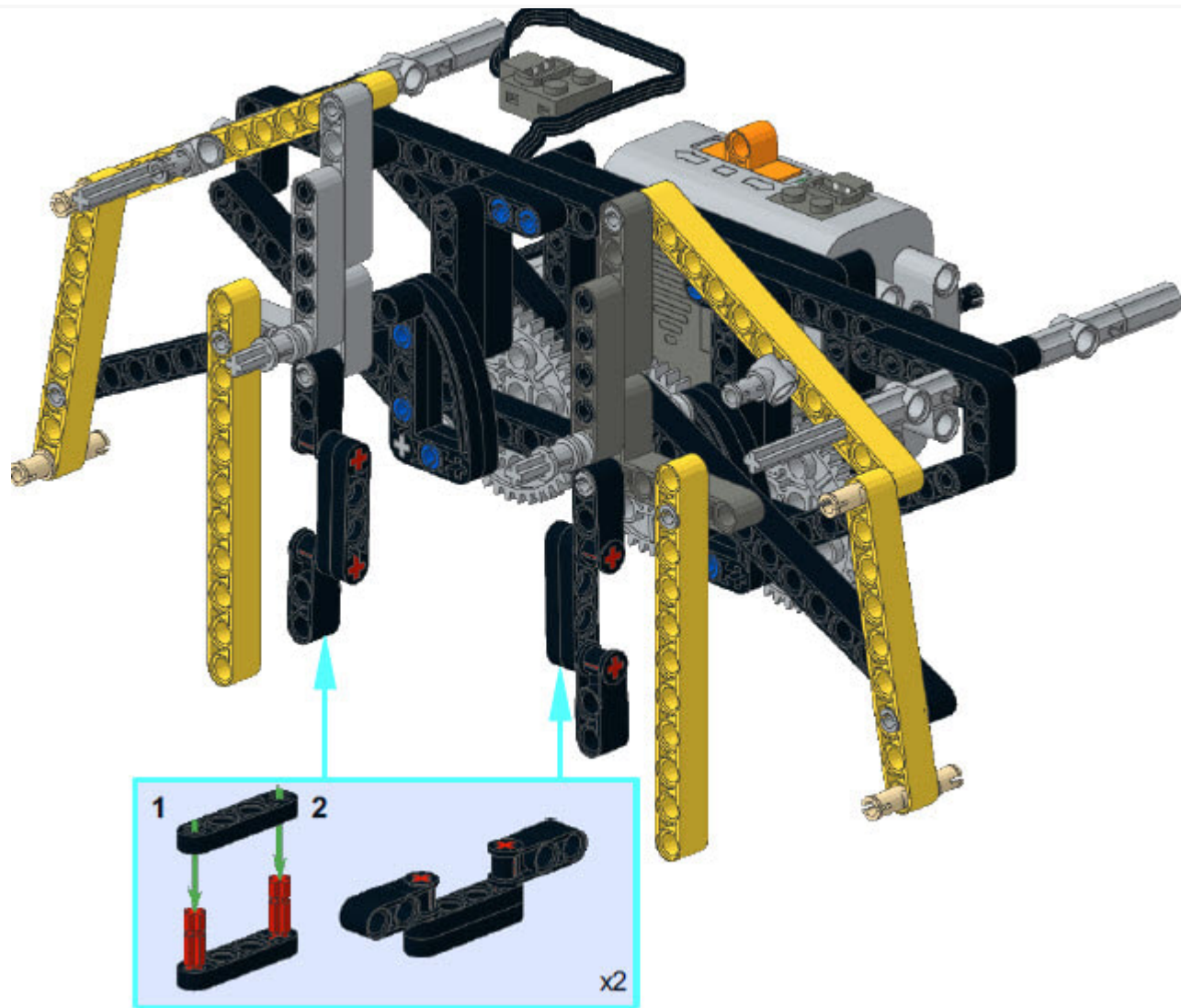
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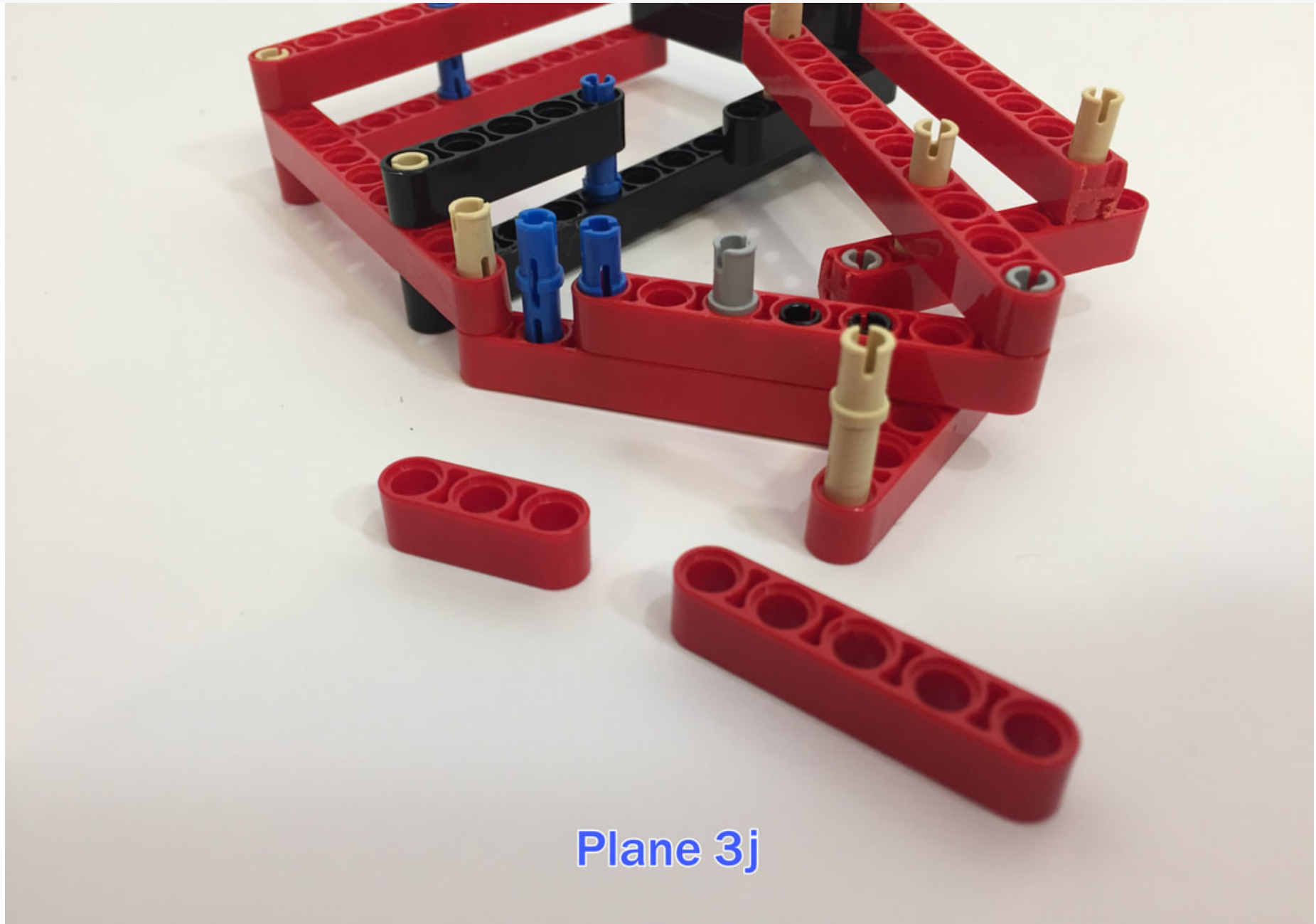
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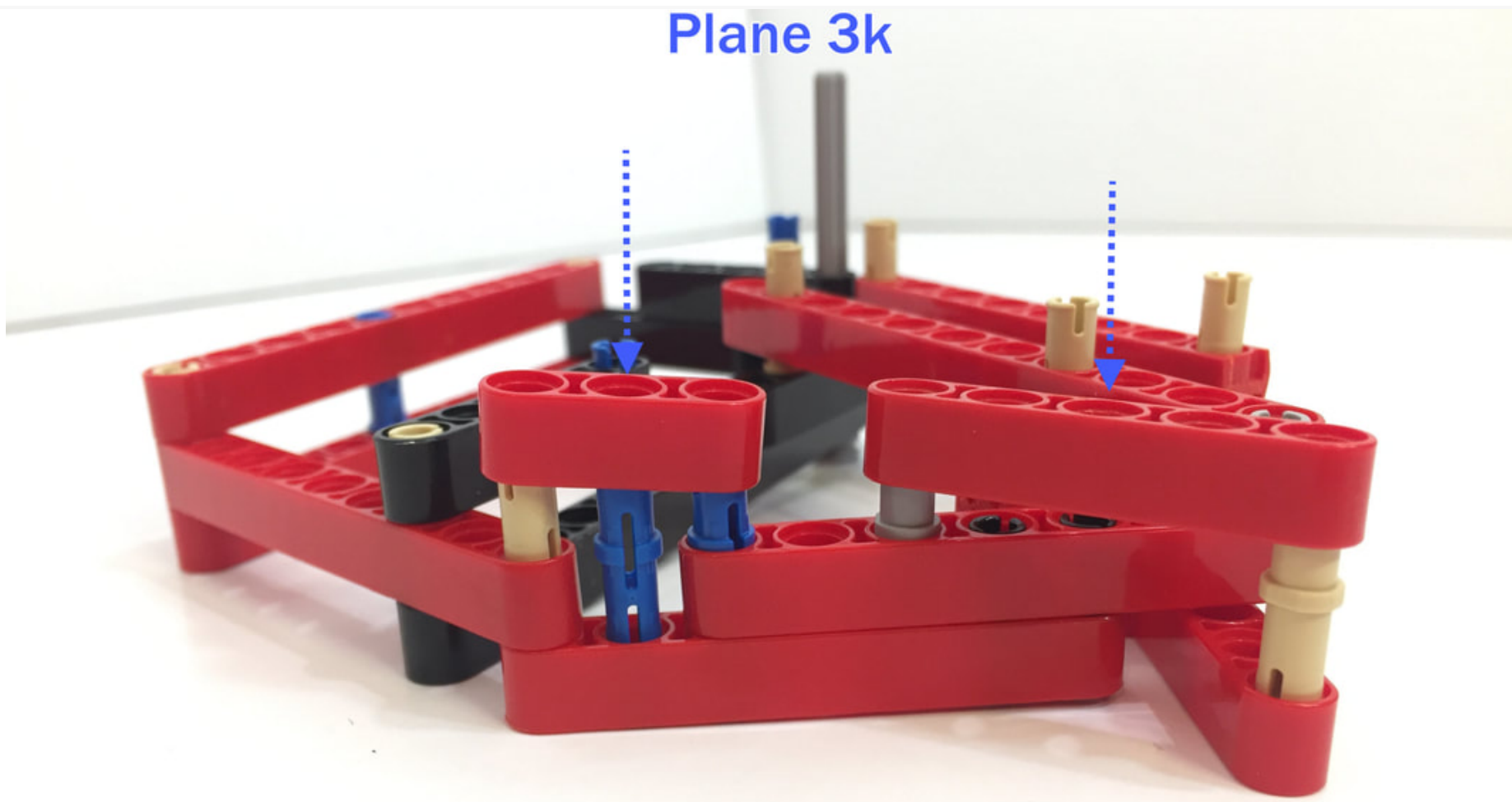
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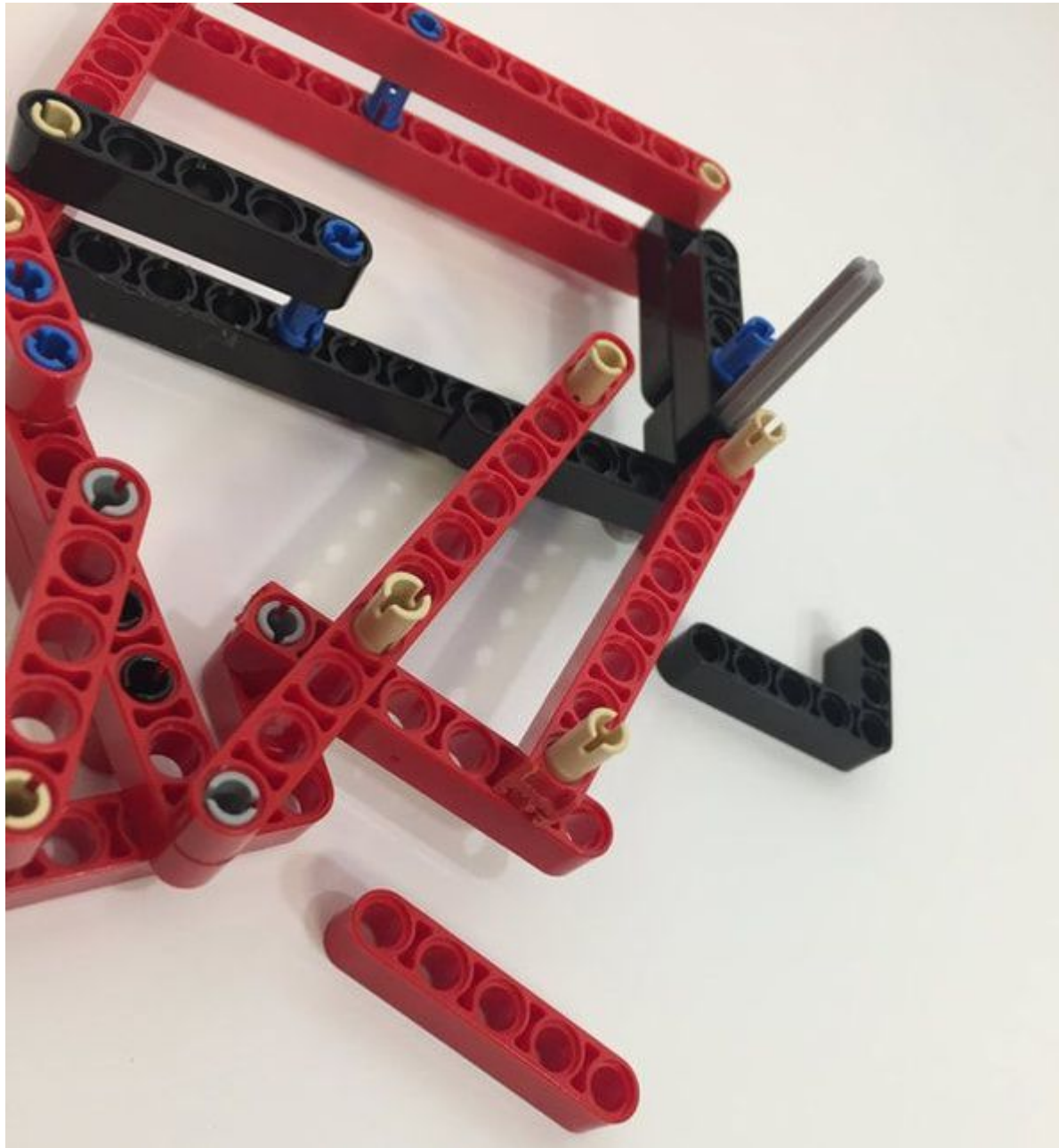


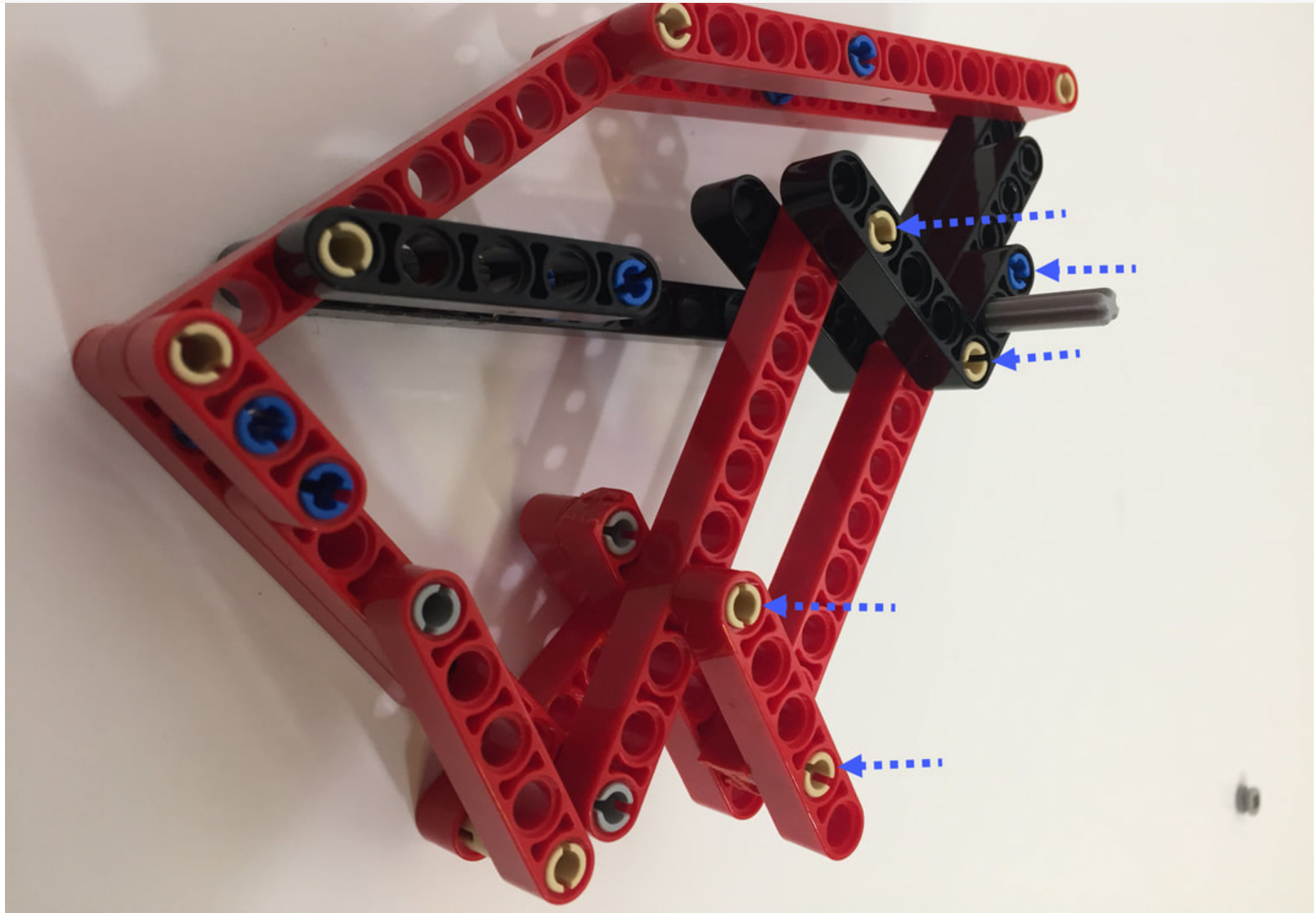


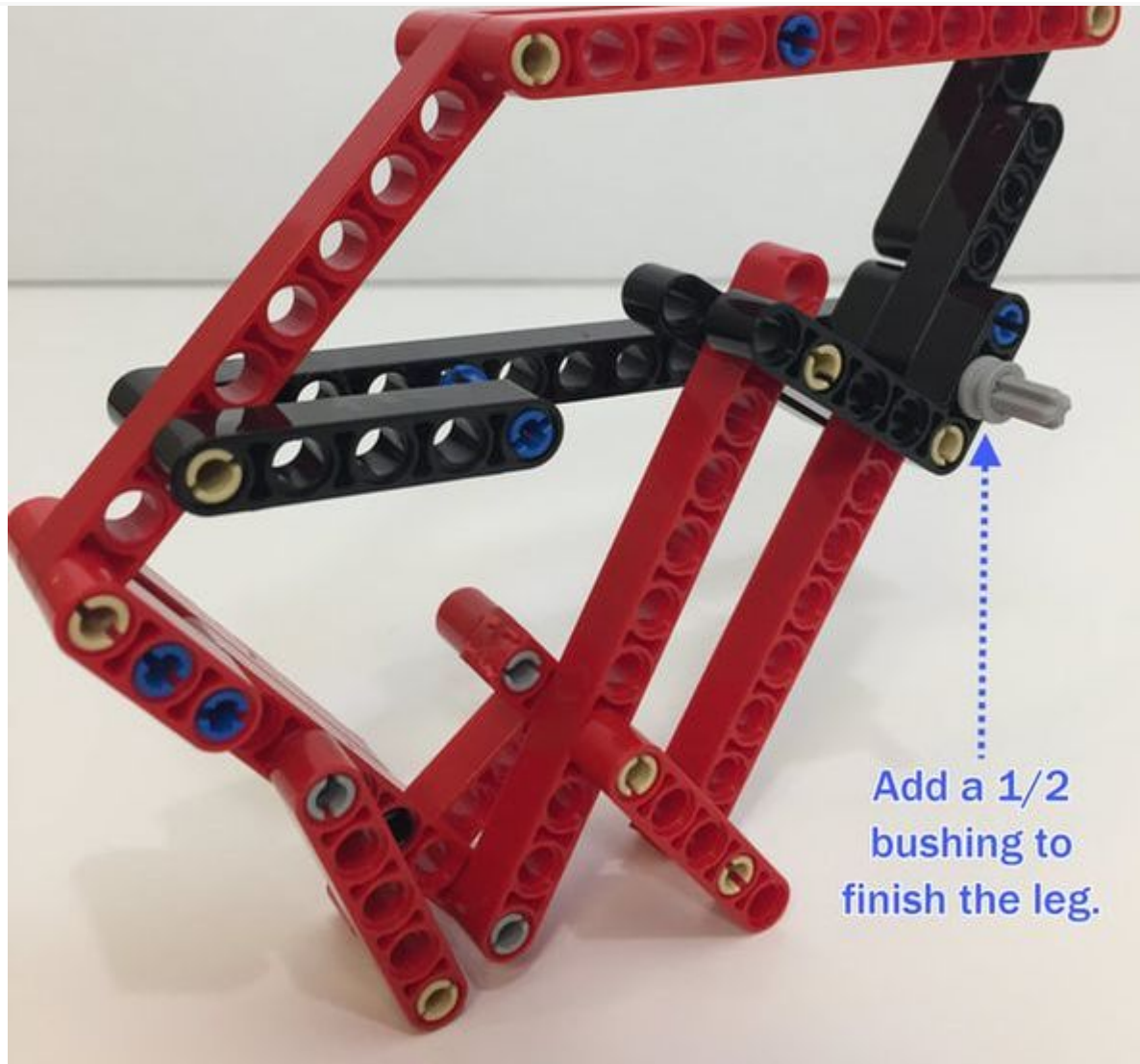


Plane 3k









The next step would be to attach cranks to both sides of the leg's axle, and then add the frames for the version of TrotBot being built.