



Fire Hose Jack

With permission, adapted from instructions by
Luke Siberry of Fire Hose Cubed



Inspiration for enrichment items can come from all over the place, as the name suggests the fire hose jack was inspired by the game of the same name. This shape is ideal for enrichment due to its complexity and the irregular path in which it rolls.

The fire hose jack has a modular design, it is made of 7 individual cubes. This design makes it stronger and easier to assemble than if it was one complex hollow shape. However, it does require more fire hose and this makes it heavier, which for some will be a positive.

Some variations include:

- Add pool noodles or other flotation devices to make it float in water.
- Add gravel, beans, or other objects in the cube so it will make a noise when moved.
- Drill holes in the external cubes to allow treats to be inserted, creating a feeder.

In these instructions, 11cm (about 4.5in) wide yellow rubber fire hose is used.



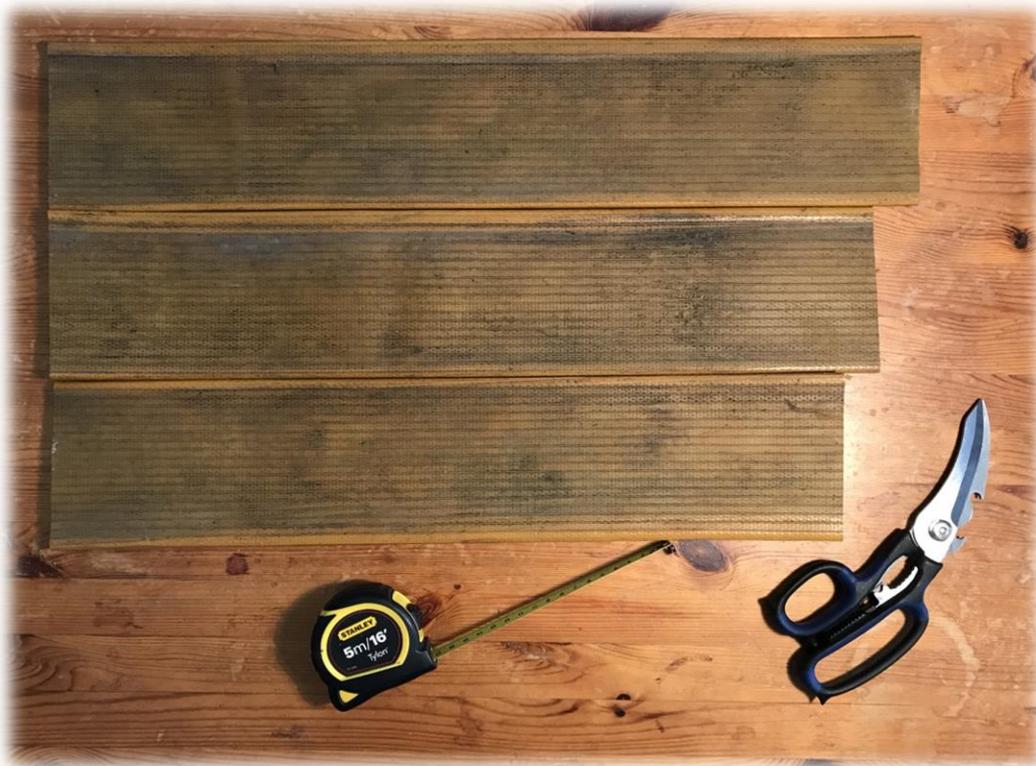


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The Measurements

To create the fire hose jack, you will need 3 different lengths of hose. The longest lengths form the centre of the jack. This central cube will be very loose, which will allow you to attach the other cubes to it. The external cubes are made of medium and short lengths. The medium lengths will be attached to the central cube (which is why they are longer than the short lengths).



Fire hose width	Long length	Medium length	Short length
11 cm	57 cm	55 cm	53 cm
8 inches	39 inches	38 inches	37 inches

If you are using a different width fire hose a good way of working out the measurements needed is to apply the measurement that you would normally use for a relatively tight fire hose cube as the short length then add length for the medium and long lengths.

If you don't know the lengths you would use for a normal cube then the lengths needed are normally the width of your hose multiplied by 4, then add 10-12 cm or 4-5 inches onto this number so that it will reach around the corners and overlap.

Example: 6.5 inch hose. Multiply 6.5 by 4 **$6.5 \times 4 = 26$ inches**

Add 4 inches if the hose is thin and 5" if the hose is thick. $26 + 5 = 31$ inches

If you are unsure about the thickness of your fire hose, use measurement for thick hose first. These lengths can always be trimmed down if too long.



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The difference between thick and thin fire hose

To find the length of the medium lengths, take the measurement needed for your short length and add 2cm or 0.75in for thin hose and 2.5cm or 1in for thick hose.

Example: From the previous example using 6.5 inch hose, the small length was 31 inches.

This hose is thick, so add 1 inch to find the medium length. $31 + 1 = 32$ inches

The medium length is 32 inches.

To find the length of your long length you need to repeat the process, taking the measurement needed for your medium length and add another 2cm or $\frac{3}{4}$ inch for thin hose and 2.5cm or 1 inch for thick hose.

Example: From the previous example using 6.5 inch hose, the medium length was 32 inches.

This hose is thick, so add 1 inch to find the long length. $32 + 1 = 33$ inches

The long length is 33 inches.

The measurements used in this example result in a tight fire hose jack. If you are not used to hiding bolts on fire hose cubes you may want to use slightly longer lengths.

The Build

The 7 cubes that make up the fire hose jack will require 21 lengths of fire hose as follows:

3 long lengths

6 medium lengths

12 short lengths

(replace the 12 short lengths with 12 medium lengths for a looser jack)



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CENTER CUBE

STEP 1. In the long lengths, punch or drills holes 1 inch from the ends and trim the corners off one end of



each length. This allows you to more easily insert one end into the other.

STEP 2. Make 2 long lengths into loops by tucking the end with the trimmed corners into the other and attaching the ends with a nut, a bolt, and two washers. Insert one loop into the other. Turn the inside loop so that the hardware is hidden by the outside loop.





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STEP 3. Weave the third long length into the 2 loops. Bolt the 2 ends of the long loop together. Move the loop around so that the hardware on that loop is hidden. The center cube is now complete; every other cube will be attached to this one.



EXTERNAL CUBES

STEP 4. Each external cube is made of 1 medium length and 2 short lengths. All lengths need to be drilled or punched with trimmed corners. To make an external cube, weave a medium length into any side of the center cube. Bolt the ends of the medium length together and hide the bolt in the center cube.





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An external cube can now be woven around the loop created by the medium length. To do this, create a loop with a short length and insert that loop into the medium loop, adjusting to hide the bolt against the central cube. Weave another short length into the 2 loops and bolt the 2 ends together. Move this loop around to hide the bolt. This process can take a while. (If it is too difficult, remake the short loops, adding an inch to the length, before you go any further.) Repeat the process, weaving a medium length into the central cube, then inserting and weaving a small loop and hide the bolt.

Six external cubes in total complete the fire hose jack!

