

K'Nex Fruit Machine by Elap – Construction of the Reels

Introduction

This document describes how the reels of the fruit machine were made. Future documents will describe and how they were installed into a frame and how the rest of the machine was made. There will not, however, be a step-by-step set of instructions for the whole machine, because the Instructables site was discovered after the machine was completed, and it would quite simply be too much work.

Each reel consists of three main parts:

- The rim, to which the symbols are attached
- A section which is used to spin and stop the reels
- A section which is used to determine the value of the displayed symbol.

Parts List for One Reel

The lengths given are the actual lengths, not the official ones. See the first two tips [here](#) for the actual lengths of rods.

Rim

- 16 188mm flexible rods
- 32 purple 3-D connectors
- 16 red 3-way connectors
- 8 white 33mm rods
- 32 green 17¼mm rods

Hub

- 1 black 192mm rod
- 5 white 8-way connectors
- 1 blue spacer
- 8 grey spacers
- 1 black rotational connector
- 3 tan connectors

Radii

- 32 yellow 86mm rods
- 24 white 33mm rods
- 16 yellow 5-way connectors
- 16 orange 2-way straight connectors

For spinning and stopping

- 24 red 130mm rods
- 16 red 3-way connectors
- 8 tan connectors
- 32 blue spacers
- 8 black rotational connectors
- 32 grey 38mm wheels

For determining the displayed symbol value

- 8 yellow 86mm rods
- 16 red 130mm rods
- 8 1-way connectors
- 39* orange 2-way straight connectors
- 1* black rotational connector
- 1* blue spacer
- 9* grey spacers

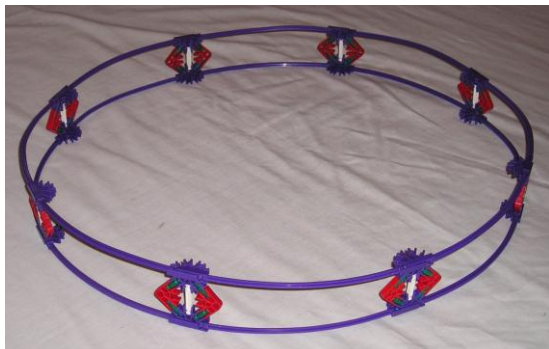
Total Parts

- 32 green 17¼mm rods
- 32 white 33mm rods
- 40 yellow 86mm rods
- 40 red 130mm rods
- 16 188mm flexible rods
- 1 black 192mm rod
- 8 grey 1-way connectors
- 55* orange 2-way straight connectors
- 32 red 3-way connectors
- 16 yellow 5-way connectors
- 5 white 8-way connectors
- 32 purple 3-D connectors
- 10* black rotational connectors
- 11 tan connectors
- 34* blue spacers
- 17* grey spacers
- 32 grey 38mm wheels

* The actual number will depend on the symbol values

K'Nex Fruit Machine by Elap – Construction of the Reels

Making the Reel



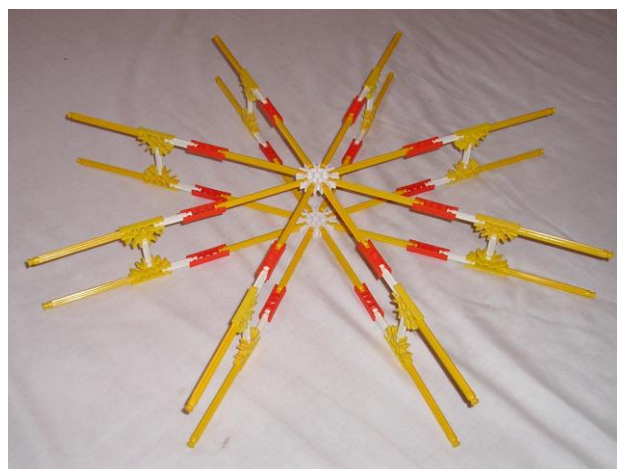
Select the 16 flexible rods, 32 purple 3-D connectors, 16 red 3-way connectors, 8 white rods and 32 green ones and make the rim as pictured on the left.

It will feel a bit floppy until the core has been added.

Make the core of the reel as pictured on the right.

This will require 32 yellow rods, 24 white ones, 16 yellow 5-way connectors, 16 orange ones and two white.

Make sure that any burrs on the ends of the rods are filed down, otherwise distortions could occur – see [K'Nex Tips](#), '6. Looking After Your Pieces'.



Now insert the core into the rim, as illustrated on the left.

If you are using used flexible rods, adjust the curves so that they don't have bulges or straightish sections in them; you should end up with a pretty good circle. Bear in mind that the lengths of flexible rods vary – see [K'Nex Tips](#), '2. Know Your Pieces – Rods (Flexible)'.



Insert eight red rods vertically into the pairs of orange connectors, as shown on the right.

Add a red square of rods over four of the vertical ones, and then place two blue spacers on the other four vertical red rods so that the same amount of each red rod has been used.

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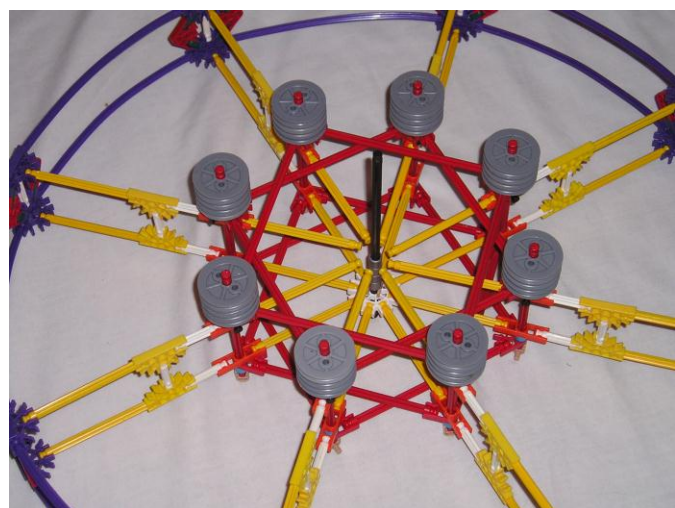
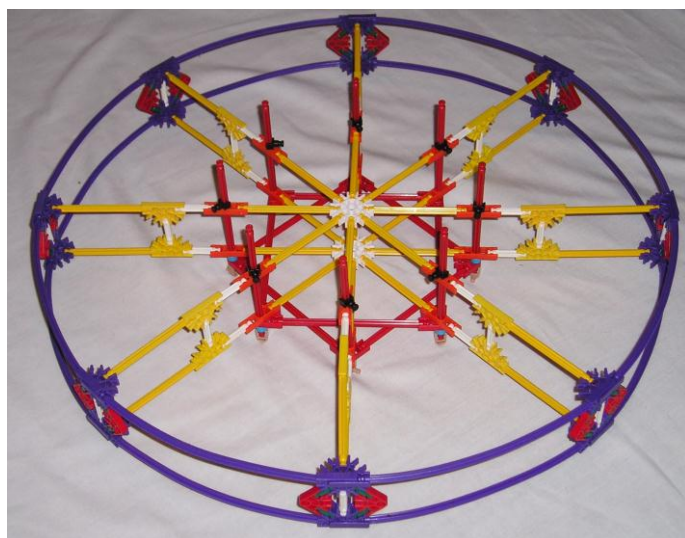


Add another square of red rods as shown, adding two blue spacers on the other four vertical rods.

Attach a tan connector to the top of each vertical red rod.

Turn the reel upside-down. You may find that the best way is to place a sheet of stiff card over the centre section before flipping it so that no red rods fall out.

Place a black rotational clip over each vertical red rod as shown on the right.



left shows the reel without the connector so that the tan connector on the bottom of the black rod, and the four silver spacers, can be seen).

Now place four 38mm wheels on each of the vertical red rods – these will be used for spinning and stopping the reel.

Place another two squares of red rods over four of the vertical red rods, placing two blue spacers on the other ones, as you did for the other side.

Remove the top 8-way white connector.

Insert a black rod through the centre of the reel, packing it with a tan connector which engages with one of the 8-way white connectors, and four silver spacers.

Replace the white connector (the picture on the

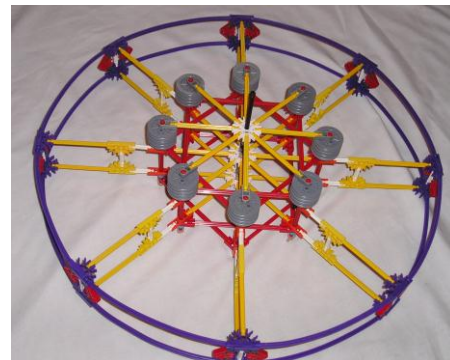
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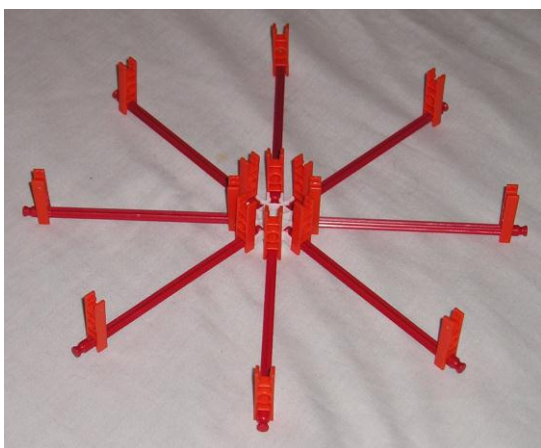
Make the simple structure on the left.

On the protruding black rod of the reel, place a tan connector so that it engages with the 8-way white connector, and on top of that place a silver spacer, a black rotational connector, two more silver spacers, and then a tan connector with its prong upwards.

Now place the structure you have just made over the eight vertical red rods as shown on the right. The end of each vertical red rod should be flush with the hole in each of the 1-way connectors.



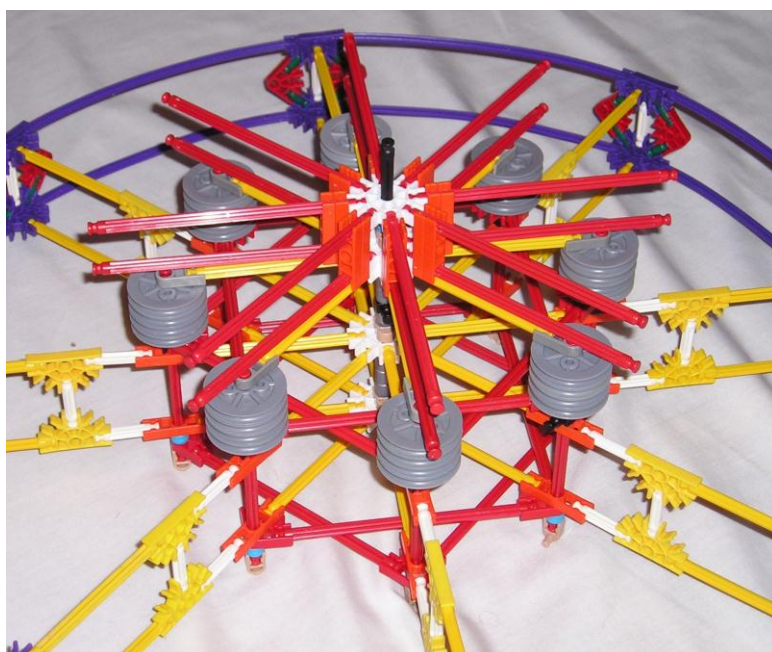
Now we need to make the section of slots; the deeper the slot, the higher the value of the corresponding symbol. In this fruit machine, slots correspond to payout values of 0, 2, 4 and 8.



Make the structure on the left – the orange connectors have been spaced out on each rod so that you can see the construction more easily.

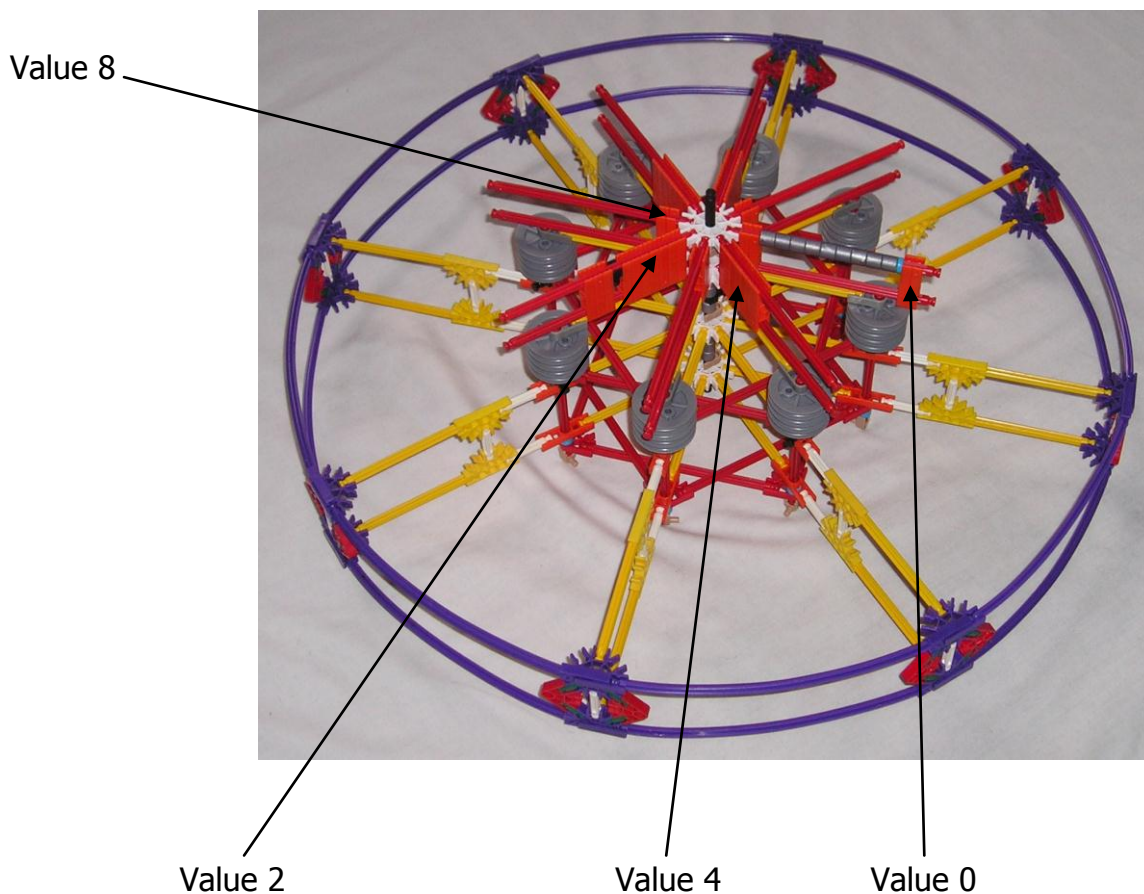
The base of each of the eight slots will consist of two orange connectors and correspond to a payout value of 8.

Attach eight more red rods to the orange connectors, and then place the structure onto the black rod of the reel. On this black rod, place a tan connector so that it engages with the white connector, and on top of that place a blue spacer and a silver one. Now affix an 8-way white connector to the inner ends of the eight red rods. Finally, slide the outer orange 2-way connectors to the middle. The reel should appear as in the picture on the right.



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The slots will need to be made shallower for the symbols which correspond to payout values of 0, 2 and 4.



The actual number of orange connectors and spacers used to adjust the depths of the slots will depend on how the associated payout-tester levers will work.

Installing the Reels

When the three reels have been made, they need to be installed in a rigid frame. This will be the topic of the next construction note.

