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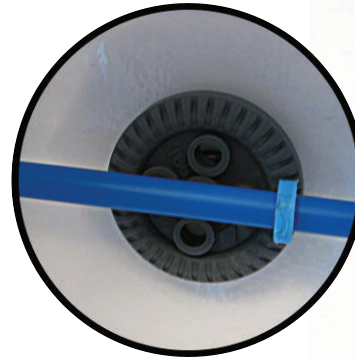
A very economical attractive working fairground model. Learn how to make a simple **cranked friction drive mechanism**, make using the laminated **mathematical forms**. Watch **centrifugal force** spin the people podules outwards.

To operate turn the handle.

Made from Kre8 mechanical parts and Kre8 laminated sheet. Equipment required:- scissor, clear adhesive tape and hole punch.  
**Height 250mm.**

### Safety

General safety awareness when using scissors, using hole punch and clear tape. Keep things tidy.



Friction Drive - underneath view

## Activities

- 1) Assemble the model using the instructions given here.
- 2) Test it works and refine if necessary

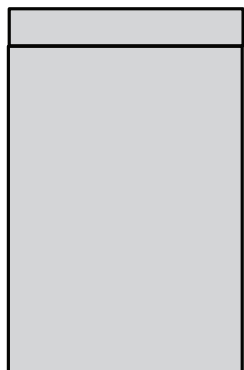
### Optional

*The people podules can have small weights added to help them swing out more when spinning round*

### Designing

*It can be adapted to be operated via an electric motor - slow drive required on the drive axle*





Packed in a reusable bag



1 x 5mm dia. slit rod

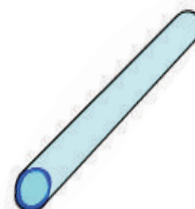


Green multi-block connector (strip of 3)

1 x Multi-block



Cat off one connector to make handle

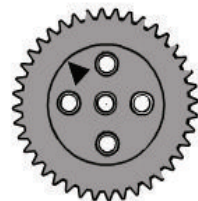


1 x light blue tube

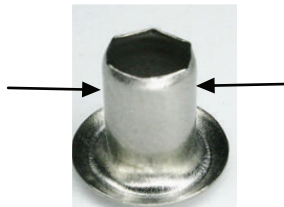


Blue collars (cut from sprue)

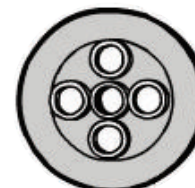
6 x Blue collars



1 x 40mm wheels



1 x eyelet 5mm dia.

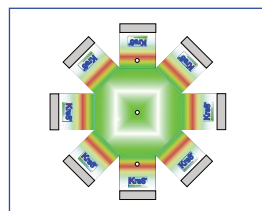
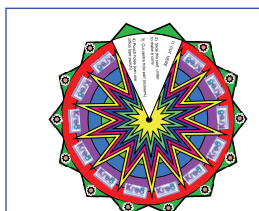
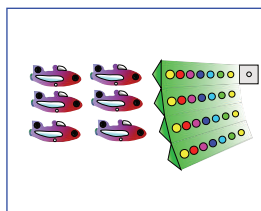


1 x 28mm wheels



4mm dia 'SNAP rod'

Abrasive paper



3 x Laminated card inserts(as shown)

Safety and Other Information  
PAPER INSERT

For making Instructions see web [www.kre8.com](http://www.kre8.com)

### Tools etc you also need



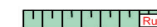
good scissors or snips



Roll of clear adhesive tape (about 20mm wide)



Paper punch

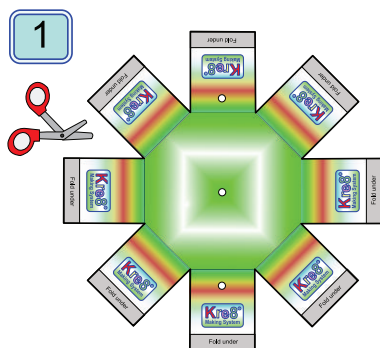


Rule (metric)

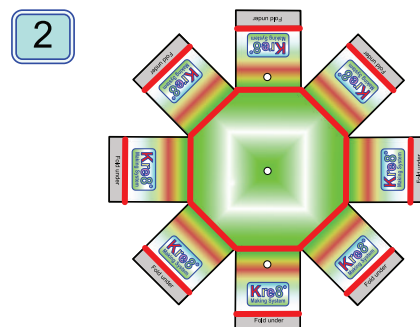
**TO MAKE** ALL SIZES IN CM  
Use these 'step-by-step instructions' as a guide and adapt as you want.

**IMPORTANT NOTES**

- 1) **ONLY** cut up connectors as needed
- 2) Use a metric ruler for measuring
- 3) For **EASY assembly** -
  - a) **Round** the end of the rods with abrasive paper then
  - b) **Push and twist** the rods into place



Cut out 'base' outline

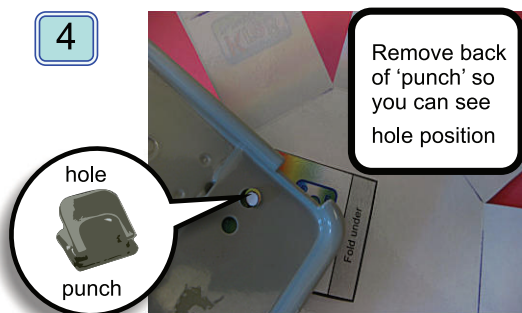


'Score' the **bend** positions using a ball point pen (marked red here)

2b  
Fold the lines just 'scored' inwards then open up temporarily.

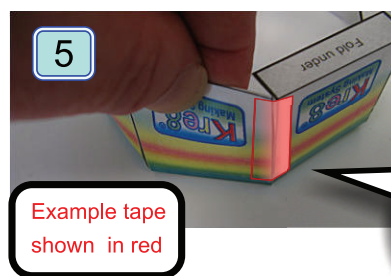


Make **hole A** in centre. (can use scissors such as shown)



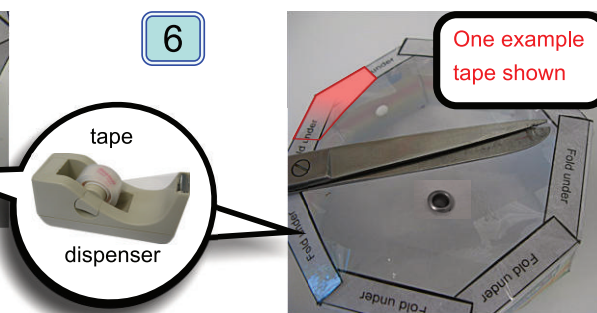
Remove back of 'punch' so you can see hole position

Punch **holes marked B and C**. First fold arm over to get access to hole.

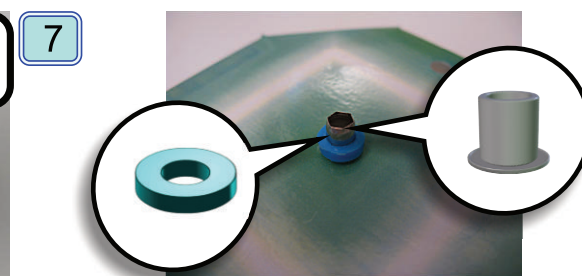


Example tape shown in red

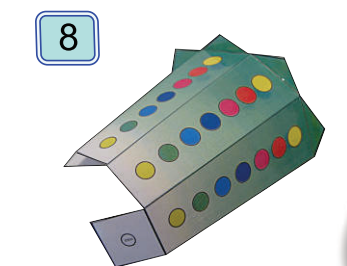
**Tape** edges using tape about 30mm long



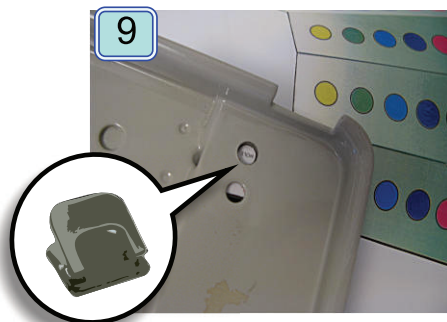
**Tape** the eight joints with clear tape (each about 25mm long)



Place **eyelet** through the centre **A** hole and add a **blue collar** (enter the **eyelet** from underside)



Cut out the '**support**' part, score and fold as shown.



Punch **hole** position marked 'hole' on square piece.



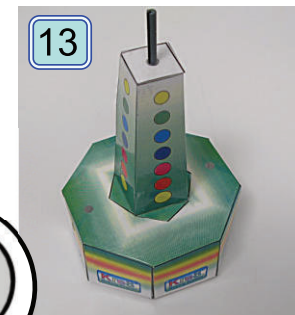
**Tape** the **support**



**Tape support** part on to the **base**



Push 28mm diameter **wheel** onto **grey rod** end then insert in base...



it will then look like this when upright.



Cut out the **top** shape out.



Cut out the **top** hole shown in black.



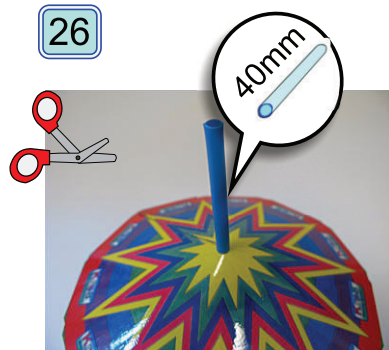
Score the **top** green parts and fold so they point downwards as shown.



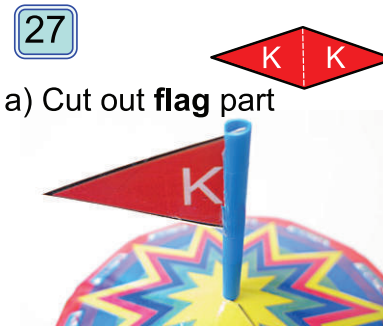
Make **top** into a cone shape and fix in place with **tape**.



Place the **top** on top of the large gear wheel (\*for more details see step [20])

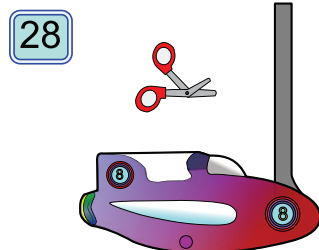


Add **blue tube** on **grey rod**



a) Cut out **flag** part

b) Add **flag** - (slit tube)



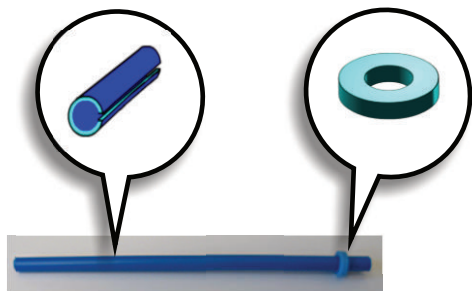
Cut out **people podules**



**Tape to top green**  
Using alternate green triangles

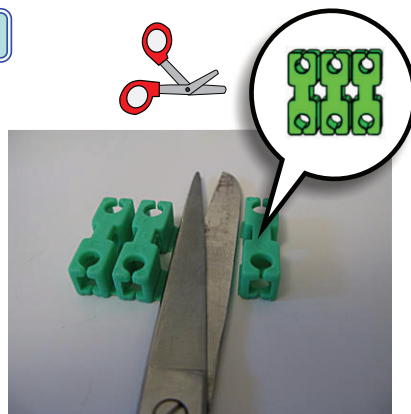


14



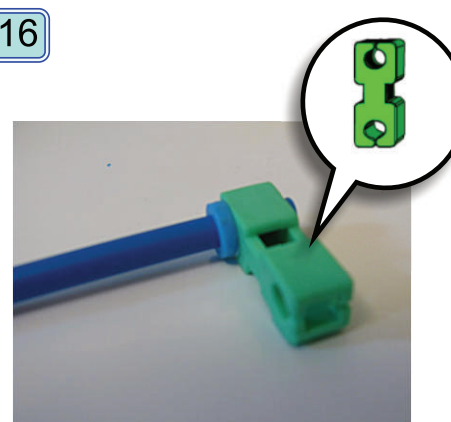
To make handle start by adding **blue collar** on the **blue slit rod**

15



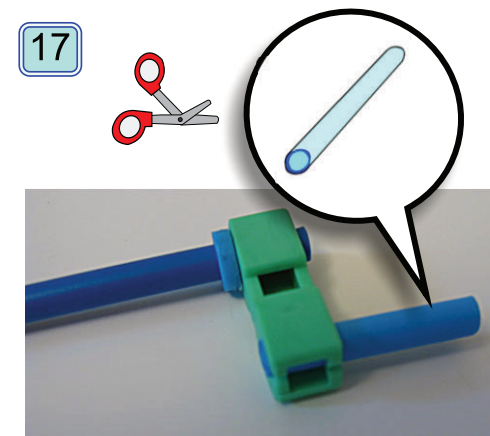
Cut one **green connector** unit from the triple connector

16



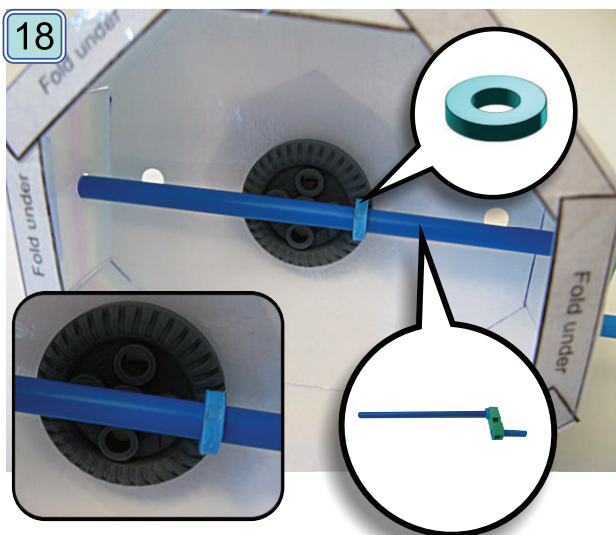
Add this **connector** to rod

17



Cut **tube**, 30mm long, and add it to **green connector** to make handle

18



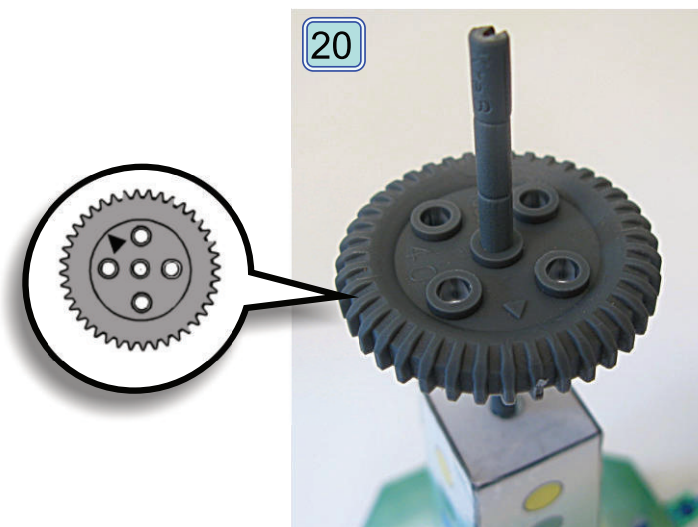
Slide the part just made through the **base** holes and add a **blue collar** to run on the rim of the wheel as shown.

19



Add another **collar** on the outside.

20



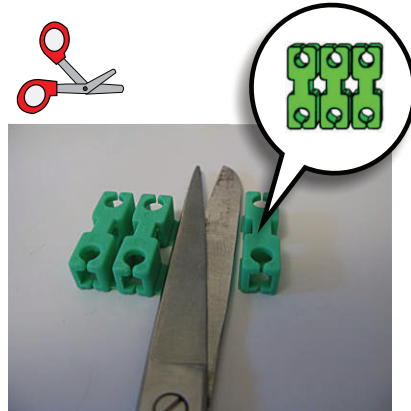
Add the **large wheel** about 20mm down the **grey rod**. (Twist and push it down)

## Cutting the Kre8 Connectors

**ONLY** cut connectors as **needed** because not all need to be cut up.

When cut it is good practice to also **trim** any sharp edges

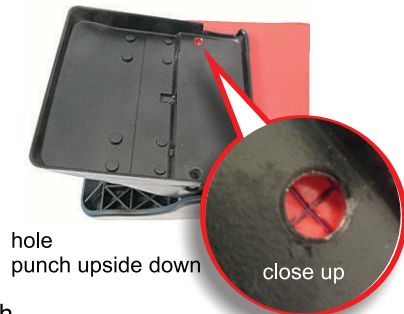
**Good scissors, safety snips or side cutters** can be used.



## Making accurate holes with a 'hole punch'



hole punch

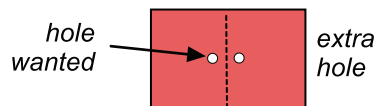


hole punch upside down

close up

- 1) Remove **back** from hole punch. *(do this over a waste bin in case back is full of old cuttings)*
- 2) Use **hole punch** upside down.
- 3) Look through **cutting hole** and line up card.
- 4) **Punch** hole in card

To punch a hole far from an edge fold the card first. *(This will make two holes but usually this will be OK)*

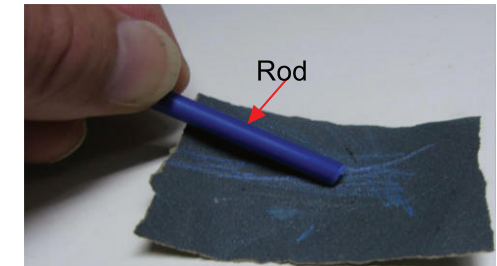


## Making rod and tube assembly easy

### Rounding the end

**Drag and turn** the rod along the **abrasive sheet** (supplied with kre8 kits) to round the end.

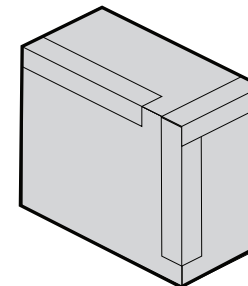
**Adding rod to connector**  
**Twist and push** into connector



## Joints made with clear tape

Invisible\* strong joints can be made using clear tape.

Easy tear clear tape dispenser



Example corner

### To make good joints

- 1) make sure **fingers** are not wet or greasy
- 2) **tear off** tape length wanted (at least 2cm)
- 3) **Align** to joint carefully and **add loosely** *(if wrong it can be removed and repositioned)*
- 4) **Rub down** with finger

### Undoing a tape joint

Use fingers to lift tape up and /or use scissors to cut along joint then remove

### Notes

\*This assumes **clear, shiny** and preferably '**easy tear**' tape is used.

\*\*Best to use tape dispensers with a **metal cutter** for ease of use.