

Timberkits™

Cams
CE



natural
wood



science of
movement

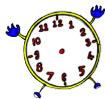


self-assembly
kits

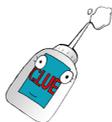


for ages
9-90

(UK) Symbols in these instructions. (FR) Symboles des instructions. (ESP) Simbolos en estas instrucciones. (IT) Simboli in queste istruzioni. (Ger) Symbole in dieser anleitung



(UK) Waiting time.
(FR) Temps d'attente.
(ESP) Tiempo de espera.
(IT) Tempo d'attesa.
(DE) Wartezeit.



(UK) Glue.
(FR) Coller.
(ESP) Pegar.
(IT) Incollare.
(DE) Leimen



(UK) Wax surface to lubricate.
(FR) Appliquer la cire sur cette surface.
(ESP) Aplica la cera sobre esta superficie.
(IT) Applicare la cera su questa superficie
(DE) Wax Oberfläche zu schmieren.



(UK) Don't glue.
(FR) Ne pas coller.
(ESP) No pegar.
(IT) Non incollare.
(DE) Nicht leimen.



(UK) Glue guard. Prevents glue getting between moving parts during build. Remove after 2 minutes.
(FR) Piece de protection contre la colle. pendant l'assemblage, eviter tout dépôt de colle sur les pieces en mouvement. Enlever apres 2 minutes.
(ESP) Parte de protection de el pegamento. durante la fase de esambalje, evitar que el pegamento se ponga sobre partes que se mueven. Quitar despues de dos minutos .
(IT) Pezzo di protezione della colla. Durante l'assemblaggio evitare che la colla vada su parti non statiche . Imuovere dopo due minuti.
(DE) Karton. Verhindert das eindringen von leim zwischen die bewegliche teile während der montage. Zwischen die beweglichen teile.

Helpful hints/conseils utiles/consejos utiles/suggerimentutili/nützliche tipps

(UK) Check all parts present in trays
(FR) Vérifier que toutes les pièces soient présentes dans les bacs
(ESP) Controlar que hay todas la partes en la caja
(IT) Controllare tutte le parti presenti nel kit
(DE) Bitte prüfen sie, ob alle benötigten teile vorhanden sind

(UK) Read all instructions and look at all diagrams
(FR) Lire toutes les instructions et regarder toutes les figures
(ESP) Leer las intrucciones y guardar a los diagramas
(IT) Leggere tutte le istruzioni e guardare i diagrammi
(DE) Lesen sie alle anweisungen und betrachten sie die schaubilder

(UK) Check assembly before gluing
(FR) Vérifier le montage avant collage
(ESP) Controlar el montaje antes de empezar a pegar
(IT) Controllare l'assemblaggio prima di incollare
(DE) Montage prüfen vor dem einklebern

(UK) Some parts may need sanding
(FR) Certaines pièces nécessiteront d'être poncées.
(ESP) Algunas parte necesitan de ser suavizadas
(IT) Alcune parti potrebbero aver bisogno di levigatura
(DE) Möglicherweise müssen manche teile geschliffen werden

Colouring tips/conseils concernant l'application de peinture/ consejos para Pintar/ suggerimenti per colorare/ lackiertipps

(UK) Do not apply paint to parts which move against one another. It is easier to paint some parts before assembling
(FR) Ne pas appliquer de peinture sur les parties qui se déplacent l'une contre l'autre. Il est conseillé de peindre avant assemblage
(ESP) No aplique la pintura sobre las partes que se tocan. Resulta mas facil pintar las partes antes de montar.
(IT) Non applicare la pittura su quelle parti dove ce attrito con un'altra parte. è piu semplice pitturare alcune parti prima della fase di assemblaggio.
(DE) Teile, die aneinander reiben, sollten nicht lackiert werden. Fertig lackierte teile sind off leichter zu montieren

New Symbols in our Instructions



Visit our website to view
instructional videos where you
see this symbol.

www.timberkits.com



Pay special attention to this
section.

NEED ADVICE?

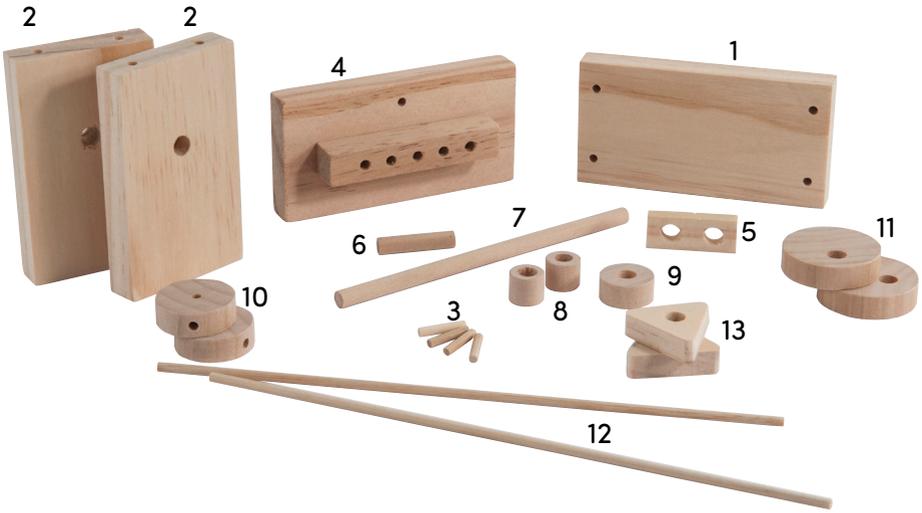


If you need any help with building this model please feel free to contact our Timberkit Human, Luise Willis by calling **01650 521635**

Although this model is very simple and designed for children some adult supervision is recommended.

We also recommend wearing old clothes as the glue is difficult to wash out if it is allowed to go hard. Enjoy!
You can visit our website for tips and tutorials

www.timberkits.com



Hello, I am Leonardo Da Vinci and I love mechanisms of all sorts. Understanding them is essential to inventing cunning contraptions. Here I will show you some different things to create using cams.

Wheels and cams go round and round and up and down and side to side and can be many different shapes depending on the movement needed.

Wheels simply go round and round with a central shaft hole while cams have their shaft hole off-centre. A cam mechanism has three parts: cam, shaft and follower. The cam shaft rotates turning the cam.

The follower is a rod that rests on the edge of the turning cam. The follower is free to move up and down, but can be prevented from moving from side to side by a slide or guide.

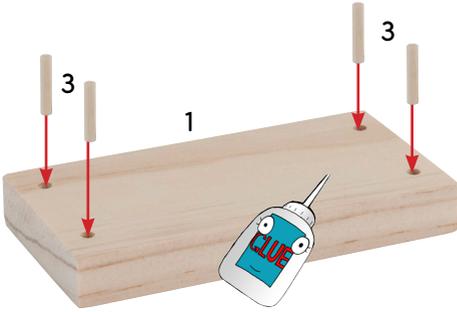


Construction tips;

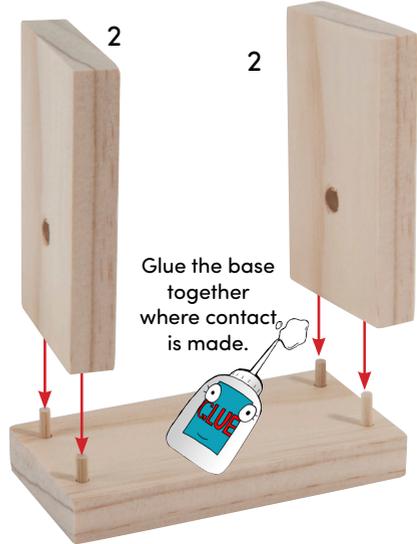
1. Glue your stand together as shown and leave to dry.

2. Look through the different possible arrangements on the other pages and choose which you would like to do.

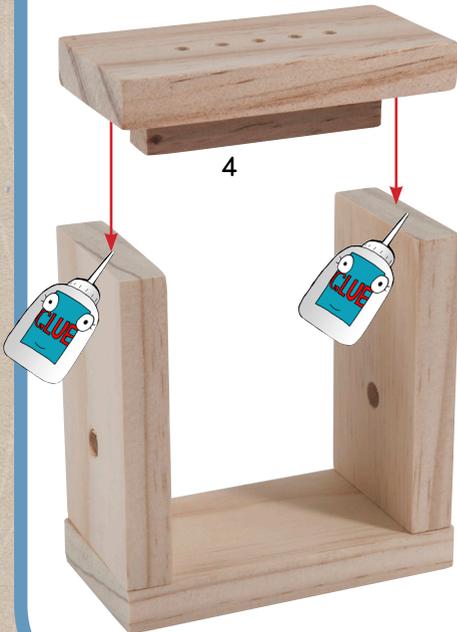
1



2



3



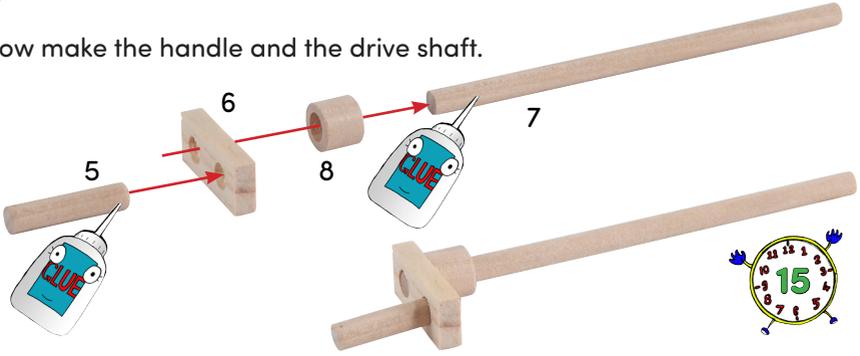
4



Once the base is built leave to dry for 15 minutes



Now make the handle and the drive shaft.



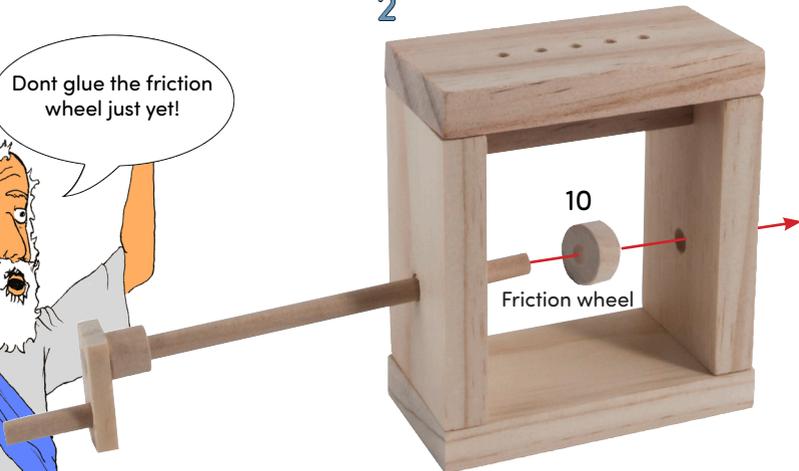
Round & Round

Using a friction wheel on the shaft to create a round and round movement.



2

Don't glue the friction wheel just yet!

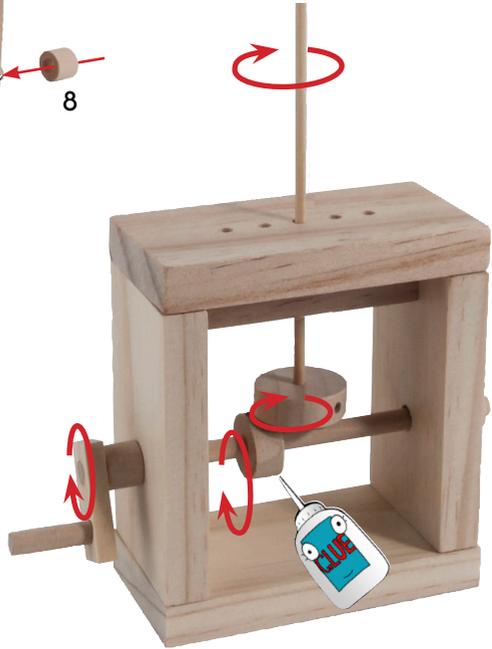


5

3



Push the drive shaft all the way through and secure with spacer number 8.

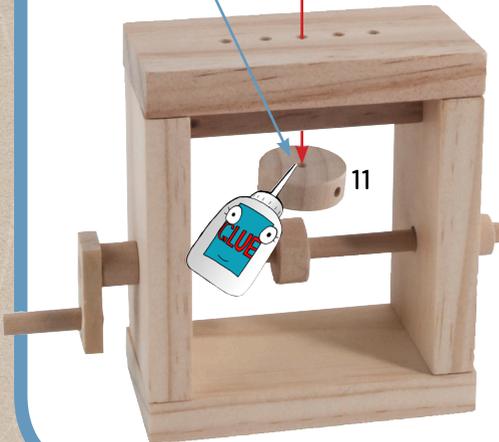


12

The handle turns the drive shaft which turns the friction wheel vertically making the follower turn horizontally. You can now align the friction wheel and glue in to place.

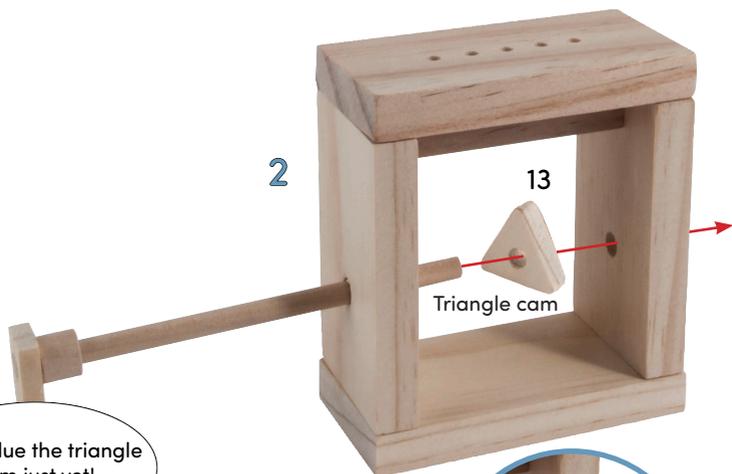
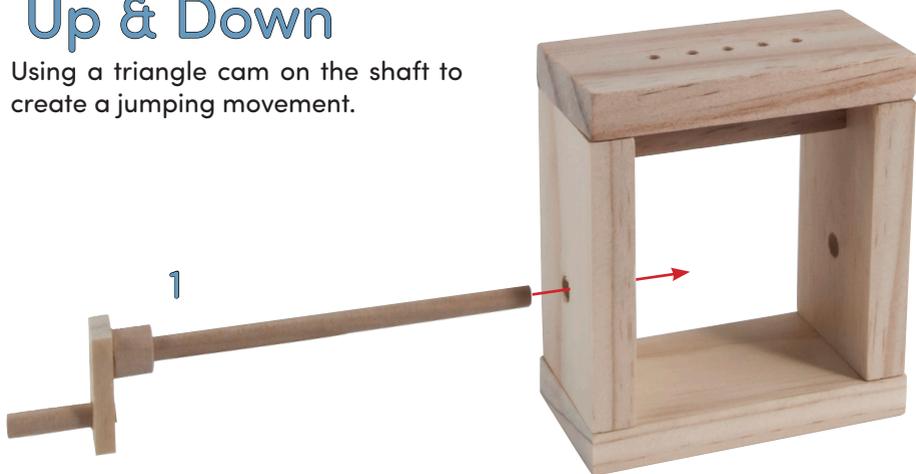
4

This is the follower

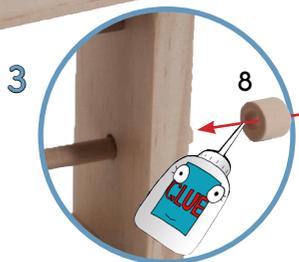


Up & Down

Using a triangle cam on the shaft to create a jumping movement.

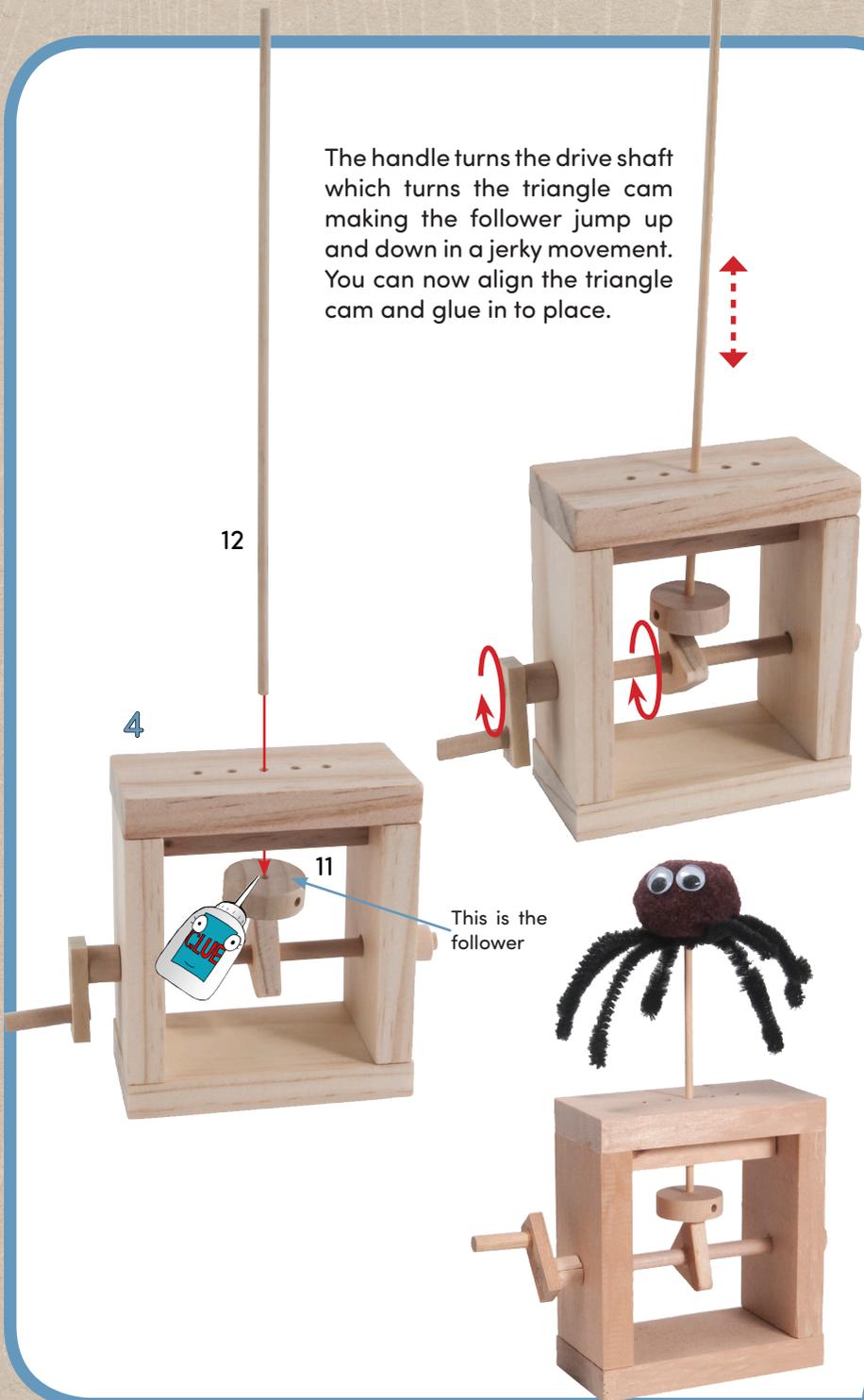


Don't glue the triangle cam just yet!



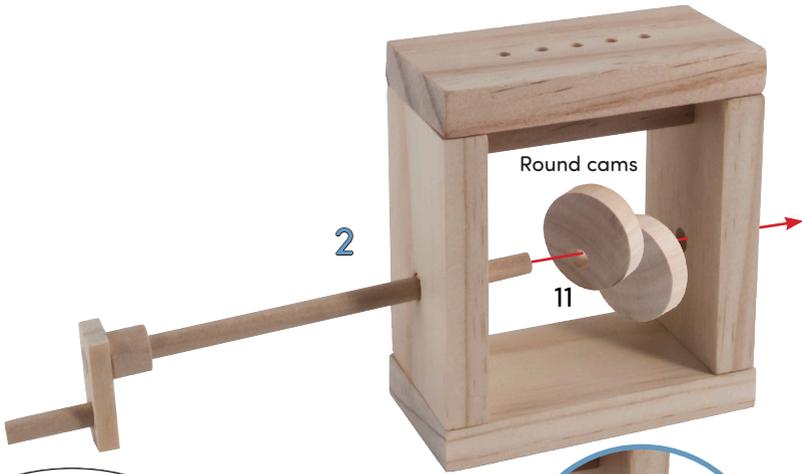
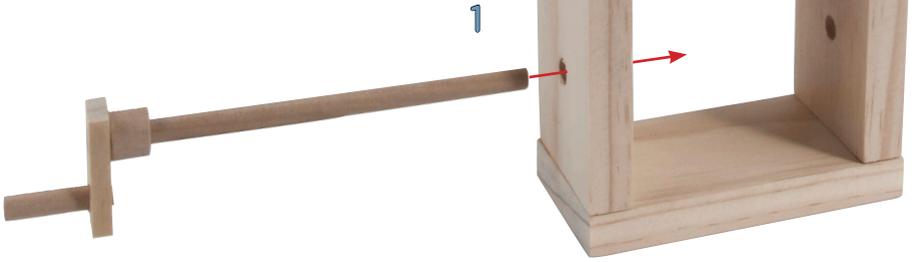
Push the drive shaft all the way through and secure with spacer number 8.

The handle turns the drive shaft which turns the triangle cam making the follower jump up and down in a jerky movement. You can now align the triangle cam and glue in to place.

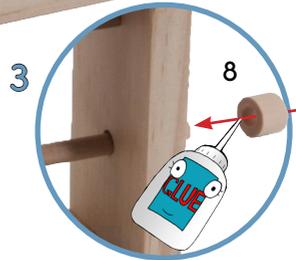


Side to Side and Up and Down!

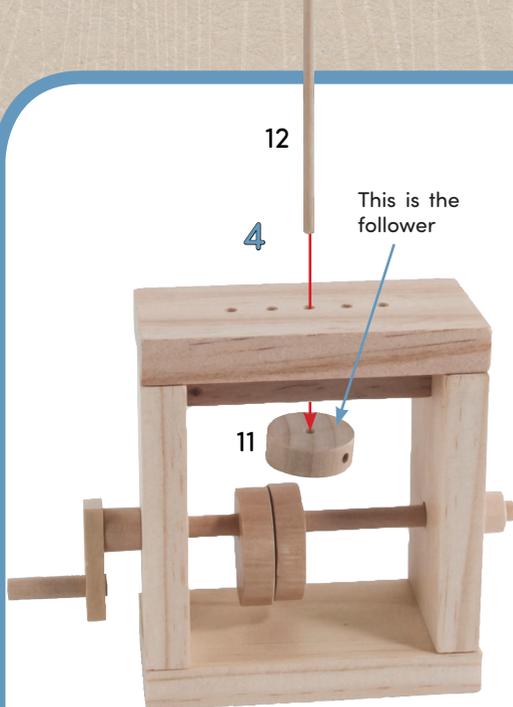
Using 2 round cams on the shaft to create a side to side and up & down movement.



Don't glue the round cams just yet!



Push the drive shaft all the way through and secure with spacer number 8.



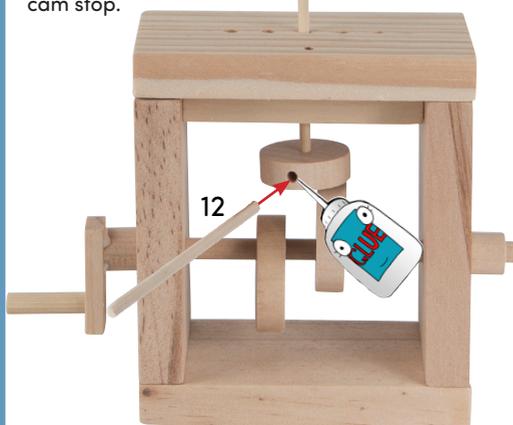
5

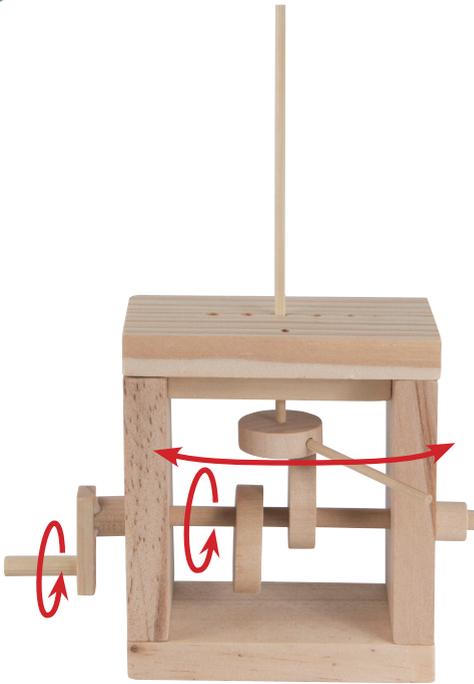
Align the cams and glue in the position shown. And leave for 15 minutes.



6

Cut a section of part number 12 to act as the cam stop.

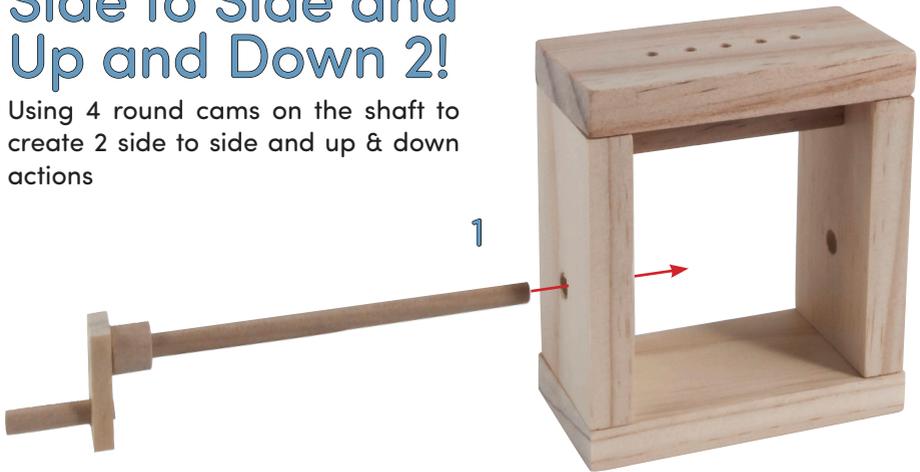


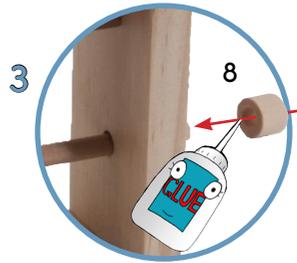
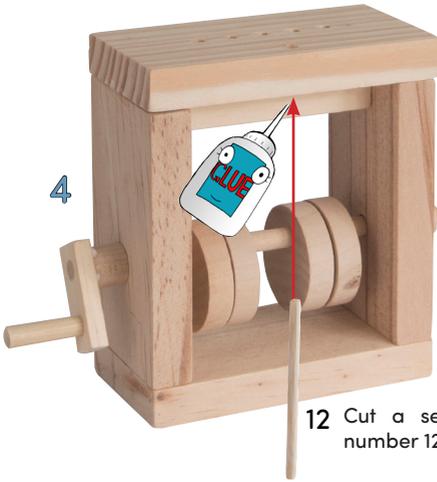
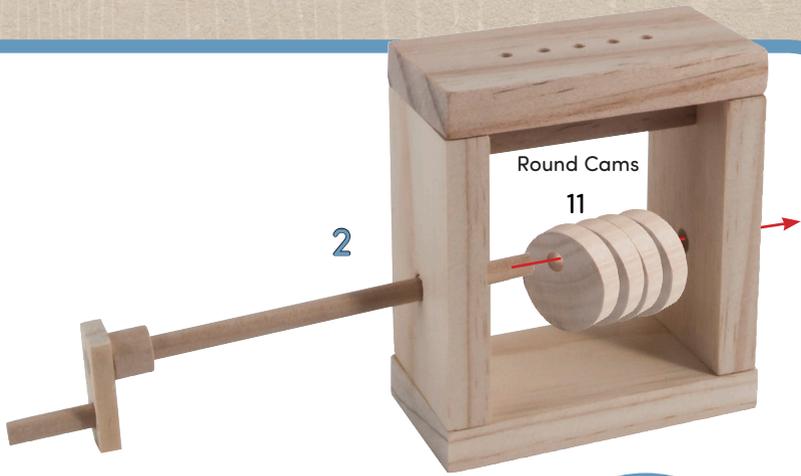


The handle turns the drive shaft which turns the round cams making the follower swing in a side to side movement while going up & down.

Side to Side and Up and Down 2!

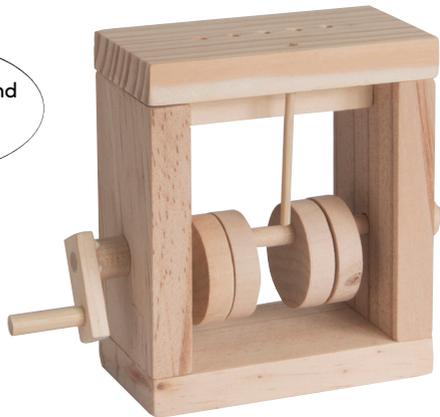
Using 4 round cams on the shaft to create 2 side to side and up & down actions





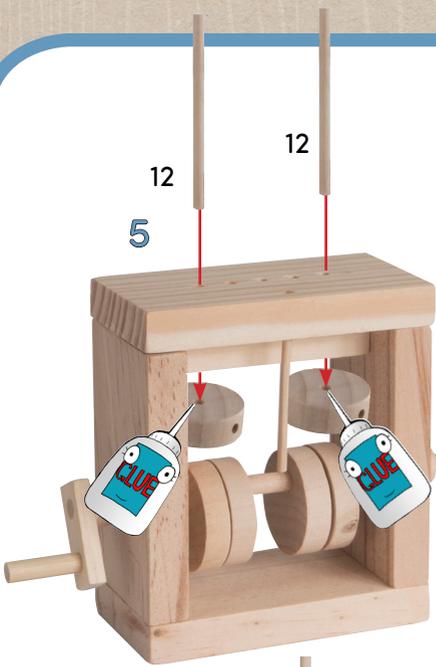
Push the drive shaft all the way through and secure with spacer number 8.

12 Cut a section of part number 12.

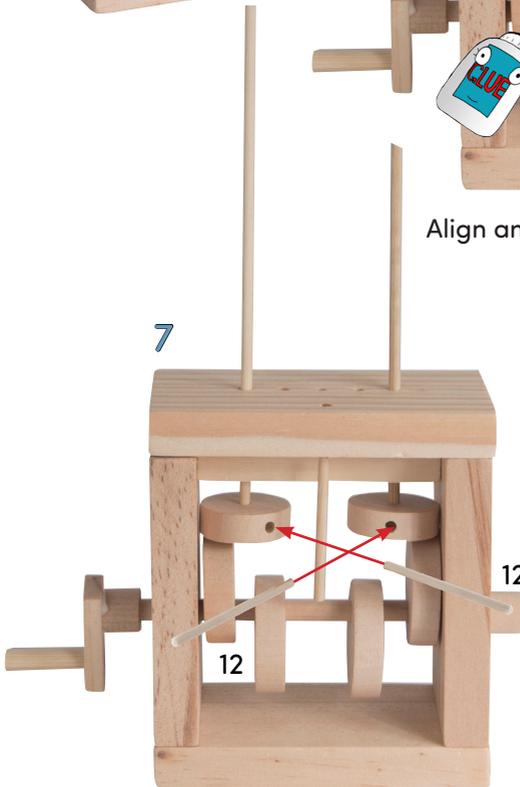


Don't glue the round cams just yet!

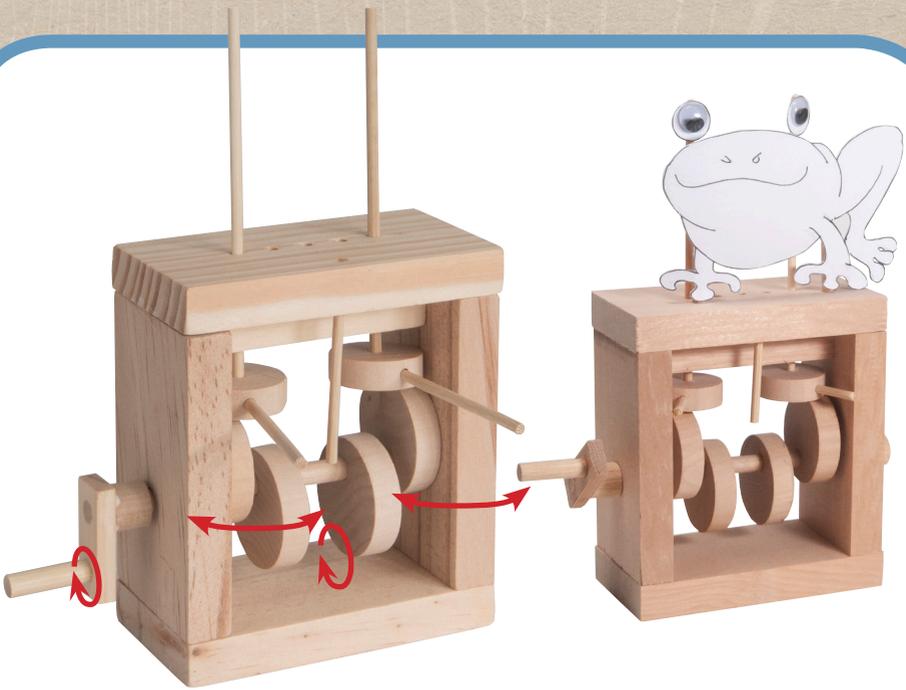




Align and glue the cams as shown in the image above.

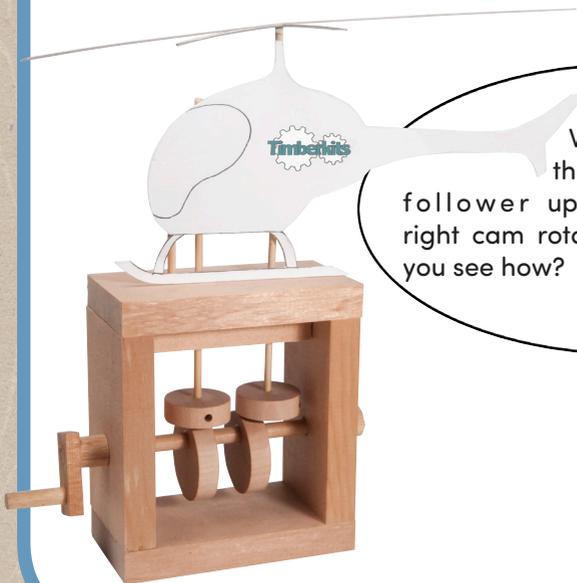


12 Cut a section of part number 12 to act as the cam stop.



The handle turns the drive shaft which turns the 2 round cams making each follower swing in a side to side movement while going up & down.

See if you can experiment with other combinations of cams and wheels to create different movement.



With this helicopter the left cam pushes the follower up and down while the right cam rotates the blades. Can you see how?





You are only restricted by your imagination. Have a go and design your own wonderful Timberkits model.

Use this area to scribble some notes and designs.



If you have enjoyed learning about Linkages then you can try our Levers kit where you can build your own models using completely different mechanisms

- (UK) If you enjoyed building this model why not try our others. Available directly from Timberkits Ltd or from our UK, European or worldwide retail partners. Check our website to find your nearest stockist.
- (FR) Si vous avez apprécié construire ce modèle, pourquoi ne pas en essayer d'autres. Ils sont disponibles chez Timberkits Ltd ou chez nos partenaires détaillants au Royaume Uni, en Europe et plus largement dans le monde.
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www.timberkits.com





TM

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This kit contains wooden components only. Look for Timberkits Bits and Bobs for additional craft materials to bring your models to life or find materials at home or at school.