

# CARD MECHANISMS AND POP-UPS

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# CARD MECHANISMS AND POP-UPS

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## 1. POP-UP LETTERS/CHARACTERS

### 2. V-FOLD MECHANISMS

### 3. CONSTRUCTING SYMMETRICAL POP-UPS

### 4. ROTARY AND PARALLEL SLIDE MECHANISMS

### 5. INTERNAL STANDS

## 6. A MOVING FACE AND MOUTH

### 7. POP-UP PROJECTS

**CLICK THE LINK BUTTON - FOR FREE,  
DETAILED MOBILE APPS FOR GRAPHICS**

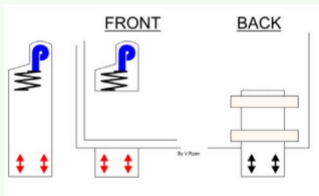


# SIMPLE POP-UP LETTERS / CHARACTERS

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A simple 'pop-up' mechanism for card is seen below. The spring and the letter 'P' are drawn on a rectangular piece of card. This is fed through a split in the paper. The card can be moved up and down as shown opposite.

**Tap the images** for construction details



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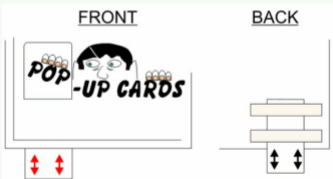
# SIMPLE POP-UP LETTERS / CHARACTERS

V.Ryan © www.technologystudent.com 2019

The same technique can be applied to entire words, as seen below

The word 'POP' is drawn on a rectangular piece of card. This is fed through a split in the paper. The card can be moved up and down as shown opposite.

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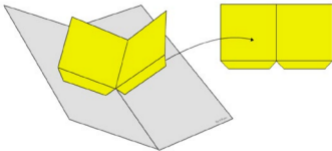


## V-FOLD MECHANISMS

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V-folding mechanisms are very popular and they are simple to make. Construct the pop-up section by adding tabs to a rectangular piece of card. The tabs are glued to the backing card remembering that the angle must be selected carefully. Draw the angle of bend on the card first before gluing the pop-up piece to it

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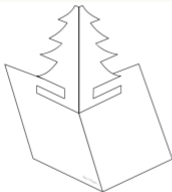


# TREE POP-UP GREETINGS CARD

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Prototype greetings card. Add appropriate colour and shade to the pop-up tree as well as any relevant detail (e.g. decorations). The final greetings card should have detail, colour and shade and relevant text to all sides of the card. Cut out the pop-up and glue it to the 90 degree lines.

**Tap the images** for construction details



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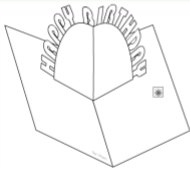


# HAPPY BIRTHDAY POP-UP GREETINGS CARD

V.Ryan © www.technologystudent.com 2019

Prototype birthday card. Add appropriate colour and shade to the pop-up 'happy birthday' as well as any relevant detail (e.g. decorations). The final greetings card should have detail, colour and shade and relevant text to all sides of the card. Cut out the pop-up and glue it to the 90 degree lines.

**Tap the images** for construction details



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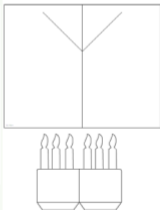
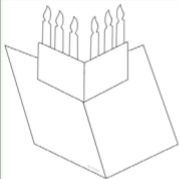


# CANDLES POP-UP GREETINGS CARD

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Prototype birthday card. Add appropriate colour and shade to the pop-up candles as well as any relevant detail (e.g. decorations). The final greetings card should have detail, colour and shade and relevant text to all sides of the card. Cut out the pop-up and glue it to the 90 degree lines.

**Tap the images** for construction details



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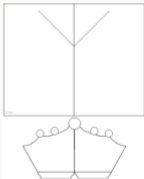


# CROWN POP-UP GREETINGS CARD

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Prototype birthday card. Add appropriate colour and shade to the pop-up crown as well as any relevant detail (e.g. decorations). The final greetings card should have detail, colour and shade and relevant text to all sides of the card. Cut out the pop-up and glue it to the 90 degree lines.

**Tap the images** for information / an exercise



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# CONSTRUCTING SYMMETRICAL POP-UPS

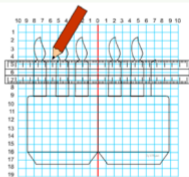
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The greetings card is below opposite is symmetrical, in that one side is a mirror image of the other side. If drawing by hand, one side is completed and the opposite side is drawn to exactly the same size.



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The grid system is very useful when drawing symmetrical shapes. Coordinates can be written on the grid, helpful when drawing the symmetrical shape accurately.



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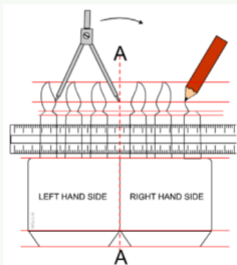
# CONSTRUCTING SYMMETRICAL POP-UPS

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An alternative technique is to use either a ruler or a pair of dividers (or both).

Measure distances with a ruler or pair of dividers on the left hand side AND transfer them to the right hand side.

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# SYMMETRICAL POP-UPS QUESTIONS

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The question below is a typical examination question. 'Simply' complete the symmetrical design, ensuring both sides of the centre line are exactly the same. Tap / click on the image for a printable version of the question.

**Tap the images** for information / an exercise



An incomplete symmetrical pop-up for a greetings card is drawn opposite. A scaled version is drawn above, so that you know the shape you are trying to complete.

1. What is meant by the term symmetrical?

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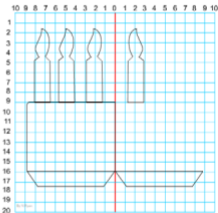
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2. Using the grid, complete the symmetrical pop-up.

3. Add appropriate colour and shade to the pop-up, in order to make it appear more realistic.



Tap the blue button for the next slide / page.



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# SYMMETRICAL POP-UPS QUESTIONS

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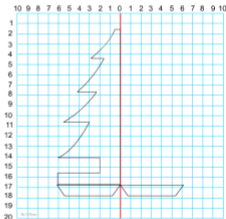
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2. Using the grid, complete the symmetrical pop-up.

3. Add appropriate colour and shade to the pop-up, in order to make it appear more realistic.



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# ROTARY MECHANISMS

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Rotary mechanisms can be used in interesting ways. The greetings card on the left allows the user to rotate a circular card disk. This changes the eyes on the front of the card. A brass split pin holds the disk to the card front but allows it to rotate.

**Tap the images** for construction details



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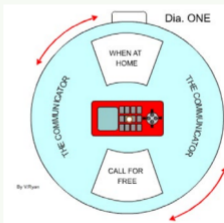
# PROMOTIONAL ROTATING DISK

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The rotating disk seen below, is a promotional device manufactured from card and aimed at promoting a new mobile phone design. The disk rotates revealing important information for potential customers.

The first piece of information displayed suggests that when phoning from home all calls are free. Rotating the disk clockwise / anticlockwise reveals further information.

**Tap the images for construction details**



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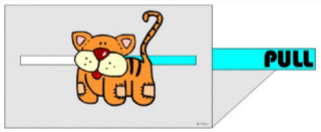
# WHAT ARE NETS / DEVELOPMENTS?

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The slide mechanism is easy to make. Start by cutting a slot in the main card.

NOW – study slide three of this PDF App to workout how the rest can be made.

**Tap the images** for information / an exercise



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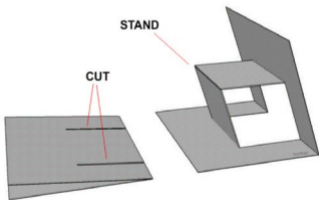


## INTERNAL STANDS

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Interesting pop-up designs can be produced by making two cuts to a backing card and bending the card inwards so that it forms a small stand (inside the card). Drawings / images can be placed on the stand so that when the card is opened the image 'pops' up

**Tap the images** for information / an exercise



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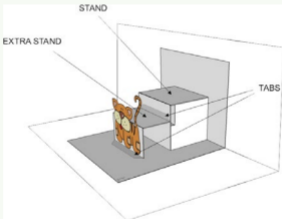
## MORE COMPLEX INTERNAL STANDS

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A slightly more difficult pop-up card can be produced by making the stand separately. This can be seen below. Remember to include tabs as these will be the surfaces that are used to glue the stand to the card.

The diagram with the tiger image shows a pop-up card that has a small double stand. When the card is opened, the image 'pops' up.

**Tap the images** for information / an exercise



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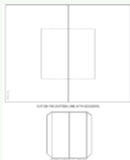


# HOW TO MAKE AN INTERNAL STAND

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Internal stands are not difficult to make, but they must be made accurately. Tap / click on the images below, for a full set of instructions and a printable template.

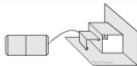
**Tap the images** for information / an exercise



1.



2.



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# A MOVING FACE AND MOUTH

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Making a basic face with a opening and shutting mouth, is quite straightforward. It requires a limited amount of folding and cutting.

**Tap the images** for construction details



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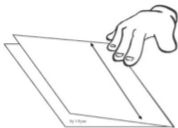
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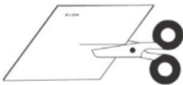
# STAGES IN MAKING THE FACE AND MOUTH

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Tap the images for construction details



1. Take a piece of card and fold it in half. Apply pressure along the fold.



2. Using a scissors, cut a line, as shown in the diagram, halfway across the folded card.

How will you find the middle / centre of the card?

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# STAGES IN MAKING THE FACE AND MOUTH

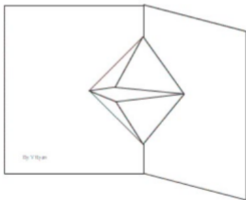
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Tap the images for construction details



3. Fold each of the 'sides', to create a 'V-fold'.

5. This produces a mouth that opens and shuts, as the card is opened and closed.  
Try opening and shutting the card.



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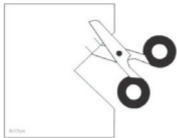
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# STAGES IN MAKING THE FACE AND MOUTH

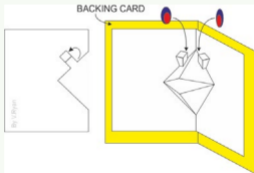
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Tap the images for construction details



6. To produce eyes, shut the card and cut two lines, as shown in the diagram. The cuts should not be too long.

7. Fold the eyes back to create a crease in the card. Add further decoration, such as large cartoon eyes. Add backing card.



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# POP-UP BOOK PROJECT

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Tap the **LINK BUTTONS** for the pop-up book project

1



2



3



4



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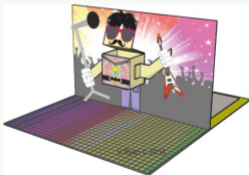


# FANTASY PAPER TOY- BASIC POP-UP

## BOOK VERSION

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Tap the images for the pop-up Fantasy Paper Toy project.



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# FANTASY PAPER TOY- BASIC POP-UP BOOK VERSION

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**Tap the link button** for the entire project  
Fantasy Paper Toy



Tap the red button to return to the  
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