

# Paper Engineering – Lesson 7

Bringing paper to life, from 2-Dimensional to 3-Dimensional



# Project Learning Objectives:

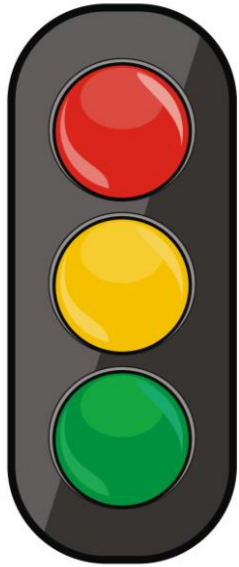
To create a 3D pop-up book suitable for a small child.

Week 1	Week 2	Week 3
Analysis of Pop-up books. Have a go at some basic pop-up techniques.	Explore the essential techniques for accurate pop-up. Continue to have a go. Introduce variations of pop-ups.	Using knowledge learnt so far, introduce mechanisms. Know the difference between them.
Week 4	Week 5/6	Week 7/8
Discuss key criteria for a good story or pop-up book. Plan the story using a storyboard.	Evaluate the story plan so far. Start to make the pop-ups and mechanisms for all the pages.	Finish the pages, with text and decoration. Create the cover and assemble the finished book.

## Success criteria:

- ▶ (SC1) I can explain advantages and disadvantages of pop-up books
- ▶ (SC2) I can identify advantages and disadvantages of making 3D shapes from flat sheets.
- ▶ (SC3) I can describe how folding a flat (2D) sheet of paper makes it a 3D object.
- ▶ (SC4) I can describe how different cuts and folds can make different 3D shapes.
- ▶ (SC5) I can make a pop-up designs following instructions.
- ▶ (SC6) I can make a pop-up designs from a blank piece of paper.
- ▶ (SC7) I can identify the difference between pop-ups and mechanisms
- ▶ (SC8) I can create a short, fun story and make it into a pop-up book.

# Introduction



Are you on track to finish?  
What do you need to do today?  
Have you moved nearer to the 'green' zone?

**Back Cover**

**Spine**

**Front Cover**

What needs to be on the cover of a book?

Design the front and back cover for your book, don't forget whether you're laying out in portrait or landscape!

Don't forget the spine of the book too!

# Book Cover

Price,  
barcode

Publisher's  
details and  
date

Book title

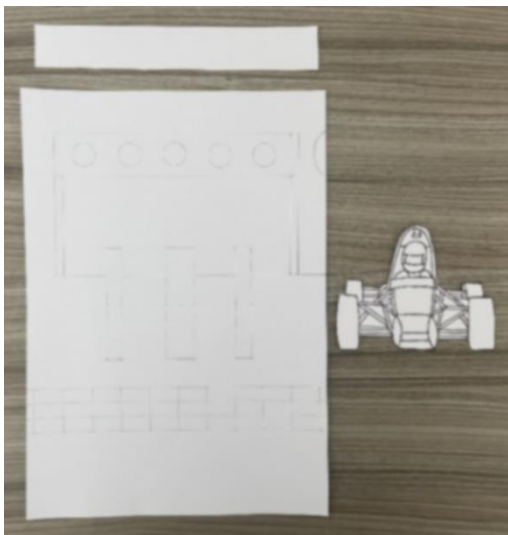
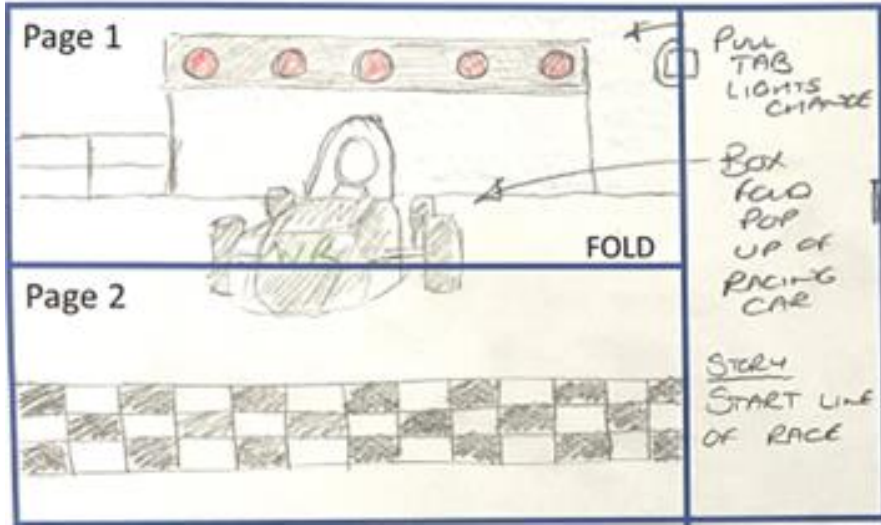
Spine: Book title,  
author and  
illustrator,  
publisher

Image of  
characters

Illustrator



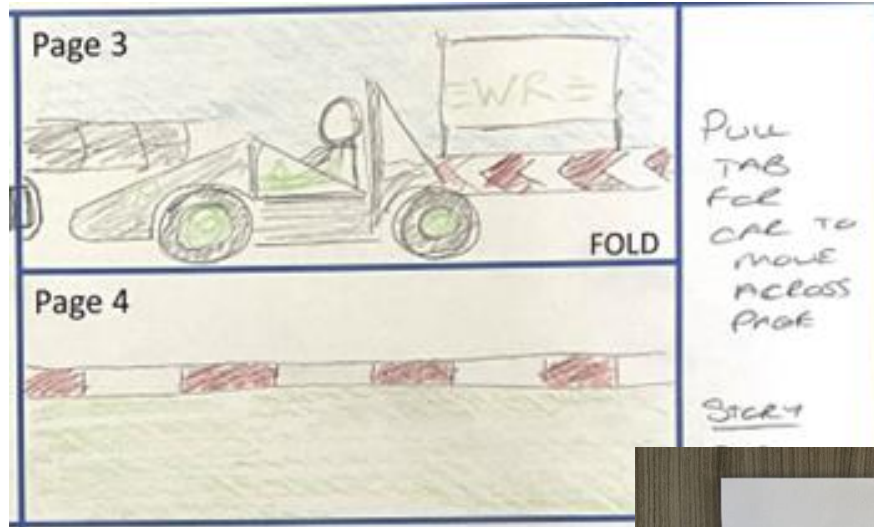
# Finishing your pages



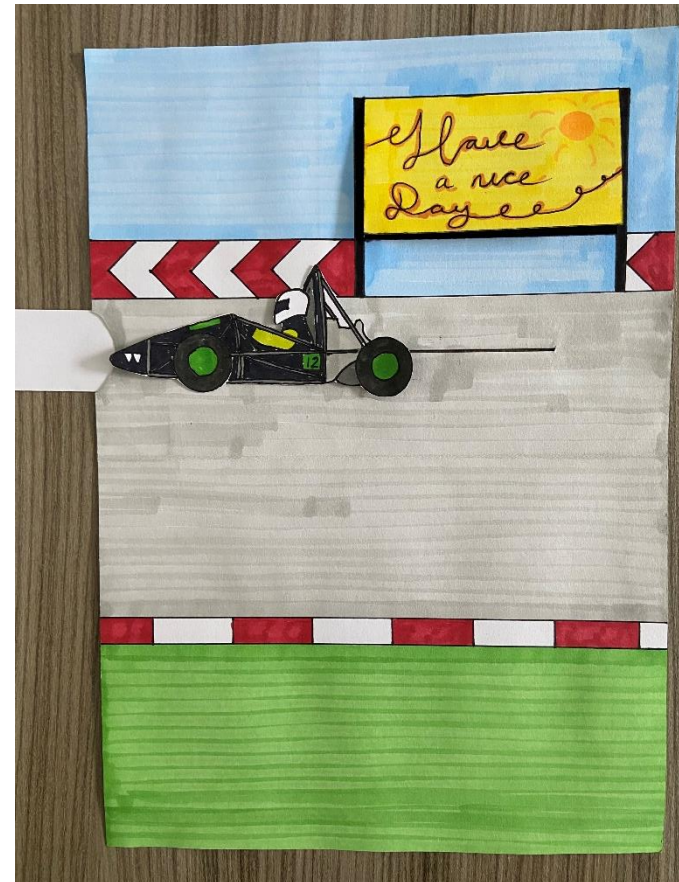
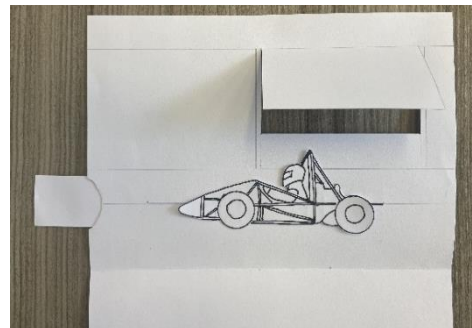
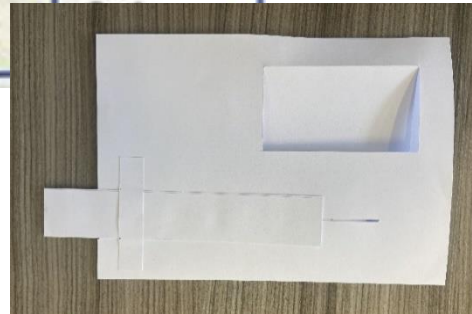
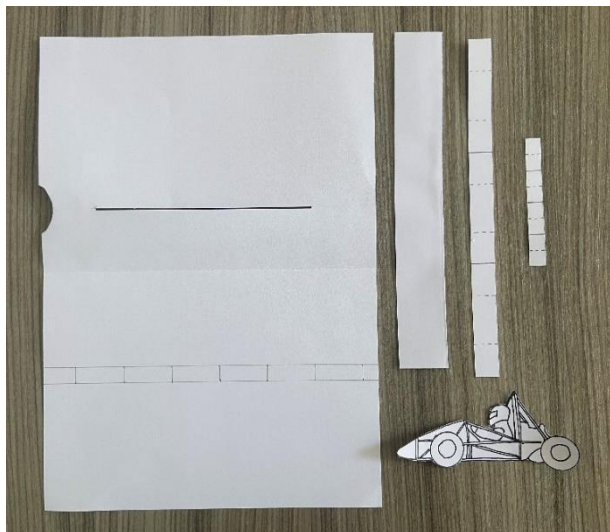
From storyboard to planning pop-ups and mechanisms to finished page.



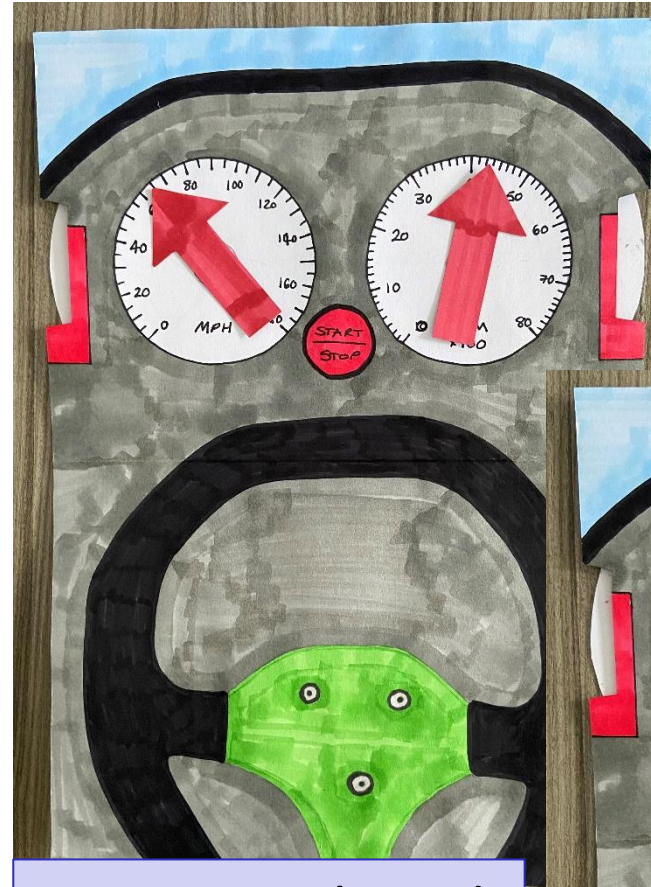
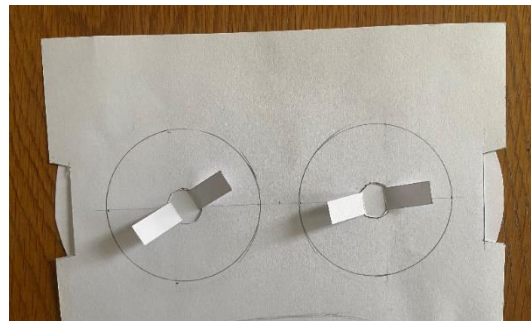
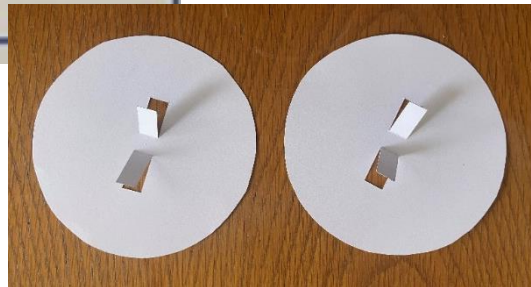
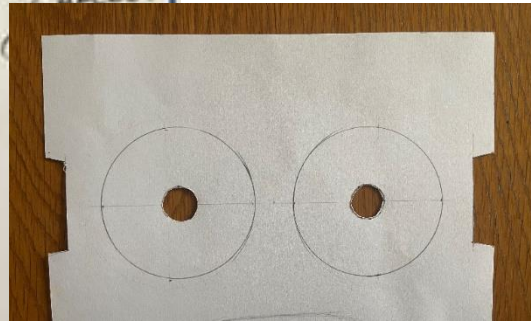
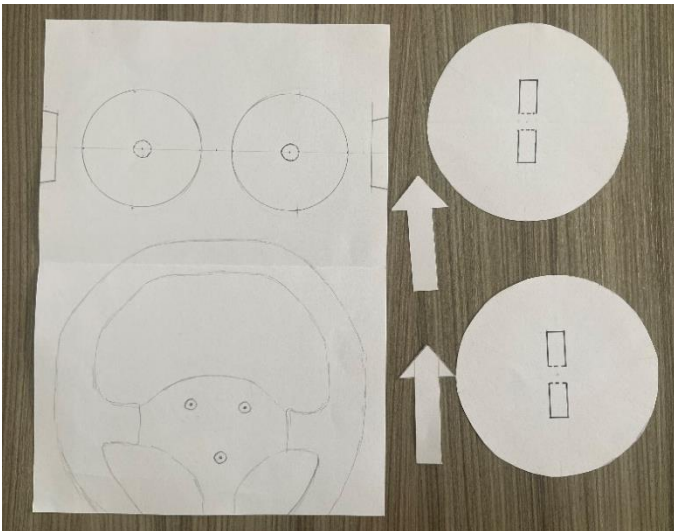
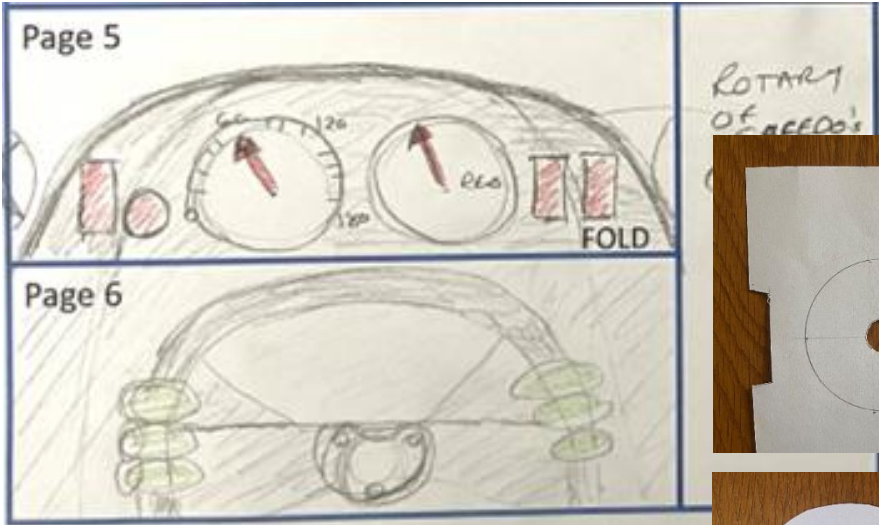
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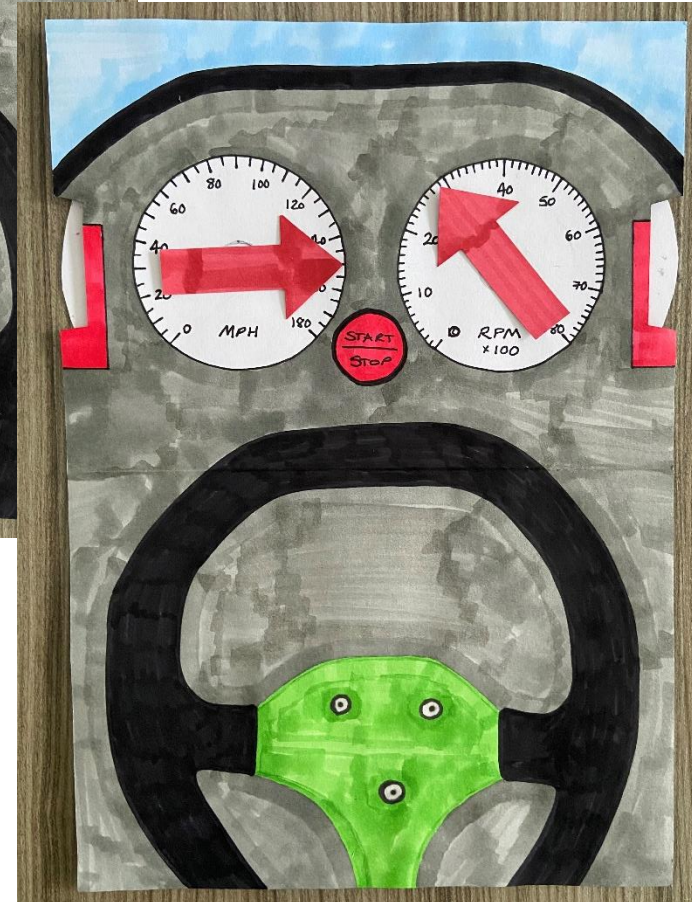
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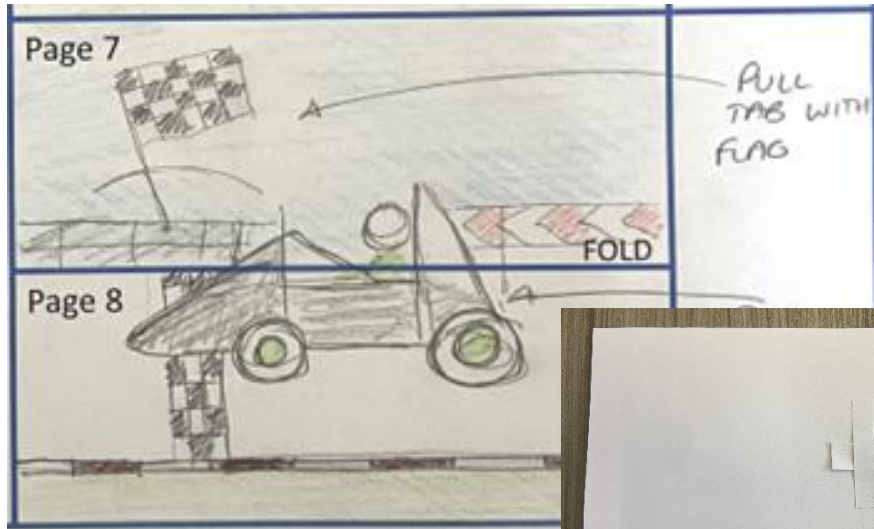
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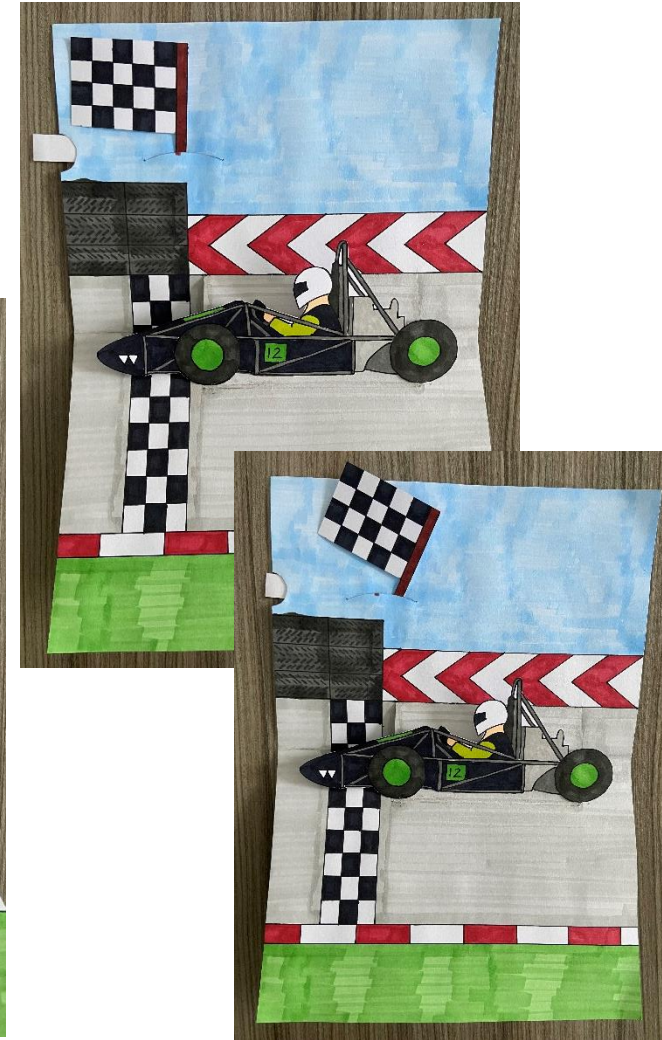
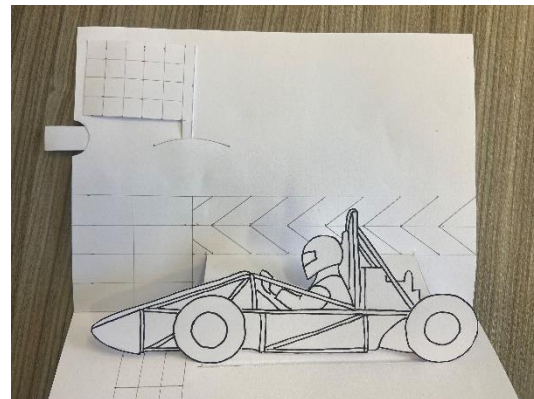
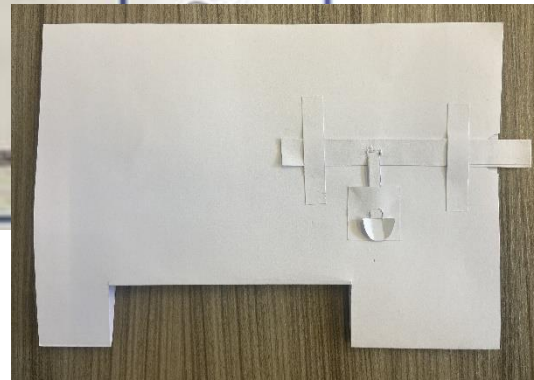
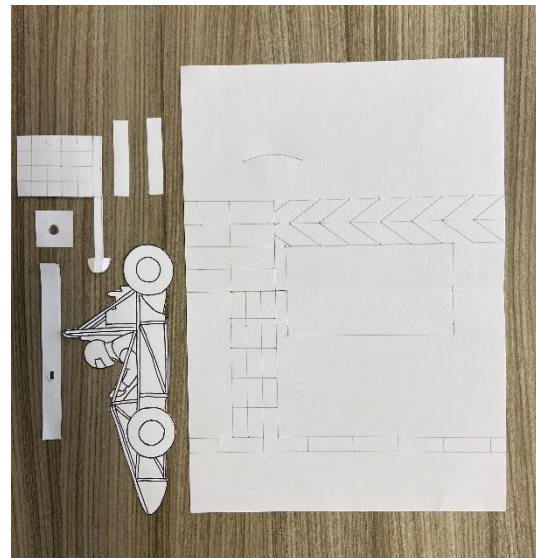
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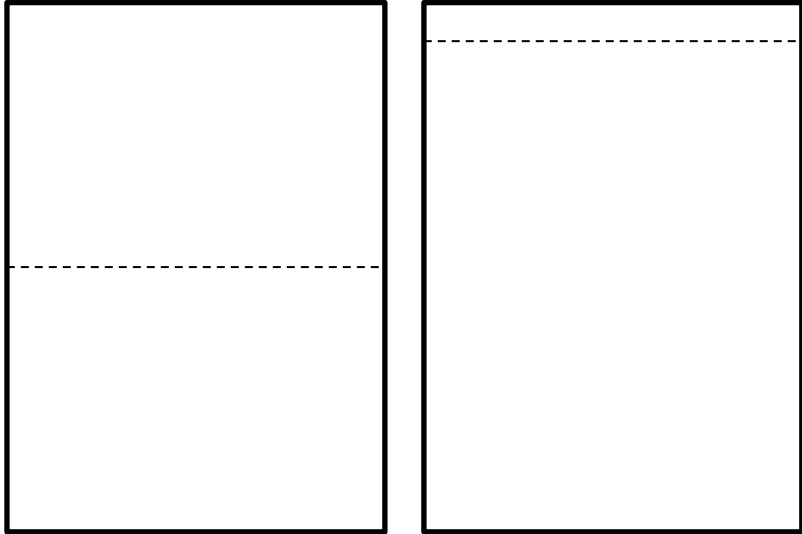


From storyboard to planning pop-ups and mechanisms to finished page.





# Making your cover



You'll need 2 sheets of A4 card, cut one in half.

On the other, cut a strip off the short edge, this will be the spine, it's width will depend on how many pages you have made for your book



## Front Cover

Decorate your front and back cover and the spine

## Back Cover

## Spine

# Making your cover



Back Cover

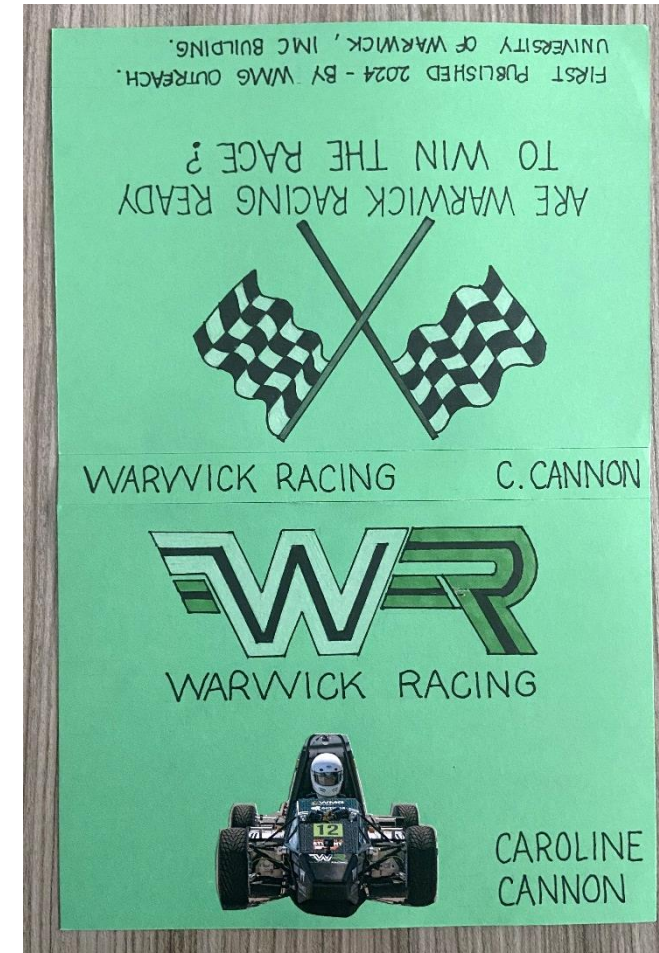
Spine

Front Cover



Layout the front cover, spine and back cover in the correct order (the back cover will be upside down)

Attach with tape



# Putting your book together

Stick the pages together, with either glue or double-sided tape.

Be careful not to stick mechanisms down, so that they can't be operated

## Paper Engineering: Warwick Racing Pop-up Book

[warwick.ac.uk/wmgoutreach/resources](http://warwick.ac.uk/wmgoutreach/resources)

[wmgoutreach@warwick.ac.uk](mailto:wmgoutreach@warwick.ac.uk)

# Assessment

Let's evaluate our pop-up book and how you feel about making it?

## EVALUATION

Question:	Your reflection:
<b>Choice:</b> Did you choose the right pop-ups and mechanisms?	
<b>What went well:</b> What's the best feature in your book?	
<b>Favourite:</b> Which pop-up / mechanism is your favourite?	
<b>Challenge:</b> Explain whether you found making pop-ups easy or hard?	
<b>Peer review:</b> Ask someone in the class to write their thoughts on your book.	
<b>Even Better If:</b> What would you do differently if you did this again?	
<b>Overall Rating of creating pop-ups and mechanisms:</b>	