

Name _____

Period _____

Paper Engineering Design Challenge

Situation:

Paper engineering can be broadly defined as using a book format and the motion from the opening of a page or from pulling “tab” or turning a “wheel,” transferred through a series of mechanisms to produce a motion or to cause a structure to form. Commonly known as “pop-up books” there are many ways that paper engineers apply the principles of structures and mechanisms. These include folding paper or levers, pivots and slides.

Challenge:

Make a paper engineered book in which the pages are tied together thematically.

Specifications:

1. The book must have a minimum of three pages. You may make as many pages as you like. If you choose to work with others you may combine pages. But **each individual is responsible for creating their own three pages** as defined in these specifications.
 - At least one page must be engineered to create a 3-D structure when opened
 - At least one page must be engineered using folds to create the appearance of motion upon opening
 - At least one page must be engineered using pull-tabs and/or wheels as input devices to create output motion not tied to the movement of the opening of pages
2. All pages must be assembled as a book and must have a common theme.
3. There must be a cover with a title (which communicates the book’s theme) and the author’s name.
4. All pages must demonstrate good composition. You will be expected to justify your composition decisions based, at least in part, on our class discussions and experiments. (Refer to notes on composition.)
 - At least one page must use composition to enhance and/or exaggerate the sense of depth.
5. All pages must demonstrate an understanding of color. You will be expected to justify your choice of color based, at least in part on our class discussions and experiments. (Refer to notes on color.)
6. The engineer/artist’s **name, period and date of completion must appear on the back cover of the finished book. This information must be neatly printed at the top.**

Assessment:

1. In addition to meeting all specifications the books will be critiqued based on:
 - The complexity of engineering.
 - The thoughtful use of color and composition.
 - The successful development of the theme with pop-ups, images and/or words.
2. The presentations, which will take place on _____
3. The Design Portfolio, which will further demonstrate each student’s understanding of concepts and design decisions.