

## Creating the Solution

**Constructs a detailed and logical plan**, which **describes** the efficient **use of time and resources, sufficient for peers to be able to follow to create the solution.** Follows the plan to **create** the solution, which functions **as intended** and is presented appropriately

Resources examples:

*Product materials- hardwood, nylon or cornstarch;*

*Product tools - hand tools, machinery, CAD software and CAM hardware.*

*Digital materials - text, fonts, images, audio, video, animation, sprites and icons.*

*Digital tools -software and hardware (input, processing and output devices).*

Task	Tools / Equipment	Materials	Time or Date	Completed (Checkmark)

Which steps might take more or less time that you expect?

Does your plan contain a sequence of logical steps?

(Circle one) YES or NO

What resources did a friend explain needed explaining? (Ask a friend what other resources might be needed or clarified)

When does your product need to be completed by?

Have you made sure you have enough time to complete your product?

(Circle one) YES or NO

How much time did you allot for practicing a new skill?

Have you given time for practicing or learning a new skill?

(Circle one) YES or NO

How much extra time do you have built into the plan?

Have you allowed extra time in case something goes wrong?

(Circle one) YES or NO

What other ways might you create the solution if you do not have enough time?

What other ways might you create the solution if you do not have the proper resources?

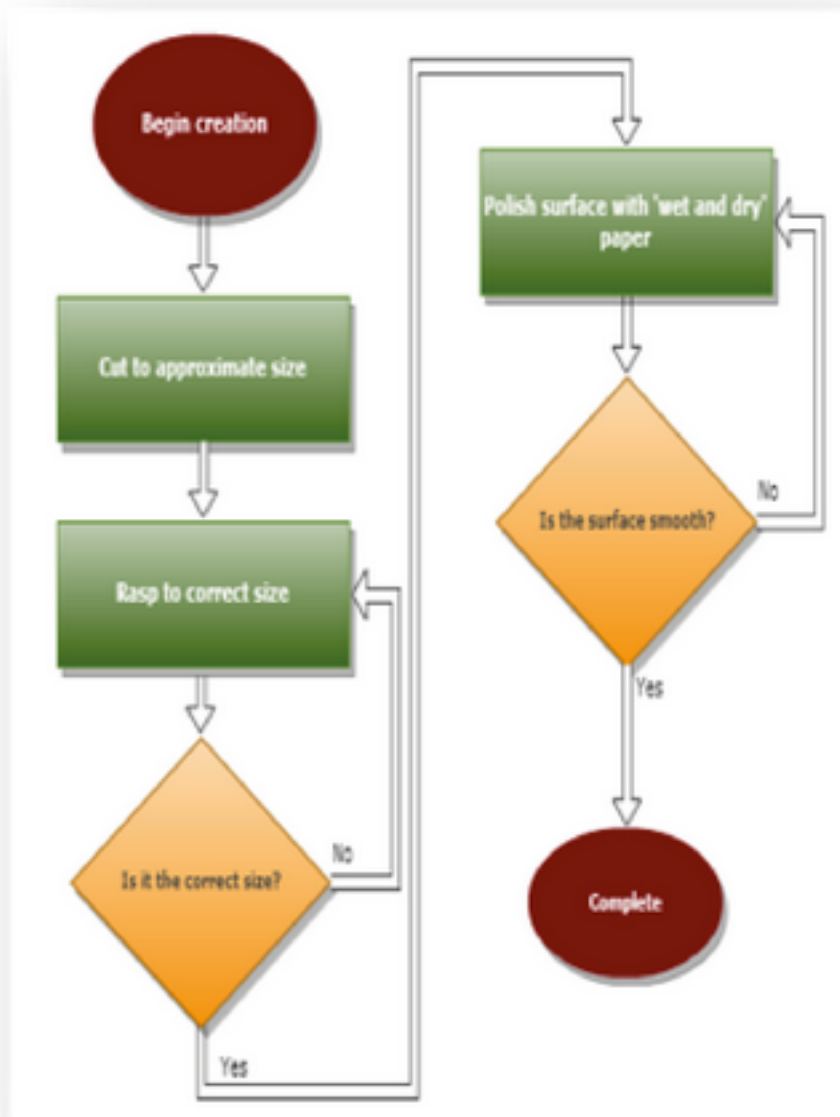
What other ways might you create the solution if you do not know how to make it?

Have you planned for testing at appropriate times in the manufacturing process?

*(Circle one)*    YES or NO

Where is this explained in the plan?

## EXAMPLES of Plans - Flow Diagram 1



## EXAMPLES of Plans - Flow Diagram 2



## EXAMPLES of Plans – Step-by-step template

Step	Process (including quality control and health and safety considerations)	Required resources	Materials	Time to complete
1.				
2.				

## EXAMPLES of Plans – Step-by-step example

### Construction Plan Example

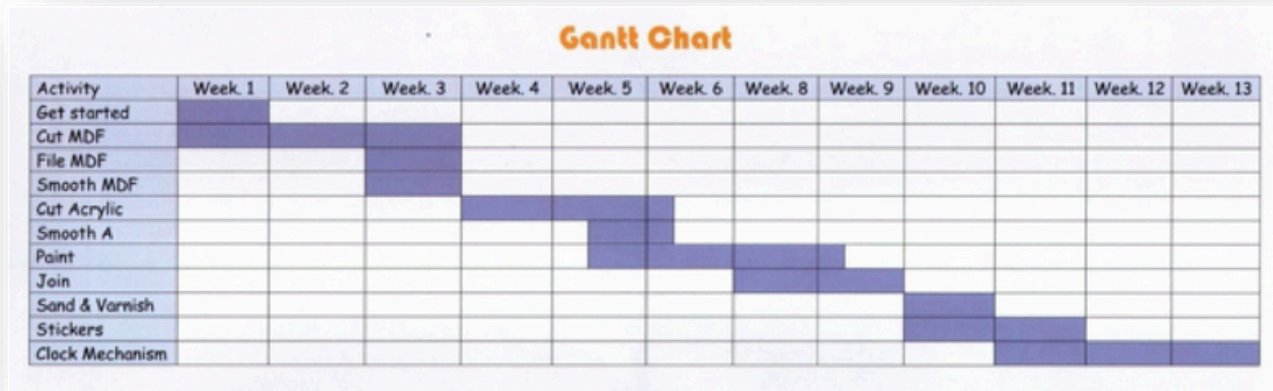
It is very important that you plan how to make your design solution. If you do a good job, it will actually save you time, as you will be prepared each lesson, and know exactly what to do. By thinking through how each part will be made, you may also solve problems before they occur.

Below is an example of a construction plan. It contains detailed descriptions of how each part is made under the task column. Your own construction plan should contain enough detail to enable someone else to make what you have designed. The plan must also indicate the specific tools, machines, and materials you intend to use. It must also indicate how long each task will take. The example is color coded to show the subtasks for each of the main parts, 'Making the Frame', 'Making the Lid' etc.

Task	Tools/Equipment	Materials	Time
<b>Making the Frame</b> - Sand the faces and edges of the pine frame using 120 then 220 grit abrasive paper.	Sanding block, 120/220 grit aluminum oxide paper	<u>Radiata</u> pine – 390x63x19mm	10 <u>mins</u>
Make the first 45 degree cut near the end of the wood, then measure from the longest side, the length of your next cut, and mark the angle using a bevel gauge. Mark the waste side of this line so you don't cut it too short, and then make the second cut. Repeat until all parts are cut. On the outside face of the wood, write your name on all 4 parts in pencil.	12" Miter Saw, steel rule, bevel gauge, pencil, safety glasses,	As above	15 <u>mins</u>
Check that opposite sides are of equal length, by placing the two parts together and setting the ends on a table.	Assembly jig (String, wooden blocks)	As above	15 <u>mins</u>

## EXAMPLES of Plans – Gantt Chart/Slippage Chart

A Gantt chart is a project-management tool used to provide an overview of a process. The Gantt chart plots divide the manufacture of a product into small tasks. It indicates the time estimated for each of these tasks and the resources required. It does not provide a detailed set of instructions, but instead is an overview to self-assess progress with a project. Students should be encouraged to indicate when each task is complete.



## EXAMPLES of Plans – Gantt Chart

Task	Description of task	Tools required	Day 1 – 6 <sup>th</sup> November	Day 2 – 13 <sup>th</sup> November	Day 3 – 20 <sup>th</sup> November	Day 4 – 22 <sup>nd</sup> November
Design wheels of buggy	Use CorelDraw CAD Program to design acrylic wheels	CorelDraw				
Cut wheels of buggy	Use laser cutter to cut out wheels from acrylic sheet	CorelDraw, Laser cutter				
Cut and shape axles	Use the tip and dye set to shape the axles for the wheels	Hacksaw, Tip and dye set				
Test the wheels	Experiment with the washers, nuts and wheel hubs to make sure the wheels work properly	Washers, Nuts, Axles, Wheels				
Assemble frame	Use balsa wood glue to glue the frame together	Balsa Wood, Balsa wood glue				
Prepare frame	Drill holes in frame for the axles to fit in	Drill, Balsa frame				

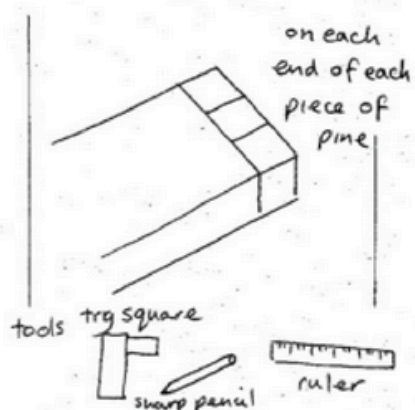
## EXAMPLES of Plans – Slippage Chart

A slippage chart goes one step further than the Gantt chart in that it has room below each task to mark when it was completed (in green), allowing students to identify when they are behind in their plans and take action to get back on schedule.

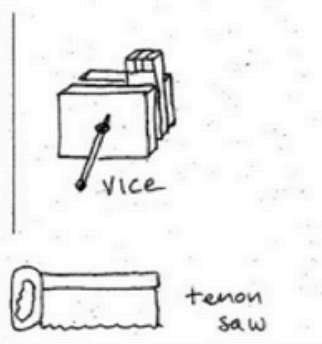
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## EXAMPLES of Plans – Storyboard: Making a Box

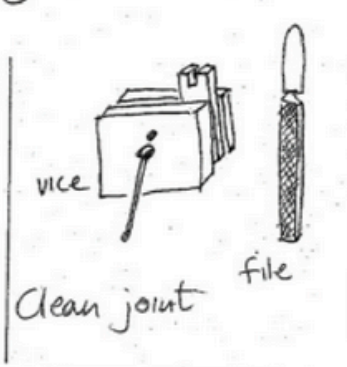
### ① Mark finger joint



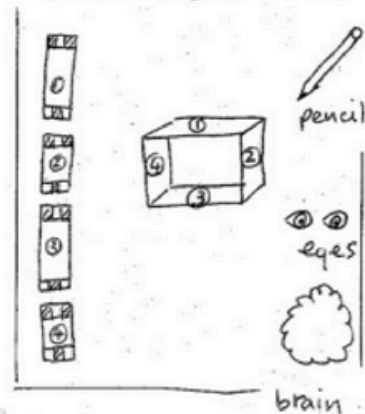
### ③ cut vertical lines



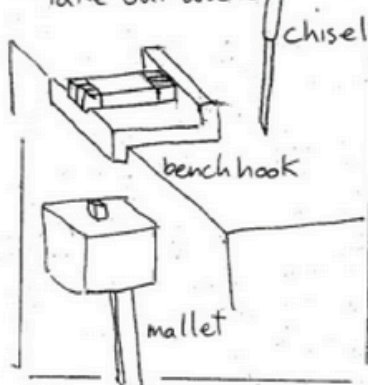
### ⑤



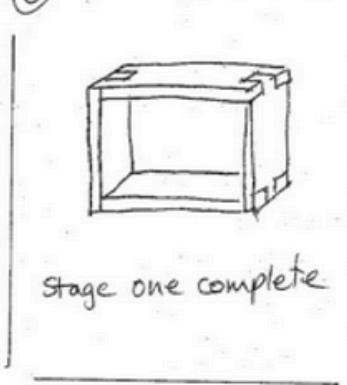
### ② Shade waste



### ④ Take out waste

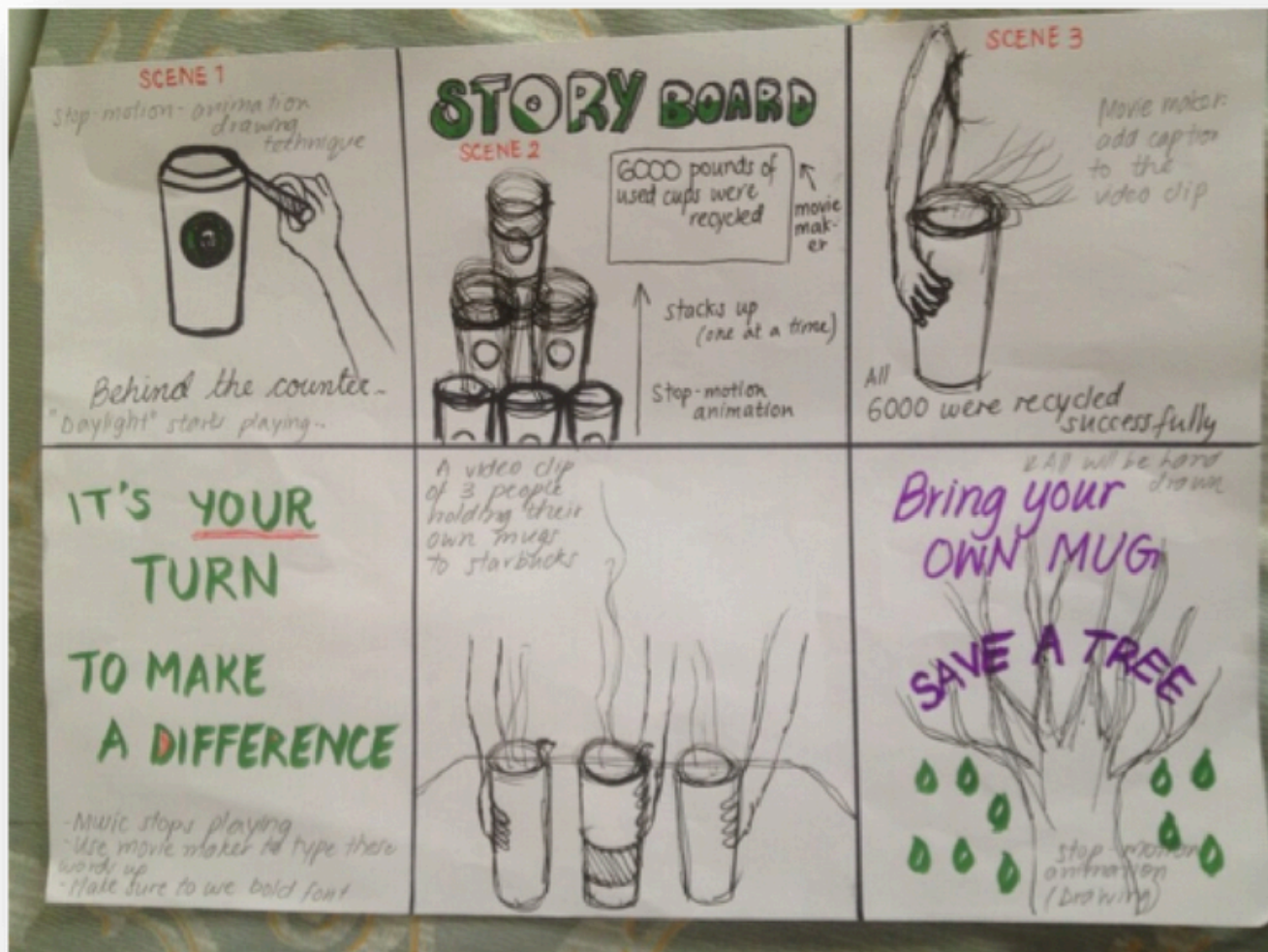


### ⑥

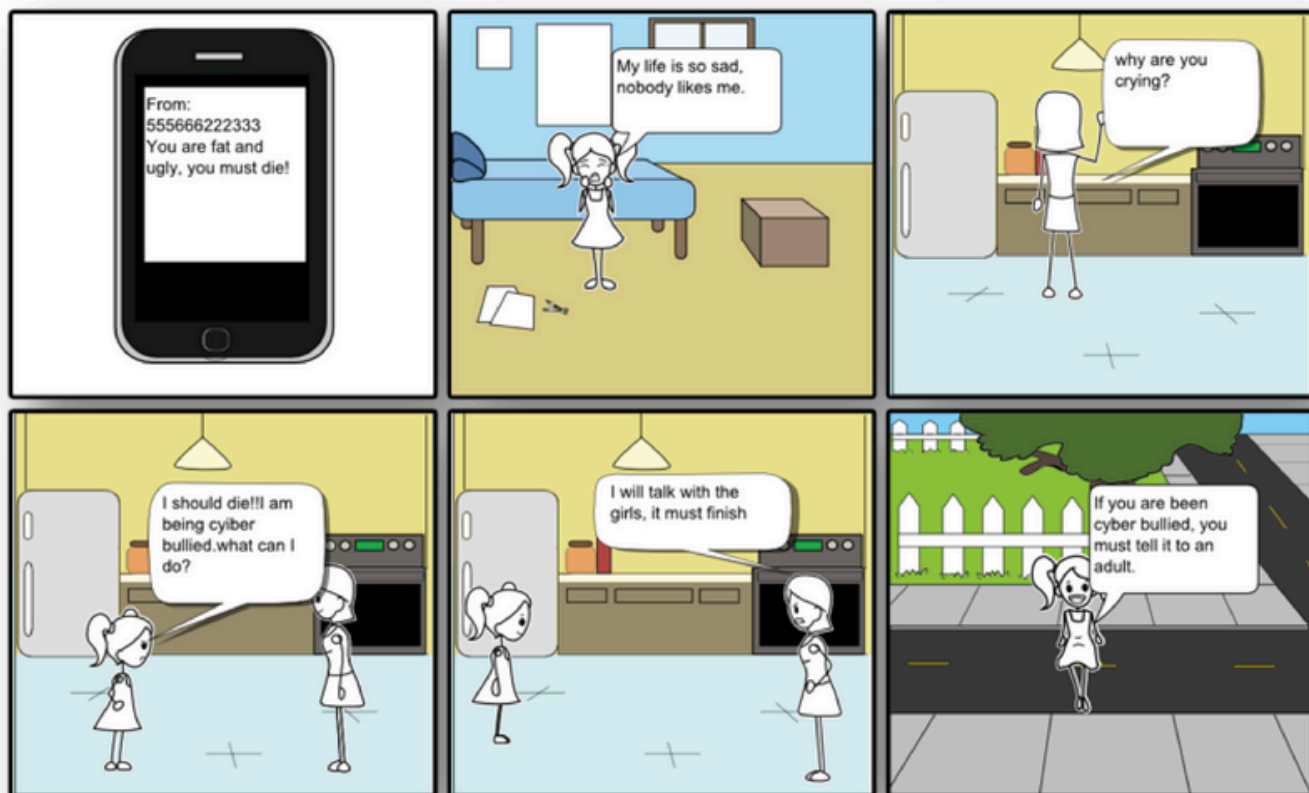




## EXAMPLES of Plans – Storyboard: Stop-motion animation



## EXAMPLES of Plans – Storyboard: Cyberbullying awareness TV advertisement (Year 2)



Create your own at [StoryboardThat.com](https://StoryboardThat.com)

## EXAMPLES of Plans – Recipe

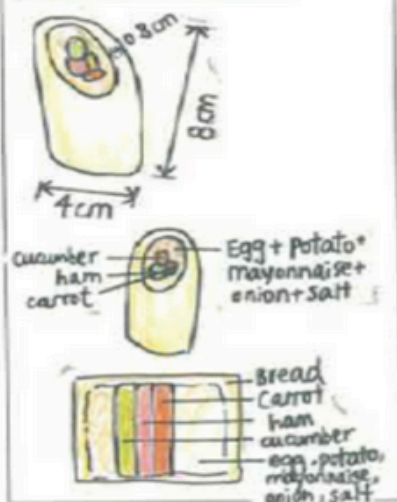
### Ingredient list

- 2 cucumbers
- 4 potatoes
- Mayonnaise
- 3 medium eggs
- 200g Ham
- 1 Carrot (Medium)
- 1 onion (large)
- 12 slices of wholemeal bread
- $\frac{1}{4}$  tsp salt

### Equipment list

- Weighing scales
- Cutting board
- 2 sharp knives
- Rolling pin
- Clean wrapper
- Pot with lid
- Vegetable peeler
- Bowls (mixing and regular)
- Plates
- 1 Wooden and 1 steel spoon
- Grater (Steel)
- Microwave

### Detailed Sketch:



### Method

1. Cook eggs and potatoes (Eggs boiled using pot and potatoes using microwave)
2. Cut the crusts off the bread
3. Using a roller pin, roll bread until the edge is thin on clean wrapper
4. Cut cucumbers, ham and carrot into long slices of similar length
5. Slice cooked eggs and potatoes and chop onions into small cubes
6. Mash the eggs and potatoes with a spoon
7. Mix eggs and potatoes with onion, mayonnaise and salt
8. Using the steel spoon to put the mixture on bread as a layer (see diagram)
9. Layer sliced ingredients on top of the mixture
10. Carefully roll the sandwich
11. Trim both side of the sandwich once more to make it look neat.
12. Present on a plate for eating

## EXAMPLES of Plans – Pattern



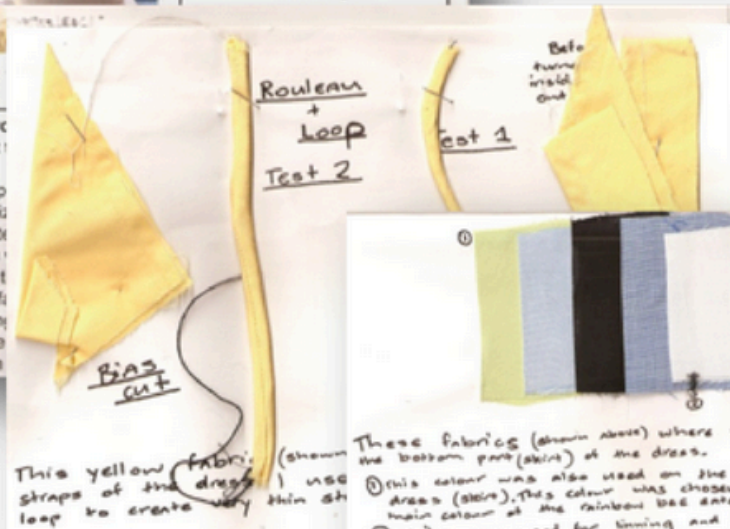
Picture of the commercial pattern



Top before lining and added to the skirt:  
First the orange fabric was cut on the bias and folded in half. Then it was sewn on to the top to form tucking. This then represented the tucking shown under the birds wings



Commercial the front dress:  
First the pattern was cut to size (size 10). Then pattern was cut from the fabric to create the bodice. Next the fabric was cut. Then using thread the bodice was sewn.



This yellow fabric (shown above) was used for the straps of the dress. I used a loop to create very thin straps.

