

Challenge time limit:



Challenge	
<b>Cautious</b>	<b>Task</b> Product Analysis - given product Write a few sentences per key area for the given product. Produce basic sketches showing key detail. 1 x A3 sheet (minimum)
<b>Confident</b>	<b>Task</b> Product Analysis - given product Write detailed sentences per key area for the given product. Use connectives so that... because ... therefore... to extend the written content Produce sketches 2D/3D showing the controller and key features. 2+ x A3 sheet
<b>Challenge</b>	<b>Task</b> Product Analysis - given product Write detailed paragraph per key area for the given product. Use connectives so that... because ... therefore... to extend the written content, Justify the key information recorded. Using a combination of 2D/3D sketches and rendered drawings (colour added) use to support your analysis.
<b>Challenge Plus</b>	<b>Task</b> As challenge PLUS - consider any additional electronic / mechanical systems - what is the INPUT and OUTPUT of the product. What materials detail is necessary to enable an improved ergonomic interaction between product and user?

Time spent  
Accuracy  
Layout  
Quality



Product Analysis:

Size - Anthropometrics (Hand Sizes)

Ergonomics

Colour(s)

Material(s)

Function (what it is designed to do)

Typography (Lettering type)

Moving Parts

**EXT.** Method of Manufacture for the casing / surface finish



<https://prezi.com/qs7enxnycixc/manufacturing-process-of-the-xbox-360-controller/>

# A level resources OCR

1) This product will be sold at a retail price of \$34.99, and produced at a cost of \$8.78. This \$26.21 margin to manufacturer than its rival (PS3 controller). It is also \$5.01 cheaper to the consumer, and will give a 5% larger profit margin of \$26.61 per unit.

2) This controller will comfortably fit the majority of hands. Providing optimal support whilst gaming. Plus, the placement is uniquely designed so that both thumbs can rest in a natural position.

3) Machines have been built that are able to exert stress on xbox controllers. These machines also press buttons up to 2 million times. This will be to ensure the controllers can stand up to abuse.

4) The casing will be made from ABS plastic. ABS plastic is impact resistant, adheres well to paint, is easily machined and all at a fair price. Plus, because it is easily machined it cuts down on machining consumables and the time taken to produce the controller. ABS plastic is prone to shattering, so to prevent this the plastic will be up to 2mm thick in damage prone areas. This helps prevent the user from any sharp shrapnel as a result of the plastic breaking.

5) As well as the 7 standard colours, there will be an option to fully customise controllers with over 8 million different combinations. A clear enamel primer will be used, followed by the paint colour of choice. Off and gloss finishes will be available.

The Xbox 360 controller is the PS3 controller. Unlike the Xbox 360 controller it requires the users thumbs to constantly rest in an unnatural position due to the placement of the analogue sticks and key buttons. The hands are usually in this position.

7) Silicone thumb pads will provide added comfort for gamers that regularly use the controller. Also, the small dimples help increase accuracy on FPS or target based games. The silicone can be built in a 2 part mix and moulded to a set shape.

8) Controllers will be available in wired and wireless formats. Wireless controllers will have a range in excess of 30 feet. The standard wire length for the wired controller is 9 feet. Twin battery charging stations will also be available for the wireless controller.

9) In comparison to the PS3 controller, the Xbox 360 controller is longer and heavier.

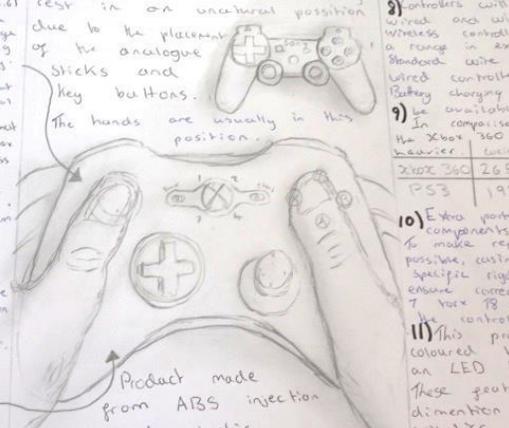
Model	Weight	Dimensions mm
Xbox 360	265g	154x105x61.3
PS3	192g	160x97x55

10) Extra ports for damage prone components will be manufactured to make repairs as simple as possible. Casing parts will have specific ridges and grooves to ensure correct parts slot together. 7 Torx T8 screws will also hold the controller together.

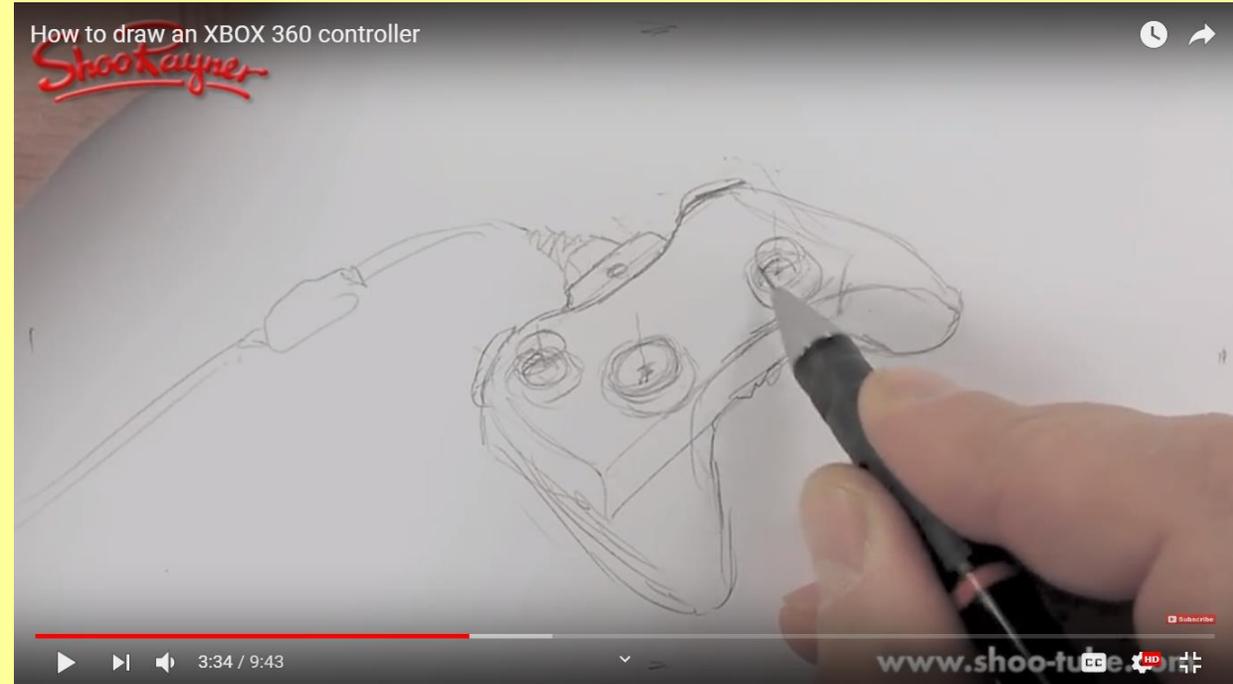
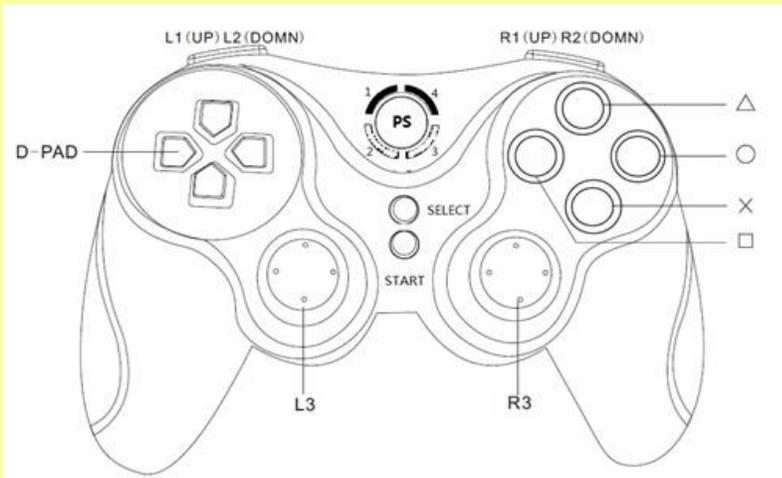
11) This product will have 4 coloured buttons (A, X, Y, B) and an LED lit home/guide button. These features add another dimension to the controllers aesthetics, and clearly set it apart from its competitor (PS3).

12) In a 2008 study the PS3's controller had a battery life of just 19 hours and 14 minutes. Whereas this controller will last over 50 hours before a charge is required. (Pointing is a key customization option so it is an essential property.)

Product made from ABS injection moulded plastic. ABS is chosen over other products like polypropylene because it adheres to paint well unlike polypropylene. (Painting is a key customization option so it is an essential property.)



N.B. Xbox controller shown – it can be a controller from a console of choice



<https://www.youtube.com/watch?v=r28mE-uOYI>

## Product Analysis:

### Method of Manufacture for the casing / surface finish

The main body of the casing is manufactured using the injection moulding process. The casing is made in several parts as this allows for the electronic components to be inserted and enclosed within the cavity in the casing.

The manufacturing using injection moulding allows for an intricate shape to the casing using a thermopolymer such as Acrylonitrile-Butadiene-Styrene (ABS) is one of the most widely used and versatile thermoplastics.

Texture and surface designs are added to the surfaces of the injection mould so that the casing comes out prefinished - there may be some aspects of flash to remove prior to assembly. Some parts are 'TWO SHOT' injection moulding - this means that the harder plastic is injection moulded first then the softer rubberized surface is added on the second 'shot'.

This allows for a more comfortable product to use.



## EXAMPLE (Challenge +)

### Microsoft Xbox One S

#### Controller - Exploded View



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