

The following questions are based on the pre-released case study which you have already prepared for.

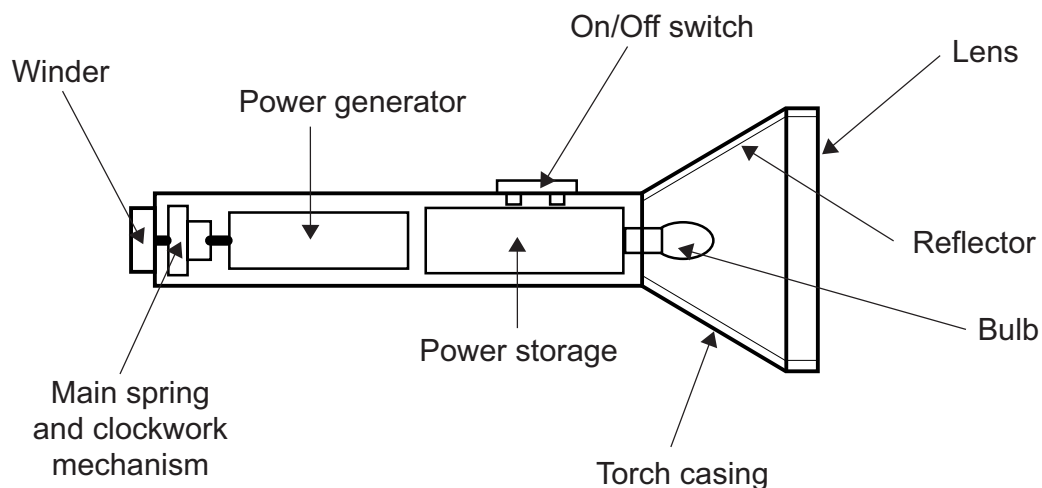
Ellie and Jamie have come up with a technical idea for a product which they would like to produce and sell. The idea is to manufacture a submersible, wind-up torch called 'OneClick'. The novel idea combines two existing technologies (a torch and a wind-up power supply) in a waterproof casing. Ellie and Jamie want to protect their idea because it is substantial and new.

Ellie and Jamie will research the marketplace to identify demand for the product and how it might impact on everyday life. They will calculate set-up, marketing and production costs and also produce a business plan, including their financial requirements, to make OneClick a success.

Ellie and Jamie want their product to meet three main criteria:

1. To be made of suitable materials.
2. The production process (or build) to have as little impact on the environment as possible.
3. To ensure that the product is recyclable, or biodegradable, when its life is finished.

OneClick torch



Instructions

You are required to investigate the viability of the OneClick product. Your study should identify the steps Ellie and Jamie will need to undertake if the OneClick product is to be a success. Your study should include investigating the following areas:

- intellectual property
- research and development
- social and environmental impact
- financial support
- suitability of materials for manufacture of the casing, reflector and switch
- potential impact on the home, workplace and built environment.



Answer ALL questions in the spaces provided.

1. There are four main types of intellectual property: patents, design, trademarks and copyright. Look at the list below which describes each intellectual property.

(a) Match the different types of intellectual property to a description. Write your answer in the spaces provided.

Patents	Designs	Trademarks	Copyrights
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..... protect material such as literature, art, music, sound recordings, films and broadcasts.

..... protect signs or symbols that can distinguish the goods and services of one trader from those of another.

..... protect the visual appearance or “eye appeal” of products.

..... protect the technical and functional aspects of products and processes.

(4)

(b) State which intellectual property type Ellie and Jamie should use to protect their OneClick idea.

..... **(1)**

(c) Give **two** different reasons why Ellie and Jamie should choose the intellectual property stated in 1(b).

1

2

(2)



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blank

(d) Explain the benefits of registering intellectual property.

.....

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.....

.....

.....

(3)

Q1

(Total 10 marks)



2. Before Ellie and Jamie can launch their torch they will need to carry out market research and development activities to ensure their torch is both successful and financially viable.

(a) Write down **three** questions they would need to ask to find out if there is a market for their torch.

1

.....

2

.....

3

.....

(3)

(b) Explain how they can make sure the torch will perform as expected before mass production begins.

.....

.....

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.....

(3)

(c) List **four** different ways Ellie and Jamie could raise finance to support their idea.

1

2

3

4

(4)

(Total 10 marks)

Q2

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3. Ellie and Jamie want their torch to be made from suitable materials. For each of the following components, state **one** suitable and specific material it could be made from and **one** property of that material which makes it suitable.

(a) Casing

(i) Material (1)

(ii) Property (1)

(b) Switch contacts

(i) Material (1)

(ii) Property (1)

(c) Reflector

(i) Material (1)

(ii) Property (1)

(Total 6 marks)

Q3



4. Describe, using notes and sketches, **one** mass production process that could be used to manufacture the torch casing.

Use this space for notes and sketches.

Q4

(Total 4 marks)



5. (a) OneClick is a submersible, wind-up clockwork torch; state **six** different advantages of using this technology in the home or work place when compared to a conventional torch.

Advantage 1

.....

Advantage 2

.....

Advantage 3

.....

Advantage 4

.....

Advantage 5

.....

Advantage 6

.....

(6)

(b) Explain **two** positive impacts that this new torch will have on the environment.

Impact 1

.....

.....

Impact 2

.....

.....

(4)

Q5

(Total 10 marks)



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6. Taking any new product from initial idea to the end user will have an impact on the environment. Consider each item below and explain the possible impact on the environment and how that impact could be reduced.

(a) Raw material production and transport.

(i) Impact:
.....
.....
(2)

(ii) Reduction:
.....
.....
(2)

(b) Energy used in the manufacturing/production process.

(i) Impact:
.....
.....
(2)

(ii) Reduction:
.....
.....
(2)

(c) Waste disposal.

(i) Impact:
.....
.....
(2)

(ii) Reduction:
.....
.....
(2)



(d) Packaging and documentation.

(i) Impact:
.....
.....
(2)

(ii) Reduction:
.....
.....
(2)

(e) Distribution of the product to the end user.

(i) Impact:
.....
.....
(2)

(ii) Reduction:
.....
.....
(2)

Q6

(Total 20 marks)

TOTAL FOR PAPER: 60 MARKS

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