

WCSA



Home Learning Book – Learning Cycle 2

Year 11

Design & Technology

Resistant Materials Focus

Completion dates;

Week 1

Week 5

Week 2

Week 6

Week 3

Week 7

Name: _____ Tutor Group: ____

Teacher(s): _____

Why is regular home learning important?

- It can improve a student's thinking and memory skills. This is vital for the new GCSEs.
- It helps students to develop positive study skills and habits that will serve them well throughout life.
- Home learning encourages students to use time wisely and efficiently.
- It teaches students to work independently.
- Home learning teaches students to take responsibility for their own work.
- It allows students to review and practice what has been covered in class and consolidate their knowledge and skills.
- Equally important, it helps students to get ready for the next day's class.
- It helps students learn to use resources, such as libraries, reference materials, and computer Web sites to find information.
- It encourages students to explore subjects more fully than classroom time permits.
- It allows students to extend their learning by applying skills to new situations.
- Home learning helps parents learn more about what their children learning in school.
- It allows parents to communicate with teachers about learning in order to support their children efficiently.

Week 1: Investigation

1. Primary and secondary research are both necessary for the modern designer.

(a) Give **one** example of primary research.

[1]

(b) Give **one** example of Secondary research.

[1]

2. Evaluate the advantages and disadvantages of each of the computer mice below with regards to ergonomics, anthropometrics, manufacturing cost and durability:



Mouse A



Mouse B

[4]

3.

Advantages of Mouse A	Advantages of Mouse B
	A skateboard helmet is shown below.
Disadvantages of Mouse A	Disadvantages of Mouse B
<p>(a) S u g g e s t</p>	

Week 3: Keywords

Research and explain the definitions of the following key words giving examples where appropriate:

<i>Key Word</i>	<i>Definition</i>
Specification	
Evaluation	
Aesthetics	
Function	
Primary data	
Secondary data	
Ergonomics	
Anthropometrics	
Client	
Survey	

Week 5: Design strategies

1. Iterative design is one approach to designing.

(a) Describe what is meant by iterative design.

[3]

(b) Justify **one** appropriate design strategy for the following:

(i) Redesigning the flow of people through a congested railway station.

[1]

(ii) Designing an asthma inhaler for an infant.

[1]

2. You are about to interview a client who has asked you to design one of the following items:

- Wedding dress
- Burglar alarm system
- Desk lamp

(a) Suggest **three** pieces of information that you will need to gather in order to start designing for your client?

[3]

3. Testing is an important part of the designing process.

State and explain **one** method of testing.

[2]

Week 6: Communication of design ideas

1. Exploded isometric projection is a common drawing technique.

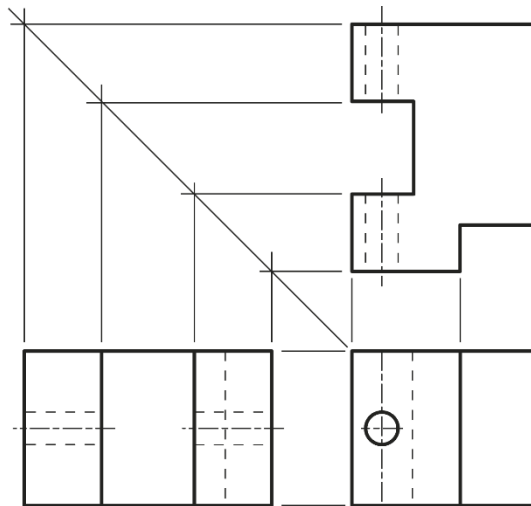
(a) Describe what is meant by 'exploded' drawing.

[1]

(b) Briefly explain **one** reason why exploded isometric drawing would be suitable for product repair instructions.

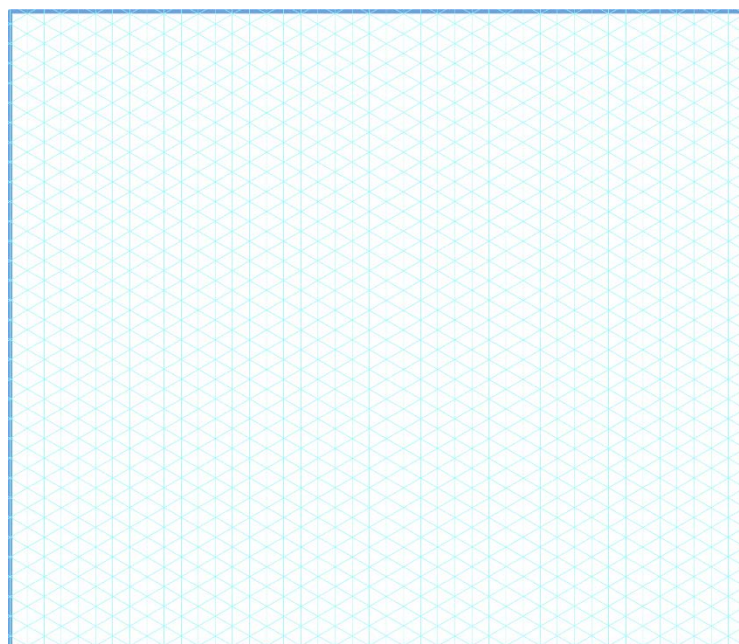
[1]

2. The working drawing shown below is drawn using 3rd angle orthographic projection.



Redraw the object using isometric projection.

[3]



3. Modelling is commonly used to create a prototype system or product for each stage in the design process.

(a) Suggest **one** suitable material for the fabrication of a model. [1]

(b) Explain **two** advantages of modelling in the design process. [4]

Week 7: Communication of design ideas

1. Make a rough sketch of a house shape in 2D plan view or oblique projection.
When you are satisfied with the design, draw it in two-point perspective.

2. Freehand sketching is a useful and informal method of quickly getting ideas on paper.
Sketches can be made in two- or three-dimensions.

 - (a) Use freehand sketching to make some ideas for a design of a house door handle.
 - (b) Render the design to suggest the feel and texture of the handle.
 - (c) Annotate the sketch to communicate your idea and to show the materials,
manufacturing processes and use of sustainable materials.