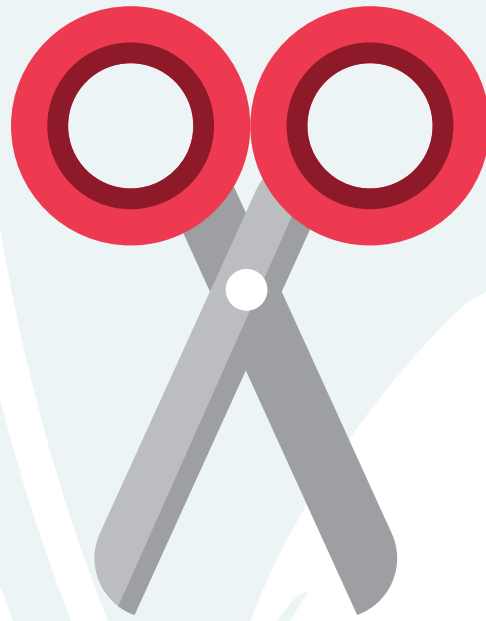




**Harrow Way**  
Community School  
Learning for life, success for all



**KS3 End Points**

**DESIGN TECHNOLOGY**

# Harrow Way Department D&T

## KS3 End Points – What Your Child Will Know and Be Able to Do

In we build the core knowledge and thinking skills that students need to succeed at GCSE and beyond. We focus on learning that is:

- **Durable** – Students *remember* important knowledge over time.
  - **In-depth** – Students *understand* it clearly, not just repeat it.
  - **Flexible** – Students can *apply* their knowledge to new questions, places and problems.
- Each year builds on the one before. Below is a summary of what students should be able to do at the end of each year, alongside what they study. We use four levels:

| Level           | What it means                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Platinum</b> | Detailed understanding with deep, flexible thinking within a theoretical and practical setting applying knowledge and skills from cross curricular links such as Maths, Science, ICT, Art, History and Geography.<br>Can explain clearly and make insightful links to the world around them with justification. Apply learnt knowledge to a wide range of real life contexts. Is developing high level analytical thinking in design and making tasks. |
| <b>Gold</b>     | Good understanding with clear explanations and well-chosen examples in both theoretical and practical settings.. Applies knowledge with growing confidence to a range of contexts. Can make links with skills gained from cross curricular such as Maths, Science, Art, ICT, History and Geography. Is developing good analytical thinking in design and making tasks.                                                                                 |

|               |                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Silver</b> | Some understanding can describe ideas and concepts in both theoretical and practical settings but needs support to explain or apply them. Is aware of links to other subjects such as Maths, Science, Art, ICT, History and Geography. Is developing some analytical thinking in design and making tasks.                                                                            |
| <b>Bronze</b> | Basic understanding, mostly factual recall with limited clarity. Not able to apply learning to a range of real life contexts. Needs frequent support in both theoretical and practical settings. Is not able to make links with other subjects such as Maths, Science, Art, ICT, History and Geography. Has difficulty in developing analytical thinking in design and making tasks. |

## Year 7 –

**Projects: Systems Fire Alarm, Textiles Pencil case, Paper and Board Packaging, Timbers Picture frame**

| End points Year 7                                                       | Platinum                                                                                                                                               | Gold                                                                                                                           | Silver                                                                                                                                         | Bronze                                                                                                                                                                     |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health and Safety                                                       | Works safely at all times and requires no teacher input.                                                                                               | Works safely for the majority of the time and requires no teacher input.                                                       | Can work safely but requires teacher reminders occasionally.                                                                                   | Can be a risk to oneself and others.                                                                                                                                       |
| Core Knowledge<br>Materials, working and physical properties, selection | Detailed understanding and can explain with detail the terms working and physical properties when considering the characteristics of materials and can | Good understanding and can explain the terms working and physical properties when considering the characteristics of materials | Some understanding and can explain the terms working and physical properties when considering the characteristics of materials and can compare | Basic understanding and cannot explain the terms working and physical properties when considering the characteristics of materials and is not able to compare and contrast |

|                                                             |                                                                                                                                                                                              |                                                                                                                                                              |                                                                                                                                                                 |                                                                                                                                                                |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| of appropriate materials.                                   | compare and contrast advantages and disadvantages when selecting Timbers, Polymers and Textiles                                                                                              | and can compare and contrast advantages and disadvantages when selecting Timbers, Polymers and Textiles                                                      | and contrast advantages and disadvantages when selecting Timbers, Polymers and Textiles<br>Requires teacher prompts                                             | advantages and disadvantages when selecting Timbers, Polymers and Textiles<br>Requires teacher prompts frequently                                              |
| Core Knowledge<br>Selecting and use of appropriate tools    | Can identify a wide range of tools, select and work independently. Demonstrates accuracy and skill with a variety of hand tools safely.                                                      | Can identify appropriate tools, select and work with good skill and accuracy with various hand tools safely.                                                 | Can identify, select and work with some skill with various hand tools safely. Needing some teacher support to ensure a level of accuracy.                       | Can identify some tools, select and work with basic skill with various hand tools safely. Needs frequent teacher support to complete practical tasks.          |
| Core Knowledge<br>Energy generation and storage             | Detailed understanding of how energy is generated and the various sources to create electricity. Secure knowledge about infinite and finite resources..                                      | Good understanding of how energy is generated and the various sources to create electricity. Good knowledge about infinite and finite resources..            | Some understanding of how energy is generated and the various sources to create electricity. Some knowledge about infinite and finite resources..               | Basic understanding of how energy is generated and the various sources to create electricity. Basic knowledge about infinite and finite resources..            |
| Core Knowledge<br>Design Strategies:<br>User Centred Design | Detailed knowledge about why Designers design. Identifying problems within a context understand design briefs and basic specifications. User needs and wants.                                | Good knowledge about why Designers design. Identifying problems within a context understand design briefs and basic specifications. User needs and wants.    | Some knowledge about why Designers design. Identifying problems within a context, understanding design briefs and basic specifications. User needs and wants.   | Basic knowledge about why Designers design. Identifying problems within a context, understanding design briefs and basic specifications. User needs and wants. |
| Literacy<br>Writing with purpose                            | Detailed explanation of key concepts and knowledge in written responses. Ability to write with full sentences and paragraphs using key words and Design and Technology specific terminology. | Good explanation of key concepts and knowledge in written responses. Ability to write with full sentences and paragraphs using a good range of key words and | Some explanation of key concepts and knowledge in written responses. Ability to write with full sentences and paragraphs using some of key words and Design and | Basic writing skills<br>Needs full literacy support i.e through the use of sentence starters and word bank.                                                    |

|  |                                                |                                                                                            |                                                                                                                                                                |  |
|--|------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | Can write, analyse and explain like an expert. | Design and Technology specific terminology. Can write, analyse and explain like an expert. | Technology specific terminology. Can write, analyse and explain like an expert. Needs literacy support i.e through the use of sentence starters and word banks |  |
|--|------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

## ◆ Year 8 –

**What students study:**

**Projects: Communication skills Technical Drawing, Systems LED desk tidy, Mechanical systems Childs mechanical toy, Automated Systems Programming Microcontrollers**

| End points Year 8                                                                              | Platinum                                                                                                                                                                                                                                         | Gold                                                                                                                                                                                          | Silver                                                                                                                                                                                                                           | Bronze                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health and Safety Retrieval                                                                    | Works safely at all times and requires no teacher input.                                                                                                                                                                                         | Works safely for the majority of the time and requires no teacher input.                                                                                                                      | Can work safely but requires teacher reminders occasionally.                                                                                                                                                                     | Can be a risk to oneself and others.                                                                                                                                                                                                            |
| Core Knowledge Materials, working and physical properties, selection of appropriate materials. | Detailed understanding and can explain with detail the terms working and physical properties when considering the characteristics of materials and can compare and contrast advantages and disadvantages when selecting Metals, Paper and Board, | Good understanding and can explain the terms working and physical properties when considering the characteristics of materials and can compare and contrast advantages and disadvantages when | Some understanding and can explain the terms working and physical properties when considering the characteristics of materials and can compare and contrast advantages and disadvantages when selecting Metals, Paper and Board, | Basic understanding and cannot explain the terms working and physical properties when considering the characteristics of materials and is not able to compare and contrast advantages and disadvantages when selecting Metals, Paper and Board, |

|                                                                       |                                                                                                                                                                                              |                                                                                                                                                                                    |                                                                                                                                                                                                  |                                                                                                                                                                    |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | Mechanisms and Electronic Components.                                                                                                                                                        | selecting Metals, Paper and Board, Mechanisms and Electronic Components.                                                                                                           | Mechanisms and Electronic Components.<br>Requires teacher prompts                                                                                                                                | Mechanisms and Electronic Components.<br>Requires teacher prompts frequently                                                                                       |
| Core Knowledge<br>Selecting and use of appropriate tools              | Can identify a wide range of tools, select and work independently. Demonstrates accuracy and skill with a variety of hand and machine tools safely.                                          | Can identify appropriate tools, select and work with good skill and accuracy with various hand and machine tools safely.                                                           | Can identify, select and work with some skill with various hand and machine tools safely. Needing some teacher support to ensure a level of accuracy.                                            | Can identify some tools, select and work with basic skill with various hand and machine tools safely. Needs frequent teacher support to complete practical tasks.  |
| Core Knowledge<br>ICT, CAD, CAM<br>Scales of Production               | Detailed understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Fully understands scales of production in manufacturing.                                 | Good understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Fully understands scales of production in manufacturing.                           | Some understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Good understanding of scales of production in manufacturing.                                     | Basic understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Low level understanding of scales of production in manufacturing. |
| Core Knowledge<br>Design Strategies:<br>Systems approach to Designing | Detailed knowledge about how Designers design. Using a systematic approach to designing mechanism and electronic devices.                                                                    | Good knowledge about how Designers design. Using a systematic approach to designing mechanism and electronic devices.                                                              | Some knowledge about how Designers design. Using a systematic approach to designing mechanism and electronic devices.                                                                            | Basic knowledge about how Designers design. Using a systematic approach to designing mechanism and electronic devices.                                             |
| Literacy<br>Writing with purpose<br>Continued                         | Detailed explanation of key concepts and knowledge in written responses. Ability to write with full sentences and paragraphs using key words and Design and Technology specific terminology. | Good explanation of key concepts and knowledge in written responses. Ability to write with full sentences and paragraphs using a good range of key words and Design and Technology | Some explanation of key concepts and knowledge in written responses. Ability to write with full sentences and paragraphs using some of key words and Design and Technology specific terminology. | Basic writing skills<br>Needs full literacy support i.e through the use of sentence starters and word bank.                                                        |

|  |                                                |                                                                      |                                                                                                                                  |  |
|--|------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--|
|  | Can write, analyse and explain like an expert. | specific terminology. Can write, analyse and explain like an expert. | Can write, analyse and explain like an expert.<br>Needs literacy support i.e through the use of sentence starters and word banks |  |
|--|------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--|

## ◆ Year 9 –

**What students study:**

**Projects: Language of Design and extended design communication skills, Composite and smart materials workshop and industry based manufacturing, Collaborative 3D modelling, Final extended Design and Make project**

| End points Year 9                                                                     | Platinum                                                                                                                                                                 | Gold                                                                                                                                                                 | Silver                                                                                                                                                                                       | Bronze                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health and Safety Retrieval                                                           | Works safely at all times and requires no teacher input.                                                                                                                 | Works safely for the majority of the time and requires no teacher input.                                                                                             | Can work safely but requires teacher reminders occasionally.                                                                                                                                 | Can be a risk to oneself and others.                                                                                                                                                                             |
| Core Knowledge Design Language and Design Considerations<br><br>Form versus Function. | Detailed understanding and can Analyse products in depth from a designers perspective taking into account key concepts around form and function when meeting user needs. | Good understanding and can Analyse products in depth from a designers perspective taking into account key concepts around form and function when meeting user needs. | Some understanding analyse products in depth from a designers perspective taking into account key concepts around form and function when meeting user needs.<br><br>Requires teacher prompts | Basic understanding with limited analysis of products from a designers perspective taking into account key concepts around form and function when meeting user needs.<br><br>Requires teacher prompts frequently |

|                                                                       |                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Core Knowledge<br>Selecting and use of appropriate tools              | Can identify a wide range of tools, select and work independently. Demonstrates accuracy and skill with a variety of hand and machine tools safely.                                                                                         | Can identify appropriate tools, select and work with good skill and accuracy with various hand and machine tools safely.                                                                                                          | Can identify, select and work with some skill with various hand and machine tools safely. Needing some teacher support to ensure a level of accuracy.                                                                                           | Can identify some tools, select and work with basic skill with various hand and machine tools safely. Needs frequent teacher support to complete practical tasks.                                                                                                 |
| Core Knowledge<br>ICT, CAD, CAM<br>3D modelling skills                | Detailed understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Can use Fusion 360 3D Modelling software to a high level. High level mathematical modelling.                                            | Good understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Can use Fusion 360 3D Modelling software to a high level. Good ability in mathematical modelling.                                 | Some understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. Can use Fusion 360 3D Modelling software to a high level. Some ability in mathematical modelling.                                               | Basic understanding of how ICT, CAD CAM systems can be used to generate and manufacture designs. use Fusion 360 3D Modelling software to a high level. Difficulty in mathematical modelling.                                                                      |
| Core Knowledge<br>Design Strategies:<br>User needs and Collaboration. | Detailed knowledge about how Designers design. Using a systematic approach to designing. Understands how analysing existing products can influence design when solving complex problems. Can apply knowledge fully when creating solutions. | Good knowledge about how Designers design. Using a systematic approach to designing. Understands how analysing existing products can influence design when solving complex problems. Can apply knowledge when creating solutions. | Some knowledge about how Designers design. Using a systematic approach to designing. Understands how analysing existing products can influence design when solving complex problems. Limitations in applying knowledge when creating solutions. | Basic knowledge about how Designers design. Using a systematic approach to designing. Finds difficulty in understanding how analysing existing products can influence design when solving complex problems. Is unable to apply knowledge when creating solutions. |
| Literacy<br>Writing with purpose<br>Continued                         | Can fully articulate, in written responses, ideas with justification and thorough evidence of critical thinking. Knows how to use key language when explaining concepts around designing. Can extract                                       | Can articulate, in written responses, ideas with justification and thorough evidence of critical thinking. Knows how to use key language when explaining                                                                          | With teacher support articulate, in written responses, ideas with justification and some evidence of critical thinking. Knows how to use key language when explaining concepts around                                                           | With teacher support and writing frames, write simple responses and ideas with some justification and low level critical thinking. Does not know how to use key language when explaining concepts around designing.                                               |



|  |                                                         |                                                                                                   |                                                                                |                                                                        |
|--|---------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------|
|  | relevant information from research to inform designing. | concepts around designing.<br>Can extract relevant information from research to inform designing. | designing. Can extract relevant information from research to inform designing. | Cannot extract relevant information from research to inform designing. |
|--|---------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------|