

## Year 8 TECHNOLOGY

### Overall intent:

Throughout Year 8 Design and Technology, students will develop a broad range of practical making skills while gaining an understanding of materials, mechanisms and design processes. They will learn to work safely and accurately using a variety of tools, equipment and manufacturing techniques, including hand tools and vacuum forming. Students will explore the properties and applications of metals, plastics, woods and smart materials, and use this knowledge to make informed design decisions. Through the Spinning Top, Polymorph Tag and Automaton projects, students will develop their creativity, problem-solving and evaluation skills while responding to design briefs and testing the effectiveness of their products. They will also gain an understanding of key engineering and mechanical principles, including motion, cams and levers, and apply mathematical knowledge to support design and manufacture. By the end of the year, students will be able to design, manufacture, test and evaluate products with increasing independence and confidence.

|                                         | Autumn 1                                                                                                                                                                                                                             | Autumn 2 | Spring 1                                                                                                                                                                                                                                       | Spring 2 | Summer 1                                                                                                                                                                                                    | Summer 2 |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Topic                                   | Spinning Top                                                                                                                                                                                                                         |          | Polymorph tag                                                                                                                                                                                                                                  |          | Automaton                                                                                                                                                                                                   |          |
| Key learning aims: Knowledge and skills | Practical skills include measuring and, marking out, filing, punching and drilling.<br>This project has cross curricular links with maths on the construction of shapes. Understanding the properties of metals and product testing. |          | Practical skills include the creation of a former from wood, the use of the vacuum former and smart materials. Students will understand smart materials and their uses. The properties of woods and plastics are also covered in this project. |          | Practical skills include wood working skills, CAM design and creation, character design and creation and drilling. Students will gain an understanding of levers, cams and motions as part of this project. |          |
| Assessment                              | Testing and quality control towards the end of the project                                                                                                                                                                           |          | Focused on evaluation at the end of the project                                                                                                                                                                                                |          | Design: meeting the design brief and the understanding of CAMS                                                                                                                                              |          |