RAYNES
PARK HIGH SCHOOL

Design & Technology Curriculum Maps 2020 - 2021

Key Stage 4

Year	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
10	**Boat Challenge** ▪ 3.1 Core technical principles ▪ 3.1.1 New and emerging technologies ▪ Industry ▪ Enterprise ▪ Sustainability ▪ People ▪ Culture ▪ Society ▪ Environment ▪ Production techniques and systems ▪ How the critical evaluation of new and emerging technologies informs design decisions	**T-Shirt Project** ▪ 3.1.6.1 Material categories ▪ **Papers and boards** ▪ **Natural and manufactured timbers** ▪ **Metals and alloys** ▪ **Polymers** ▪ **Textiles** ▪ 3.1.6.2 Material properties **Material properties** ▪ 3.2 Specialist technical principles ▪ 3.2.1 Selection of materials or components	**Promotional Products** ▪ 3.1.2 Energy generation and storage ▪ Fossil fuels ▪ Nuclear power ▪ Renewable energy ▪ Energy storage systems including batteries	**Festival Projects** ▪ 3.1.3 Developments in new materials ▪ Modern materials ▪ Smart materials ▪ Composite materials ▪ Technical textiles ▪ 3.1.4 Systems approach to designing ▪ Inputs ▪ Processes ▪ Outputs ▪ 3.1.5 Mechanical devices ▪ Different types of movement ▪ Changing magnitude and direction of force ▪ 3.1.6 Materials and their working properties	**Festival Projects** ▪ 3.2.2 Forces and stresses ▪ Materials and objects can be manipulated to resist and work with forces and stresses ▪ Materials can be enhanced to resist and work with forces and stresses to improve ▪ Functionality ▪ 3.2.3 Ecological and social footprint ▪ Ecological issues in the design and manufacture of products ▪ The six Rs ▪ Social issues in the design and manufacture of products	**Non-Examined Assessment Prep** ▪ 3.2.4 Sources and origins ▪ 3.2.5 Using and working with materials ▪ Properties of materials ▪ The modification of properties for specific purposes ▪ How to shape and form using cutting, abrasion and addition ▪ 3.2.6 Stock forms, types and sizes ▪ 3.2.7 Scales of production

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11	**Theory & Non-Examined Assessment** ▪ 3.2.8 Specialist techniques and processes ▪ The use of production aids ▪ Tools, equipment and processes ▪ How materials are cut shaped and formed to a tolerance ▪ Commercial processes ▪ Quality control ▪ 3.2.9 Surface treatments and finishes ▪ 3.3 Designing and making principles	**Theory & Non-Examined Assessment** ▪ 3.3.1 Investigation, primary and secondary data ▪ Use primary and secondary data to understand client and/or user needs ▪ How to write a design brief and produce a design and manufacturing specification ▪ Carry out investigations in order to identify problems and needs ▪ 3.3.2 Environmental, social and economic challenge ▪ 3.3.3 The work of others	**Theory & Non-Examined Assessment** ▪ 3.3.4 Design strategies ▪ Generate imaginative and creative design ideas using a range of different design ▪ Strategies ▪ Explore and develop their own ideas ▪ 3.3.5 Communication of design ideas ▪ 3.3.6 Prototype development	**Theory & Non-Examined Assessment** ▪ 3.3.7 Selection of materials and components ▪ 3.3.8 Tolerances ▪ 3.3.9 Material management ▪ Cut materials efficiently and minimise waste ▪ Use appropriate marking out methods, data points and coordinates	**Theory & Non-Examined Assessment** ▪ 3.3.6 Prototype development ▪ 3.3.7 Selection of materials and components ▪ 3.3.8 Tolerances ▪ 3.3.9 Material management ▪ Cut materials efficiently and minimise waste ▪ Use appropriate marking out methods, data points and coordinates	**Theory & Non-Examined Assessment** ▪ 3.3.10 Specialist tools and equipment ▪ 3.3.11 Specialist techniques and processes ▪ Surface treatments and finishes