AQA GCSE Design and Technology Revision Checklist

Core Technical Principles (All students must study)

1. **New and Emerging Technologies**
    - Industry and enterprise
    - Sustainability and the environment
    - People, culture and society
    - Production techniques and systems
    - Automation, robotics and computer-aided manufacture
    - Communication technologies
2. **Energy Generation and Storage**
    - Fossil fuels and renewable energy
    - Storing energy (batteries, capacitors, kinetic pumped storage)
3. **Developments in New Materials**
    - Smart materials (e.g., thermochromic pigment, shape memory alloys)
    - Modern materials (e.g., graphene, carbon fibre)
4. **Systems Approach to Designing**
    - Input, process, output systems
    - Flowcharts and system diagrams
5. **Mechanical Devices**
    - Levers and linkages
    - Cams and followers
    - Gears
    - Pulleys and belts
6. **Materials and Their Working Properties**
    - Functionality, strength, elasticity, etc.
    - Understanding how materials behave

Specialist Technical Principles (Timber is the one we study at school)

☐ **Timbers**

- Categories and properties of materials (hardwoods, softwoods, alloys, etc.)
- Stock forms, types and sizes
- Scales of production (one-off, batch, mass, continuous)
- Selection of materials and components
- Forces and stresses (bending, compression, tension)
- Ecological and social footprint
- Surface treatments and finishes
- Working with tools, equipment, and processes

Designing and Making Principles

- The work of others (famous designers and design movements)
- Design strategies (e.g., iterative design, user-centred design)
- Communication of design ideas (sketching, annotation, CAD)
- Prototype development and modelling
- Selection of materials and components for making
- Tolerances and accuracy in making
- Quality control and assurance
- Health and safety
- Environmental, social, and economic challenges in design