**Design and Technology Subject Audit 2022-3**Secondary Subject-Knowledge Development

**Self-Audit** **page 2**
Complete the following audit of your skills and understanding in this
subject area. Rate yourself against each criterion by colour-coding the
relevant box (None, Expected, Expected +, Good or Excellent):

  **g  4**  **None** No knowledge /confidence in this area and/or no experience.
**(only grade yourself grey if you have no experience**
**whatsoever of a particular aspect)**

**g  3**  **Expected** Some knowledge in this area and/or limited experience and
in need of further development

**g  2.5**  **Expected+** Developing knowledge / growing experience in this area

**g  2**  **Good** Good knowledge in this area and /or some experience

  **g  1**  **Excellent** Totally confident in my knowledge of this area and/or lots
of experience

  The completed audits will be reviewed with your Mentor and used to create your Individual Training Plan
**NB:** In addition to the content of this audit there will be specific content that will need to be known prior to the teaching of specific qualifications. This audit is **not** exhaustive and there will be specific skills and capabilities that will need to be addressed in addition to this.

**Subject Knowledge Development**

**SK Days Compulsory Reading**
This is the list of reading to complete before and after each Subject Knowledge Day. Reflect on
the reading as part of the weekly Academic Reading Reflection in your Reflective Journal.

**SK Development Task Bank**
Once you have completed the Baseline self-assessment, please select and complete one of the tasks from the Subject Knowledge Development Task Bank.As you review your knowledge each term, continue identifying and completing relevant tasks from the Task Bank.

**Evidence of SK Development**
Keep a record of your Subject-Knowledge Development in the evidence summary. This will be signed off by your mentor and SK tutor.

**Appendix**

**Appendix A: SK in the Carter Review and the ITT CCF**

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| **Subject Area:**  | **Design Technology** | **Baseline**  | **Autumn**  | **Spring**  | **Summer**  |
| **Subject Knowledge & Understanding**  |
| **Design.** |
| SK1 | Be able to use primary and secondary research to understand user needs such as different cultures, market research, focus groups and anthropometric data) |   |   |   |   |
| SK2  | Be able to consider the needs and wants of others in order to write a design brief and produce specifications. |   |   |   |   |
| SK3  | Be able to take into consideration the environmental, social and economic challenges that influence design and making. |   |   |   |   |
| SK4  | Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. |   |   |   |   |
| SK5  | Be able to use a variety of approaches to generate creative ideas and avoid design fixation. A good understanding of the interactive design process is also important.  |   |   |   |   |
| SK6  | Be able to develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. |   |   |   |   |
|  |  |   |   |   |   |
| **Make.**  |
| SK1  | Be able to select and use appropriate materials and components suitable for the task according to their properties.  |   |   |   |   |
| SK2  | Be able to select and use appropriate materials and components suitable for the task according to their properties.  |   |   |   |   |
| SK3  | Be able to accurately measure and mark out considering appropriate tolerance’s using a range of both precision hand tools and machines.  |   |   |   |   |
| SK4  | Be able to accurately cut and use materials by hand or machine.  |   |   |   |   |
| SK5  | Be able to accurately and efficiently use templates to mark out materials to minimise waste.  |   |   |   |   |
| SK6  | Textiles- batik, silk painting, appliqué, free machine embroidery.  |   |   |   |   |
| SK7  | Use a range of specialist machinery to deform, form and fabricate a range of materials  |   |   |   |   |
| SK8  | Be able to select and use a range of joining methods and components to create completed working products or systems.  |   |   |   |   |
| SK9  | Have knowledge of and be able to use a range of surface treatments and finishes for functional and aesthetic purposes.  |   |   |   |   |
| SK10 | Demonstrate safe working practices in a workshop environment and with specialist tools and machinery.  |   |   |   |   |
| SK11SK12 | Be able to use CAD/CAM to cut, shape, waste, add pattern and surface texture to a range of materials.Be able to use CAD/CAM to create models and prototypes of products as they develop/are completed.  |   |   |   |   |
| **Technical knowledge and understanding.**  |
|  | 1. Understand that materials fall under different categories. (Papers and Boards, Timber, Metals and Alloys, Polymers, Textiles, Composites).
2. Have an understanding of the working and physical properties of the materials in your specialist area (Extending into other material areas as you develop your knowledge.)
3. Be aware of the developments and uses of Modern and Smart materials.
4. Understand the properties of materials and the performance of structuralelements to achieve functioning solutions.
5. Apply computing and use electronics to embed intelligence in products that respond to inputs [for eg; sensors] and control outputs [for eg; actuators] using programmable components [for eg; microcontrollers].
6. Understand how advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs].
7. Understand how power sources are selected to make and power systems including; Fossil fuels, Nuclear Power, Renewable sources and storage systems (Kinetic and batteries).
 |   |   |   |   |
| **Evaluate.** | 1. Be able to analyse the work of past and present professionals and others to aid the development of ideas.
2. Be able to investigate new and emerging technologies and understand their impact on industry, sustainability, people, society, culture and the environment.
3. Be able to test, evaluate and refine ideas and products against a specification, taking into account the views of intended users and other interested groups.
4. Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
5. Be able to test, evaluate and refine ideas and products against a specification, taking into account the views of intended users and other interested groups.
6. Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
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| **Subject Area:**  | **Design Technology** | **Baseline**  | **Autumn**  | **Spring**  | **Summer**  |
| **Subject-Specific Pedagogy**  |
| **Knowledge of Subject Specific Pedagogy**  |
| SSP.1  | Understanding the importance for a DT department to have a clear curriculum intent.  |   |   |   |   |
| SSP.2  | How to ensure precise and correct use of subject-specific language.  |   |   |   |   |
| SSP.3  | How to lead a class discussion around key concepts in DT.  |   |   |   |   |
| SSP.4  | How to build on prior knowledge, encouraging students to make links and connections.  |   |   |   |   |
| SSP.5  | How to break down complex DT content/skills/tasks into smaller steps.  |   |   |   |   |
| SSP.6  | How to sequence a DT lesson / series of lessons to move from foundational knowledge to more complex content?  |   |   |   |   |
| SSP.7  | How to anticipate and address misconceptions in DT/ How to answer students’ questions.  |   |   |   |   |
| SSP.8  | How to scaffold DT activities to make new knowledge more accessible / How to differentiate complex topics to higher and lower-ability students.  |   |   |   |   |
| SSP.9  | How to present, model, give examples / clear explanations for and clarify key concepts in DT. |   |   |   |   |
| SSP.10  | How to advise a group or individual on how to improve their skill level in your subject.  |   |   |   |   |
| SSP.11  | How to extend 'general knowledge' about subject, including cross-curricular links historical and multi-cultural aspects.  |   |   |   |   |
| **Knowledge of Subject Assessment & Development**  |
| SAD.1  | How confident would you be in assessing students’ knowledge and understanding of DT?  |   |   |   |   |
| SAD.2  | How confident would you be in assessing students’ skill development in DT?  |   |   |   |   |
| SAD.3  | How confident are you in deploying formative assessment strategies linked to lesson objectives during lessons (incl. hinge questions to pinpoint knowledge gaps, self and peer-assessment, etc.)?  |   |   |   |   |
| SAD.4  | How confident would you be to write a DT summative assessment on a topic chosen by the subject mentor, choosing, where possible, externally validated materials?  |   |   |   |   |
| SAD.5  | How confident are you in using data (assessment, homework, etc.) to inform your planning?  |   |   |   |   |
| SAD.6  | How confident are you in using data to set appropriate targets?  |   |   |   |   |
| SAD.7  | How confident are you in planning for progression (short, medium and long-term)?  |   |   |   |   |
| SAD.8  | Some schools teach DT in mixed ability groups.  How confident are you that you can involve every pupil in the learning process?   |   |   |   |   |
| SAD.9  | How confident are you in checking prior knowledge to identify knowledge gaps and misconceptions?  |   |   |   |   |
| SAD.10  | How confident are you in drawing conclusions about what pupils have learned by looking at patterns of performance over a number of assessments to inform future planning?  |   |   |   |   |
| SAD.11  | How confident are you in assessing written answers to questions and identifying ways of improving the answer given through high-quality feedback and specific actions?  |   |   |   |   |
| SAD.12  | How confident are you in making marking manageable and effective? (incl. use of verbal feedback, whole-class feedback, abbreviations, codes, peer-self-assessment, error highlighting, etc.)  |   |   |   |   |
| SAD.13  | How secure is your knowledge of DT A-Level Content and Assessment Objectives?  |   |   |   |   |
| SAD.14  | How secure is your knowledge of the DT GCSE Content and Assessment Objectives?  |   |   |   |   |
| SAD.15  | How would you rate your understanding of the 9-1 grades in DT?  |   |   |   |   |
| SAD.16  | How confident would you be in assessing students’ soft skills such as resilience, teamwork, empathy, fairness and collaboration in your subject?  |   |   |   |   |
| **Child & Adolescent Development within your Subject**  |
| CAD.1  | How do you feel about creating effective learning environments?  |   |   |   |   |
| CAD.2  | How do you feel about securing all pupils’ motivation and concentration?  |   |   |   |   |
| CAD.3  | How confident are you creating challenging learning opportunities and promoting high aspirations for all learners, especially those from a disadvantaged background?  |   |   |   |   |
| CAD.4  | How confident are you implementing effective strategies to engage students with behavioural, mental health or SEN within DT?  |   |   |   |   |
| CAD.5  | How confident are you working with pupils who may be disaffected in DT lessons and raising their level of engagement and motivation?  |   |   |   |   |
| CAD.6  | How confident are you building pupils’ confidence to attempt more complex tasks / multi-step problems.  |   |   |   |   |
| CAD.7  | How confident are you at creating competitive and celebratory opportunities for students in your subject?  |   |   |   |   |
| CAD.8  | How confident are you supporting out-of-classroom DT learning (e.g. through your extra-curricular involvement) to increase participation in your subject and contribute to the holistic development of your students?  |   |   |   |   |
| CAD.9  | How confident are you promoting effective behaviour for learning from students?  |   |   |   |   |
| CAD.10  | How confident are you engaging parents in your students’ learning?  |   |   |   |   |
| **Professional Skills (Literacy & Numeracy)**  |
| PS.1  | Own literacy skills *(see detail of requirements on CTTP Teams VLE >> Library >> Professional Skills)*  |   |   |   |   |
| PS.2  | Ability to support the development of students’ literacy within Art.  |   |   |   |   |
| PS.3  | Own numeracy skills *(see detail of requirements on CTTP Teams VLE >> Library >> Professional Skills)*  |   |   |   |   |
| PS.4  | Ability to support the development of students’ numeracy within Art.  |   |   |   |   |
| **Effective Use of ICT**  |
| ICT.1  | Word  |   |   |   |   |
| ICT.2  | Excel  |   |   |   |   |
| ICT.3  | PowerPoint  |   |   |   |   |
| ICT.4  | Interactive Whiteboard  |   |   |   |   |
| ICT.5  | School Online Learning Platform (Teams, Google Classroom, SharePoint, etc.)  |   |   |   |   |
| ICT.6  | School Systems (SIMS, CPOMS, Class Charts, etc.)  |   |   |   |   |
| ICT.7  | Understanding of e-Safety and how to support it  |   |   |   |   |
| ICT.8  | How to use ICT in the classroom to raise engagement and support the individual?  |   |   |   |   |
| ICT.9  | How to use ICT and online resources to help manage your workload?  |   |   |   |   |
| ICT.10  | How to deliver an effective remote lesson / blended lesson?  |   |   |   |   |

**SK Development**Subject Knowledge Day Compulsory Reading

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| **SK Day 1**  |  Logo  Description automatically generated | **Technology programmes of study: key stage 3**, DfE, 2013 □ *Design embodies some of the highest forms of human creativity. A high-quality design education should engage, inspire and challenge pupils, equipping them with the knowledge and skills to experiment, invent and create their own design. As pupils progress, they should be able to think critically and develop a more rigorous understanding of design. They should also know how design both reflects and shapes our history, and contributes to the culture, creativity and wealth of our nation.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/239089/SECONDARY\_national\_curriculum\_-\_Design\_and\_technology.pdf |  Logo  Description automatically generated | **AQA Glossaries** □□ *GCSE Command Words* *https://www.aqa.org.uk/resources/design-and-technology/teach/command-words GCSE Subject-Specific Vocabulary* *Subject-Specific Vocabulary* <https://www.aqa.org.uk/resources/design-and-technology/gcse/design-and-technology/teach/subject-specific-vocabulary>*AS and A-Level Command Words* https://www.aqa.org.uk/resources/design-and-technology/teach/command-words |
| **SK Day 2**  |  Logo  Description automatically generated | **Technology GCSE subject content**, DfE, 2015 □□ *The GCSE subject content sets out the knowledge, understanding and skills common to all GCSE specification,s in a given subject. Together with the assessment objectives it provides the framework within which awarding organisations create the detail of their specifications, so ensuring progression from key stage 3 national curriculum requirements and the possibilities for development into A level.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/473188/GCSE\_design\_technology\_subject\_content\_nov\_2015.pdf |  Logo  Description automatically generated | **GCE AS and A Level subject content for Technology**, DfE, 2014 □□ *AS and A level subject content sets out the knowledge, understanding and skills common to all AS and A level specifications in art and design.* <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/302101/A_level_art_and_design_subject_content.pdf>  |
| **SK Day 3**  |  Logo  Description automatically generated | **Including students with SEN and/or disabilities in secondary technology**, TDA, 2009 □ *This booklet gives tutors and trainees information about subject-specific issues in the art and design curriculum for students with SEN and/or disabilities. It offers a straightforward introduction to planning inclusive art and design lessons.* https://dera.ioe.ac.uk/13789/1/designandtechnology.pdf  |  Logo  Description automatically generated | **Access and engagement in technology: Teaching pupils for whom English is an additional language**, Department for Education and Skills, 2002 □ *The guidance is in two parts. Sections 1 to 4 are intended for subject leaders of art and ethnic minority achievement (EMA) in secondary schools. These sections are designed to support a departmental meeting focused on reviewing the attainment of pupils learning English as an additional language (EAL), and should be read in conjunction with the later sections. Sections 5 to 8 are for all art teachers and their EMA colleagues. They aim to help teachers support pupils learning EAL in the classroom, particularly those working at levels 3 to 4 and who have been learning in English for a minimum of two years, in order to raise their attainment in art lessons.* http://www.naldic.org.uk/Resources/NALDIC/Teaching%20and%20Learning/sec\_ks3\_en\_access\_engage\_art.pdf  |
| **SK Day 4**  | Logo  Description automatically generated  | **Reading set by the SK Tutor** Record details of the reading set below:  | Logo  Description automatically generated  | **Reading set by the SK Tutor** Record details of the reading set below:  |