

MeLDE: Supporting programmes of study, aims and attainment at KS3, KS4 and GCSE

Digital, online and blended learning does not end with the end of lockdown: digital technology and digital skills form part of our everyday lives and this includes teaching and learning inside and outside the classroom.

MeLDE's series of courses are aimed at improving digital teaching and learning opportunities for both teachers and students within Secondary Education. MeLDE provides teachers with free online courses in:

1. Digital Teaching and Learning Skills
2. Online Communication and Collaboration
3. Digital Content Creation
4. E-Safety

Importantly, the courses can support teachers in delivering a range of Key Stage 3 and 4 programmes of study (including Mathematics, English, Science, Citizenship, Art and Design and Computing) and provide resources that can be used in the classroom through a combination of lesson plans, web lectures, books and additional resources.

In which specific subject areas can the four MeLDE training courses support KS3, KS4 and GCSE programmes of study, aims and attainment?

The following maps the areas of the curriculum where MeLDE's training supports teaching and learning, based on current National Curriculum key aims for England (June 2021).

1. Digital Teaching and Learning Skills

This module explores ways of teaching and learning with technology. It introduces a series of digital tools, platforms and techniques that can support lesson planning, assessment design, marking and feedback and student learning and engagement. It links different types of learning with different forms of technology: from acquisition to production.

It includes lesson plans for familiarizing students with ways of analysing and improving their digital capabilities, exploring the benefits of using digital technology to enhance learning, how to collaborate online and how to give audio peer feedback.

Design and Technology at KS3:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world

- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists and investigate new and emerging technologies
- Critique, evaluate and test their ideas and products and the work of others
- Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making; use research and exploration, such as the study of different cultures, to identify and understand user needs
- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools
- Investigate new and emerging technologies

GCSE Design and Technology:

- Develop the skills to critique and refine their own ideas whilst designing and making
- Use imagination, experimentation and combine ideas when designing
- Communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing
- Develop realistic design proposals as a result of the exploration of design opportunities and users' needs, wants and values

Art and Design at KS3:

- Equip students with the knowledge and skills to experiment, invent and create their own works of art, craft and design produce creative work, exploring their ideas and recording their experiences and evaluate
- Analyse creative works using the language of art, craft and design and to analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work

GCSE Art and Design:

- Develop creative, imaginative and intuitive capabilities when exploring and making images, artefacts and products
- Acquire and develop technical skills through working with a broad range of media, materials, techniques, processes and technologies with purpose and intent
- Use visual language critically as appropriate to their own creative intentions and chosen area(s) of study

Languages at KS3:

- Understand and respond to spoken and written language from a variety of authentic sources
- Speak with increasing confidence, fluency and spontaneity, finding ways of communicating what they want to say, including through discussion and asking

questions, and continually improving the accuracy of their pronunciation and intonation and communicate for practical purposes

GCSE Modern Foreign Languages:

- Develop their ability to communicate confidently and coherently with native speakers in speech and writing, conveying what they want to say with increasing accuracy
- Express and develop thoughts and ideas spontaneously and fluently
- Listen to and understand clearly articulated, standard speech at near normal speed

History at KS3:

- Make connections, draw contrasts, analyse trends, frame historically-valid questions and create structured accounts, including written narratives and analyses
- Gain and deploy a historically grounded understanding of abstract terms such as 'empire', 'civilisation', 'parliament' and 'peasantry' and understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically-valid questions and create their own structured accounts, including written narratives and analyses

History at GCSE:

- Organise and communicate their historical knowledge and understanding in different ways and reach substantiated conclusions
- The ability to create their own structured accounts, selecting organising and communicating their knowledge and understanding in written narratives, descriptions and analyses, reaching substantiated conclusions when appropriate

Citizenship at KS3:

- Equip pupils with the skills and knowledge to explore political and social issues critically, to weigh evidence, debate and make reasoned arguments and the roles played by public institutions and voluntary groups in society, and the ways in which citizens work together to improve their communities, including opportunities to participate in school-based activities

English at KS3:

- Use discussion in order to learn
- Elaborate and explain clearly understanding and ideas and are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate

English at KS4:

- Use discussion in order to learn; they should be able to elaborate and clearly explain their understanding and ideas

- Are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate
- Listening and responding in a variety of different contexts, both formal and informal, and evaluating content, viewpoints, evidence and aspects of presentation

Science at KS3:

- Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- Analysis and evaluation
- Present observations and data using appropriate methods, including tables and graphs
- Present reasoned explanations, including explaining data in relation to predictions and hypotheses and identify further questions arising from their results
- Understand the importance of publishing results and peer review

Science at KS4:

- Presenting observations and other data using appropriate methods
- Presenting reasoned explanations, including relating data to hypotheses
- Communicating the scientific rationale for investigations, including the methods used, the findings and reasoned conclusions, using paper-based and electronic reports and presentations

Computing at KS3 and KS4:

- Equips pupils to use computational thinking and creativity to understand and change the world
- Ensure that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world
- Are responsible, competent, confident and creative users of information and communication technology; create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability

GCSE Computer Science:

- Think creatively, innovatively, analytically, logically and critically
- Understand the components that make up digital systems, and how they communicate with one another and with other systems
- Understand the impacts of digital technology to the individual and to wider society

Maths at KS3:

- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- Solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Maths at KS4:

- Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate graphical representation

2. Online Communication and Collaboration

This module aims to address a gap in teachers' knowledge by introducing the benefits of personal branding and to best practice and tips for online self-promotion and event promotion.

For students, it addresses issues of Netiquette, including hate speech, through a series of lesson plans and handouts.

Citizenship at KS3:

- Helps to provide pupils with knowledge, skills and understanding to prepare them to play a full and active part in society and developing pupils' understanding of democracy, government and the rights and responsibilities of citizens
- Pupils should use and apply their knowledge and understanding whilst developing skills to research and interrogate evidence, debate and evaluate viewpoints, present reasoned arguments and take informed action

English at KS3:

- Use discussion in order to learn
- Elaborate and explain clearly understanding and ideas and are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate

English at KS4:

- Use discussion in order to learn; they should be able to elaborate and clearly explain their understanding and ideas
- Are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate
- Understand and critically evaluate texts through reading in different ways for different purposes, summarising and synthesising ideas and information, and evaluating their usefulness for particular purposes
- Listening and responding in a variety of different contexts, both formal and informal, and evaluating content, viewpoints, evidence and aspects of presentation

Design and Technology at KS3:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists and investigate new and emerging technologies

Computing at KS3 and KS4:

- Ensure that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world
- Are responsible, competent, confident and creative users of information and communication technology
- Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy
- Recognise inappropriate content, contact and conduct and know how to report concerns

GCSE Computer Science:

- Think creatively, innovatively, analytically, logically and critically
- Understand the impacts of digital technology to the individual and to wider society

3. Digital Content Creation

This hands-on module aims to show teachers how to create compelling and engaging 'short form' audio and video content to use in lectures and online.

A series of lesson plans also guides students through creating audio-visual content and the different digital techniques available that can enhance their work: from building websites to presentations and animations.

Art and Design at KS3:

- Equip students with the knowledge and skills to experiment, invent and create their own works of art, craft and design produce creative work, exploring their ideas and recording their experiences and evaluate
- Analyse creative works using the language of art, craft and design and to analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work

GCSE Art and Design:

- Develop creative, imaginative and intuitive capabilities when exploring and making images, artefacts and products
- Acquire and develop technical skills through working with a broad range of media, materials, techniques, processes and technologies with purpose and intent
- Use visual language critically as appropriate to their own creative intentions and chosen area(s) of study

Design and Technology at KS3:

- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools
- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists and investigate new and emerging technologies

GCSE Design and Technology:

- Use imagination, experimentation and combine ideas when designing
- Communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing

English at KS3:

- Use discussion in order to learn; they should be able to elaborate and clearly explain their understanding and ideas
- Students are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate; write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences

English at KS4:

- Use discussion in order to learn; they should be able to elaborate and clearly explain their understanding and ideas
- Are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate
- Write accurately, fluently, effectively and at length for pleasure and information through: adapting their writing for a wide range of purposes and audiences: to describe, narrate, explain, instruct, give and respond to information, and argue; selecting and organising ideas, facts and key points, and citing evidence, details and quotation effectively and pertinently for support and emphasis; selecting, and using judiciously, vocabulary, grammar, form, and structural and organisational features,

including rhetorical devices, to reflect audience, purpose and context, and using Standard English where appropriate

- Working effectively in groups of different sizes and taking on required roles, including leading and managing discussions, involving others productively, reviewing and summarising, and contributing to meeting goals/deadlines listening and responding in a variety of different contexts, both formal and informal, and evaluating content, viewpoints, evidence and aspects of presentation

Science at KS3:

- Analysis and evaluation
- Present observations and data using appropriate methods, including tables and graphs
- Present reasoned explanations, including explaining data in relation to predictions and hypotheses
- Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
- Understand the importance of publishing results and peer review

Science at KS4:

- Explaining every day and technological applications of science
- Presenting observations and other data using appropriate methods
- Presenting reasoned explanations, including relating data to hypotheses
- Communicating the scientific rationale for investigations, including the methods used, the findings and reasoned conclusions, using paper-based and electronic reports and presentations

Computing at KS3 and KS4:

- Students are responsible, competent, confident and creative users of information and communication technology
- Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users; create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability
- Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns

GCSE Computer Science:

- Think creatively, innovatively, analytically, logically and critically

History at KS3:

- Understand historical concepts such as continuity and change...and create their own structured accounts, including written narratives and analyses.

History at GCSE:

- Organise and communicate their historical knowledge and understanding in different ways and reach substantiated conclusions
- The ability to create their own structured accounts, selecting organising and communicating their knowledge and understanding in written narratives, descriptions and analyses, reaching substantiated conclusions when appropriate

Maths at KS3:

- Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data

Maths at KS4:

- Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate graphical representation

4. E-Safety

This module aims to educate secondary school teachers and students about online safety skills, from protection to privacy to more complex issues like recognizing and reporting fake news and cyberbullying.

Design and Technology at KS3:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists and investigate new and emerging technologies

Citizenship at KS3:

- Provide pupils with knowledge, skills and understanding to prepare them to play a full and active part in society and developing pupils' understanding of democracy, government and the rights and responsibilities of citizens

English at KS3:

- Use discussion in order to learn
- They should be able to elaborate and clearly explain their understanding and ideas and are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate

English at KS4:

- Use discussion in order to learn; they should be able to elaborate and clearly explain their understanding and ideas
- Are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate
- Understand and critically evaluate texts through reading in different ways for different purposes, summarising and synthesising ideas and information, and evaluating their usefulness for particular purposes
- Listening and responding in a variety of different contexts, both formal and informal, and evaluating content, viewpoints, evidence and aspects of presentation

Computing at KS3 and KS4:

- Ensure that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world
- Are responsible, competent, confident and creative users of information and communication technology
- Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns

GCSE Computer Science:

- Understand the impacts of digital technology to the individual and to wider society