3

DIGCOMP 3.0 FRAMEWORK

3. DIGCOMP 3.0 FRAMEWORK

3.1 How to read DigComp 3.0

This section presents an integrated view of DigComp 3.0. It is recommended to review **Section 2** along with this one. Readers can also consult the **Glossary** for any terms that may be unclear. **Figure 6** explains how to navigate the contents of this section.

Figure 6. How to read DigComp 3.0.

COMPETENCE STATEMENTS AND LEARNING OUTCOMES – WHAT'S THE DIFFERENCE?

Learning outcomes (Annex 2) are classified by proficiency level and by knowledge, skills and attitudes. They provide the **most detailed view** of the framework and are for 'granular' purposes such as design or revision of education and training, teaching, learning and assessment content.

Competence statements (this Section 3) cover all of the key content in the learning outcomes, and are classified by proficiency level, but do not distinguish between knowledge, skills or attitudes. They are intended to **give a concrete sense** of each competence at each proficiency level.

COMPETENCE AREA: The **name** of the competence area to which the competence belongs. The competence area **descriptors** are in **Table 2** (pages 18-20).

1. INFORMATION SEARCH, EVALUATION AND MANAGEMENT

COMPETENCE: The **name** and **descriptor** of the competence. There are **21** competences in total. Each competence is shown on **one page**.

1.1 Browsing, searching and filtering information

To articulate information needs, to know how and where to search for information and content in digital environments, and to access and navigate between them. To select appropriate digital tools to create, implement and update searches in digital environments and to be able to distinguish between relevant and irrelevant information and content.

LINK TO LEARNING OUTCOMES: A hyperlink takes the reader to the learning outcomes in **Annex 2**. Readers can also navigate back from Annex 2 to this section.

Link to learning outcomes for Competence 1.1

At **Basic** level, *with guidance as needed,* individuals	**CS1.1.01:** Acknowledge the benefits of using different digital search tools and methods, depending on one's purpose. **[AI-I]** **CS1.1.02:** Identify the main features of commonly-used AI-driven and traditional search tools. **[AI-E]** **CS1.1.03:** Recognise that digital search results or outputs can contain information that may not be relevant, and that they depend on the digital search tool used and the way that an individual specifies the search. **[AI-I]** **CS1.1.04:** Use digital search tools to implement, refine and update basic information searches. **[AI-I]**
At **Intermediate** level, individuals	**CS1.1.05:** Purposefully explore new digital search tools and strategies. **[AI-I]** **CS1.1.06:** Select appropriate digital search tools based on information needs. **[AI-I]** **CS1.1.07:** Distinguish between more and less relevant digital search results or outputs. **[AI-I]** **CS1.1.08:** Translate information needs into effective digital search queries, commands or statements, and apply appropriate strategies to refine or filter results. **[AI-I]**
At **Advanced** level, individuals	**CS1.1.09:** Continually explore functions and features of familiar and novel digital search tools to deepen capabilities. **[AI-I]** **CS1.1.10:** Combine a variety of digital search tools and strategies to address complex information needs. **[AI-I]** **CS1.1.11:** Assist others in developing their digital search capabilities. **[AI-I]**
At **Highly Advanced** level, individuals	**CS1.1.12:** Stay informed about developments in digital search technologies. **[AI-I]** **CS1.1.13:** Combine a variety of digital search tools and strategies to address highly complex or specialised information needs. **[AI-I]** **CS1.1.14:** Assist others to implement and refine complex or specialised searches in digital environments. **[AI-I]** **CS1.1.15:** Contribute to improvements in or new solutions for complex or specialised searches in digital environments. **[AI-I]**

COMPETENCE STATEMENTS: Each competence has competence statements categorised by proficiency level. Numbering shows which competence the statement belongs to. For example, **Competence 1.1** has 15 competence statements, **CS1.1.01 to CS1.1.15**.

AI LABELLING: Indicates if **AI is explicitly mentioned [AI-E]**, or **not explicitly mentioned** but implicitly relevant **[AI-I]**. See **Section 2.6** for more detail on AI-explicit and AI-implicit labels.

PROFICIENCY LEVELS: Four levels of acquisition of digital competence. See **Section 2.4** for more information.

Source: JRC own elaboration.

3.2 DigComp 3.0

1. INFORMATION SEARCH, EVALUATION AND MANAGEMENT

1.1 Browsing, searching and filtering information

To articulate information needs, to know how and where to search for information and content in digital environments, and to access and navigate between them. To select appropriate digital tools to create, implement and update searches in digital environments and to be able to distinguish between relevant and irrelevant information and content.

Link to learning outcomes for Competence 1.1

At **Basic** level, *with guidance as needed*, individuals	**CS1.1.01:** Acknowledge the benefits of using different digital search tools and methods, depending on one's purpose. **[AI-I]** **CS1.1.02:** Identify the main features of commonly-used AI-driven and traditional search tools. **[AI-E]** **CS1.1.03:** Recognise that digital search results or outputs can contain information that may not be relevant, and that they depend on the digital search tool used and the way that an individual specifies the search. **[AI-I]** **CS1.1.04:** Use digital search tools to implement, refine and update basic information searches. **[AI-I]**
At **Intermediate** level, individuals	**CS1.1.05:** Purposefully explore new digital search tools and strategies. **[AI-I]** **CS1.1.06:** Select appropriate digital search tools based on information needs. **[AI-I]** **CS1.1.07:** Distinguish between more and less relevant digital search results or outputs. **[AI-I]** **CS1.1.08:** Translate information needs into effective digital search queries, commands or statements, and apply appropriate strategies to refine or filter results. **[AI-I]**
At **Advanced** level, individuals	**CS1.1.09:** Continually explore functions and features of familiar and novel digital search tools to deepen capabilities. **[AI-I]** **CS1.1.10:** Combine a variety of digital search tools and strategies to address complex information needs. **[AI-I]** **CS1.1.11:** Assist others in developing their digital search capabilities. **[AI-I]**
At **Highly Advanced** level, individuals	**CS1.1.12:** Stay informed about developments in digital search technologies. **[AI-I]** **CS1.1.13:** Combine a variety of digital search tools and strategies to address highly complex or specialised information needs. **[AI-I]** **CS1.1.14:** Assist others to implement and refine complex or specialised searches in digital environments. **[AI-I]** **CS1.1.15:** Contribute to improvements in or new solutions for complex or specialised searches in digital environments. **[AI-I]**

1. INFORMATION SEARCH, EVALUATION AND MANAGEMENT

1.2 Evaluating information

To assess and compare the credibility and reliability of sources of information and content in digital environments. To interpret and critically evaluate information and content in digital environments, and the processes used to generate them.

Link to learning outcomes for Competence 1.2

At **Basic** level, *with guidance as needed*, individuals	**CS1.2.01:** Acknowledge the benefits of a cautious approach in interpreting information and content in digital environments. **[AI-I]** **CS1.2.02:** Recognise that some digital information sources and systems may not be trustworthy. **[AI-I]** **CS1.2.03:** Recognise that it can be difficult to distinguish between information and content generated by humans and AI systems. **[AI-E]** **CS1.2.04:** Recognise examples of misinformation, disinformation, and sources of bias. **[AI-I]** **CS1.2.05:** Recognise examples of social media influencing and filter bubbles. **[AI-I]** **CS1.2.06:** Make a basic assessment of the reliability and credibility of digital information sources and content. **[AI-I]**
At **Intermediate** level, individuals	**CS1.2.07:** Identify the source of online information and the purposes of fact-checking services to develop pre-bunking and de-bunking capabilities. **[AI-I]** **CS1.2.08:** Recognise that the data used to train AI systems and how they are trained affects the reliability of the information they provide. **[AI-E]** **CS1.2.09:** Recognise that some digital technologies, such as AI systems, might function like a 'black box', making it difficult to explain why or how an output has been produced. **[AI-E]** **CS1.2.10:** Recognise that AI systems may produce output which is inaccurate, even if it may seem plausible, and that the human using the AI system is responsible for checking the quality and validity of information and content generated. **[AI-E]** **CS1.2.11:** Recognise that individual (cognitive and affective) biases and AI system biases play a role in the generation and interpretation of information. **[AI-E]** **CS1.2.12:** Recognise and respond effectively to user-directing strategies in digital environments such as clickbait, nudging and gamification. **[AI-I]** **CS1.2.13:** Critically assess the reliability of sources, information and content in digital environments, considering the role of AI systems, personalisation effects, and commercial or other interests. **[AI-E]**
At **Advanced** level, individuals	**CS1.2.14:** Continually scrutinise how AI systems, biases, and various interests shape generation, presentation and interpretation of information in digital environments. **[AI-E]** **CS1.2.15:** Describe features of trustworthy digital technologies, such as AI systems. **[AI-E]** **CS1.2.16:** Describe personal, social and political consequences of misinformation, disinformation, sources of bias, social media influencing and filter bubbles. **[AI-I]** **CS1.2.17:** Thoroughly assess the reliability and accuracy of a diversity of digital sources, information and content, considering a range of potential influencing factors. **[AI-I]** **CS1.2.18:** Support others to develop capabilities to assess the credibility and reliability of digital sources, information and content. **[AI-I]**
At **Highly Advanced** level, individuals	**CS1.2.19:** Systematically assess and evaluate digital sources, information and content to support complex decision-making. **[AI-I]** **CS1.2.20:** Help others to develop capabilities to critically evaluate information and content, and resilience to misinformation and disinformation, in digital environments. **[AI-I]** **CS1.2.21:** Lead or contribute to initiatives that support accurate interpretation of information in digital environments. **[AI-I]**

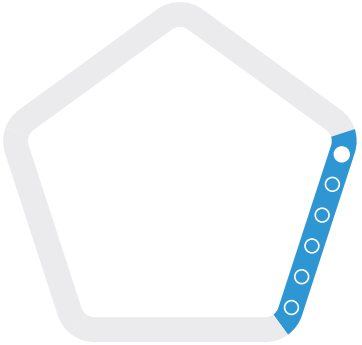
1. INFORMATION SEARCH, EVALUATION AND MANAGEMENT

1.3 Managing information

To organise, store and retrieve information and data in digital environments. To collect, process and analyse information and data in structured digital environments.

Link to learning outcomes for Competence 1.3

At **Basic** level, *with guidance as needed*, individuals	**CS1.3.01:** Acknowledge the benefits of managing and organising information in digital environments. **CS1.3.02:** Recognise functions of data removal, restoration and backup, and main properties of digital files and folders. **CS1.3.03:** Download, save, retrieve, move and delete digital files. **CS1.3.04:** Organise and format simple data in a structured digital environment, such as in spreadsheets. **CS1.3.05:** Update one's contacts, such as on phone, email or social media.
At **Intermediate** level, individuals	**CS1.3.06:** Acknowledge the importance of careful and ethical management of data and information in digital environments. **[AI-I]** **CS1.3.07:** Apply naming conventions to digital files and hierarchies to digital folders. **CS1.3.08:** Organise folders, and manage, save and delete files on digital devices, external storage, and cloud services. **CS1.3.09:** Identify common types of data and their formats, and use data collection tools for simple processing of data. **[AI-I]** **CS1.3.10:** Manage information in one's digital accounts, such as email. **[AI-I]** **CS1.3.11:** Organise and format data and apply basic formulas in a structured digital environment, such as in spreadsheets.
At **Advanced** level, individuals	**CS1.3.12:** Prioritise ethical and transparent management and processing of data and information in digital environments. **[AI-I]** **CS1.3.13:** Apply a variety of functions to transfer and manage data and information in digital environments. **[AI-I]** **CS1.3.14:** Describe examples, applications and limitations of open data and big data. **[AI-I]** **CS1.3.15:** Use range of digital tools and methods to collect and process a variety of data and information. **[AI-I]** **CS1.3.16:** Apply appropriate analysis to information and data in digital environments to contribute to complex decision-making. **[AI-I]** **CS1.3.17:** Assist others with data and information management, processing and analysis in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS1.3.18:** Acknowledge the importance of structuring and documenting data and information in digital environments for the benefit of others. **CS1.3.19:** Develop and implement strategies for complex or specialised data and information management, processing and analysis in digital environments. **[AI-I]** **CS1.3.20:** Use a variety of digital tools and methods to process, manage or analyse complex data or large volumes of information. **[AI-I]** **CS1.3.21:** Lead or contribute to initiatives that support others in advanced information and data management, processing and analysis in digital environments. **[AI-I]** **CS1.3.22:** Contribute to improvements in or new solutions for data management, processing or analysis in digital environments. **[AI-I]**



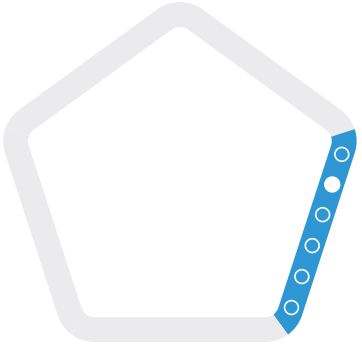
2. COMMUNICATION AND COLLABORATION

2.1 Interacting through and with digital technologies

To interact through and with a variety of digital technologies, and to use appropriate digital communication for a given context.

Link to learning outcomes for Competence 2.1

At **Basic** level, *with guidance as needed*, individuals	**CS2.1.01:** Identify and use basic features of digital communication tools to interact with individuals and groups. **[AI-I]** **CS2.1.02:** Acknowledge the importance of taking others' preferences into account in digital communication. **CS2.1.03:** Recognise differences between digital and non-digital interactions, and between physical and virtual realities. **[AI-I]** **CS2.1.04:** Identify basic features of virtual assistants (chatbots) and recognise key differences between human-to-machine and human-to-human interactions. **[AI-I]** **CS2.1.05:** Recognise in general terms what a robot is, the non-human nature of robots, and that humans interact with robots to carry out tasks. **[AI-I]**
At **Intermediate** level, individuals	**CS2.1.06:** Acknowledge the importance of tailoring one's digital communication to specific contexts. **CS2.1.07:** Recognise that there is a reality-virtuality continuum in digital environments. **[AI-I]** **CS2.1.08:** Identify a suitable communication means for a given context or purpose. **[AI-I]** **CS2.1.09:** Use multiple features of a variety of digital communication tools to interact with and manage individuals, groups and channels. **[AI-I]** **CS2.1.10:** Develop and refine questions, commands or statements (prompts) for virtual assistants (chatbots) and AI systems to handle non-complex interactions. **[AI-E]** **CS2.1.11:** Define how humans can interact with robots, identifying their key features (such as sensors, software, motion controls and human interface), and recognising that they can operate with varying degrees of autonomy. **[AI-I]**
At **Advanced** level, individuals	**CS2.1.12:** Continually adapt communication in digital environments in response to a variety of contexts. **CS2.1.13:** Combine digital communication tools and methods for complex communication and interaction tasks. **[AI-I]** **CS2.1.14:** Systematically develop and progressively refine questions, commands or statements (prompts) for AI systems to handle complex interactions. **[AI-E]** **CS2.1.15:** Assist others to assess and select suitable digital communication tools for a given purpose. **[AI-I]** **CS2.1.16:** Organise and/or moderate complex digital events. **[AI-I]** **CS2.1.17:** Assess benefits and disadvantages of robotic applications in a specific context. **[AI-I]**
At **Highly Advanced** level, individuals	**CS2.1.18:** Stay informed about developments in digital communication and interaction tools and methods. **[AI-I]** **CS2.1.19:** Assess and combine digital communication and interaction tools for highly complex or novel tasks. **[AI-I]** **CS2.1.20:** Provide guidance, support or leadership in the advanced use of communication and interaction tools. **[AI-I]** **CS2.1.21:** Lead or contribute to improvements in or new solutions for digital communication or human-machine interaction. **[AI-I]**



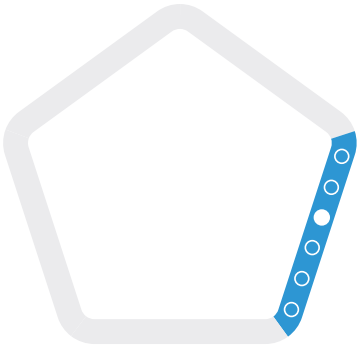
2. COMMUNICATION AND COLLABORATION

2.2 Sharing through digital technologies

To share information and content ethically and responsibly with others through appropriate digital technologies.

Link to learning outcomes for Competence 2.2

At **Basic** level, *with guidance as needed*, individuals	**CS2.2.01:** Acknowledge the importance of ethical and responsible sharing of information and content. **[AI-I]** **CS2.2.02:** Identify functions and uses of social media, and examples of common social media platforms. **[AI-I]** **CS2.2.03:** Recognise benefits and risks of sharing information and content in digital environments, and that individuals can choose how and what to share. **[AI-I]** **CS2.2.04:** Recognise that content can be shared in a variety of ways by AI systems as well as humans. **[AI-E]** **CS2.2.05:** Identify purpose and target audience of information and content to be shared in digital environments. **CS2.2.06:** Use simple processes to share information and content in digital environments appropriately and in accordance with goals.
At **Intermediate** level, individuals	**CS2.2.07:** Acknowledge the importance of assessing the value and accuracy of information and content prior to sharing it in digital environments. **CS2.2.08:** Define responsibilities associated with sharing information and content in digital environments. **[AI-I]** **CS2.2.09:** Describe and implement effective and ethical ways to share information and content in a variety of digital environments. **[AI-I]** **CS2.2.10:** Report or flag misinformation and disinformation that has been shared in digital environments. **[AI-I]**
At **Advanced** level, individuals	**CS2.2.11:** Acknowledge the value of sharing information and content in digital environments to assist others. **CS2.2.12:** Share information and content in digital environments to support personal, learning or professional goals of oneself and others. **[AI-I]** **CS2.2.13:** Advise others on effective and ethical ways to share information and content in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS2.2.14:** Facilitate complex sharing of information across a variety of digital technologies, exploring new and alternative means as needed. **[AI-I]** **CS2.2.15:** Contribute to complex or specialised initiatives for sharing information and content in digital environments. **[AI-I]** **CS2.2.16:** Lead or contribute to improvements in or new solutions for sharing information and content in digital environments. **[AI-I]**



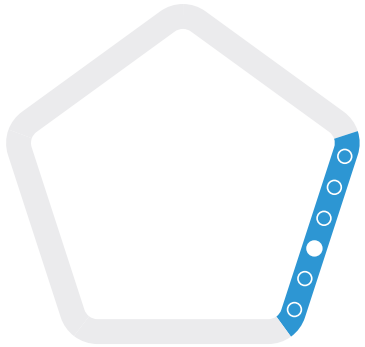
2. COMMUNICATION AND COLLABORATION

2.3 Engaging in citizenship through digital technologies

To participate in society through the ethical and responsible use of digital platforms and services. To seek opportunities for self-empowerment and participation through appropriate digital technologies. To be aware of and assert one's rights, and to exercise choice, in digital environments.

Link to learning outcomes for Competence 2.3

At **Basic** level, *with guidance as needed*, individuals	**CS2.3.01:** Identify main purposes and functions of digital platforms and services, using them with assistance as needed. **[AI-I]** **CS2.3.02:** Recognise the potential of digital technologies for participation and empowerment – and exclusion – of oneself and specific groups and communities. **[AI-I]** **CS2.3.03:** Recognise that there are laws and regulations to protect the rights of users of digital platforms and services. **[AI-I]** **CS2.3.04:** Use digital tools to search for and find communities for civic participation on issues of interest. **[AI-I]**
At **Intermediate** level, individuals	**CS2.3.05:** Participate in discussions on digital citizenship topics. **[AI-I]** **CS2.3.06:** Prioritise the exploration of ways that digital technologies can enhance one's civic and societal participation. **[AI-I]** **CS2.3.07:** Describe the potential benefits of common forms of digital participation, recognising that civic participation occurs along a continuum. **CS2.3.08:** Recognise key rights under relevant digital laws and regulations, and define how to exercise them. **[AI-I]** **CS2.3.09:** Describe how digital technologies such as social media platforms can influence some aspects of basic democracy (for example, distortion of the electoral process). **[AI-I]** **CS2.3.10:** Describe the concept of the platform economy, including opportunities, risks, social and ethical implications. **[AI-I]** **CS2.3.11:** Describe the concepts and functions of civic monitoring and e-Government. **CS2.3.12:** Interact autonomously and effectively with digital platforms and services. **[AI-I]**
At **Advanced** level, individuals	**CS2.3.13:** Participate in discussions on digital technologies' ethical, political and social implications, prioritising the continual exploration of ways in which digital technologies can support empowerment and civic participation. **[AI-I]** **CS2.3.14:** Assess the potential of digital technologies for inclusion, exclusion, and civic intervention. **[AI-I]** **CS2.3.15:** Assess several implications of digital technologies such as social media platforms in democratic processes. **[AI-I]** **CS2.3.16:** Distinguish between high-risk and prohibited AI systems (according to legislation) and their potential societal, political or economic impacts. **[AI-E]** **CS2.3.17:** Assist others to identify opportunities and participate in digital environments for (self or community) empowerment and civic participation. **CS2.3.18:** Support others to inform themselves about and exercise their rights under digital legislation. **[AI-I]**
At **Highly Advanced** level, individuals	**CS2.3.19:** Use up-to-date knowledge of digital technologies and legislative developments to evaluate impacts of digital technologies on society, political processes, or the economy, from a range of perspectives. **[AI-I]** **CS2.3.20:** Assist others to comprehend the main provisions of digital legislation, given a specific context. **[AI-I]** **CS2.3.21:** Lead or design digital citizenship initiatives, for example to promote civic participation, inclusion or empowerment. **[AI-I]**



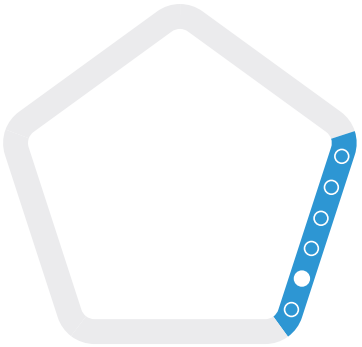
2. COMMUNICATION AND COLLABORATION

2.4 Collaborating through digital technologies

To use digital technologies ethically and responsibly for collaborative purposes, and for the co-construction and co-creation of information, resources and knowledge.

Link to learning outcomes for Competence 2.4

At **Basic** level, *with guidance as needed*, individuals	**CS2.4.01:** Participate in collaborative groups via digital collaboration tools, recognising their benefits and limitations. **[AI-I]** **CS2.4.02:** Recognise the presence of AI systems in digital collaboration tools. **[AI-E]** **CS2.4.03:** Acknowledge the importance of effective communication skills for successful collaboration in digital environments.
At **Intermediate** level, individuals	**CS2.4.04:** Create, manage and contribute effectively to simple collaborative tasks in digital environments. **[AI-I]** **CS2.4.05:** Recognise main features and functions of a variety of collaboration tools, selecting them to meet collaboration goals. **[AI-I]** **CS2.4.06:** Identify examples of ethical, responsible and effective human-AI collaboration. **[AI-E]** **CS2.4.07:** Take account of different perspectives to help achieve a common goal in digital environments.
At **Advanced** level, individuals	**CS2.4.08:** Use and combine a variety of digital collaboration tools, ensuring proportionate and ethical use of digital technologies and human-AI collaboration processes that meet the needs of projects, tasks and groups. **[AI-E]** **CS2.4.09:** Lead collaboration in digital environments. **[AI-I]** **CS2.4.10:** Help others to develop their capabilities to collaborate in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS2.4.11:** Promote and support proportionate, ethical and effective use of digital technologies including AI systems in collaborations. **[AI-E]** **CS2.4.12:** Design complex or specialised collaboration strategies or systems for digital environments. **[AI-I]** **CS2.4.13:** Assist others to develop capabilities to lead collaboration in digital environments. **[AI-I]** **CS2.4.14:** Lead or contribute to improvements in or new solutions for human-AI collaboration. **[AI-E]**



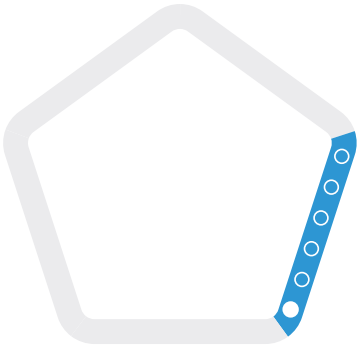
2. COMMUNICATION AND COLLABORATION

2.5 Digital behaviour

To be aware of behavioural norms, and to know how to behave respectfully while using digital technologies and interacting in digital environments. To adapt communication to specific contexts, and to be aware of and respect cultural, generational and other diversity in digital environments.

Link to learning outcomes for Competence 2.5

At **Basic** level, *with guidance as needed*, individuals	**CS2.5.01:** Recognise differences in verbal and non-verbal behaviour in digital and non-digital environments, and that there are cultural and contextual differences in verbal and non-verbal digital communication. **CS2.5.02:** Acknowledge the importance of giving space to the opinions of others in digital environments. **CS2.5.03:** Recognise that some behaviour in digital environments may not be acceptable to others, and/or may have legal consequences. **[AI-I]** **CS2.5.04:** Use appropriate tone and visual expression such as emoji in formal and non-formal digital environments.
At **Intermediate** level, individuals	**CS2.5.05:** Describe the relationship between digital behaviour and digital reputation. **CS2.5.06:** Prioritise behaviour that supports inclusion and a positive digital reputation for oneself and others. **CS2.5.07:** Identify key rights and responsibilities of children and adults in relation to digital behaviour. **[AI-I]**
At **Advanced** level, individuals	**CS2.5.08:** Respond with effective and respectful communication and behaviour to difficult or complex situations in digital environments. **CS2.5.09:** Distinguish between ethical, legal and illegal behaviours in digital environments, recognising that these distinctions may be complex. **[AI-I]** **CS2.5.10:** Analyse patterns of abuse of specific groups in digital environments and their potential impacts, and describe ways in which they can be reported and tackled. **[AI-I]** **CS2.5.11:** Promote and support inclusive and respectful behaviour in digital environments. **CS2.5.12:** Support others to develop their capacities for inclusive and respectful behaviour in digital environments.
At **Highly Advanced** level, individuals	**CS2.5.13:** Stay informed about developments in policies and legislation relating to behaviour in digital environments. **[AI-I]** **CS2.5.14:** Assist others to understand key rights and responsibilities under policies or legislation relating to digital behaviour in a given context. **[AI-I]** **CS2.5.15:** Lead or contribute to digital behaviour policies or initiatives. **[AI-I]**



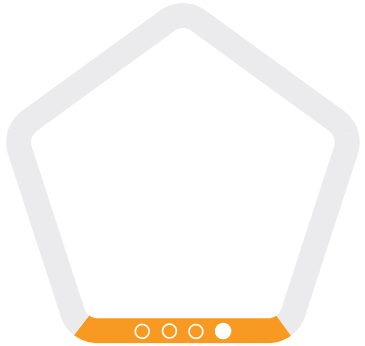
2. COMMUNICATION AND COLLABORATION

2.6 Managing digital identity

To manage one or multiple digital identities. To take actions to help protect one's digital reputation (how one is perceived based on online presence), and to manage one's digital footprint (the data that is produced through use of and by digital platforms and services).

Link to learning outcomes for Competence 2.6

At **Basic** level, *with guidance as needed*, individuals	**CS2.6.01:** Acknowledge the benefits of implementing measures to help manage one's digital identity. **CS2.6.02:** Recognise features of physical and digital identities, and identify aspects of physical identity that can be linked to digital identity. **CS2.6.03:** Recognise digital identity as both a means of authenticating (validating) an individual and the data generated by an individual's online activities, and identify common forms and uses of digital identity. **[AI-I]** **CS2.5.04:** Recognise the concept and components of a digital footprint. **[AI-I]** **CS2.6.05:** Recognise that digital identity protection laws protect individuals' data and privacy. **[AI-I]** **CS2.6.06:** Identify and implement simple measures, such as limiting tracking and deleting browsing history, to manage digital identity.
At **Intermediate** level, individuals	**CS2.6.07:** Acknowledge the importance of one's own role and rights in the management of digital identity. **[AI-I]** **CS2.6.08:** Identify examples of actively and passively generated information in relation to digital identity. **[AI-I]** **CS2.6.09:** Analyse the scope of one's own digital identity to implement protections. **[AI-I]** **CS2.6.10:** Adjust settings on devices and apps, online accounts and activity tracking to help manage one's digital identity. **[AI-I]** **CS2.6.11:** Curate and manage one or more digital identities using a variety of features and functionalities on digital platforms or services. **[AI-I]**
At **Advanced** level, individuals	**CS2.6.12:** Describe ways to exercise legal rights in issues relating to digital identity. **[AI-I]** **CS2.6.13:** Assess one's digital identity on an ongoing basis, and use a variety of processes to manage digital identity. **[AI-I]** **CS2.6.14:** Assess benefits, social and ethical implications of the use of AI systems in digital identity management. **[AI-E]** **CS2.6.15:** Curate and manage digital identities for personal, professional and/or organisational purposes across a variety of platforms and services. **[AI-I]** **CS2.6.16:** Assist others with basic digital identity management. **[AI-I]**
At **Highly Advanced** level, individuals	**CS2.6.17:** Stay informed about developments in digital technologies in relation to digital identity management and protection. **[AI-I]** **CS2.6.18:** Support others to deepen their capabilities in the management and curation of digital identities. **[AI-I]** **CS2.6.19:** Advise others on complex aspects of digital identity management and rights. **[AI-I]**



3. CONTENT CREATION

3.1 Developing digital content

To use digital technologies ethically and responsibly to create and edit a variety of content. To express oneself through digital means.

Link to learning outcomes for Competence 3.1

At **Basic** level, *with guidance as needed*, individuals	**CS3.1.01:** Acknowledge the benefits of exploring a variety of digital content creation tools to support content creation goals. **[AI-I]** **CS3.1.02:** Acknowledge the importance of accessible and inclusive digital content. **CS3.1.03:** Identify common types of digital content and file formats, and common operational functions across digital content creation tools. **[AI-I]** **CS3.1.04:** Recognise that while AI systems can generate content, humans are essential to ensure ethical, responsible, and context-appropriate outputs. **[AI-E]** **CS3.1.05:** Recognise that generative AI is a particular type of AI and is one of various digital technologies that can be used to support content creation. **[AI-E]** **CS3.1.06:** Use basic features of content creation tools to create and edit digital content. **[AI-I]**
At **Intermediate** level, individuals	**CS3.1.07:** Purposefully explore features and functions of digital content creation tools to deepen capabilities. **[AI-I]** **CS3.1.08:** Describe benefits and limitations in the use of digital technologies such as AI systems for content creation, using them selectively and ethically. **[AI-E]** **CS3.1.09:** Use a variety of content creation tools to create and edit digital content. **[AI-I]** **CS3.1.10:** Apply strategies that enable efficient digital content creation. **[AI-I]** **CS3.1.11:** Assess audience accessibility and inclusivity needs, and create and edit digital content accordingly. **[AI-I]**
At **Advanced** level, individuals	**CS3.1.12:** Acknowledge the importance of assessing capabilities, constraints and ethical aspects of digital content creation tools. **[AI-I]** **CS3.1.13:** Select and combine digital content creation tools and methods to meet complex content creation task and audience requirements. **[AI-I]** **CS3.1.14:** Create and edit complex or specialised digital content, tailored appropriately to goals and audience. **[AI-I]** **CS3.1.15:** Support others to develop their capabilities in digital content creation using ethical and responsible approaches. **[AI-I]**
At **Highly Advanced** level, individuals	**CS3.1.16:** Promote and support accessibility and inclusivity, and the selective and ethical use of AI systems, in digital content creation. **[AI-E]** **CS3.1.17:** Help others to develop advanced digital content creation capabilities. **[AI-I]** **CS3.1.18:** Lead or contribute to complex or specialised digital content creation initiatives. **[AI-I]** **CS3.1.19:** Lead or contribute to improvements in or new solutions for complex or specialised digital content. **[AI-I]**

3. CONTENT CREATION

3.2 Integrating and re-elaborating digital content

To modify, refine and integrate new information and content into existing knowledge and resources to create new and original content and knowledge.

Link to learning outcomes for Competence 3.2

At **Basic** level, *with guidance as needed*, individuals	**CS3.2.01:** Acknowledge the importance of ethical and transparent practices when re-using or elaborating existing digital content. **[AI-I]** **CS3.2.02:** Acknowledge the benefits of exploring digital content integration and elaboration tools and techniques. **[AI-I]** **CS3.2.03:** Distinguish between editable and uneditable digital content. **CS3.2.04:** Make changes to digital content using basic editing, formatting and integration functions. **[AI-I]**
At **Intermediate** level, individuals	**CS3.2.05:** Purposefully explore a variety of ways to integrate and re-elaborate digital content. **[AI-I]** **CS3.2.06:** Adjust or integrate digital content to meet format, structure and audience requirements. **[AI-I]** **CS3.2.07:** Modify or transform digital textual, numeric or visual representations to effectively and accurately convey the meaning of data and information. **[AI-I]** **CS3.2.08:** Use digital technologies in a selective, ethical, transparent and responsible way to make enhancements or integrations to existing digital content. **[AI-I]**
At **Advanced** level, individuals	**CS3.2.09:** Adjust or integrate a variety of digital content to meet complex format, structure, and audience requirements. **[AI-I]** **CS3.2.10:** Apply digital technologies in a selective, ethical and transparent way to make improvements or integrations to complex digital content. **[AI-I]** **CS3.2.11:** Support others in developing their capabilities in digital content enhancement. **[AI-I]**
At **Highly Advanced** level, individuals	**CS3.2.12:** Promote and support ethical and transparent practices in digital content integration and re-elaboration, informed by current digital technological developments. **[AI-I]** **CS3.2.13:** Evaluate and apply advanced design and data visualisation techniques to complex or specialised digital content integration and re-elaboration. **[AI-I]** **CS3.2.14:** Assist others with complex digital content integration or re-elaboration tasks. **[AI-I]** **CS3.2.15:** Lead or contribute to complex digital content integration or re-elaboration initiatives, or to improvements in or new solutions for digital content integration or re-elaboration. **[AI-I]**

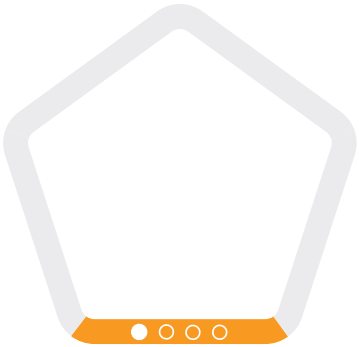
3. CONTENT CREATION

3.3 Copyright and licences

To understand how copyright and licences, as well as associated legal and ethical issues, apply to digital content, and how to correctly apply them.

Link to learning outcomes for Competence 3.3

At **Basic** level, *with guidance as needed*, individuals	**CS3.3.01:** Recognise the general concepts of copyright and licence in digital contexts, and that an individual's original digital content is automatically copyrighted. **CS3.3.02:** Recognise that copyright and licences can apply to digital content, including AI-generated content, and that these determine how content can be used and shared. **[AI-E]** **CS3.3.03:** Recognise that AI-generated content should be labelled as such to help others understand its origin and possibilities for further use. **[AI-E]** **CS3.3.04:** Use and share digital content in compliance with basic legal and ethical guidelines, and identify digital content that can be used free of charge. **[AI-I]**
At **Intermediate** level, individuals	**CS3.3.05:** Acknowledge the complexity of copyright and licences in digital contexts, prioritising a cautious approach. **[AI-I]** **CS3.3.06:** Define the concept of intellectual property, and distinguish between copyright, trademark, design and patent. **[AI-I]** **CS3.3.07:** Identify common types and purposes of licences in digital contexts, including Creative Commons. **CS3.3.08:** Describe ethical, legal and commercial implications of copyright violations in digital contexts. **[AI-I]** **CS3.3.09:** Identify examples of legal and ethical challenges relating to copyright in the training of AI models. **[AI-E]** **CS3.3.10:** Apply legal and ethical guidelines appropriately when using and sharing digital content. **[AI-I]**
At **Advanced** level, individuals	**CS3.3.11:** Describe key features of current legislation in relation to digital copyright and licences. **[AI-I]** **CS3.3.12:** Describe examples of where copyright applies and does not apply in digital contexts, distinguishing between training data for AI systems and AI-generated content. **[AI-E]** **CS3.3.13:** Assess and correctly apply legal and ethical guidelines for using and sharing digital content in complex contexts (for example in relation to AI systems). **[AI-E]** **CS3.3.14:** Assist others to use and share digital content in compliance with legal and ethical guidelines. **[AI-I]**
At **Highly Advanced** level, individuals	**CS3.3.15:** Promote and support awareness and understanding of legal and ethical copyright and licensing practices in digital contexts. **[AI-I]** **CS3.3.16:** Apply advanced knowledge of intellectual property rights, copyright and licensing concepts in digital contexts to inform decision-making. **[AI-I]** **CS3.3.17:** Lead or contribute to policies or guidelines on copyright and licensing in digital contexts. **[AI-I]**



3. CONTENT CREATION

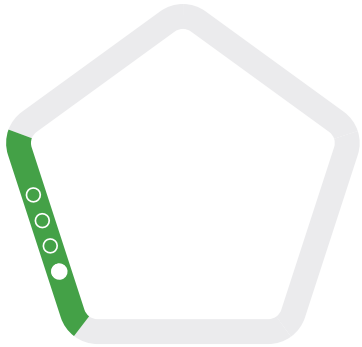
3.4 Computational thinking and programming

To understand and implement steps to analyse a problem, recognise sub-problems, and plan and develop a sequence of instructions for a computing system to solve a given problem or to perform a specific task.

Note: *Computational thinking and programming is a transversal competence, relevant to other DigComp competences. It is included under Competence Area 3, to maintain structural consistency with the previous version.*

Link to learning outcomes for Competence 3.4

At **Basic** level, *with guidance as needed*, individuals	**CS3.4.01:** Recognise the role of programming in society, and common uses of computer programs and applications. **CS3.4.02:** Recognise computational thinking as a human activity which involves the identification of steps that can be performed by a computer to solve a problem or task. **CS3.4.03:** Recognise what AI is in general terms, making a basic distinction between what is and what is not an AI system. **[AI-E]** **CS3.4.04:** Represent simple sequences symbolically, interpret simple symbolic sequences, and give basic instructions to a computer to perform simple tasks. **[AI-I]**
At **Intermediate** level, individuals	**CS3.4.05:** Acknowledge the relevance of computational thinking, algorithmic representation and programming to everyday contexts. **[AI-I]** **CS3.4.06:** Distinguish between a computational model of reality and reality itself. **[AI-I]** **CS3.4.07:** Define differences between a computable problem and a non-computable problem, and general steps in computational thinking. **CS3.4.08:** Define foundational programming concepts and recognise that there are a variety of programming languages, each with a range of potential uses. **[AI-I]** **CS3.4.09:** Recognise that machine learning is a type of programming used in AI that enables algorithms to learn from data and make predictions. **[AI-E]** **CS3.4.10:** Recognise that there are steps that should be followed to develop, validate and deploy a computer program or an AI system. **[AI-E]** **CS3.4.11:** Translate basic information into logical operations, develop basic programs with control structures, and create visual representations to illustrate basic algorithms. **[AI-I]**
At **Advanced** level, individuals	**CS3.4.12:** Acknowledge the importance of human oversight and human-centric approaches in the development and deployment of computer programs and AI systems. **[AI-E]** **CS3.4.13:** Describe the main steps in developing, validating and deploying a computer program or an AI system. **[AI-E]** **CS3.4.14:** Describe examples of the application of computational thinking and programming in robotics. **[AI-I]** **CS3.4.15:** Distinguish between main types of machine learning. **[AI-E]** **CS3.4.16:** Assess ethical and practical aspects of the development and deployment of computer programs and AI systems. **[AI-E]** **CS3.4.17:** Identify and (partially or fully) automate routine tasks with programming tools or AI systems. **[AI-E]** **CS3.4.18:** Apply programming tools or AI systems to complex computational thinking tasks. **[AI-E]**
At **Highly Advanced** level, individuals	**CS3.4.19:** Promote and support ethical programming and/or AI system development practices. **[AI-E]** **CS3.4.20:** Stay informed about current developments in programming techniques and related applications of AI systems, such as robotics. **[AI-E]** **CS3.4.21:** Lead or contribute to complex projects focused on applications of computational thinking, programming or AI systems, including developing, validating and deploying computer programs or AI systems. **[AI-E]** **CS3.4.22:** Assist others to develop basic programming capabilities and/or capabilities in the application of AI systems to computational thinking tasks. **[AI-E]**



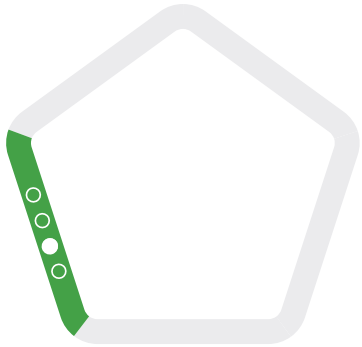
4. SAFETY, WELLBEING AND RESPONSIBLE USE

4.1 Protecting devices

To apply safety and cybersecurity measures in order to protect digital devices and content. To be aware of the evolving nature of risks and threats in digital environments, and to have due regard to security of digital devices and their contents.

Link to learning outcomes for Competence 4.1

At **Basic** level, *with guidance as needed*, individuals	**CS4.1.01:** Acknowledge the importance of one's individual role in protecting digital devices and their contents. **CS4.1.02:** Recognise that individual actions and cybersecurity tools work together to help keep devices and their contents secure. **CS4.1.03:** Recognise that there is cybersecurity legislation that helps to ensure the security of products and services. **CS4.1.04:** Identify and apply basic device protection measures such as antivirus software, screen locking, strong passwords, and multi-factor authentication.
At **Intermediate** level, individuals	**CS4.1.05:** Acknowledge the importance of remaining vigilant to and up-to-date with cybersecurity practices. **[AI-I]** **CS4.1.06:** Describe main features of malware and apply a variety of malware prevention techniques to protect devices and their contents. **[AI-I]** **CS4.1.07:** Recognise that recent and emerging digital technologies such as AI systems can be used for both cyberattacks and cybersecurity. **[AI-E]**
At **Advanced** level, individuals	**CS4.1.08:** Prioritise regular checking and updating of cybersecurity measures to protect devices and their contents in response to evolving digital threats. **[AI-I]** **CS4.1.09:** Describe key rights of individuals under current cybersecurity legislation. **[AI-I]** **CS4.1.10:** Identify examples of how recent and emerging technologies such as AI systems are used in cyberattacks and cybersecurity. **[AI-E]** **CS4.1.11:** Assist others in implementing basic cybersecurity protection measures, such as antivirus software, screen locking, strong passwords and multi-factor authentication.
At **Highly Advanced** level, individuals	**CS4.1.12:** Stay informed about digital technological and legislative developments in relation to cybersecurity. **[AI-I]** **CS4.1.13:** Assess rights of individuals under relevant provisions of current cybersecurity legislation. **[AI-I]** **CS4.1.14:** Lead or contribute to citizen-focused cybersecurity initiatives. **[AI-I]** **CS4.1.15:** Support others to build their capabilities in protecting devices and their contents against digital threats. **[AI-I]**



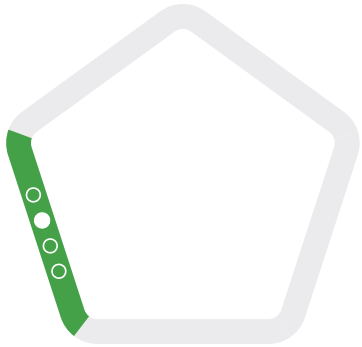
4. SAFETY, WELLBEING AND RESPONSIBLE USE

4.2 Protecting personal data and privacy

To be aware of and exercise one's rights in relation to personal data and privacy in digital environments. To evaluate and manage privacy risks and protect personal data and privacy in digital environments. To use and share one's own and others' personal data safely, ethically and responsibly.

Link to learning outcomes for Competence 4.2

At **Basic** level, *with guidance as needed*, individuals	**CS4.2.01:** Acknowledge the importance of a cautious approach to the sharing of personal data in digital environments. **CS4.2.02:** Recognise that personal data is collected and generated through a large variety of sources and processes. **[AI-I]** **CS4.2.03:** Recognise that manipulative methods can be used in digital environments to deceive individuals into providing access to personal data, accounts or other sensitive information. **CS4.2.04:** Identify risks of sharing personal data in digital environments, including specific risks in relation to AI systems. **[AI-E]** **CS4.2.05:** Recognise that individuals have a right to privacy and that their personal data is protected under legislation. **[AI-I]** **CS4.2.06:** Implement basic security measures for online payments and transactions. **CS4.2.07:** Block or flag personal information that has been inappropriately shared online. **CS4.2.08:** Recognise and respond appropriately to signs of identity theft.
At **Intermediate** level, individuals	**CS4.2.09:** Recognise the importance of careful handling of personal data of oneself and others, especially vulnerable individuals and children. **CS4.2.10:** Recognise key concepts related to data protection and privacy legislation. **[AI-I]** **CS4.2.11:** Define the purpose of online privacy statements and main privacy policy concepts. **CS4.2.12:** Define personal data breach under current data protection and privacy legislation. **CS4.2.13:** Describe privacy implications associated with the use of shared online content, such as to train AI systems, recognising that regulation of personal data ownership of content shared online is complex. **[AI-E]** **CS4.2.14:** Describe techniques related to social engineering in digital environments, such as phishing or baiting, identifying and responding appropriately to instances of them. **CS4.2.15:** Safely manage personal data and privacy across a variety of digital environments, including use of privacy tools. **[AI-I]**
At **Advanced** level, individuals	**CS4.2.16:** Continually explore data ownership and privacy issues in relation to digital technological developments. **[AI-I]** **CS4.2.17:** Support others to understand their rights under current data protection and privacy legislation. **[AI-I]** **CS4.2.18:** Assist others to implement basic strategies to protect personal data and manage privacy in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS4.2.19:** Stay informed about digital technological and legislative developments in relation to personal data, data ownership and privacy. **[AI-I]** **CS4.2.20:** Advise on policy or regulatory aspects of data protection and privacy in digital contexts. **[AI-I]** **CS4.2.21:** Lead or contribute to the design of personal data protection strategies in digital contexts. **[AI-I]**



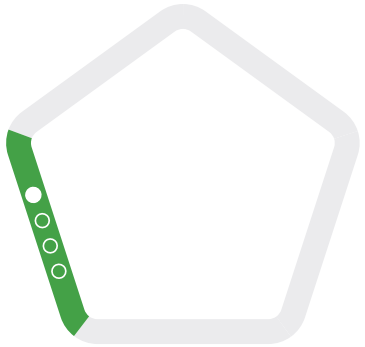
4. SAFETY, WELLBEING AND RESPONSIBLE USE

4.3 Supporting wellbeing

To use digital technologies in ways that support wellbeing and inclusion. To minimise risks and threats to physical, mental and social wellbeing of oneself and others while using digital technologies. To balance usage of digital technologies with offline activities to support wellbeing. To take action to help protect oneself and others from possible dangers in digital environments (e.g. cyberbullying, harmful content), and to know how to respond to such dangers.

Link to learning outcomes for Competence 4.3

At **Basic** level, *with guidance as needed*, individuals	**CS4.3.01:** Acknowledge the benefits of balancing online and offline activities, and the benefits and risks to one's own physical, mental and social wellbeing in using digital technologies. **[AI-I]** **CS4.3.02:** Acknowledge the interplay between one's own digital habits and features of digital platforms or services that are designed to capture and maintain users' attention. **[AI-I]** **CS4.3.03:** Recognise that there is a variety of information, groups and communities in digital environments that can support one's physical, mental and/or social wellbeing. **[AI-I]** **CS4.3.04:** Identify limitations and risks of using virtual assistants and AI systems to support human wellbeing. **[AI-E]** **CS4.3.05:** Recognise that there are laws and regulations that help protect the wellbeing of individuals in digital environments. **[AI-I]** **CS4.3.06:** Make a basic assessment of one's digital habits in relation to one's physical, mental and social wellbeing, with an awareness of signs of problematic usage, and identify and implement strategies to support one's wellbeing.
At **Intermediate** level, individuals	**CS4.3.07:** Acknowledge the importance of one's own and others' right to disconnect and the benefits of regularly reviewing one's digital usage patterns. **CS4.3.08:** Describe impacts of harmful behaviour, content and deceptive design in digital environments on oneself and others. **[AI-I]** **CS4.3.09:** Identify reliable sources of information, and inclusive groups and communities in digital environments, that can support one's physical, mental and/or social wellbeing. **[AI-I]** **CS4.3.10:** Identify possible ways to flag or intervene if harmful behaviour or content is encountered in digital environments. **[AI-I]** **CS4.3.11:** Describe ways in which some digital technologies, such as social media, augment and perpetuate bias, stereotyping and exclusion. **[AI-I]** **CS4.3.12:** Implement strategies to protect against and respond effectively to harmful behaviour, content and deceptive design in digital environments, and to support and maintain one's own and others' wellbeing. **CS4.3.13:** Adapt to changing digital technological developments and needs to support and maintain physical, mental and social wellbeing. **[AI-I]**
At **Advanced** level, individuals	**CS4.3.14:** Continually scrutinise the role of digital technologies such as social media in augmenting and perpetuating bias, stereotyping and exclusion. **[AI-I]** **CS4.3.15:** Flag or intervene effectively in instances of harmful behaviour or content in digital environments. **[AI-I]** **CS4.3.16:** Assist others to review and adapt their usage of digital technologies and to develop awareness of harmful behaviour, content and deceptive design in digital environments. **[AI-I]** **CS4.3.17:** Help others to build capacity to counteract the role of digital technologies such as social media in augmenting and perpetuating bias, stereotyping and exclusion. **[AI-I]** **CS4.3.18:** Assist others to understand their rights in relation to wellbeing and/or inclusion in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS4.3.19:** Promote actions that support wellbeing and inclusion in digital environments. **[AI-I]** **CS4.3.20:** Assess and evaluate evidence on wellbeing and/or inclusion in digital environments to guide decision-making. **[AI-I]** **CS4.3.21:** Lead or contribute to initiatives that support wellbeing and/or inclusion in digital environments. **[AI-I]** **CS4.3.22:** Contribute to legal and regulatory decision-making in relation to individuals' wellbeing and/or inclusion in digital environments. **[AI-I]**



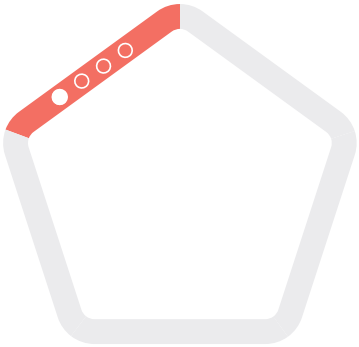
4. SAFETY, WELLBEING AND RESPONSIBLE USE

4.4 Environmental impacts of digital technologies

To be aware of the environmental impacts of digital technologies, including device production, operation, repair, recycling, disposal, data storage infrastructure, energy consumption and usage of tools and applications. To take action to reduce such impact and to use digital technologies to support sustainability.

Link to learning outcomes for Competence 4.4

At **Basic** level, *with guidance as needed*, individuals	**CS4.4.01:** Acknowledge the role that individuals can play to help reduce the environmental impact of digital technologies. **CS4.4.02:** Recognise that some digital technologies and infrastructures, such as AI systems and data centres, have large impacts on the environment. **[AI-E]** **CS4.4.03:** Recognise that the full environmental impacts of digital technologies are not immediately apparent to an individual user. **[AI-I]** **CS4.4.04:** Recognise the role of digital technologies in supporting energy efficiency and sustainability. **[AI-I]** **CS4.4.05:** Identify and apply simple strategies to reduce energy and data consumption while using digital technologies. **[AI-I]**
At **Intermediate** level, individuals	**CS4.4.06:** Continually assess the environmental impacts of one's usage of digital technologies. **[AI-I]** **CS4.4.07:** Identify environmental impacts of digital technologies that occur during manufacturing, usage and disposal, and of data centres and e-commerce. **[AI-I]** **CS4.4.08:** Describe how some digital technologies can support sustainable living. **[AI-I]** **CS4.4.09:** Describe potential environmental benefits of the digital sharing and circular economy models. **CS4.4.10:** Assess and apply a variety of strategies to reduce the environmental impact of one's use of digital technologies and digital devices. **[AI-I]**
At **Advanced** level, individuals	**CS4.4.11:** Stay informed about the environmental impacts of digital technologies and ways in which digital technologies can support sustainability. **[AI-I]** **CS4.4.12:** Evaluate the environmental impacts of digital technologies and infrastructures to support decision-making or advocacy. **[AI-I]** **CS4.4.13:** Help others to assess their use of digital technologies to identify ways in which to reduce environmental impact. **[AI-I]**
At **Highly Advanced** level, individuals	**CS4.4.14:** Stay informed about the environmental and sustainability implications of digital technologies across a range of sectors. **[AI-I]** **CS4.4.15:** Promote and support actions for environmentally sustainable usage of digital technologies. **[AI-I]** **CS4.4.16:** Lead or contribute to digital sustainability initiatives. **[AI-I]** **CS4.4.17:** Contribute to improvements in or solutions for digital sustainability. **[AI-I]**



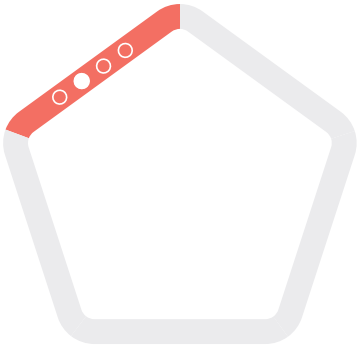
5. PROBLEM IDENTIFICATION AND SOLVING

5.1 Identifying and solving technical problems

To identify technical problems when operating digital devices and in digital environments, and to solve them through a variety of means.

Link to learning outcomes for Competence 5.1

At **Basic** level, *with guidance as needed*, individuals	**CS5.1.01:** Acknowledge the commonplace nature of technical problems in digital environments and the benefits of seeking assistance to help resolve them. **CS5.1.02:** Differentiate between operating systems and software and identify the main features of hardware, software, connectivity, and common peripheral devices. **CS5.1.03:** Identify common technical issues and follow instructions to help to solve them. **CS5.1.04:** Install and update software and applications, as needed.
At **Intermediate** level, individuals	**CS5.1.05:** Acknowledge the benefits of building capacity and autonomy in addressing common technical issues. **CS5.1.06:** Troubleshoot technical problems in digital environments using a variety of search and problem-solving strategies (whether human-assisted or digital technology-assisted). **[AI-I]** **CS5.1.07:** Update and adjust settings on main and peripheral digital devices to maintain good performance.
At **Advanced** level, individuals	**CS5.1.08:** Prioritise the development of one's capacity to diagnose and solve technical issues in digital environments. **[AI-I]** **CS5.1.09:** Assist others to diagnose and solve technical problems in digital environments. **CS5.1.10:** Use various solution-finding strategies to troubleshoot complex technical problems in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS5.1.11:** Help others to develop confidence and autonomy to solve technical problems in digital environments. **CS5.1.12:** Design or deliver training to support the use of digital devices or systems. **[AI-I]**



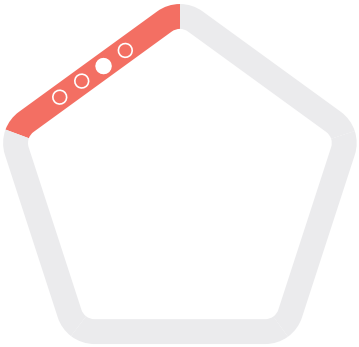
5. PROBLEM IDENTIFICATION AND SOLVING

5.2 Identifying needs and digital technological responses

To assess one's own and others' needs and to evaluate, select, use and adapt digital technologies to meet these needs. To adjust and customise digital environments to the contexts, goals and needs (e.g. accessibility) of oneself and others.

Link to learning outcomes for Competence 5.2

At **Basic** level, *with guidance as needed*, individuals	**CS5.2.01:** Acknowledge the importance of individual choice in digital environment configurations. **CS5.2.02:** Recognise the concept and purpose of a digital assistance tool and the presence of AI systems in such tools. **[AI-E]** **CS5.2.03:** Identify the purpose of technology accessibility and examples of common assistive technologies. **[AI-I]**
At **Intermediate** level, individuals	**CS5.2.04:** Acknowledge the benefits of exploring adaptations to digital environment configurations and features of digital assistance tools. **[AI-I]** **CS5.2.05:** Make informed use of digital assistance tools to support one's own and others' needs, with awareness of their benefits and limitations. **[AI-I]** **CS5.2.06:** Adjust features of one's digital environment to suit one's own and others' needs and preferences. **[AI-I]**
At **Advanced** level, individuals	**CS5.2.07:** Prioritise an ongoing assessment of how digital environmental configurations, digital assistance tools and/or assistive technologies can meet the needs of oneself and others. **[AI-I]** **CS5.2.08:** Adjust features of digital environments, and use digital assistance tools and assistive technologies, to suit one's own and others' needs and preferences. **[AI-I]** **CS5.2.09:** Assess the accessibility, inclusivity, fairness and/or rights-sensitivity of digital technologies in a given context. **[AI-I]** **CS5.2.10:** Support others to make informed use of digital assistance tools and adjustments to digital environment configurations. **[AI-I]**
At **Highly Advanced** level, individuals	**CS5.2.11:** Promote and support inclusive and accessible digital technologies. **[AI-I]** **CS5.2.12:** Assess complex needs of individuals to identify and/or design tailored digital solutions. **[AI-I]** **CS5.2.13:** Contribute to improvements in or solutions for digital assistance tools, accessible digital environment configurations, and/or assistive technologies. **[AI-I]**



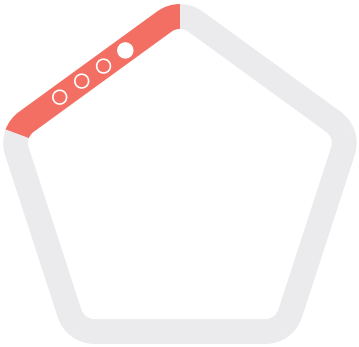
5. PROBLEM IDENTIFICATION AND SOLVING

5.3 Identifying creative solutions using digital technologies

To use digital technologies to make improvements in or new solutions for processes and products, using a human-centric approach. To engage individually and collectively in critical thinking processes, and the creative and purposeful use of digital technologies, to understand and resolve conceptual problems and problem situations.

Link to learning outcomes for Competence 5.3

At **Basic** level, *with guidance as needed*, individuals	**CS5.3.01:** Recognise that digital technologies can support, but not replace, human creativity. **[AI-I]** **CS5.3.02:** Identify examples of how digital technologies are used to solve real-world problems and to make improvements to or create new solutions, products or services. **[AI-I]** **CS5.3.03:** Identify examples of where digital technologies can support or augment human creativity. **[AI-I]**
At **Intermediate** level, individuals	**CS5.3.04:** Define the concept of human-centric and its role in digital technologies development and usage. **[AI-I]** **CS5.3.05:** Describe strengths, weaknesses and ethical considerations of digital technologies including AI systems in relation to human creativity and problem-solving. **[AI-E]** **CS5.3.06:** Use a variety of digital technologies responsibly and ethically to support problem-solving as an individual or in a group. **[AI-I]**
At **Advanced** level, individuals	**CS5.3.07:** Use a variety of digital technologies efficiently, responsibly and ethically, prioritising human-centric approaches, to help solve complex problems. **[AI-I]** **CS5.3.08:** Support others to develop their confidence and capabilities in using digital technologies to help solve real-world problems. **[AI-I]** **CS5.3.09:** Contribute to the (co-) creation or (co-) construction of complex knowledge about or solutions to real-world problems in digital environments. **[AI-I]**
At **Highly Advanced** level, individuals	**CS5.3.10:** Lead or contribute to initiatives focused on the application of digital technologies for highly complex or specialised problem-solving. **[AI-I]** **CS5.3.11:** Lead or contribute to initiatives that use digital technologies to help make improvements to or find new solutions for real-world problems. **[AI-I]** **CS5.3.12:** Support others to develop their capabilities to use digital technologies for complex or specialised problem-solving tasks. **[AI-I]**



5. PROBLEM IDENTIFICATION AND SOLVING

5.4 Identifying and addressing digital competence needs

To recognise where one's own digital competence needs to be improved or updated. To address digital competence needs within a broader process of lifelong learning, building capacity and autonomy. To support others with their digital competence development. To stay informed about digital technological developments and their personal, professional and societal implications.

Link to learning outcomes for Competence 5.4

At **Basic** level, *with guidance as needed*, individuals	**CS5.4.01:** Acknowledge the value of developing one's digital competence, and the benefits of seeking support in addressing digital competence needs. **[AI-I]** **CS5.4.02:** Recognise that digital competence is much broader than technical skills, and requires regular updating for daily life, working and learning. **[AI-I]** **CS5.4.03:** Identify opportunities to improve one's digital competences. **[AI-I]**
At **Intermediate** level, individuals	**CS5.4.04:** Acknowledge the benefits of staying informed about developments in digital technologies to help identify learning needs. **[AI-I]** **CS5.4.05:** Accurately assess one's own digital competences and digital competence needs. **[AI-I]** **CS5.4.06:** Participate actively in learning to meet one's digital competence needs. **[AI-I]**
At **Advanced** level, individuals	**CS5.4.07:** Continually assess digital technological developments and their implications for one's own and others' digital competence needs. **[AI-I]** **CS5.4.08:** Engage in ongoing self-development to meet digital competence needs. **[AI-I]** **CS5.4.09:** Support others to develop confidence, autonomy and problem-solving capabilities in digital environments. **[AI-I]** **CS5.4.10:** Compile available digital competence learning opportunities for a particular purpose. **[AI-I]**
At **Highly Advanced** level, individuals	**CS5.4.11:** Engage in ongoing self-development to meet complex or specialised digital competence needs. **[AI-I]** **CS5.4.12:** Mentor others in identifying and addressing their digital competence needs. **[AI-I]** **CS5.4.13:** Design learning material to help others to meet complex or specialised digital competence needs. **[AI-I]**