# DIGITAL SKILLS
## SCOPE AND SEQUENCE

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# Overview

Nexus International School's vision for technology in education is firmly rooted in pedagogy, not tools. It seeks to emphasise the ways that technology can be used to amplify and even transform learning and teaching. The field of education now realizes the insufficiency of throwing digital tools into classrooms without further support and expecting valid changes in teaching and, more importantly, improved student outcomes. What has not been fully realized, however, is the potential for technology to mend gaps in equity, engage students as unique individuals and prepare them for an uncertain future.

This Scope and Sequence aims to emphasize the skills and qualities we want for students, enabling them to engage and thrive in a connected, digital world. The Digital Skills are designed for use by educators across the curriculum, with every age student, with a goal of cultivating these skills throughout a student's academic career. Both students and teachers will be responsible for achieving foundational technology skills to fully apply the standards. The reward, however, will be educators who skillfully mentor and inspire students to amplify learning with technology and challenge them to be agents of their own learning.

ICT in the PYP encompasses the use of a wide range of digital tools, media and learning environments for teaching, learning and assessing. ICT provides opportunities for the transformation of teaching and learning and enables learners to investigate, create, communicate, collaborate, organize and be responsible for their own learning and actions. ICT allows learners to make connections and reach a deeper understanding of its relevance and applicability to their everyday lives. Through the use of ICT, learners develop and apply strategies for critical and creative thinking, engage in inquiry, make connections, and apply new understandings and skills in different contexts.

In the PYP, there will be opportunities to use ICT in all areas of learning in the relevant, authentic context of the units of inquiry. Teachers have a responsibility to help learners to make explicit connections between different aspects of their learning. Learners need opportunities to identify and reflect on significant ideas within the different skills of ICT and across the transdisciplinary themes. The role of ICT to support inquiry is important as learners engage in building understandings that contribute to their success as lifelong learners in a digital age.

The ultimate responsibility for learning about and through ICT rests with the Home Room teacher, aided and supported by a Digital Coach. It is vital that these Digital Coaches are themselves considered primarily as PYP teachers who support the integration of ICT throughout the curriculum, and in so doing contribute to both the broad and specific learning outcomes of a transdisciplinary programme. Digital Coaches must be present at any planning meetings involving specialists. It is the responsibility of the Phase Leader to invite Digital Coaches to any planning sessions that may benefit from the expertise and advice of a Digital Coach.

The effective integration of ICT enhances the learner's opportunity to connect globally and to explore different perspectives in order to understand evolving cultural and social norms. The ICT skills provide the whole school community with a structure for using ICT as a tool for learning. It has been designed in recognition of the fact that learning is a series of feedback loops involving the individual, the group and the local or global environment. All teachers working with PYP learners will find that the ICT skills will be relevant to the transdisciplinary programme of inquiry as well as to subject specific inquiries.

ICT includes a variety of approaches to help connect learners within both the local and global community in order to empower learning. Learners' awareness, use and appreciation of different ICT knowledge, skills and platforms should be developed. Furthermore, learners should be encouraged to recognize that competency in ICT is a valuable life skill. (International Baccalaureate Organization, 2011, p. 1-2)

The 7 Nexus Digital Skills for Inquiry are organised into 4 main phases with differentiation for year groups within that phase.  The phase level expectation aims to identify what concepts, skills and knowledge should be taught and what is important for learners to have opportunities to know, understand and be able to do. Although the 4 phases can be aligned to grade levels it is recommended that teachers consider their class and determine where individual learners are currently and move them through the stages accordingly.

| Phase 1 | | Phase 2 | | Phase 3 | | Phase 4 | |
|---|---|---|---|---|---|---|---|
| Nursery | Kindergarten | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |

# Digital Capabilities

The following Digital Capabilities are relevant to all learners. Each skill is transdisciplinary and will support learning both within the transdisciplinary programme of inquiry and within the subject areas. These skills interact with each other to support the development of learners. The 7 Nexus Digital Capabilities have been aligned with the IB PYP ATLs.

## 1. Empowered Learner

|  | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | Use technology with help to **choose** how I want to learn. | I am starting to use technology independently to to choose how I would like to learn. | I can use technology with guidance to choose how I want to learn with increasing independence. <br><br> I am beginning to use technology to check my guided learning goals and plan my learning. | I can use technology to choose how I want to learn independently. <br><br> I can use technology to create learning goals and plan my learning. |

## 2. Digital Citizen

|  | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | I am begging to **learn** about technology and being **careful** with it. | I am learning about internet how to stay safe and be honest when going online. | I now understand the opportunities of learning interconnected digital world, and learning to act in ways that are safe and honest. | I learning about the rights, responsibilities and opportunities of living, learning in an interconnected digital world, and act and model in ways that are safe, legal and ethical. |

## 3. Knowledge Constructor

|  | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | Begin to use technology to **learn new things** with the help of adults. | I can use digital tools with guidance to learn, create and make meaningful learning experiences for myself and others. | I can use digital tools with guidance to learn, create and make meaningful learning experiences for myself and others. | I can curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for myself and others. |

## 4. Innovative Designer

| | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | Begin to use technology with help to **explore designing** and making my ideas. | I can use a variety of technologies with guidance to solve problems by creating new, useful or imaginative solutions. | I understand the Design Cycle as process to solve problems.<br><br>I can use a variety of technologies to solve problems by creating new, useful or imaginative solutions. | I understand the Design Cycle as process to solve problems.<br><br>I can use a variety of technologies to solve problems by creating new, useful or imaginative solutions. |

## 5. Computational Thinker Digital Skills

| | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | Begin to use technology to **understand** problems and try to **solve** them. | I can use technology with guidance to understand problems and then develop and test solutions. | I can use technology with guidance to understand problems and then develop and test solutions. | I can use technology with guidance to understand problems and then develop and test solutions. |

## 6. Creative Communicator Digital Skills

| | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | Begin to use technology to **communicate** and **express myself** creatively. | I can use digital tools with guidance to communicate clearly and express myself creatively for a variety of purposes. | I can use digital tools with communicate clearly and express myself creatively. | I can use digital tools with communicate clearly and express myself creatively. |

## 7. Global Collaborator Digital Skills

| | Phase 1 | Phase 2 | Phase 3 | Phase 4 |
|---|---|---|---|---|
| **End of Phase Expectations** | Begin to use technology to learn about the wider world and **communicate** with people in other places. | I can use digital tools with guidance to broaden my perspectives and enrich my learning by collaborating with others and working effectively in teams locally and globally. | I am beginning to understand that technology can let me collaborate meaningfully with others. | I can use digital tools with guidance to broaden my perspectives and enrich my learning by collaborating with others and working effectively in teams locally and globally. |

# Phase 1 - N/K

| PHASE 1 N/K **When I am a ….** | 1 EMPOWERED LEARNER | 2 DIGITAL CITIZEN | 3 KNOWLEDGE CONSTRUCTOR | 4 INNOVATIVE DESIGNER | 5 COMPUTATIONAL THINKER | 6 CREATIVE COMMUNICATOR | 7 GLOBAL COLLABORATOR |
|---|---|---|---|---|---|---|---|
| *CONCEPTUAL UNDERSTANDING* **I can...** | Use technology with help to **choose** how I want to learn. | Begin to **learn** about technology and being **careful** with it. | Begin to use technology to **learn new things** with the help of adults. | Begin to use technology with help to **explore designing** and making my ideas. | Begin to use technology to **understand** problems and try to **solve** them. | Begin to use technology to **communicate** and **express myself** creatively. | Begin to use technology to learn about the wider world and **communicate** with people in other places. |
| *RESPONSIBILITY AND ACTIONS* **I do this by….** | With help I can take photos to capture my learning. With help I can I understand which icons take me to different learning experiences. | I understand when to use technology I understand that I must treat technology with care I understand the importance of logging in as the correct person I am beginning to understand that I can use the internet with guidance. | I am aware of how I can find out new information with guidance. | I am beginning to explore construction materials to create simple structures. | I am beginning to explore programming with physical objects. I am beginning to understand that I can use technology to collect data to answer questions. | I am beginning to use creative tools with guidance. I am beginning to share my learning stories using video, voice, annotations. | I am beginning to understand that technology can let me communicate meaningfully with others. |

# Phase 2 - Y1-Y2

| PHASE 2 Y1-Y2<br><br>**When I am a ….** | 1 EMPOWERED LEARNER | 2 DIGITAL CITIZEN | 3 KNOWLEDGE CONSTRUCTOR | 4 INNOVATIVE DESIGNER | 5 COMPUTATIONAL THINKER | 6 CREATIVE COMMUNICATOR | 7 GLOBAL COLLABORATOR |
|---|---|---|---|---|---|---|---|
| *CONCEPTUAL UNDERSTANDING*<br><br>**I can...** | I am starting to use technology independently to to choose how I would like to learn. | I am learning about internet how to stay safe and be honest when going online. | I can use digital tools with guidance to learn, create and make meaningful learning experiences for myself and others. | I can use a variety of technologies with guidance to solve problems by creating new, useful or imaginative solutions. | I can use technology with guidance to understand problems and then develop and test solutions. | I can use digital tools with guidance to communicate clearly and express myself creatively for a variety of purposes. | I can use digital tools with guidance to broaden my perspectives and enrich my learning by collaborating with others and working effectively in teams locally and globally. |
| *RESPONSIBILITY AND ACTIONS*<br><br>**I do this by….** | I can take photos to capture my learning.<br><br>I can annotate and record voice overs to explain my learning to others.<br><br>I understand which icons take me to different learning experiences on iPad and MacBook. | I understand when to use technology.<br><br>I understand that I must treat technology with care.<br><br>I understand the importance of logging in as the correct person on different learning apps.<br><br>I am beginning to understand that I must use appropriate search terms when learning online.<br><br>I am learning that I can communicate with others and must use appropriate language when I do. | I am aware of how I can find out new information using appropriate online resources. | I am able to find and use construction materials with greater independence to create structures that can solve simple problems. | I can explore programming with physical objects.<br><br>I am beginning to explore programming using a digital device.<br><br>I am beginning to use Digital Tools to record data and answer questions. | I am beginning to use creative tools with guidance.<br><br>I am able to share my learning stories independently using video, voice, annotations. | I am beginning to understand that technology can let me collaborate meaningfully with others. |

## Phase 3 - Y3-Y4

| PHASE 3 Y3-Y4 When I am a …. | 1 EMPOWERED LEARNER | 2 DIGITAL CITIZEN | 3 KNOWLEDGE CONSTRUCTOR | 4 INNOVATIVE DESIGNER | 5 COMPUTATIONAL THINKER | 6 CREATIVE COMMUNICATOR | 7 GLOBAL COLLABORATOR |
|---|---|---|---|---|---|---|---|
| *CONCEPTUAL UNDERSTANDING* **I can...** | I can use technology with guidance to choose how I want to learn with increasing independence. I am beginning to use technology to check my guided learning goals and plan my learning. | I now understand the opportunities of learning interconnected digital world, and learning to act in ways that are safe and honest. | I can use digital tools with guidance to learn, create and make meaningful learning experiences for myself and others. | I understand the Design Cycle as process to solve problems. I can use a variety of technologies to solve problems by creating new, useful or imaginative solutions. | I can use technology with guidance to understand problems and then develop and test solutions. | I can use digital tools with communicate clearly and express myself creatively. | I am beginning to understand that technology can let me collaborate meaningfully with others. |
| *RESPONSIBILITY AND ACTIONS* **I do this by….** | I understand when to use the technology independently. I can use technology to capture my learning in different ways. I understand which websites and icons take me to different learning experiences on iPad and MacBook. | I am learning about private and personal information and what is ok to share online. I understand that when I communicate with others and must use appropriate language. I am learning about Digital Footprint. What goes online can be shared and changed in ways that are out of my control. I understand the importance of using appropriate search terms when learning online. | I am learning about Smart Research and how to use digital research resources.. I can find out new information independently using appropriate online resources. I can search critically. | I am able to find and use construction materials with greater independence to create structures that can solve simple problems. I am beginning to explore digital tools to design innovative solutions . I am learning about ways of thinking that help me to innovate. | I can program confidently with physical objects/robots. I am beginning to explore programming using a digital device. I am able to use Digital Tools to record data and answer questions. | I am able to use creative tools independently to present my learning to others. I am able to share my learning stories independently using video, voice, annotations. | I understand that technology can let me collaborate meaningfully with others. |

## Phase 4 - Y5-Y6

| PHASE 4 Y5-Y6 When I am a …. | 1 EMPOWERED LEARNER | 2 DIGITAL CITIZEN | 3 KNOWLEDGE CONSTRUCTOR | 4 INNOVATIVE DESIGNER | 5 COMPUTATIONAL THINKER | 6 CREATIVE COMMUNICATOR | 7 GLOBAL COLLABORATOR |
|---|---|---|---|---|---|---|---|
| *CONCEPTUAL UNDERSTANDING* **I can...** | I can use technology to choose how I want to learn independently. I can use technology to create learning goals and plan my learning. | I learning about the rights, responsibilities and opportunities of living, learning in an interconnected digital world, and act and model in ways that are safe, legal and ethical. | I can curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for myself and others. | I understand the Design Cycle as process to solve problems. I can use a variety of technologies to solve problems by creating new, useful or imaginative solutions. | I can use technology with guidance to understand problems and then develop and test solutions. | I can use digital tools with communicate clearly and express myself creatively. | I can use digital tools with guidance to broaden my perspectives and enrich my learning by collaborating with others and working effectively in teams locally and globally. |
| *RESPONSIBILITY AND ACTIONS* **I do this by….** | I understand when to use the class iPads or Macbooks independently. I understand which websites and icons take me to different learning experiences on iPad and MacBook. I know how to set my own learning goals and plan my learning. I can articulate my reasons for choosing different technologies. | I understand that I must treat class and personal iPads and Macbooks with care. I can contribute to an Essential Agreement. I understand the importance of logging in as the correct person on different learning apps. I understand the importance of using appropriate search terms when learning online. I understand can I can communicate with others and must use appropriate language when I do. | I can use a variety of digital tools to share my learning for exhibition! I can find out new information independently using appropriate online resources. I can reflect on my use of resources and critically evaluate sources of information. | I am able to find and use construction materials independence to create structures that can solve complex problems. I can use digital tools to design innovative solutions . I can find new tools to help me ideate. | I can program confidently with physical objects/robots. I am beginning to explore programming using a digital device. I am able to use Digital Tools to record and organise data and answer questions. | I am able to use creative tools independently I am able to share my learning stories independently using 2D Graphic Design, video, voice, annotations. Can blend digital and paper presentation appropriately. | I understand that technology can let me collaborate meaningfully with others. Contacting Family and Friends Abroad Can independently contact others to support learning |

# Phase 5 - Y7-Y8

| PHASE 5 Y7-Y8  When I am a …. | 1 EMPOWERED LEARNER | 2 DIGITAL CITIZEN | 3 KNOWLEDGE CONSTRUCTOR | 4 INNOVATIVE DESIGNER | 5 COMPUTATIONAL THINKER | 6 CREATIVE COMMUNICATOR | 7 GLOBAL COLLABORATOR |
|---|---|---|---|---|---|---|---|
| *CONCEPTUAL UNDERSTANDING*  **I can...** | I leverage technology to take an active role in choosing, achieving and demonstrating competency in my learning goals. | I recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and act and model in ways that are safe, legal and ethical. | I critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for myself and others. | I use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. | I develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. | Communicate clearly and express myself creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. | I use digital tools to broaden my perspectives and enrich my learning by collaborating with others and working effectively in teams locally and globally. |
| *RESPONSIBILITY AND ACTIONS*  **I do this by….** | I articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve my learning outcomes.  I build networks and customize my learning environments in ways that support my learning process.  I use technology to seek feedback that informs and improves my practice and to demonstrate | I cultivate and manage my digital identity and reputation and are aware of the permanence of their actions in the digital world.  I engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.  I demonstrate an understanding of and respect for the rights and obligations of using and | I can plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.  I can evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.  I can curate information from digital resources using a variety of tools and methods to create collections of | I know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.  I select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.  I develop, test and refine prototypes as part of a cyclical design process.  I exhibit a tolerance for ambiguity, | I collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.  I break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.  I formulate problem definitions suited for | Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication  I can create original works or responsibly repurpose or remix digital resources into new creations.  I can communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.  I can publish or present content | I use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.  I use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.  I contribute constructively to project teams, assuming various roles and responsibilities |

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| my learning in a variety of ways.<br><br>I understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and am able to transfer my knowledge to explore emerging technologies. | sharing intellectual property.<br><br>I manage my personal data to maintain digital privacy and security and am aware of data-collection technology used to track my navigation online. | artifacts that demonstrate meaningful connections or conclusions.<br><br>I can build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions. | perseverance and the capacity to work with open-ended problems. | technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.<br><br>I understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions. | that customizes the message and medium for their intended audiences. | to work effectively toward a common goal.<br><br>I explore local and global issues and use collaborative technologies to work with others to investigate solutions. |

# Phase 6 - Y9-Y13

| PHASE 6 Y9-Y13 | 1 EMPOWERED LEARNER | 2 DIGITAL CITIZEN | 3 KNOWLEDGE CONSTRUCTOR | 4 INNOVATIVE DESIGNER | 5 COMPUTATIONAL THINKER | 6 CREATIVE COMMUNICATOR | 7 GLOBAL COLLABORATOR |
|---|---|---|---|---|---|---|---|
| ITSE STANDARDS | I leverage technology to take an active role in choosing, achieving and demonstrating competency in my learning goals. | I recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and act and model in ways that are safe, legal and ethical. | I critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for myself and others. | I use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. | I develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. | I communicate clearly and express myself creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. | I use digital tools to broaden my perspectives and enrich my learning by collaborating with others and working effectively in teams locally and globally. |
| ITSE INDICATORS | I articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve my learning outcomes.<br><br>I build networks and customize my learning environments in ways that support my learning process.<br><br>I use technology to seek feedback that informs and improves my practice and to demonstrate my learning in | I cultivate and manage my digital identity and reputation and are aware of the permanence of their actions in the digital world.<br><br>I engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.<br><br>I demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property. | I can plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.<br><br>I can evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.<br><br>I can curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate | I know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.<br><br>I select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.<br><br>I develop, test and refine prototypes as part of a cyclical design process.<br><br>I exhibit a tolerance for ambiguity, | I collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.<br><br>I break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.<br><br>I formulate problem definitions suited for | I can choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication<br><br>I can create original works or responsibly repurpose or remix digital resources into new creations.<br><br>I can communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.<br><br>I can publish or present content that customizes | I use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.<br><br>I use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.<br><br>I contribute constructively to project teams, assuming various roles and |

| | a variety of ways. I understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and am able to transfer my knowledge to explore emerging technologies. | I manage my personal data to maintain digital privacy and security and am aware of data-collection technology used to track my navigation online. | meaningful connections or conclusions.<br><br>I can build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions. | perseverance and the capacity to work with open-ended problems. | technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.<br><br>I understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions. | the message and medium for their intended audiences. | responsibilities to work effectively toward a common goal.<br><br>I explore local and global issues and use collaborative technologies to work with others to investigate solutions. |
|---|---|---|---|---|---|---|---|