International School of Kenya Technology Plan 2017-2020

Information Communication Technology (ICT) Capability

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Technology in Education

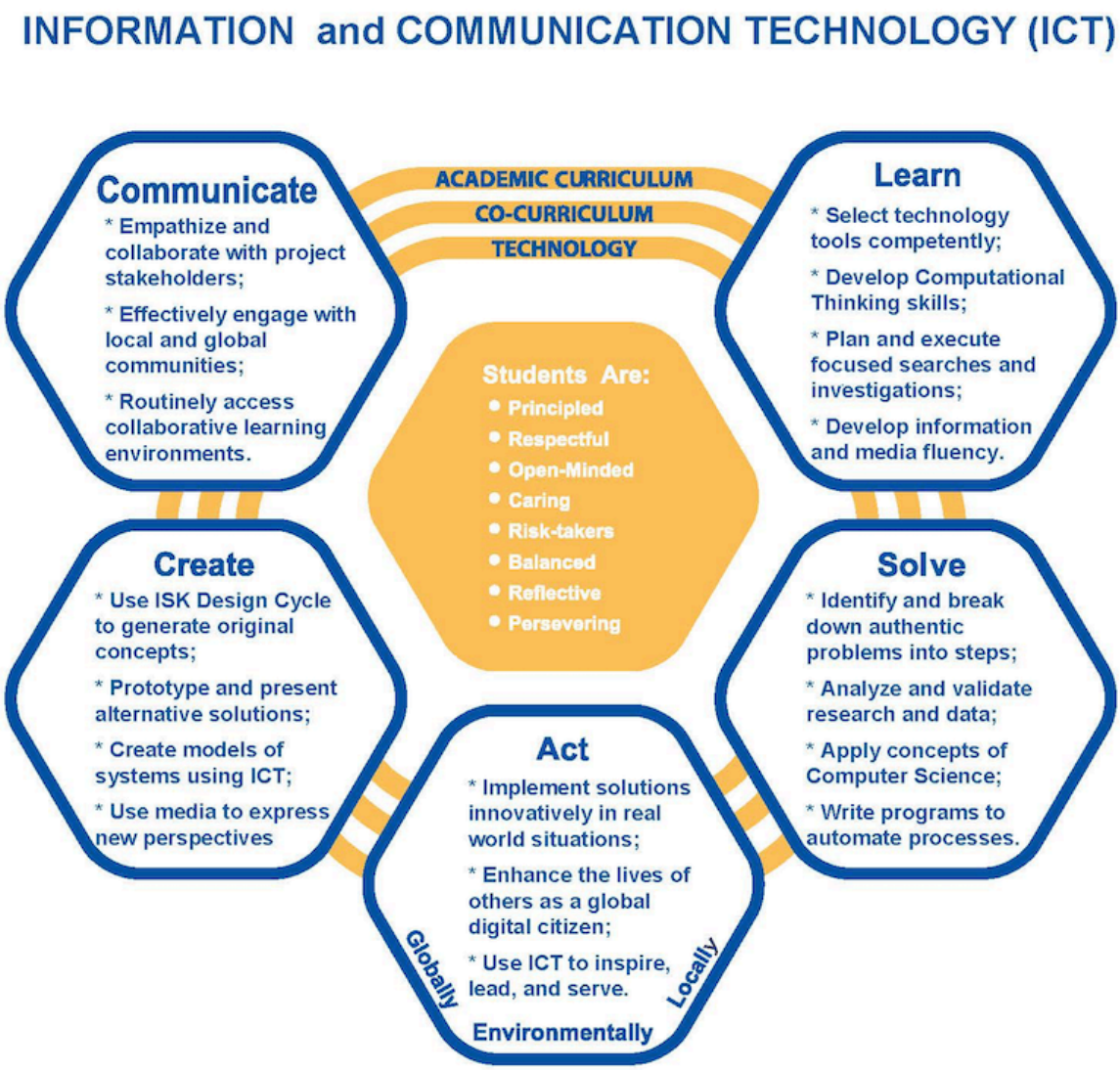
Philosophy and AIMS

ISK prepares students and community to be responsible and active 21st century citizens. We strive to ensure they have the skills to adapt to, make sense of, and innovate in this ever-changing digital world.

Philosophy

The educational mission of the ISK ICT program will cultivate a culture of innovation amongst teachers, students and our community. ISK provides ICT resources, expertise, and learning opportunities needed to develop the robust ICT capability required for rich and vigorous participation as global citizens.

ISK Technology AIMS



Each of the above Aims will be referenced throughout this document in abbreviated form:

- **L** - Learn
- **S** - Solve
- **A** - Act
- **CR** - Create
- **C** - Communicate

Information Communication Technology (ICT) Capability

Introduction

At ISK, students develop lifelong ICT capability as they learn to use ICT effectively and responsibly in their learning. Students use ICT to:

- competently access, communicate, remix, and create knowledge and concepts;
- investigate and solve relevant problems;
- work collaboratively in all learning areas at school and in their lives beyond school;
- explore and innovate using design and computational thinking;
- participate ethically and responsibly in a digital environment;
- understand ICT systems and contribute to new ways of doing things as technologies evolve.

Recognizing that technology is multidisciplinary by nature and has applications in any environment, ISK promotes lifelong success by infusing technology utilization throughout the teaching and learning processes.

Standards for ICT Capability

ICT capability is based on the assumption that technologies are digital tools that enable the student to create learning pathways to carry out tasks, solve problems and generate new processes. Students perceive ICT systems as useful and adaptive tools that they use and remix creatively to accomplish learning tasks, rather than systems that require following rigid, standard procedures.

ISK combines the strengths of International ICT Standards and the ISK AIMS to provide authentic contexts in which students build ICT capability. The five ICT Standards for ISK are stated in the language of a learner's ambitions and goals:

- **Creator and Innovator**
- **Investigator and Problem-Solver**
- **Communicator and Collaborator**
- **Computational Thinker**
- **Global Digital Citizen**

ICT Capability across the curriculum and within set Technology Curriculum

Learning areas across the curriculum provide the content and contexts within which students develop and apply the knowledge, skills, behaviors, and dispositions that comprise ICT capability. Students develop the ability to transfer these across environments and applications. They learn to use ICT with confidence, while understanding its possibilities, limitations and impact on individuals, groups and communities. They learn to innovate with ICT, creating new ideas and generating unique processes for the future.

HS Technology Courses and MS Explore Courses provide specialized instructional opportunities for students who desire exploration and mastery of more advanced technological proficiencies required for future careers.

ICT opportunities will be reviewed and revised regularly to ensure that there is alignment and consistency in opportunities for all students, and to respond to the demands for increased involvement with evolving technologies

Year at a Glance: 2017-2018 Information and Communication Technology

ICT opportunities will be:

- integrated with ISK Technology Standards within curricular and transdisciplinary learning environments;
- focused on integration of technology through Digital Citizenship, use of the Design Cycle, Computational Thinking, and Innovation;
- facilitated through student devices and class use of Computer Labs, Chromebook carts, the Design and Multimedia Labs, and ES MakerSpaces;
- offered in exploratory and advanced media-design classes as programs develop;
- used by students to design and implement personal learning paths;
- provided in co-curricular activities;

ICT capability will be:

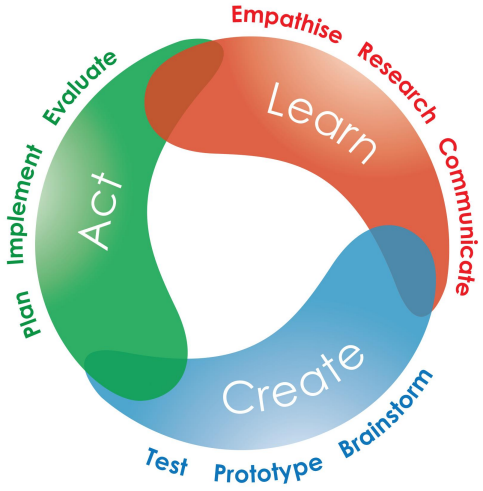
- assessed through processes such as ePortfolios and project rubrics;
- evaluated against at Grade Span level profiles aligned with the ISK ICT Standards and ISTE Standards;
- celebrated by highlighting and displaying student-generated work throughout the school, on our Website, and at assemblies to cultivate an exciting culture of innovation.

ICT learning will be supported through:

- 1:1 iPad program in Grades 3-7, 1:1 Chromebooks in Grade 8; and 1:1 BYOD in High School;
- Class sets of iPads in Pre-K - Grade 2;
- Chromebook carts in Grades 3, 4, 5 and 3 available in MS
- Professional Learning opportunities for teachers;
- Equipment, Software, and Network upgrades.

Information and Communication Technology Standards for Students

The ISK Design Cycle is the foundational process used to achieve ICT Standards.



Five interrelated standards that are linked to the ISK Educational Aims guide learning with ICT:

- Creator and Innovator **(CR) (A)**
- Investigator and Problem-Solver **(L) (S)**
- Communicator and Collaborator **(C) (S)**
- Computational Thinker **(L) (S)**
- Global Digital citizen **(L) (A)**

Creator and Innovator

Students use a variety of technologies within a design process to create and innovate. Students:

CR-1: Generate original ideas, designs, processes and solutions;
CR-2: Evaluate and use a variety of devices, software, and online tools;
CR-3: Prototype and present alternative solutions;
CR-4: Implement solutions innovatively across various disciplines.

Investigator and Problem-Solver

Students identify authentic problems, research responsibly, synthesize learning, and develop possible solutions. Students:

PR-1: Empathize and communicate with various stakeholders
PR-2: Plan and execute focused information/data searches for investigations;
PR-3: Generate, organize, analyze and evaluate validity of research and data;
PR-4: Explain and implement solutions in tasks and challenges.

Communicator and Collaborator

Students use digital tools to broaden their perspectives, increase empathy, and work effectively in teams. Students:

CC-1: Select, plan, and participate in technology-facilitated communications;
CC-2: Exchange ideas and solve problems in collaborative learning communities;
CC-3: Learn, explain thinking, and/or teach through communications technologies;
CC-4: Participate in collaborative online ventures that create and share group learning.

Computational Thinker

Students employ algorithmic thinking to propose and automate solutions to authentic problems and systems. Students:

CT-1: Recognize patterns and break down complex problems into steps (decomposition);
CT-2: Apply fundamental principles and concepts of computer science, including synthesis, abstraction, logic, algorithms, and data representation;
CT-3: Analyze problems in computational terms, and have repeated experience of designing and writing computer programs to solve and automate them;
CT-4: Use technology to create models and simulations to investigate and/or explain systems.

Global Digital Citizen

Students act in ways that are safe, legal, and ethical while learning and working in an interconnected digital world. Students:

DC-1: Use systems, such as Copyright and Creative Commons, to acknowledge intellectual property rights for all media and to share own work;
DC-2: Apply personal and digital information security protocols routinely;
DC-3: Create and monitor a personal digital footprint responsibly;
DC-4: Identify the impacts of current and emerging ICT in society.

Integration Planning Technology References

Australian Curriculum, Assessment and Reporting Authority (ACARA) n.d. *Information and Communication Technology (ICT) Capabilities:* **http://www.australiancurriculum.edu.au/GeneralCapabilities/Pdf/ICT** (accessed 7 September 2013)

Gov. UK. Department of Education (2013). *National curriculum in England: design and technology programmes of study:* https://www.gov.uk/government/publications/national-curriculum-in- england-design-and-technology-programmes-of-study/national-curriculum-in-england-design- and-technology-programmes-of-study (accessed 4 October 2013)

International Society for Technology in Education (2016). *National Educational Technology Standards (NETS) and Performance Indicators for Students:* **http://www.iste.org/standards/standards/for-students** (accessed 2016)

ICT Horizontal Learner Profiles by Standards and Grade Spans

- These Grade Span Level Profiles are updated to reflect alignment with the 2016 ISTE Student Technology Standards Profiles.
- **A scope and sequence of skills** created by Shorecrest Preparatory School (www.shorecrest.org) will be aligned and linked with the ISK Standards and Learning Profiles during 2017-2018 to support teachers in designing age-appropriate learning activities.
- Grade level or curriculum teams should use these profile articulations to help ensure that students acquire the appropriate technology skills to build upon for future learning. Technology integrators will work together each year to update these profiles based on data from 2017-2018 and link to student exemplars. Professional Learning can be planned using this summarized Horizontal Learning Profiles.
- An **interactive tool linking student exemplars to these benchmarks** will be available in the teachers toolkit.

Strand (Elements)	Capability by end of Grade 2 (LES)	Capability by end of Grade 5 (UES)	Capability by end of Grade 8 (MS)	Capability by end of Grade 12 (HS)
Creator and Innovator *Students use a variety of technologies within a design process to create and innovate.* Students: CR-1: Generate original ideas, designs, processes and solutions; CR-2: Evaluate and use a variety of devices, software, and online tools; CR-3: Prototype and present alternative solutions; CR-4: Implement solutions innovatively across various disciplines	Set personal learning goals that stretch current creative talents and open pathways to develop others.	Set learning goals to create, reuse, and re- purpose digital and non-digital artifacts to solve a problem, seeking and using feedback.	Articulate personal learning goals that include using a cyclic design process to investigate, design, prototype, test, reflect, and improve innovations.	Design personal learning goals that stretch current talents and open pathways and transfer ICT learning across disciplines for innovation.
	Select digital and non-digital tools to learn by taking things apart, creating or remixing, tinkering, and using the design cycle.	Select digital and non-digital tools to learn by taking things apart, creating or remixing, tinkering, and innovating using the design cycle.	Create, reuse, revise and re- purpose digital and non-digital artifacts for a given audience, seeking and using feedback to improve work.	Design and create digital artifacts or processes for a given audience, with attention to successfully serving a client's purposes and needs.
	Prepare simple plans, design, and test prototypes of solutions or answers to questions. Use feedback to revise plans.	Learn how a design process works to generate ideas, consider solutions, plan to solve a problem or create innovative products.	Document the use of an iterative design cycle that begins with a thorough investigation of the users' needs to produce a prototype for testing.	Produce and publish creative works and projects using a range of devices to add value to the world or to achieve new solutions. Seek and use feedback.

Investigator and Problem-Solver *Students use technology to identify authentic problems, research responsibly, synthesize learning, and develop possible systems and solutions.,* <u>Students:</u> PR-1: Empathize and communicate with various stakeholders PR-2: Plan and execute focused information/data searches for investigations; PR-3: Generate, organize, analyze and evaluate validity of research and data; PR-4: Explain and implement solutions in tasks and challenges	Locate and record information from a given set of digital sources. Discuss ways to determine truth, value and reliability of digital information.	Select digital tools to collect, organize and analyze data to evaluate theories or test hypotheses.	Evaluate, select, and utilize information/media sources and digital tools based on the appropriateness for specific tasks.	Demonstrate analytical problem-solving, design thinking, and computational thinking in relevant problem-solving activities.
	Choose tools that help with the research process to find, record and analyze data and graphics that help solve problems.	Choose tools for the research process to gather, classify and display information in meaningful ways.	Use the research process to collect and analyze information/data and evaluate resources for accuracy, perspective, credibility and relevance.	Use advanced search tools and techniques, simulations, and digital models to locate or generate precise data and information that supports the development of new understandings.
	Choose tools to represent, explain, and reflect on results of investigations.	Learn searching techniques and practice how to evaluate sources for accuracy, perspective, credibility and relevance.	Create and use databases and structures efficiently to organize, analyze, extract, and represent data to solve problems across disciplines.	Design, modify and manage complex digital solutions for a range of audiences and purposes.
	Practice strategies to persevere in solving problems	Demonstrate strategies to persevere in solving complex problems	Share strategies to persevere in solving increasingly complex problems.	Persevere in investigating, solving, and presenting solutions to complex authentic problems.

Communicator and Collaborator *Students use digital tools to broaden their perspectives, increase empathy, and work effectively in teams.* <u>Students:</u> CC-1: Select, plan, and participate in technology-facilitated communications; CC-2: Exchange ideas and solve problems in collaborative learning communities; CC-3: Learn, explain thinking, and/or teach through communications technologies; CC-4: Participate in collaborative online ventures that create and share group learning.	Choose ICT tools to safely share and exchange information and perspectives with age-appropriate audiences.	Choose digital tools to safely share, exchange information, and collaborate with other learners with different backgrounds.	Use electronic communication tools to explore and guide inquiry through multicultural perspectives with other learners.	Routinely interact, collaborate, and publish with peers and experts, employing a variety of digital environments and media formats.
	Collaborate with others to develop solutions and safely publish them in a variety of ways (visual, audio, written).	Build a network of experts and peers within school policy and customize digital environments to enhance learning.	Build and utilize a network of experts and peers from different communities (within school policy) and customize digital environments to enhance learning.	Participate in collaborative online ventures, individually and in teams, communicating effectively with multicultural audiences.
	Identify and try different team roles in collaborative work.	Organize teams so that members' roles are defined. Try different team roles in collaborative work.	Participate in teams by assuming different roles and taking on different responsibilities that ensure team success. Reflect on participation.	Participate in teams that may include members collaborating online to gain expertise and perspectives in solving problems. Reflect on the process.

Computational Thinker *Students employ algorithmic thinking to propose and automate solutions to authentic problems and systems.* Students: CT-1: Recognize patterns and break down complex problems into steps (decomposition); CT-2: Apply fundamental principles and concepts of computer science, including synthesis, abstraction, logic, algorithms, and data representation; CT-3: Analyze problems in computational terms, and have repeated experience of designing and writing computer programs to solve and automate them; CT-4: Use technology to create models and simulations to investigate and/or explain systems.	Break down problems into smaller steps and record them.	Break down complex problems into steps to create and modify directions for finding digital solutions more easily.	Practice defining and breaking down problems to solve through patterning, data analysis, modeling, and algorithmic thinking.	Design, use, and evaluate computational abstractions that model the state and behavior of real-world problems, and document client interactions.
	Use small steps to draw or write instructions on how a problem can be solved more easily using repeated patterns.	Explore concepts related to repeated patterns and algorithmic thinking through practical experience in writing and debugging computer programs that accomplish a task.	Use programming languages to design debug, and demonstrate possible solutions to a variety of problems or learning game experiences.	Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems.
	Recognize patterns and understand basic coding concepts to create and debug simple programs.	Learn how to use computer programming to create models, tell stories, show how something works, or make learning games.	Transfer programming skills to use new languages and systems that can solve and automate solutions to problems.	Document innovative use of an design cycle, evaluating and explaining the strengths and weaknesses of alternative designs to meet a client's needs. Reflect on the importance of empathy and feedback.

Global Digital Citizen *Students act in ways that are safe, legal, and ethical while learning and working in an interconnected digital world.* <u>Students:</u> DC-1: Use systems, such as Copyright and Creative Commons, to acknowledge intellectual property rights for all media and to share own work; DC-2: Apply personal and digital information security protocols routinely; DC-3: Create and monitor a personal digital footprint responsibly; DC-4: Identify and evaluate the impacts of current and emerging ICT in society.	Understand the concept of digital ownership and how to respect the ideas and work of others	Practice digital security strategies for protecting digital information and for being safe, respectful and legal online.	Practice and advocate for a range of ways to use technology safely, respectfully, responsibly, and securely, including protecting personal online identity and privacy.	Independently apply and advocate for appropriate strategies to protect rights, identity, privacy and emotional safety of self and others online.
	Practice safe, respectful, and cooperative use of online tools and materials.	Recognize the importance of digital ownership and practice citing intellectual property in work.	Learn and apply practices that comply with legal obligations regarding ownership and use of digital products, resources, and services.	Demonstrate compliance with legal obligations regarding the ownership and use of digital products, resources, and services.
	Understand the concepts of public Internet, privacy, and digital footprints.	Learn to manage and safely move data as digital technology changes.	Experience current and emerging ICT systems, learning how to manage data and safely move it between systems.	Manage digital data and processes comfortably between desktop, mobile, cloud environments, and other emerging ICT systems.
	Recognize that technology can affect societies positively and negatively.	Discuss the impacts of current and emerging technology, including how digital waste affects societies.	Identify impacts of current and emerging technology on societies; discuss ways to create equitable access and manage digital waste.	Understand responsibilities in creating and utilizing emerging technologies, their effects on societies, and equitable access.

ICT Program Implementation Timeline Information

	2016-2017	2017-2018	2018-2019	2019-2020
Program Development and Tech Integration	• Update Grade Span learner profiles to align with revised ISK Standards/benchmarks; • Design and begin building Teachers' Toolkit for Technology • Develop links to exemplars for benchmarks/profiles; • List available software, apps, and purposes for teachers/students; • Design and document Digital Citizenship Program; • Pilot prototypes and implementations of K-12 Design and Computational Thinking; • Teachers document ICT integration in current unit plans; • Investigate Personal Learning Network articles and models • Support and assess current ePortfolio programs.	• Assist teachers in using the ISK Tech Standards and benchmarks; • Introduce Teachers' Tech Toolkit, and expand collaboratively; • Collect and connect exemplars to standards and benchmarks; • Develop tool for identifying software that fits a learning objective; • Develop, implement, and assess the Digital Citizenship in classrooms across K-12. • Share prototypes of project-based experiential learning through the Design process; • Share prototypes of students use of Computational Thinking; • Begin to align AIMS-based performance indicators with Tech Standards; • Pilot phase of Learning Board • Developing Design Lab and MakerSpaces; • Pilot tool for PLN • Expand ePortfolios K-10 • Identify tech for transdisciplinary units • Pilot Family Maker Saturday.	• Review progress of using the ISK Tech Standards and benchmarks; • Assess use of Teachers' Tech Toolkit; update and expand resources; • Examine exemplars and resources for relevancy with current best practices. • Review and assess Digital Citizenship program K-12; • Review all documentation for Tech Integration and Design Cycle; • Vertical alignment of K-12 Coding and computational thinking • Continue to graft performance indicators and standards; • Plan next steps for Design Lab and MakerSpaces; • Plan steps for improvement from previous year's department reflections; • Evaluate and adjust ePortfolio programs.	Audit of the K-12 tech integration program with emphasis on: • Digital Citizenship; • Computational Thinking and coding; • Use of Design Cycle; • Learning in Design Lab and MakerSpaces; • Tech in transdisciplinary learning; • 1:1 programs; • use and assessment of ISK Tech standards and benchmarks; • Shared devices programs; • Levels of Integration • Use of tech to promote independent learning • Reflect on current program and initiate plans to change or expand; • Develop goals to reflect assessments of programs.

Assessment / Tracking System	• Further develop MS ePortfolio and evaluate effectiveness as learning and assessment tool; • Explore ePortfolios in grades LES and G9; • Revisit HS requirements for ICT and/or how it is assessed.	• Revisit ePortfolios as learning and assessment tools; • Explore grade span technology assessment rubrics; • Piloting of the IDP LearningBoard Foundation, Feedback, and Dashboard modules • Piloting and trial of the IDP LearningBoard ePortfolio and Classroom Management Modules • Determine HS requirements for ICT graduation; • Explore methods of tracking ICT integration.	• Examine ePortfolio assessment rubrics and strategies; • Implementation of the IDP LearningBoard Feedback, ePortfolio and Classroom Management Modules. • Share successful ICT assessment strategies; • Prototype methods of tracking ICT integration in the classes. • Pilot a tech reporting strategy and evaluate.	• Evaluate effectiveness of the IDP LearningBoard; • Consider options available for tracking student progress and ePortfolios
Materials / Resources Needed	• Make template to adopt Google Sites as ePortfolio system for Grade 9 • Maintain Moodle as primary site for classroom resource distribution, assignment information, emergency closure platform and parent information • Time to design the Teachers' Tech Toolkit	• Time to create a searchable site/collection of benchmarks linked with sample lessons, and exemplars. • Time to update the Teachers' Tech Toolkit • Consider change in role of ES tech lab person, as the ES tech integrationist is now in classrooms; • Consider Kathleen to take care of some of upper ES grades for integration for a year.	• Maintenance of site, database, and/or assessment system • Full Time HS Tech Integrator.	• We will evaluate needed resources as programs develop in previous years.

Co Curricular Options	ES: ● Learning with Minecraft in Education MS: ● STEM related activities ● Collaborative Robotics ● Programming ● MS Lego League HS: ● STEM is now allowed as an after-school activity.	ES: ● Previous year's offerings reviewed and new to be determined by ES. MS: ● STEM ● Robotics ● Programming ● MS Lego League/Botball ● 3D design and printing HS: ● Robotics-Botball ● 3D design and printing ● Independent projects	ES: ● Previous year's offerings reviewed and new to be determined by ES. MS: ● STEM ● Robotics ● Programming ● MS Lego League/Botball ● 3D design and printing HS: ● Robotics-Botball ● 3D design and printing ● Independent projects	ES: ● Previous year's offerings reviewed and new to be determined by ES. MS: ● STEM ● Robotics ● Programming ● MS Lego League/Botball ● 3D design and printing HS: ● Robotics-Botball ● 3D design and printing ● Independent projects
Materials / Resources Needed for Co-curricular	● Funding for supplies to develop rich tech co-curricular experiences.	● Funding for Lego League not yet in budget.	● Funding for supplies to develop rich tech co-curricular experiences.	● Funding for supplies to develop rich tech co-curricular experiences.
Integration Training / Professional Learning (PL)	All: ● Model the power of PLN's to faculty and work with them to help identify their needs and possible resources; ● Introduce the prototype of the Technology Toolbox for Teachers; ● Provide Design Thinking, Computational Thinking and Project Based Learning PL opportunities; ● Support the use of MakerSpaces with ideas and simple materials; ● Demonstrate basic and special uses of Hapara, including Workspaces;	All: ● Further development of Faculty PLN's to share ISK-based expertise; ● Expanded training using the Tech Toolbox for Teachers; ● Site for independent tech learning for teachers; ● Continued support for pedagogical uses of Hapara or Classroom; ● Provide Design Thinking, Computational Thinking and Project Based Learning PL opportunities; ● Initial training on LearningBoard for pilot group.	All: ● Training on LearningBoard for all modules that we are going to use; ● Sharing and development of student and teachers' PLNs; ● Assess needs for Professional Learning opportunities; ● Continued support for pedagogical uses of Hapara or Classroom; ● Evaluate, update, and improve Tech Toolkit; ● Examine inclusion and use of the ICT standards in curricula and transdisciplinary units.	All: ● Training on LearningBoard for all modules that we are going to use; ● Sharing and development of students' and teachers' PLNs to include appropriate global connections; ● Examine inclusion and use of the ICT standards in curricula and transdisciplinary units.

	• Share ISK-based professional expertise; • Provide training for 1:1 best practices.	• Assess needs for Professional Learning opportunities;		
Materials/ Resources Needed	• Devices in hands of all teachers in programs; • Need funding for the MakerSpaces activities; • Funding for External Source of Technology Professional Learning; • Online platform for sharing ICT teaching and learning resources.	• Scheduled time so that teachers see we providing the time and we can make progress; • Online platform for sharing ICT teaching and learning resources; • Funding for External Source of Technology Professional Learning; • Hapara subscription for ES and MS; • Agreed upon Apps for all devices; • Continuation of school-wide technology tool subscriptions.	• Scheduled time so that teachers see we providing the time and we can make progress. • Funding for External Source of Technology Professional Learning; • Hapara subscription if we are still using it.	• This will be determined as we go through the 2017-2018 school year.

Technology Plan Implementation Timeline

	2016-2017	2017-2018	2018-2019	2019-2020
School-wide Equipment and Infrastructure	• Improve Network Management and expand WIFI coverage and bandwidth to the MS and HS areas • Rewire Arts Centre • Expand Design Lab • Continue Classroom/MPR minimum tech equipment (mounting projectors/speakers) • Grade 8 iPads (MS 1to1 Completed) • iPad to 1 to 1 for Grade 4 • Two Chromebook Carts added one to Library and one to Upper ES • Phase I of Design Lab resources supported by the Annual Fund • Equip and support one camera live streaming of events • Scheduled Equipment Replacement	• Upgrade Data Center switches • Upgrade node switches, focusing on those directly connected to data center • Upgrade fiber to HS/MS area • Test and Install Radius Server • Evaluate and weed/upgrade servers as needed • Continue Classroom/MPR minimum tech equipment (mounting projectors/speakers) • Continue to develop Design Lab equipment, adding a laser cutter and more hand/electrical tools • Add 2 Chromebook Carts to Upper ES • Add 2 Chromebook Carts to MS and move Library Chromebook cart to MS • Scheduled Equipment Replacement	• Improve WIFI coverage and bandwidth to the ES areas • Continue the upgrade of the node switches • Evaluate and weed/upgrade servers as needed • Continue Classroom/MPR minimum tech equipment (mounting projectors/speakers) • Equipment is added in Design lab to support integration of the Design Model • Scheduled Equipment Replacement • 3-D Printer for Design Lab • Equip and support two camera live streaming of events	• Improve WIFI coverage and bandwidth to the remaining areas • Upgrade node switches • Evaluate and weed / upgrade servers as needed • Continue Classroom/MPR minimum tech equipment (mounting projectors/speakers) • Equipment is added in Design lab to support integration of the Design Model • Scheduled Equipment Replacement
School-wide Technology support	• SYSAdmin • 2 Technicians Level 1- (Systems, ISK Database	• Add a new position, Design Lab TA • Consider externally	• No Change in ISK contracted employees • Ensure externally	• No Change in ISK contracted employees

	Management and Servers) ● 3 Technicians Level 2 – Support, Ipad Management) ● 2 AV Technicians – Events, Classroom Peripherals, Multimedia	contracted Service Level Agreements ● No change in other areas	contracted Service Level Agreements are in place	
School-wide Instructional Staffing	Same as 14-15 ● Whole School Director of Technology ● Whole School Instructional Technology Coordinator ● ES ICT Teacher Specialist with TA ● MS Integration Specialist ● HS ICT Teacher, also online course supervisor-80%, TI-20% ● Part time IB Certified, IT Teacher	Consider Change in Position ● ES ICT Lab Teaching Assistant increased role	New Position ● Technology Integration Specialist at HS	● No Change
School-wide technology software and resources	● Whole School Software Licensing renewals ● Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets ● iPad Apps support for whole school	● Whole School Software Licensing renewals ● Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets ● iPad / Chromebook Apps support for whole school ● Resources to support Design Lab learning	● Whole School Software Licensing renewals ● Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets ● iPad / Chromebook Apps support for whole school ● Resources to support Design Lab learning	● Whole School Software Licensing renewals ● Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets ● iPad / Chromebook Apps support for whole school ● Resources to support Design Lab learning
Design Lab Initiative	● Design Lab (Multidisciplinary Planning), Phase 1: Designing and equipping the space. Answering the key questions below: ○ How will this space be used?	● Design Lab Phase 2: Making this a true shared learning space. Answering the key questions below: ○ How will lab reservations be	● Design Lab Phase 3: Evaluation of how Design Lab is being used for learning.	

	○ Where will items be stored? ○ How will tools be secured? ○ What are the rules?	handled for teachers to use with classes? ○ How will large groups of students be trained with specific tools? ○ Is MS making effective use of the space? ○ Are students using the rooms meaningfully? ○ What other equipment is required? ○ Should the wall between the HS and the Design Lab should also be opened.		
Library	• Charging Stations for Students • Additional Chromebook Cart (above as well) • Power Stabilization and battery backup for ES Area	• Assess Technology Needs as 1 to 1 Programs are Implemented	• Consider the use of the Library computer lab and if it should be repurposed	• Implement any proposed changes for Library lab
Training / Professional Learning	• Support faculty to move from a "PD me" model to a "Personal Learning Network" model • Design Thinking, Computational Thinking and Project Based Learning PD; HS PD for Best Practices Pedagogy with 1:1 • Hapara Training • Yearly Recurring Training • New Staff training	• Continue support of faculty in moving from a "PD me" model to a "Personal Learning Network" model • Design Thinking, Computational Thinking and Project Based Learning PD; • Model for sharing ISK-based professional expertise during	• Possibility of hosting an African Makeology Conference • Support faculty's "Personal Learning Network" model • Sharing ISK-based professional expertise during IMPACT. • Grade 6-8 PL collaborative with teachers and students • HS 1 to 1 Continued collaboration and training	• Continue support channels from previous years • Consider new ways of supporting teachers and students.

	● Pursue GAFE East Africa conference ● Join ISTE as a school ● Training in new PowerSchool GradeBook ● SIS Administration training ● Advanced Moodle Skills ● Google Apps course offered to staff ● Map Training	IMPACT; ● Collecting and reflecting on teaching exemplars. ● HS 1 to 1 Continued collaboration and training	● New Staff training ● 1 to 1 Teaching Strategies ● Online PL implementation and support	

Tech Plan Estimated Budget Summary

	2016-2017	2017-2018	2018-2019	2019-2020
Human Resources	Instructional Staff (same as 15-16) ● Director of Technology ● Educational Technology Coordinator ● ES ICT Teacher/ Specialist with TA ● MS Integration Specialist ● HS ICT Teacher and online learning ● HS Part-time IB Certified IT Teacher ● Support Staff ○ Network Systems Manager ○ 2 Technicians Level 1- (Systems, ISK Database Management and Servers) ○ 3 Technicians Level 2 – Support, iPad Management) ○ 2 AV Technicians – Events, Peripherals, Multimedia	● Design Lab Technician	Change in Position Instructional ES ICT Lab Teaching Assistant increased role *Note: This would be converting a TA position to teaching position New Position Instructional Technology Integration Specialist at HS	

Operational Summary	• Communications (Internet) • Licenses and Software • Spares/ Tools • Consumables • Freight • Maintenance	• Communications (Internet) • Licenses and Software • Spares/ Tools • Consumables • Freight • Maintenance • Maintenance contracts	• Communications (Internet) • Licenses and Software • Spares/ Tools • Consumables • Freight • Maintenance • Maintenance contracts	• Communications (Internet) • Licenses and Software • Renewal of 3 year Internet Filter license ($53,250) • Spares/ Tools • Consumables • Freight • Maintenance • Maintenance contracts
Costs	$346,000	$360,000	$379,000	$453,250
Capital	• Computer equipment • Network upgrades • Classroom technology	• Computer equipment • Network upgrades • Server upgrades • Classroom technology	• Computer equipment • Network upgrades • Server upgrades • Classroom technology	• Computer equipment • Network upgrades • Completion of Wireless upgrade • Server upgrades • Classroom technology
Costs	$275,000	$270,000	$280,000	$311,000
Operational + Capital Budget Totals	$621,000	$630,000	$659,000	$764,250

Additional Documentation

ISK One to One Program

Vision

A 1-to-1 program is an essential element for success of our technology visions of how students learn in the 21st century. The ability for our students to have increased access to information, social interaction and the ability to create and share digital content exponentially increases in a 1-to-1 environment.

Essential Steps/Guidelines

- Develop teacher training (Work with the Tech Integration and Professional Learning Committees and the Director of Teaching and Learning;
- Secure administrative support and build leadership;
- Communicate with parents, students and staff;
- Assess and improve infrastructure
- Develop support systems both online and human
- Assess current and develop new tech related policies, protocols and agreements

The High School Device

The ISK technology committee has recommended the adoption of the MacBook Pro or MacBook Air as the recommended model for our HS 1-to-1 program. Basis for this decision is as follows:

Rationale:

- ISK is a "Mac" school.
- Tech support is already trained in supporting Macs.
- Teachers all are issued MacBooks and are familiar with the operating system and applications.
- A uniform device will facilitate ease in planning lessons and supporting students during class.

Requirements and procedures for student laptop:

- A minimal required package of software will be required.
- Families will purchase devices, giving the students an added incentive to be responsible and accountable for their laptop.
- Provisions will be put in place for students transferring in during the school year, such that we will have some loaners available or a student may use a PC computer while a Mac is sourced.
- During school hours and whenever connected to the ISK network students will be required to adhere to the all ISK related student policies and the ISK Responsible Use Agreement.

Required Software:

- MS Office (we are transitioning to Google Apps, but MS Office is still required for certain courses)
- Standard package that comes with MacBook
- Adobe reader
- Safari, Firefox and Chrome Browsers
- Java
- Adobe Flash
- Additional software may be required for specific courses

The MS & ES Device

Rationale

The ISK Technology Integration Specialists have recommend iPads as the 1-to-1 device. iPads are an ideal tool for ES and MS students to be creative. iPads are easy for students to manage, they have a built in camera for video and still, microphone and tools that allow for rapid remixing. iPads also allow the user to freehand draw, print / write directly into applications. They are compact durable

and have longer battery life. iPad apps also offer a wide variety of educational software suitable to MS and ES levels.

After evaluation of the Grade 8 program by teachers and students, it was decided to provide a 1:1 Chromebook program for Grade 8 students. The main reasons for this change are:

- The Grade 8 Capstone Project requires more access to a keyboard;
- Some of the G Suite applications work better on a Chromebook than on an iPad;
- Many of the apps available on the iPad are becoming available on the Chromebook;
- This will help the Grade 8's transition between having an iPad for their use up to grade 7 to using a full Mac laptop (purchased by each student's family) in grade 9 and above.

Device Ownership
ISK will provide iPads and a suite of educational apps to ES and MS students.

Software (Apps)
A complete list of current Apps can found in the software section of this document.

References and Supporting Resources

Steps to Successful Implementation

Five Steps for Successful Implementation (**Edutopia)**

Working Digitally 1 to 1

Laptop Program Research **(Maine Learning Technology Initiative)**

Lessons from Maine LTI Program

Library Planning Summary

Definition of the Library Spaces:
For the purpose of this document, the Library is considered those spaces which the librarians are currently responsible for supervising and maintaining: the main space (Secondary Library), the Group Study rooms, the Library Lab, the ES Library and Picture Book Room, the Library Office and Workroom.

Current Hardware Status (also included in full hardware summary):

- Library software: Alexandria
- Desktop Computers: iMacs
    - 2 Circulation desk computers
    - 16 ES student computers in the ES teaching area:
    - 8 MS Student Computers in the Lobby:
    - 9 HS Student Computers in the Lobby:
    - 21 Library Lab computers:
- Laptops:
    - 20 Laptops (in cart) MacBook Pro
    - 22 Chromebooks (in cart)
    - 5 iPads for Alexandria access
    - 2 Librarians MacBook Pro
    - 89 Kindles
- Printers (3)
    - ES Printer at ES Circulation desk [HP LaserJet P2015dn]
    - LibraryKyocera at Main Circulation Desk [FS-6525MFP-Kyocera]
    - LibraryColor - Kyocera TASKalfa 3050ci KPDL at the Library Lab
- Scanner (1 in library lab)
- Headphones
- Speakers
- 4 Projectors (ES, Reference, Study Room 1 and Library Lab)

Technology Use Forms and Agreements

All forms and agreements for staff and students are available online at the ISK Website. Links to these agreements are provided below.

Staff Agreements and Forms

Responsible Use Agreement

Admin Rights to Assigned Computer

ISK Code of Ethics

Social Media Guideline

Equipment Checkout

Summer use of Laptop

Wireless Access for Personal Devices

Student Agreements and Forms

Student and Parent iPad Agreement

Responsible Use Agreement

Wireless Access For Personal Devices

IT Staff Agreements and Forms

System Administrator Acceptable Use

Technicians Acceptable Use

Confidentiality Protocol

Planned Classroom Standard Tech Equipment

Classrooms Standard

- **LCD projector** – ceiling mounted, power required in ceiling. Each projector must have ports for HDMI, VGA, S-video/Component Video, and PS2. VGA cord is required from ceiling mounted location to computer position.
- **Projection Screen**
- **Document Camera**
- **Speakers** - currently desktop speakers but moving to portable bluetooth speakers appropriate for the classroom environment
- **Computer or Laptop**
- **Wireless Access** (Campus Wide)
- Convenient Access to a **Printer** – one network printer within each pod/block of classrooms
- Ability to Control and Annotate Projected Desktop (This may be done through Smartboard, Apple TV, AirServer software, iPad app or other emerging technologies)
- Multiple Connection Points (in classrooms)

Current Software

School-Wide		
Adobe	Audicity	Keynote
Adobe Acrobat 9 Pro	Automator	Maps
Adobe Bridge CS5	Burn	Microsoft Office 2011
Adobe Device Central CS5	Chess	Notes
Adobe Dreamweaver CS5	GarageBand	Numbers
Adobe Fireworks CS5	Google Chrome	Pages
Adobe Flash Catalyst CS5	Google Drive	Photo Booth
Adobe Flash CS5	iBooks	QuickTime Player
Adobe Illustrator CS5	iDVD	Safari
Adobe InDesign CS5	Image Capture	TextEdit
Adobe Photoshop CS5	iMovie	VLC
Adobe Reader	iPhoto	

ICT Labs Software Installed		
ES Lab	**MS Lab / Library Cart**	**HS Lab / Library Lab / Design Lab**
Algodoo	Algodoo	123D Design
Animation-ish Classroom Edition	Animation-ish Classroom Edition	Algodoo
Anime Studio Debut	Anime Studio Debut (10 licenses)	Animation-ish Classroom Edition
Aperture	Aperture	Anime Studio Debut
AppInventor	AppInventor	Aperture
AudioScore Lite	AudioScore Lite	AppInventor
Autodesk	Autodesk	Arduino
Blender	BryteWaveK12	AudioScore Lite
BryteWaveK12	ChemAxon	Autodesk
Comic Life	Comic Life 2	Blender
Comic Life 2	Dropbox	BlenderPlayer
Dropbox	EV3 Curriculum	BryteWaveK12
Enlight	EV3 Education (Updated)	ChemAxon
Evernote	Evernote	Comic Life
FaceTime	FaceTime	Comic Life 2
FileMaker Pro 14	FileMaker Pro 14	Dropbox
Firefox	Firefox	Enlight
Flv Crunch	Flip Player	EV3 Curriculum
Follet Shelf App	Flip4Mac	EV3 Education (Updated)
Font Book	Flv Crunch	Evernote
GCompris	Follet Shelf App	FaceTime
Gimp	Font Book	FileMaker Pro 14
Google Earth	GCompris	Final Cut Pro
Google SketchUp 8	Gimp	Firefox
GSP5	Google Earth	Flip Player
HandBrake	Google SketchUp 8	Flv Crunch
iBooks Author	GSP5	Follet Shelf App
Inspiration 9 IE	HandBrake	
	iBooks Author	

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Subscriptions/Licensing		
Tech Office Netgear WC License (150 AP) Ruckus SmartZone (80 AP) Mojo Helpdesk Paragon NTFS for Mac OS X PaperCut Web Hosting Service - Finalsite PowerSchool	**School-Wide** Turnitin Moodle **HS** Naviance	**SSS (managed through SSS Department)** BrainPop ESL Headsprouts Spelling City RazKids Reading A to Z
Library Alexandria NoodleTools BrainPop	**MS** IXL Hapara TeacherDashboard	
Selection of Educational iPad Apps		

Current Hardware Summary

All Classrooms
Projector, Document Camera, Speakers, Computer or Laptop

Commons Level 0

- 4 Computer Labs with Projectors
- 1 Design Lab with Projector
- 35 Computers in General Area
- 5 OPAC Stations (iPads)
- 2 Projectors in Common Area
- 1 Projector in Study Room
- Laptop Cart (20 units)
- Chromebook Cart (22 units)
- Kindles - Inventory by Library

iPads

- ES, ES-SSS and ES Teachers (290 total)
- HS - 5
- MS - (251 total for 2017-18)
- Library OPAC Points - 5
- Check Out - 2
- Storage / replacement 25 units

Laptop Carts

- ES Cart - 30 units
- ES Chromebook Cart for - 23 units
- MS Humanitarians Cart - 21 units
- MS Science Cart - 25 units
- Loaner Cart - 18 Units
- Library Cart - 20 units
- Library Chromebook Cart for - 22 units

Laptops
Student Use – 114 MacBook's, Staff Assigned - 139 MacBook's, and for there will be an additional 44 Student Use Chromebooks

Desktop iMacs

- Student Use, in labs and common areas 201
- Staff Assigned 87

Mac Minis

- Support Staff - 2

Servers

- Mount racked- 8

Printer and Copiers

- Networked Printers - 36 (B/W - 31, Color - 05)
- Networked Copier/Printer (Leased) - 14 (B/W - 12, Color - 02)
- Small Office Printers - 9 (B/W - 9, Color - 0)

Digital Cameras Recorders

- Digital Cameras - 34
- Video Cameras - 5
- Audio Recorders - 5
- Document Cameras - 70
- LCD Projectors - 144