Foundation Connections for SSIS ICT Standards

The SSIS's ICT Standards are guided by the ISTE NETS for Students 2007. The following table is a connections summary of the ICT Standards and Bloom's Digital Taxonomy:

SSIS ICT Standards - Strands (Guided by ISTE NETS)	Bloom's Digital Taxonomy
 **Technology Operations & Concepts** Students demonstrate understanding of technology concepts, systems, and operations.	Applying Understanding Remembering
 **Research & Information Fluency** Students use appropriate technology to gather, evaluate and use data and/or information in order to plan and conduct research or inquiry.	Evaluating Analyzing Applying Understanding Remembering
 **Critical Thinking & Problem Solving** Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.	Creating Evaluating Analyzing Applying Understanding Remembering
 **Communication & Collaboration** Students work collaboratively, using digital media and environments, to support individual learning and to contribute to the learning of others.	Creating Evaluating Analyzing Applying Understanding Remembering
 **Digital Citizenship** Students understand human, cultural, and societal issues related to technology and practice legal, ethical and safe behavior.	Creating Evaluating Analyzing Applying Understanding Remembering
 **Creativity & Innovation** Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.	Creating Evaluating Analyzing Applying Understanding Remembering

Adapted from the Toronto District School Board ICT Standards www.tdsb.on.ca/ictstandards

The Foundations of the SSIS ICT Standards Document

The SSIS ICT Standards document has been guided by two resources:

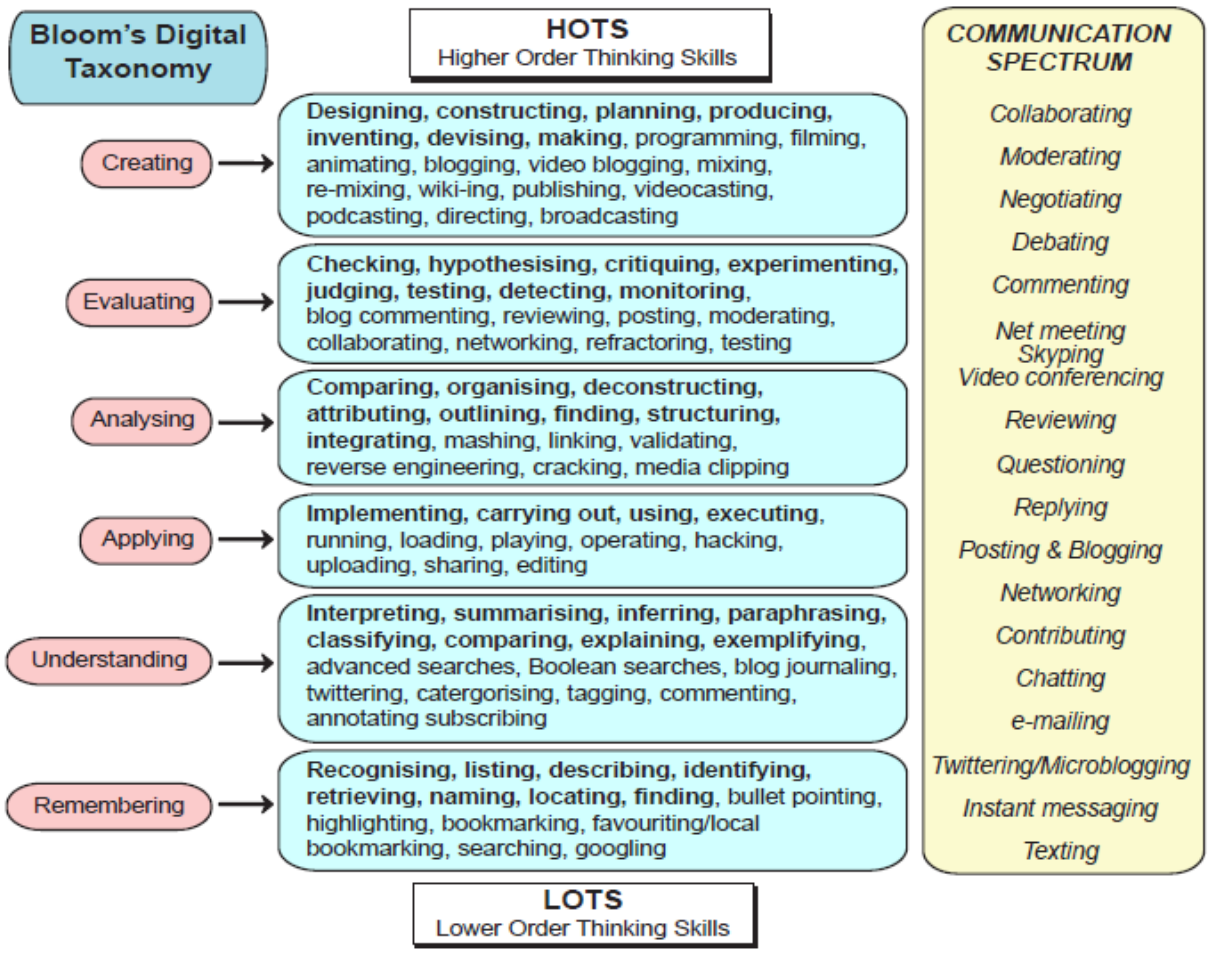
- ISTE NETS for Students 2007
  http://www.iste.org/AM/Template.cfm?Section=NETS
- Bloom's Digital Taxonomy (Andrew Churches, 2008)
  http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy

Foundation One: ISTE NETS for Students 2007

The International Society for Technology in Education (ISTE) is a non-profit organization representing over 85,000 professionals worldwide. They first published their National Educational Technology Standards for Students (NETS•S) in 1998. These standards were then updated in 2007 and can be accessed at http://www.iste.org/AM/Template.cfm?Section=NETS. Educators around the world are currently sharing how they are implementing the ISTE NETS on ISTE's Implementation wiki which is accessible at http://nets-implementation.iste.wikispaces.net.

Foundation Two: Bloom's Digital Taxonomy

Anderson and Krathwohl revised Benjamin Bloom's Taxonomy in 2001 by using verbs for the categories and rearranging the sequence within the taxonomy. Andrew Churches, an educator in New Zealand, subsequently revised Anderson and Krathwohl's version of Bloom's Taxonomy in 2008 to incorporate ICT activities. The revision, Bloom's Digital Taxonomy, is accessible at http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy. Andrew Churches' summary concept map of Bloom's Digital Taxonomy is provided below:



ICT Standards: Grade K-2	
Technology Operations & Concepts	**Research & Information Fluency**
 Students demonstrate understanding of technology concepts, systems, and operations.	 Students use appropriate technology to gather, evaluate and use data and/or information to plan and conduct research or inquiry.
Fundamental Skills • Recognize and demonstrate how to access applications on a networked computer • Create content for a particular purpose (e.g., Kerpoof) **Digital Tools and Software Applications** • Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)	**Research & Information Processing** • Locate and organize information from appropriate and credible primary sources (e.g., interviews, diaries, surveys) and secondary/ tertiary sources (e.g., online encyclopedias, databases available on the school library website) **Ethical Use of Information** • Understand and be able to explain what it means to be the author of a work (e.g., drawing, photo, or text) • Tell or write who is the author of a resource or where the resource was found.

Critical Thinking & Problem Solving	**Communication & Collaboration**
 Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.	 Students work collaboratively, using digital media and environments, to support individual learning and to contribute to the learning of others.
Project Management • Adhere to a pictorial project plan to develop a solution or complete a project (e.g., Super 3 Research Process, Big Six) **Technology Selection** • Select appropriate technologies for a specific purpose **Computer Simulation Participation** • Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., Sumdog)	**Online Collaboration** • Observe a modeled online environment (e.g., email, online forums, virtual worlds, video/web conferences) **Online Learning** • Use eLearning to support and extend learning (e.g., Discovery Education, BrainPop, Raz-Kids)

Digital Citizenship	**Creativity & Innovation**
 Students demonstrate understanding of human, cultural, and societal issues related to technology and practice legal, ethical and safe behavior.	 Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.
Digital Rights & Responsibilities • Identify the use of another person's work **Digital Etiquette & Safety** • Observe and recognize safe, respectful, and responsible online communication (e.g., email, online forums, blogs, social networks, cyber bullying) **Healthy Digital Habits** • Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, ergonomics, time management, etc.)	**Creative Work** • Create original works as a means of personal or group expression (e.g., drawing, painting, audio recording, movie creation software) **Innovative Work** • Apply existing knowledge to generate new ideas, products, or processes

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Adopted October 10, 2012

Curricular Connections: Kindergarten

Essential Learning: Identifying, Understanding, and Applying

ICT Experience – Productivity

Students will demonstrate proper technique while using technology to assist and enhance personal needs for learning

Examples of Curricular Integration

- Access math software on a computer to identify geometric shapes, sequence numbers, etc. (Math)
- Explore literacy websites to read and listen to online stories (Literacy)
- Capture science experiment results by taking pictures with a digital camera (Science)

Essential Learning: Contributing, Networking, and Posting

ICT Experience – Collaboration

Students will share ideas with learners from other classrooms through email, weblogs, video conferencing, or other electronic means.

Examples of Curricular Integration

- Capture discussions on a math problem and various solutions on a blog or wiki for buddies or parents to respond to. (Math)
- Create graphic organizers on computers with fourth grade buddies (Literacy)

Essential Learning: Searching, Organizing, Contributing, and Creating

ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and create a class digital slideshow to share their learning.

Examples of Curricular Integration

- Share learning through a class slide show on a science topic (e.g., butterflies) (Science)
- Use presentation software and digital cameras to create a healthy-living public service announcement (wash hands, cough in your elbow, etc) (PE/Health)
- Use a slide show of digital images captured by students and compiled/projected by teacher to reflect on day's activities/learning.

Curricular Connections: Grade 1
Essential Learning: Identifying, Understanding, and Applying
 ICT Experience – Productivity Students will use technology to assist and enhance personal needs for learning.
Examples of Curricular Integration • Select musical clips and respond creatively with draw or paint software (Music) • Explore literacy websites (RAZ Kids, Tumble Books, Starfall) to read and listen to online stories (Literacy) • Capture images of buildings and members of a local community with a digital camera (Social Studies) • Create voice recordings of reading or responses i.e. literacy (Literacy)
Essential Learning: Contributing, Networking, and Posting
 ICT Experience – Collaboration Students will share ideas with learners from other classrooms through email, weblogs, video conferencing, or other electronic means.
Examples of Curricular Integration • Post ideas about art samples/elements of design captured during classroom discussions on a class blog or wiki (Art) • Crearte and send an email to the principal about rules in the school (Social Studies)
Essential Learning: Searching, Organizing, Creating, and Sharing
 ICT Experience – Digital Presentation Students will use the four-stage research model to investigate an inquiry question and create a digital presentation to share their learning.
Examples of Curricular Integration • Create a digital presentation with draw or paint software to illustrate characteristics of plants, animals, and humans (Science) • Create a digital presentation with draw or paint software and include at least three of the elements of design. Include a voice track to explain how the drawings express their feelings (Art) • Introduce keyboarding skills to publish poetry or short stories using Kidpix and/or Word

Curricular Connections: Grade 2

Essential Learning: Identifying, Understanding, and Applying

ICT Experience – Productivity

Students will use technology to assist and enhance personal needs for learning.

Examples of Curricular Integration

- Use a teacher-created template to create a personal pictograph the history and culture of Vietnam (Social Studies)
- Explore literacy websites to read and listen to online stories and respond to questions (Literacy)
- Capture images of Balance and Motion experiments with a digital camera (Science)
- Use LCD projector and online interactive learning resources (ie. Google Earth) to support the learning of mapping skills (Social Studies)

Essential Learning: Contributing, Networking, and Posting

ICT Experience – Collaboration

Students will share ideas with learners from other classrooms through email, web logs, video conferencing, or other electronic means.

Examples of Curricular Integration

- Use a blog to Share ideas from classroom discussions about ESLRs and facilitate online discussions (Social Studies)
- Construct a class email to another school sharing information about books the class is currently reading (Literacy)
- Communicate with pen pal class in other part of Vietnam to learn about life in that part of the country. (Social Studies)

Essential Learning: Searching, Organizing, Creating, and Sharing

ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and create a digital presentation to share their learning.

- Examples of Curricular Integration
- Create a digital presentation to highlight the similarities and differences comparing two animals (Literacy: All About)
- Use Power Point or other presentation software to share the learned differences and similarities between Vietnam and a country of the child's choosing (Social Studies)
- Create a podcast to share aspects of Vietnam and persuade others to visit (Social Studies)

ICT Standards: Grade 3-5

Technology Operations & Concepts

Students demonstrate understanding of technology concepts, systems, and operations.

Fundamental Skills
- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets software, blog posts)

Digital Tools and Software Applications
- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

Research & Information Fluency

Students use appropriate technology to gather, evaluate and use data and/or information to plan and conduct research or inquiry.

Research & Information Processing
- Search, read, and take notes from information sources (e.g., online encyclopedias, databases found on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary/tertiary sources (e.g., online encyclopedias, databases found on the school library website)

Ethical Use of Information
- Use research to develop original drafts and cite sources

Critical Thinking & Problem Solving

Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Project Management
- Adhere to a pictorial project plan to develop a solution or complete a project (e.g., Super 3 Research Process, Big Six)

Technology Selection
- Select appropriate technologies for a specific purpose

Computer Simulation Participation
- Participate in a digital simulation or game to explore concepts and/or determine outcomes (e.g., Sumdog)

Communication & Collaboration

Students work collaboratively, using digital media and environments, to support individual learning and to contribute to the learning of others.

Online Collaboration
- Participate and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences, Google Drive)

Online Learning
- Use eLearning to support and extend learning (e.g., Discovery Education, BrainPop, Raz-Kids)

Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal, ethical and safe behavior.

Digital Rights & Responsibilities
- Understand and recognize the importance of intellectual and creative property in a digital environment (e.g., Creative Commons)

Digital Etiquette & Safety
- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, blogs, social networks, cyber bullying)

Healthy Digital Habits
- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, ergonomics, time management, etc.)

Creativity & Innovation

Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

Creative Work
- Create original works as a means of personal or group expression (e.g., drawing, painting, audio recording, movie creation software)

Innovative Work
- Apply existing knowledge to generate new ideas, products, or processes

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Curricular Connections: Grade 3

Essential Learning: Organizing and Publishing

ICT Experience – Word Processing

Students will demonstrate proper technique and posture when using a keyboard. Using a word processor, students will publish an original text.

Examples of Curricular Integration

- Create a tourism brochure to advertise island (Social Studies)
- Capture the dissection/observations of owl pellets with a digital camera and then import the images into a report explaining the scientific process (Science)
- Use wiki, blog and resources to support problem solving and capture learning in an electronic form (Math)

Essential Learning: Analyzing and Evaluating

ICT Experience – Spreadsheet

Students will use spreadsheet software to create pie charts of numerical data and record their analysis.

Examples of Curricular Integration

- Use online survey to collect data on classmates' favorite ECAP activities and Input the data into a spreadsheet (Math)
- Use computer software to graph and analyze data about students height and weight (Math and Science)

Essential Learning: Deconstructing, Explaining, Analyzing, Applying, and Collaborating

ICT Experience – Collaboration

Students will deconstruct and analyze the elements of effective online communication. They will then apply these elements when sharing curriculum-related ideas in a closed online forum, in accordance with legal and ethical standards of digital citizenship.

Examples of Curricular Integration

- Post on a wiki, blog or Wallwisher responses to teacher-guided questions (All Subjects)
- Email grade 3 students in other countries to share and compare what life is like between the two (Social Studies)
- Download and analyze resources on water from an online learning environment (Science)

Essential Learning: Locating, Comparing, Analyzing, and Creating

ICT Experience – Digital Presentation

Students will use the four-stage research model to investigate an inquiry question and produce a digital presentation with narration.

Examples of Curricular Integration

- Create a digital slideshow with screen captures of Google Earth's Satellite and/or Map views to support a personal opinion regarding human and environmental interaction in communities (Social Studies)
- Create an infomercial on a book a student has read (Literacy)

Curricular Connections: Grade 4

Essential Learning: Organizing and Publishing

ICT Experience – Word Processing

Students will demonstrate proper technique and posture when using a keyboard. Using a word processor, students will incorporate columns, lists, and images to publish an original text with proper citation of resources.

Examples of Curricular Integration

- Create a pro-con chart or a school newsletter article that identifies effects of clear cutting on a forest community in preparation for Earth Day (Science)
- Create a poster/pamphlet as a book review (Literacy)
- Capture the growth and change in plants with a digital camera and import the images into a report. (Science)
- Use Voice Thread and Everyday Math resources to support fraction exploration and capture learning on a wiki or blog. (Math)

Essential Learning: Analyzing, Interpreting, and Sharing

ICT Experience – Spreadsheet

Students will use spreadsheet software to create pie charts and bar graphs of numerical data, record their analysis, and share their interpretation of the results.

Examples of Curricular Integration

- Collect, graph, and analyze plant growth data using online resources. (Science)
- Collect data on school related topics such as genre preferences using an online survey tool. Then input, graph, and analyze the data, sharing the results on a blog. (Math, Literacy)

Essential Learning: Understanding, Analyzing, Collaborating, and Evaluating

ICT Experience – Collaboration

Students will analyze information from online environments to build upon and synthesize ideas in accordance with legal and ethical standards of digital citizenship.

Examples of Curricular Integration

- Participate in an online forum and respond to questions about explorers (Social Studies)
- Email students in other countries to compare and contrast regional/cultural characteristics (Social Studies)
- Read information, access links and assignments, and download resources on magnets and electricity in an online learning environment (Science)
- Make a Power Point from research on home country (Social Studies)

Essential Learning: Understanding, Analyzing, Evaluating, and Sharing
   ICT Experience – Digital Presentation Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship.
Examples of Curricular Integration • Create a digital presentation to show the impact of humans on the environment (Science) • Create an audio show or commercial that will showcase the influence of different indigenous people on U.S. culture (Social Studies) • Create a digital presentation showcasing poems for Poetry Cafe. (Literacy)

Curricular Connections: Grade 5

Essential Learning: Organizing, Categorizing, and Publishing

ICT Experience – Word Processing

Students will properly use a word processor incorporating word art and images to publish original texts and cite resources correctly.

Examples of Curricular Integration

- Create blog reflections using Word Docs in order to take advantage of its spelling and grammar check, before uploading them to the Internet. (e-portfolio)
- Type stories or other writer's workshop assignment draft into GoogleDocs, share with teacher/peer editors, and edit/revise as needed. (Literacy)
- Use an online bibliography tool and add to their projects (Social Studies)
- Use Microsoft Publisher to create timelines of their 20th century agent projects which will include dates, images gathered from the Internet, and labels. (Social Studies)

Essential Learning: Analyzing, Evaluating, and Producing

ICT Experience – Spreadsheet

Students will use spreadsheet software to create pie charts, bar and/or line graphs of numerical data, incorporate formulas for addition and subtraction, and share their interpretation of the results.

Examples of Curricular Integration

- Compare lab team results (in graph form) of K'NEX car experiments based on individual team's data. (Science: Motion & Design)
- Communicate survey results in published writing online. (Literacy: Persuasive Essay)
- Analyze and reflect on personal reading habits by graphing book genre based on data from Reading Journals (Literacy)

Essential Learning: Collaborating, Analyzing, and Synthesizing

ICT Experience – Collaboration

Students will collaborate in an online forum to share original work, build upon and synthesize ideas; incorporating hyperlinks to websites, in accordance with legal and ethical standards of digital citizenship.

Examples of Curricular Integration

- Collaborate and contribute to the develop of a wiki page about a theme of geography (Social Studies: Geography).
- Collaborate through note taking by building on prior knowledge, linking resources, and making connections to new scientific ideas (Science)
- Create a blog post, Analyzing and reflecting on a current event using probing questions, linking to article and supporting materials (Social Studies)
- Use surveys (such as GoogleDocs or SurveyMonkey) to collect and analyze data gathered from other people around the community and internet (Math, Literacy).
- Using GoogleDocs, draft persuasive essays. Then share with peers for revision and editing. (Literacy)

Essential Learning: Locating, Analyzing, Designing, and Creating
   ICT Experience – Digital Presentation Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.
Examples of Curricular Integration • Use presentation application (Power Point, Prezi, etc.) or video to share the procedure and results of a student-designed science experiment. (Science: Mixtures & Solutions) • Create a Wiki page about a biome they have studied (Science: Ecosystems) • Create an electronic presentation about their 20th Century Change agent, using Powerpoint, Animoto, PhotoPeach, or Prezi, and share it with their peers (Social Studies) • Create a voice thread about a form of government that they have researched (Social Studies: Government) • Upload all of the above to their blogs and respond to others work as comments on their blogs.

ICT Standards: Grade 6-12

Technology Operations & Concepts

Students demonstrate understanding of technology concepts, systems, and operations.

Fundamental Skills
- Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags)
- Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets software, blog posts)

Digital Tools and Software Applications
- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

Research & Information Fluency

Students use appropriate technology to gather, evaluate and use data and/or information to plan and conduct research or inquiry..

Research & Information Processing
- Search, read, and take notes from information sources (e.g., online encyclopedias, databases found on the school library website, the Internet)
- Categorize, analyze, and evaluate information from primary sources (e.g., interviews, surveys) and secondary/tertiary sources (e.g., online encyclopedias, databases found on the school library website)

Ethical Use of Information
- Use research to develop original drafts and cite sources

Critical Thinking & Problem Solving

Students think critically to manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Project Management
- Plan, manage and carry out activities to develop a solution or complete a project.

Technology Selection
- Select appropriate technologies for a specific purpose

Computer Simulation Participation
- Participate in a digital simulation or game to explore concepts and/or determine outcomes

Communication & Collaboration

Students work collaboratively, using digital media and environments, to support individual learning and to contribute to the learning of others.

Online Collaboration
- Create, participate, and collaborate in an online environment (e.g., email, online forums, virtual worlds, video/web conferences, social media)

Online Learning
- Use eLearning to support and extend learning (e.g., learning management system)

Digital Citizenship

Students demonstrate understanding of human, cultural, and societal issues related to technology and practice legal, ethical and safe behavior.

Digital Rights & Responsibilities
- Understand and recognize the importance of intellectual and creative property in a digital environment (e.g., Creative Commons)

Digital Etiquette & Safety
- Recognize and demonstrate safe, respectful, and responsible online communication (e.g., email, online forums, blogs, social networks, cyber bullying)

Healthy Digital Habits
- Recognize and demonstrate strategies to promote digital health (e.g., keyboarding technique, ergonomics, time management, etc.)

Creativity & Innovation

Students demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology.

Creative Work
- Create original works as a means of personal or group expression (e.g., drawing, painting, audio recording, movie creation software, digital presentations)

Innovative Work
- Apply existing knowledge to generate new ideas, products, or processes

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Curricular Connections: Grade 6

Essential Learning: Organizing, Categorizing, and Publishing

ICT Experience – Productivity

Students will create original work (e.g., essay, journal entry, letter, article, documentary, report, experiment, manual) to convey curriculum content for a particular audience.

Examples of Curricular Integration

- Create Presentations and spreadsheets for "Data and Statistics" projects (Math)

Essential Learning: Analyzing, Evaluating, and Producing

ICT Experience – Collaboration

Students will collaborate in an online forum to share original work, build upon and synthesize ideas; incorporating hyperlinks to websites, in accordance with legal and ethical standards of digital citizenship.

Examples of Curricular Integration

- View an online video clip (e.g., Dove's "Evolution" video found at:
- http://www.dove.ca/en#/features/videos/video_gallery.aspx[cp-documentid=9150778]/),
- then contribute and build upon ideas, theories, and conclusions related to concepts of body image and self-esteem (Health and Physical Education)
- Communicate in online forums with astronauts to discuss space exploration (Science)
- Read information, access links and assignments, download resources, and submit curricular work on drama and dance in an online learning environment (Drama and Dance)

Essential Learning: Collaborating, Analyzing, and Synthesizing

ICT Experience – Digital Presentation

Students will use the research process to investigate an inquiry question and create a podcast or digital presentation to share their learning in accordance with legal and ethical standards of digital citizenship. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.

Examples of Curricular Integration

- Create a Public Service Announcement on the influences, legalities, and alternatives to substance use and abuse (Health and Physical Education)
- Create a digital photo montage on how human choices have an impact on biodiversity (Visual Arts and Science)
- Create a digital game on the impact of space exploration on society and the environment with an original soundtrack that enhances the game's appeal (Music and Science)
- Create an interactive device that can be used to conserve energy (Science)

Essential Learning: Searching, Analyzing, Designing, Creating, and Sharing
 ICT Experience – Creative Work Students will build and maintain an ePortfolio, a digital repository of artifacts and self-reflections of their learning. Furthermore, students will apply Creative Commons licensing to each artifact.
Examples of Curricular Integration • Create a reflective learning journal in a unit of study (Cross-Curricular) • Create an electronic response journal/portfolio to demonstrate an understanding of the water filtration process and the Drinking Water Standards (Science)

Curricular Connections: Grade 7

Essential Learning: Organizing, Categorizing, and Publishing

ICT Experience – Word Processing

Students will use digital probes, sensors, handheld devices, or GPS's (Global Positioning Systems) to collect and analyze data. Students will properly word process report results for content-related problems incorporating auto shapes, tables, and images to publish original texts.

Examples of Curricular Integration

- Humanities 7: Digital Book Trailer, blog posts, essays, poems
- Mandarin 7&8: Used Glogster to make a poster about animals and clothes and put up on their blog posts.
- Spanish: Created multimedia lessons on specific topics in Spanish; podcasts of their speech on specific tasks; reflecting in blog posts

Essential Learning: Organizing and Classifying

ICT Experience – Database

Students will use databases to organize information for a curricular purpose.

Examples of Curricular Integration

- Construct a class database of research pertaining to various roles in New France (e.g., nuns, farmers, merchants) and/or figures (e.g., Laura Secord, Isaac Brock, Tecumseh) to determine how these people affected social change (History)
- Develop an independent reading database with a summary and review of texts that can be shared with classmates(Language)

Essential Learning: Networking, Collaborating, and Evaluating

ICT Experience – Collaboration

Students will collaborate respectfully and responsibly in an online forum with students from other schools in the local community. They will share original work and build upon and synthesize ideas, incorporating hyperlinks to websites and peer-to-peer postings.

Examples of Curricular Integration

- Spanish, Humanities, Science: Sharing of students Google presentation, Prezis, Movies within student personal blog.
- Spanish, Humanities, Science: Student commenting on blog posts of fellow classmates and other classes.

Essential Learning: Searching, Analyzing, Evaluating, Creating, and Sharing

ICT Experience – Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning. They will indicate usage rights with Creative Commons license icons/tools. Afterwards, students will observe the upload of their creations to a media streaming site or other online forum.

Examples of Curricular Integration

- Avisory: Students have been using blogs for goal setting purposes and self reflection.
- Spanish, Humanities and Science: Students have been using blog posts for self-reflection on a variety of projects.
- Humanities: Students have been using and properly citing Creative Commons images in multimedia presentations.
- Science: Endocrine system podcast, Periodic Table singing the first 10 elements song. Video work with Phoenix and podcast work with Myna.
  Spanish: students have created podcasts of their own speech using Audacity, Soundcloud, to share with the teacher.
- Madarin: Audacity recording, Video reflection of students presentation. Scratch animation.
  Humanities : digital book trailer

Curricular Connections: Grade 8

Essential Learning: Organizing, Categorizing, and Publishing

ICT Experience – Database and Word Processing

Students will use databases to organize information and select data for a particular purpose. Students will then analyze the data and draw conclusions in a word-processed document.

Examples of Curricular Integration

- Create a database of examples of different advertising techniques, then create a poster incorporating at least one of these techniques (Media Literacy)
- Populate a database with local support groups and community organizations that provide information on health and well-being, then create a brochure on one of the groups to share with peers (Health and Physical Education)

Essential Learning: Networking, Hypothesizing, Evaluating, and Posting

ICT Experience – Collaboration

Students will collaborate respectfully and responsibly in an online forum with students from other districts/countries to share original work and build upon and synthesize ideas. They will be required to incorporate hyperlinks to websites and peer-to-peer postings.

Examples of Curricular Integration

- Discuss with students in an online forum examples of unhealthy behaviour (e.g., drinking and driving) and provide strategies to access assistance (Health and Physical Education)
- Collaborate with students in different countries on ways to reduce the impact of human activities and technologies on the sustainability of water resources (Science)
- Read information, access links and assignments, download resources, submit curricular work, and participate in group forums in an online learning environment (Cross-Curricular)

Essential Learning: Evaluating, Reflecting, and Creating

ICT Experience - Creative Work

Students will build and maintain an ePortfolio, a digital repository of artifacts and self-reflections of their learning. Furthermore, students will apply Creative Commons licensing to each artifact.

Examples of Curricular Integration

- Create a reflective learning journal in a unit of study (Cross-Curricular)
- Create an electronic response journal/portfolio to demonstrate an understanding of the water filtration process and the Drinking Water Standards (Science)

Essential Learning: Searching, Evaluating, and Creating

ICT Experience - Digital Presentation

Students will use the four-stage research process to investigate an inquiry question and create a podcast or digital presentation to share their learning and indicate usage rights with Creative Commons license icons/tools. With teacher approval and moderation, students will observe the upload of their creations to a media streaming site or other online forum.

Examples of Curricular Integration

- Create a short video or an animated image sequence to develop a feeling of suspense, speed or passage of time, to reflect the changing society (Visual Arts and History)
- Record a podcast on stress and how to deal with it in a positive manner (Health and Physical Education)
- Design and create a digital game on the functions and processes of plant and animal cells (Science)

Curricular Connections: Grade 9

Essential Learning: Searching, Evaluating, Applying, and Producing

ICT Experience - Productivity

Students will create original work (e.g., essay, journal entry, letter, article, documentary, report, experiment, manual) to convey curriculum content for a particular audience.

Elements of ICT Experience

- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Produce original work (e.g., word processing, spreadsheet, database software, online forums)

Examples of Curricular Integration

Demonstrate an understanding of concepts such as:

- Greek comedy
- Art forms

Identify and explain:

- Exponent rules
- Family, peer, and media influences on food choices

Produce a report about concerns that affect a situation or system such as:

- Technological developments
- Wilderness protection

Create data tables and graphs in science.

- Investigate traffic accidents in Vietnam as background for an art project.
- Read a website of a national park in Ecuador and write a letter asking questions about national parks in Ecuador and this particular national park in Spanish.

Essential Learning: Networking and Collaborating

ICT Experience - Collaboration

Students will participate in an online forum to support knowledge building in preparation for demonstration of learning.

Elements of ICT Experience

- Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)
- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work

Examples of Curricular Integration

Support peer learning by providing:

- Homework help
- Course notes
- Opportunities to share research

Authentic Problem or Problem of Understanding:

- Safety principles of a dance environment
- Workplace forgery/theft
- Teamwork for group consensus

Essential Learning: Searching, Organizing, Applying, Analyzing, and Creating

ICT Experience – Digital Presentation

Students will gather and organize information from a primary source (e.g., surveys, interviews) and form conclusions in a digital presentation.

Elements of ICT Experience

- Perform information searches using teacher/librarian selected online resources available on the school library website, the Internet, and other primary sources
- Manage project files using folders and appropriate naming conventions
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply and use proper citations using citation builder sites
- Apply Creative Commons licensing to original creations
- Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting, drawing, movie creation, photo editing, audio recording, web creation software)

Examples of Curricular Integration

Design and conduct a survey and draw conclusions on topics such as:

- Study skills
- Health-related fitness programs

Interview human resources, describe potential careers, and relay the educational connections in fields such as:

- Theatre
- Health food retailer
- Library

Communicate expert viewpoints, summarize and form conclusions on topics such as:

- Employer-union agreements
- Computer Acceptable Use Policies
- Substance abuse

Essential Learning: Searching, Designing, Managing, Mashing, and Inventing

ICT Experience – Innovative Work

Students will research, design and create their own digital work of art or simulation for a particular purpose and audience.

Elements of ICT Experience

- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)
- Design and organize project duties and timelines and share with an instructor
- Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship
- Manage project files using folders and appropriate naming conventions
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship

using music creation software
- Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)
- Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex
- (e.g., presentation, animation, simulation creation, mind mapping, programming software)

Examples of Curricular Integration
A list of possible themes and topics is provided below:

- Artwork
  - response to supply & demand
  - citizenship
- Simulation or Animated Model
  - problem solving for a financial purchase
  - land use predictions
- Music to accompany a display that illustrates a change in time
  - transportation systems
  - agricultural use of chemicals
- Collection of photos to represent
  - stylist dance elements
  - business cultural differences
  - sexuality stages
  - workplace hazards
- Compose melody and accompaniment using web based software in music class
- Use photo editing software (Photoshop) to prepare images for press in yearbook

Curricular Connections: Grade 12

Essential Learning: Searching, Collaborating, Organizing, Applying, and Publishing

ICT Experience - Productivity

Students will collaborate through online productivity tools (e.g., Google Docs, Writeboard, Zoho Writer) and as a group publish a single original work (e.g., essay, experiment, manual, article, journal).

Elements of ICT Experience

- Collaborate using online productivity tools
- Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias,
- search engines, and electronic books available on the school library website, the Internet, and primary sources
- Organize research information using mind mapping software
- Apply and use proper citations using citation builder sites
- Publish work online (e.g., word processing, spreadsheet, database software, online forums)

Examples of Curricular Integration

- Texts could be based on the following topics:
- Elements of effective writing
- Industry standards for live, recorded, electronic or graphic communications
- Food security and hunger elimination
- Logarithmic functions
- Transition from school to career
- International business mistakes
- Post-secondary education and training for various occupations
- Create digital painting and illustration in AP Art.
- Design experiments to investigate reaction time and a chosen independent variable factor, like age, BMI, caffeine intake, sex, sleep deprivation, or handedness (Right or left) in IB Biology. Use excel spreadsheet, computer-generated graphs and database research in the investigation.
- Gather information on influential artists based on themes in IB Art.
- Use Youtube videos to investigate artists' biographies.

Essential Learning: Evaluating, Organizing, Selecting, Applying, Creating, and Publishing

ICT Experience – Digital Presentation

Students will research and create an audio and/or video presentation to be published online.

Elements of ICT Experience

- Evaluate the validity of online information
- Decide which sources support an inquiry question
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Select and combine appropriate technologies for a specific purpose
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video
- Export digital images using copyright-free image collections
- Apply and use proper citations using citation builder sites
- Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)

- Upload creations to media streaming sites that are age appropriate
- Use assistive technologies to support student learning

Examples of Curricular Integration

- The digital presentation could be based on the following topics:
- Construction company's personnel, documents, and management structure
- Relationship between children and parents in different historical periods
- Theories of bonding and attachment
- Polynomial and simple rational equations
- Societal and cultural expressions of sexuality
- Biological impact on human performance
- Challenges and benefits of internet business
- Ethical business standards
- Keep a personal reflection blog after daily workouts, respond to prompts having to do with various issues discussed in class, comment/respond on each others blog posts in Female Fitness class

Essential Learning: Organizing, Collaborating, Designing, Synthesizing, and Publishing

ICT Experience - Collaboration

Students will research and communicate online with others – peers, community members, experts - in search of solutions to a social issue. Individually, they will demonstrate their solutions by developing an informative community website.

Elements of ICT Experience

- Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias,search engines, and electronic books available on the school library website, the Internet, and primary sources
- Collaborate in an online forum in order to discuss curriculum content and support peer learning (e.g., homework help, course notes, shared research)
- Download or link curricular materials
- Organize research information using mind mapping software
- Manage project files using folders and appropriate naming conventions
- Digitally photograph and/or create digital images incorporating text using presentation software
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video
- Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)
- Use assistive technologies to support student learning

Examples of Curricular Integration

Social and global issues could include:

- Effects of human activity on a type of ecosystem
- Media – agents of socialization and change
- Impact of global trends on people and environments at local and global levels
- • Analyze ethical issues and propose strategies for ethical practices related to computers

Essential Learning: Searching, Applying, Collaborating, Designing, Creating, and Inventing

ICT Experience – Innovative Work

Students will research and collaborate with a business, technology, or computer programming class to design and create a digital learning resource for a curricular area and selected age group. They will use online forums or productivity tools
(e.g., Academic Workspace, Google Docs) to plan, assign duties, and set timelines for project completion.

Elements of ICT Experience

- Collaborate using online productivity tools
- Perform sophisticated information searches, including peer-reviewed materials, using online databases, online encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Deconstruct interactive learning resources, and share with peers
- Observe and participate in the design of a simulation, game, and/or robot
- Design and organize project duties and timelines in an online forum
- Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices, GPS – Global Position Systems)
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship
- Create new ideas, products, or processes using a combination of technologies (e.g., digital gaming, storytelling, field trips, virtual worlds, music creation)
- Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex
- (e.g., presentation, animation, simulation creation, mind mapping, programming software)
- Apply Creative Commons licensing to original creations
- Use assistive technologies to support student learning

Examples of Curricular Integration

The innovative product could be based on the following:

- Child rearing and socialization
- Dynamics of intimate relationships
- Human development
- Trigonometric equations and identities
- Workplace literacy and numeracy skills
- Software development process
- Team-base approach to project management

Curricular Connections: Grade 11

Essential Learning: Organizing, Selecting, Applying, and Producing

ICT Experience - Productivity
Students will select technologies to produce original work (e.g., essay, journal entry, letter, article, documentary, report, experiment, manual) with visuals that support the message for a particular audience or purpose.

Elements of ICT Experience

- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Select and combine appropriate technologies for a specific purpose
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video creations
- Apply Creative Commons licensing to original
- Produce original work (e.g., word processing, spreadsheet, database software, online forums)

Examples of Curricular Integration
Demonstrate an understanding of concepts such as:

- The theory of evolution
- Ethics in accounting practice
- Child development theories

Identify and explain:

- Principles of taxonomy and phylogeny
- Business venture plan
- Equivalence relation to simplification of expressions

Produce a research report, essay, or newspaper article for a particular audience on topics such as:

- Famous role model for teenagers
- Use of plants in society

Use digital layering software to create a mixed media painting in advanced art.

Create a poster for a shopping mall's winter sale in Mandarin class.

Investigate Mendelian Genetics of Corn using chi square analysis. Using Google Docs to share information, a document projector during the lab, and spreadsheets to record and analyze results in AP/IB Biology.

Research different energy resources to identify the advantages and disadvantages of their use. Analyze data to resolve an energy dilemma in IB Environmental Systems.

Collect data work using data logging technology. Illustrate patterns graphically to analyze the relationship between variables in IB Chemistry.

Use Google Earth to study Ho Chi Minh City, and draw overlays on the city in order to show how the geographic layout matches (or does not match) the urban models studied in IB Geography.

Use YouTube interviews to understand artists' perspectives in AP Art.

Essential Learning: Networking, Collaborating, Synthesizing, Creating, and Uploading

ICT Experience - Collaboration

Students will express ideas and problem solve in an online forum with peers outside the province. Individually, they will communicate their solutions and conclusions of an authentic community problem in their own online forum.

Elements of ICT Experience

- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem
- Create and manage an online forum (e.g., membership, privacy settings, layouts)
- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work
- Participate in group forums

Examples of Curricular Integration

Students may discuss topics such as:

- Genetic research and related technologies
- Origins and effects of water pollution
- Characteristics of a hero and villain from a graphic novel
- Cultural significance of dance forms around the world

Collect photos and scientific names of organisms and to upload to a class Facebook page created for the project.

Essential Learning: Evaluating, Creating, Organizing, Applying, and Publishing

ICT Experience – Digital Presentation

Students will research an inquiry question, draw conclusions, create, and post the audio/video presentation.

Elements of ICT Experience

- Decide which sources support an inquiry question
- Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)
- Evaluate the validity of online information and share with a partner
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Digitally photograph and/or create digital images incorporating text using presentation software
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply and use proper citations using citation builder sites and apply Creative Commons licensing to original creation
- Create a serial podcast, digital presentation, ePortfolio, or website (e.g., presentation, painting and drawing, movie
- creation, photo editing, audio recording, web creation software)
- Upload creations to media streaming sites that are age appropriate

Examples of Curricular Integration

Research the contributions of individuals to following fields of study:

- Science
- Engineering
- Journalism
- Social Work

Communicate expert viewpoints, summarize and form conclusions on topics such as:

- Genetic processes
- Preventions of injuries in dance
- Labor market trends
- Societal effects of technologies
- Healthy active living

Essential Learning: Collaborating, Managing, Searching, Applying, Designing, and Inventing

ICT Experience – Innovative Work
Students will collaboratively research, explore, deconstruct, design, and invent an interactive learning resource for curricular review.

Elements of ICT Experience

- Manage project files using folders and appropriate naming conventions
- Edit using text or audio comments (e.g., commenting, track changes, voice recording)
- Perform more sophisticated information searches using online databases, online encyclopedias, search engines, and eBooks
- available on the school library website, the Internet, and other primary sources
- Participate in a digital simulation, game, or virtual world
- Deconstruct interactive learning resources, and share with peers
- Observe and participate in the design of a simulation, game, and/or robot
- Create or manipulate digital music in accordance with legal and ethical standards of digital citizenship using music creation software
- Mash digital images using photo editing software in accordance with legal and ethical standards of digital citizenship
- Apply Creative Commons licensing to original creations
- Invent a digital learning resource or simulation such as a game, picture book, adventure choice, terminology rolodex
- (e.g., presentation, animation, simulation creation, mind mapping, programming software)

Examples of Curricular Integration
The learning object could be based on the following topics:

- Stereotypes
- Transmission of hereditary characteristics
- Original dramatic work
- Software development process
- Personal safety
- Solving financial problems
- Rights and responsibilities of employers and employees

Curricular Connections: Grade 10

Essential Learning: Searching, Evaluating, Applying, and Producing

ICT Experience - Productivity

Students will research and produce original work (e.g., essay, journal entry, letter, article, documentary report, experiment, manual) for a particular audience or curricular purpose (e.g., retell, inform, explain, persuade, describe, compare, predict, direct, connect, resolve).

Elements of ICT Experience

- Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Evaluate the validity of online information and share with a partner
- Create an electronic log for search strategies and bibliographic information (e.g., word processing, spreadsheet, database software, online forums)
- Edit using text or audio comments (e.g., commenting, track changes, voice recording)
- Apply and use proper citations using citation builder sites
- Produce original work (e.g., word processing, spreadsheet, database software, online forums)

Examples of Curricular Integration

Demonstrate an understanding of concepts such as:

- The design process
- Properties of light
- Computer ethics

Identify and explain:

- Relation of process and product
- Hierarchical organization of cells
- • Support systems in construction
- Create a dance video in dance class
- Describe yourself using a word processor in Mandarin class.
- Use a simulation to manipulate variables to analyze the effect on other variables in science class.
- Use an online simulation game investigating a factory for labor violations in Geography.
- Use an online Venn Diagram tool to compare a simulation with the reality of the world in geography class. http://www.readwritethink.org/files/resources/interactives/venn/
- Collect information from different online sources in the Spanish-speaking world and create articles for their Spanish newspapers using publisher.

Essential Learning: Networking, Collaborating, Synthesizing, and Posting

ICT Experience - Collaboration

Students will collaborate with peers outside their community in an online forum to solve a problem and post conclusions.

Elements of ICT Experience

- Collaborate to explain, interpret, hypothesize, and synthesize to determine a solution to an authentic problem
- Network with others locally and globally through safe, responsible, and respectful electronic communications
- Organize and storyboard original work using word processing, mind mapping, or comic creation software

- Read information (e.g., calendars, news items, curricular content, grades)
- Navigate the environment
- Download or link curricular materials
- Submit curricular work

Examples of Curricular Integration

- Invention and innovation in entrepreneurship
- Natural and human factors that influence climate change
- Personal finances
- Economic and social changes since 1914
- Cooking methods
- Health and safety standards in relation to health and tourism
- Home computer networking
- In triads (researcher, illustrator and note taker) groups use their laptops to find information about Jackson Pollock and his use of physics and gravity to co-author his painting and produce a group report.

Essential Learning: Retrieving, Understanding, Organizing, Applying, and Creating

ICT Experience – Digital Presentation

Students will interview experts in a related field and create an audio or video presentation.

Elements of ICT Experience

- Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Understand and demonstrate the importance of intellectual property in a digital environment and seek permission to use digital images, music, and/or video
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply and use proper citations using citation builder sites
- Apply Creative Commons licensing to original creations
- Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)

Examples of Curricular Integration

Learn about curriculum-related careers by interviewing people such as:

- Entrepreneurs
- Builders
- Financial advisers

Communicate expert viewpoints, summarize and form conclusions on topic such as:

- America's War involvement
- Technological advancements

Essential Learning: Searching, Retrieving, Managing, Organizing, and Creating

ICT Experience – Creative Work

Students will research, design and create an ePortfolio for a particular purpose – growth, achievement, competence, or celebration.

Elements of ICT Experience

- Perform information searches using online databases, encyclopedias, search engines, and eBooks available on the school library website, the Internet, and other primary sources
- Locate and organize personal resources (e.g., folders, links)
- Manage project files using folders and appropriate naming conventions
- Organize and storyboard original work using word processing, mind mapping, or comic creation software
- Apply Creative Commons licensing to original creations
- Create a podcast, digital presentation, ePortfolio, or webpage (e.g., presentation, painting and drawing, movie creation, photo editing, audio recording, web creation software)

Examples of Curricular Integration

In the ePortfolio, students may reflect on their:

- Achievements and successes
- Characteristics and skills
- Curricular and extra-curricular experiences
- Courses and personal skills for post-secondary connections
- Courses and career preparation

In Algebra 2 use a graphing calculator to

- input rational equations and they look at how the graphs shift from the original.
- check predictions of asymptotes
- look for holes in graph to see if they were visible or not