INFORMATION AND TECHNOLOGY

PHILOSOPHY

The 21st century student lives in an information-based society. They need not only basic skills but also must experience authentic applications in order to function as a global citizen in a digital world. Teachers in Catholic schools create an environment that enables students to develop a high level of competence and more importantly a sense of social conscience and responsibility in order for their knowledge and skills to improve the lives of others. Students must be cognizant of the ethical and societal issues involved in the use of technology.

INTRODUCTION

 "What we have learned in the two decades of dramatically increasing penetration of information and communication technologies into our society is that the foundational skills are not sufficient….we know that unless students are given the opportunity and charged with the expectation to apply these basics in authentic, integrated ways to solve problems, complete projects, and creatively extend their abilities, then mastering these basis will not make much difference in the long run. Higher order skills and digital citizenship is critical if we are to provide students the opportunity to learn effectively for a lifetime and live productively in our emerging global society and increasingly digital world."

National Technology Standards for Students (NET*S), ISTE

The Information and Technology Curriculum provides the framework for diocesan teachers to implement appropriate instructional methodology in grades K through 8 and indicates the level of competency expected of students at each grade level. The curriculum is based on the National Educational Technology Standards for Students (NET*S) www.iste.org/standards , American Association of School Librarians (AASL) Standards for the 21st Century Learner www.ala.org/**aasl**/standards/ , and the *North Carolina Essential Standards.* The NC Information and Technology curriculum is also available at www.ncpublicschools.org/**acre**/standards/.

To implement the curriculum effectively the teacher must understand the language of the format:

Strands are the specific areas of focus for Information and Technology instruction: Sources of Information, Informational Text, Research Process, Safety and Ethical Issues, and Technology as a tool.

Values and Attitudes highlight values rooted in Gospel teachings, which enable students to develop a critical conscience in the use and application of technology. Values and Attitudes are not necessarily quantifiable.

Essential Standards detail what a student should know and be able to apply for each strand.

Clarifying Objectives are specific indicators of age appropriate knowledge/skills prerequisite to achieve the goals at each grade level.

Integration Strategies offer suggestions for authentic application of the Standards and Objectives in the classroom.

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KINDERGARTEN – GRADE 8

Value and Attitudes

Catholic Schools exist so that curriculum may be taught in the light of Gospel teachings. Teachers must reinforce Gospel truths and values so that students may serve as witnesses to their Catholic faith. The values listed below will help students develop a critical conscience in the use and application of information and technology skills. These are not necessarily quantifiable but rather identified in a student's respect toward the content area.

- All people are created with minds and the gift to reason.

- God makes each of us as a unique individual.

- Recognize our talents and share them with one another in order to do God's will.

- Work cooperatively with peers when using technology. (K-2)

- Understand the impact of information and technology on society. (3-8)

- Understand the place of technology in everyday life and basic issues related to responsible use of technology. (3-8)

- Demonstrate responsible and ethical behavior that exemplifies Catholic values when using information technology, including respect for property, honesty and compassion.

- Appreciate electronic communications as a means to enhance learning and realize the consequences of misuse.

(The first three bullets are common to all areas of curriculum.)

GRADE 3

SOURCES OF INFORMATION		
ESSENTIAL STANDARDS	**CLARIFYING OBJECTIVES**	**STRATEGIES**
3.SI.1E Categorize sources of information for specific purposes.	3.SI.1.1 Classify various types of resources as appropriate or inappropriate for purposes. (NETS.S.3.b) 3.SI.1.2 Classify resources as reliable or not reliable. (NETS.S.3.b)	• Understand that ideas are produced in a variety of formats. • Compare a variety of print and non-print resources. • Select and use appropriate sources. • Identify key words about a topic, problem or question. • Compare teacher-selected sources for reliable facts.

INFORMATIONAL TEXT		
ESSENTIAL STANDARDS	**CLARIFYING OBJECTIVES**	**STRATEGIES**
3.IN.1 Apply strategies that are appropriate when reading for enjoyment and for information.	3.IN.1.1 Use visual and literacy cues to locate relevant information in a given text. (NETS.S.3.b) 3.IN.1.2 Compare the characteristics of genres to develop diverse reading habits. (NETS.S.3.c)	• Demonstrate competence and self-motivation as a reader. • Recognize nonfiction text features, e.g., bold print, italics, bullets, etc. • Read a variety of genres. • Understand the basic organizational structure of books.

RESEARCH PROCESS		
ESSENTIAL STANDARDS	**CLARIFYING OBJECTIVES**	**STRATEGIES**
3.RP.1 Apply a research process as part of collaborative research.	3.RP.1.1 Implement a research process by collaborating effectively with other students. (NETS.S.2.a)	• Use a research model. • Work in small groups to research topics using a variety of resources. *(Note: a research model should be adopted school-wide, e.g., Super 3 or Big 6)*

GRADE 3

SAFETY AND ETHICAL ISSUES		
ESSENTIAL STANDARDS	**CLARIFYING OBJECTIVES**	**STRATEGIES**
3.SE.1 Understand issues related to the safe, ethical, and responsible use of information and technology resources.	3.SE.1.1 Understand the guidelines for responsible use of technology hardware. (NETS.S.5.a) 3.SE.1.2 Understand ethical behavior when using resources. (NETS.S.5.a) 3.SE.1.3 Understand internet safety precautions (personal information, passwords, etc.). (NETS.S.5.a)	• Implement age appropriate Acceptable Use Policy (AUP). • Demonstrate proper use of computer, monitor, mouse and keyboard. • Identify the author and copyright date of print and non-print sources of information. • Identify sources used in a project. • Understand the necessity of privacy of passwords and personal information. • Recognize consequences of sharing passwords and personal information.

TECHNOLOGY AS A TOOL		
ESSENTIAL STANDARDS	**CLARIFYING OBJECTIVES**	**STRATEGIES**
3.TT.1 Use technology tools and skills to reinforce classroom concepts and activities.	3.TT.1.1 Use a variety of technology tools to gather data and information. (NETS.S.6.b) 3.TT.1.2 Use a variety of technology tools to organize data and information. (NETS.S.6.b) 3.TT.1.3 Use technology tools to present data and information using multimedia, audio and visual recording, online collaboration tools, etc. (NETS.S.2.b)	• Search for information using an online encyclopedia and a teacher-directed web resource for a classroom activity. • Sort and organize information and data for projects. • Create a developmentally-appropriate class project using sound, pictures and video.

	K-2	3-5	6-8
Sources of Information	- Recognize that information is communicated in a variety of formats including: print, non- print, electronic, and conversations. - Explain the difference between fiction and non-fiction. - Independently approach library staff for assistance. - Independently locate fiction and non-fiction sections in the library. - Listen to information and ideas of other students; cooperate and exhibit appropriate group behavior. - Assist other students with information selection.	- With assistance, explore and develop understanding of how to locate and use proper sources to gather information. - Explain different types of resources that can be used for different purposes. - Identify key words to find information on a topic and develop a strategy for finding relevant information. - With assistance, develop criteria to recognize and evaluate facts for accuracy. - Distinguish between fact and opinion. - Connect topics to own interests. - Summarize information in a variety of formats and draw conclusions. - Compare and contrast information from various sources. - Share ideas and knowledge with other students.	- Independently explore increasingly wide range of formats for information - Identify and define authentic problems/information needs and formulate relevant questions. - Seek information from a variety of resources to gain a balanced overview of a topic. - With assistance, create meaningful searches by selecting and modifying keywords and phrases for information seeking purposes. - Independently select appropriate resources to answer questions and understand the organization of various resources. - Identify pre-existing knowledge, as well as additional information necessary to solve information need. - Use information responsibly and ethically. - Identify main ideas and supporting details of resources. - Consider the significance of ideas by comparing their usage in various texts. - Understand the difference between primary and secondary sources, and their uses. - Independently choose appropriate information from a variety of sources. - Use cross reference to locate additional information. - Recognize inadequacies or gaps in information. - Determine discrepancies by comparing information in different sources. - Interpret information and ideas. - Review prior knowledge and reflect on how ideas changed with information. - Collaborate with peers in sharing information.

	K-2	3-5	6-8
Research	***Use a simple research model to plan and complete a project** • Form simple questions and begin to explore ways to answer them. • Rephrase assignments. • Identify existing knowledge and, with assistance, determine where more knowledge is required. (i.e. KWL chart) • Identify which sources are best to use and why. • With assistance, develop a strategy to solve information problem. • Group, classify and sequence pieces of information. • With guidance, indicate the source of information. • Create developmentally suitable text and images • Use new information and create suitable text and images in a product. • With assistance, present a product using an appropriate format. • Judge their product by asking simple questions (e.g. What did I like? What was easy or hard? What would I do different next time?) • Use a rubric to check that a project is complete	***With assistance, use a research model to plan and complete a project** • Understand information needs to formulate questions and practice different ways to answer them. • With assistance, analyze criteria for research assignment and generate a list of keywords for inquiry. • Use a teacher selected essential question to develop a focus. • Predict answers to questions based on background knowledge. • Gather information from a variety of both provided and self-selected resources. • Identify facts that support main topic and with help. • Organize notes and ideas appropriately in response to questions. • Use a provided graphic organizer to organize information. • Create a simplified citation of sources. • With assistance, summarize information and draw a conclusion. • With guidance, consider the audience for a product and generate a final product using an appropriate format. • Consult with peers and teachers during creation of product and in final product evaluation (e.g. Did I complete all the steps? How can I improve my product? What have I learned?) • Use a rubric to check that a project is complete	***Use a research model to plan and complete a project** • Understand the criteria for a research assignment. • Explain what a final project will look like. • Use a teacher provided essential question to develop a topic focus (or develop a self-selected essential question) from a range of possibilities. • With assistance, develop a thesis statement. • Follow research guidelines and seek feedback/guidance for improving the process. • Independently develop criteria for relevant information (i.e., authority, accuracy, objectivity, relevancy, and currency of source). • Independently discriminate between primary and secondary sources. • Independently categorize information by using an outline or graphic organizer. • Avoid plagiarism by paraphrasing information in their own words when taking notes. • Interpret data to draw conclusions. • Independently complete a works cited in a research paper for information sources that uses a proper, predetermined bibliographic format (e.g. works cited in MLA format.) • Cite within the text of a research paper using a proper predetermined bibliographic format. • With assistance, demonstrate understanding of copyright law. • Select a presentation form based on intended audience. • Use teacher provided guidelines to improve content and delivery. • Independently complete a project that incorporates writing, visuals and other forms of media to communicate research results. • Analyze evaluation results to improve communications of research through doing self and peer and evaluations. • With assistance, describe the ethical use of information. • Understand that communicating information is a lifelong skill. • Collaboratively create a rubric.

Information and Technology K-8 Benchmarks

SKILLS	K-2	3-5	6-8
Word Processing	• Type sentences ➢ Change font size, style, color ➢ Use tab to indent ➢ Use special keys appropriately (space bar, shift, tab) • Open and close an application • Save and print information	• Type paragraphs ➢ Copy/cut/paste ➢ Change font size, style, color ➢ Indent paragraphs ➢ Change justification ➢ Add graphics ➢ Set spacing ➢ Landscape and portrait layouts, etc.	• Use an office suite to create an appropriate document. Within that document: ➢ Copy/paste information between applications and from other sources ➢ Change font: size, style, color ➢ Modify page layout: set paragraph margins, indent paragraphs, use columns, set spacing, change justification create tables, format headers and footers, etc.
Spreadsheets	• Create simple graphs • Enter data into teacher – prepared spreadsheet • Understand the difference between text and numbers.	• Create graphs • Enter data into teacher created spreadsheet • Choose and create appropriate graph, enter simple formulas, etc.	• Create graphs • Enter data into spreadsheet • Choose, create graph, enter formulas, sort and filter data, etc.
Organizing Data	• Use a graphic organizer to classify information.	• Use graphic organizers to organize information and process data.	• Create graphic organizers to organize information and process data.
Desktop Publishing		• Use different formats, e.g., greeting cards, post cards, newsletter, brochure.	• Choose appropriate different formats and layouts for a given assignment.
Presentations	• Use presentation software to create a classroom project. • Choose appropriate graphic • Drag and drop resize • Enter text and numbers.	• Add text, word art, graphics • Understand slide transitions • Add animations, audio and visual recording, etc.	• Choose presentation format for a project • Present a research project • Understand storyboards and timeline views.
			• Understand file extensions are different types of files and must be opened with appropriate application, e.g., jpeg, gif, video, audio word processing, spreadsheets, html.