

Catholic Schools Office  
Diocese of Tucson

# Technology Curriculum Grades Pre-K thru High School

Based on the International Society for Technology in Education,  
The Arizona State 2009 Educational Technology Standards

And

The Catholic Social Teachings



Diocesan Curriculum Committee

Dave Keller

Donna Betterton

Jacque Barwick

Joanne Moothart

Yolanda Leon

Rose Ellen McDonnell

Roxanne Taylor

Mary K. Espinoza

Our Mother of Sorrows School

St. Joseph Catholic School

All Saints Catholic School

Immaculate Heart School

Lourdes Catholic School

Santa Cruz School

St. Ambrose School

Sacred Heart School

## **Vision**

Our students will learn technology through its use in content-area curriculum, as well by acquiring technology skills using software and multimedia based content. Technology integration will be used to enhance discipline-specific areas of the curriculum, as well as to further engage students in a differentiated instructional setting. This will be achieved with computers in classrooms, computer labs and media centers.

## **Philosophy**

Technology is an integral part of students' lives. To be effective members of our society, and to succeed at their next academic level, students must know how to apply technology to learning. Students must acquire technology skills that allow them to *gather, process, discern, and communicate information* in our classrooms to prepare them *to fulfill their Christian and civic responsibilities* in a global setting.

## **Acknowledgements**

The Catholic Diocese of Tucson Technology Curriculum Committee would like to acknowledge the work of the International Society for Technology in Education (ISTE) and the authors of the National Educational Technology Standards for Students (NETS - 2000), and the Arizona State Department of Education.

The Diocese of Tucson Technology Standards, outlined below, are adopted from the Arizona Department of Education Standards, approved in May 2009.

### **Strand 1: Creativity and Innovation**

This strand requires that students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Concept 1: Knowledge and Ideas

Use technology to generate knowledge and new ideas.

Concept 2: Models and Simulations

Use digital models and simulations to examine real-world connections, explore complex systems and issues, and enhance understanding.

Concept 3: Trends and Possibilities

Use technology to forecast trends and possibilities.

Concept 4: Original Works

**Using Catholic values as our guide**, use technology to create original works in innovative ways.

## **Strand 2: Communication and Collaboration**

This strand requires students to use digital media and environments to communicate and collaborate with others.

Concept 1: Effective Communications and Digital Interactions

Communicate and collaborate with others employing a variety of digital environments and media.

Concept 2: Digital Solutions

Contribute to project teams to produce original works or solve problems.

Concept 3: Global Connections

Create cultural understanding and global awareness **using Catholic values** by interacting with learners of other cultures.

## **Strand 3: Research and Information Literacy**

This strand requires that students apply digital tools to gather, evaluate, and use information.

Concept 1: Planning

Plan strategies to guide inquiry.

Concept 2: Processing

Locate, organize, analyze, evaluate, synthesize, and ethically use information **with respect to Catholic values** from a variety of sources and media.

## **Strand 4: Critical Thinking, Problem Solving, and Decision Making**

This strand requires students to use critical thinking, problem solving, and decision making to manage projects using digital tools and resources.

Concept 1: Investigation

Identify and define authentic problems and significant questions for investigations.

Concept 2: Exploring Solutions

**Using the framework of our Catholic faith**, plan and manage activities to develop solutions to answer a question or complete a project.

## **Strand 5: Digital Citizenship**

This strand requires students to understand human, cultural, and societal issues related to technology practice and ethical behavior.

Concept 1: Safety and Ethics

Advocate and practice safe, legal, and responsible use of information and technology **consistent with our Catholic values.**

Concept 2: Leadership for Digital Citizenship

Demonstrate leadership for digital citizenship **using Catholic Social Teachings as our model.**

Concept 3: Impact of Technology

**With respect to Catholic values,** develop an understanding of cultural, historical, economic and political impact of technology on individuals and society.

## **Strand 6: Technology Operations and Concepts**

This strand requires students to demonstrate a sound understanding of technology concepts, systems, and operations.

Concept 1: Understanding

Recognize, define and use technology processes, systems, and applications.

Concept 2: Applications

Select and use applications effectively and productively.

Concept 3: Problem Solving

Define problems and investigate solutions in systems and processes.

Concept 4: Transfer of Knowledge

Transfer current knowledge to learning of new technologies.

# **Technology Standards: Pre-K thru 6<sup>th</sup> Grade**

# **Pre-K thru 6<sup>th</sup> Grade**

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

## Strand 1: Creativity and Innovation

<b>Concept 1: Knowledge and Ideas</b>						
Use technology to generate knowledge and new ideas.						
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>
		PO 1. Evaluate information to generate ideas.	PO 1. Evaluate information to generate ideas.	PO 1. Evaluate information to generate ideas and processes.	PO 1. Evaluate information to generate ideas and processes.	PO 1. Analyze information to generate ideas and processes.
		PO 1. Evaluate information to generate ideas.	PO 1. Evaluate information to generate ideas.	PO 1. Evaluate information to generate ideas and processes.	PO 1. Evaluate information to generate ideas and processes.	PO 1. Analyze information to generate new ideas and products.

<b>Concept 2: Models and Simulations</b>						
Use digital models and simulations to examine real-world connections, explore complex systems and issues, and enhance understanding.						
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>
PO 1. Explore and identify models and simulations.	PO 1. Explore and identify models and simulations.	PO 1. Identify elements of a digital model or simulation.	PO 1. Identify elements of a digital model or simulation.	PO 1. Recognize and explain interdependent elements of a digital model or simulation.	PO 1. Recognize and explain interdependent elements of a digital model or simulation.	PO 1. Recognize and explain interdependent elements of a digital model or simulation.
		PO 2. Explore and identify models and simulations.	PO 2. Identify and describe how aspects of a situation change using models or simulations.	PO 2. Identify and describe how aspects of a situation change using models or simulations.	PO 2. Explore and experiment with system variables using models or simulations.	PO 2. Explore and experiment with system variables using models or simulations.
		PO 3. Identify a system.	PO 3. Describe how one system operates by comparing it to another system.	PO 3. Transfer understanding of how one system operates by comparing it to another system.	PO 3. Transfer understanding of how one system operates by comparing it to another system.	PO 3. Compare and contrast two systems using a digital model or simulation.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

<b>Concept 3: Trends and Possibilities</b>							
Use technology to forecast trends and possibilities.							
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
	PO 1. Observe and extend patterns.	PO 1. Recognize and create patterns.	PO 1. Examine patterns to identify trends.	PO 1. Examine patterns and identify trends to generate questions.	PO 1. Identify patterns and trends to generate questions and draw conclusions.	PO 1. Identify patterns and trends to draw conclusions and forecast possibilities.	PO 1. Identify patterns and trends to draw conclusions and forecast possibilities.

<b>Concept 4: Original Works</b>							
Using Catholic values as our guide, use technology to create original works in innovative ways.							
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
PO 1. Use digital creativity tools to develop ideas and create a project.	PO 1. Use digital creativity tools to develop ideas and create a project.	PO 1. Use digital creativity tools to develop ideas and create a project.	PO 1. Use digital creativity tools to create original works.	PO 1. Use digital creativity tools to create original works.	PO 1. Analyze information using digital creativity tools to create original works and express ideas.	PO 1. Analyze information using digital creativity tools to create original works and express ideas.	PO 1. Analyze information using digital creativity tools to create original works and express ideas.
		PO 2. Use digital collaborative tools to develop collective ideas.	PO 2. Use digital collaborative tools to develop collective ideas.	PO 2. Use digital collaborative tools to analyze information to produce original works.	PO 2. Use digital collaborative tools to analyze information to produce original works and express ideas.	PO 2. Use digital collaborative tools to analyze information to produce original works and express ideas.	PO 2. Use digital collaborative tools to analyze information to produce original works and express ideas.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

## Strand 2: Communication and Collaboration

<b>Concept 1: Effective Communications and Digital Interactions</b>							
Communicate and collaborate with others employing a variety of digital environments and media.							
	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
<b>Pre-K</b> PO 1. Identify different methods of communication.	Communicate with others as a whole class using digital tools.	PO 1. Communicate with others as a whole class using digital tools.	PO 1. Communicate with others as a whole class or small group using digital tools.	PO 1. Communicate digitally with others and using a variety of appropriate communication tools.	PO 1. Communicate digitally with others by selecting and using a variety of appropriate communication tools.	PO 1. Communicate digitally with others by selecting and using a variety of appropriate communication tools.	PO 1. Communicate digitally with others by selecting and using a variety of appropriate communication tools.
		PO 2. Identify and demonstrate safe and appropriate behavior when using digital environments.	PO 2. Identify and demonstrate safe and appropriate behavior when using digital environments to communicate with others.	PO 2. Identify and demonstrate safe and appropriate behavior when using digital environments to communicate with others.	PO 2. Explain safety and etiquette guidelines of digital environments and demonstrate that knowledge while communicating with intended audiences.	PO 2. Explain and demonstrate the safety and etiquette of digital environments to communicate with intended audiences.	PO 2. Explain and demonstrate the safety and etiquette of digital environments to communicate with intended audiences.

<b>Concept 2: Digital Solutions</b>							
Contribute to project teams to produce original works or solve problems.							
	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
<b>Pre-K</b> PO 1. Identify digital tools.	Participate in a classroom learning project using digital collaborative resources.	Participate in a classroom learning project using digital collaborative resources.	PO 1. Identify and apply cooperative group rules to effectively collaborate in a classroom digital learning project.	PO 1. Contribute to a cooperative learning project and demonstrate effective group behaviors while using digital collaborative resources.	PO 1. Contribute to a cooperative learning project and demonstrate effective group behaviors while using digital collaborative resources.	PO 1. Contribute to a cooperative learning project and demonstrate effective group behaviors while using digital collaborative resources.	PO 1. Communicate and collaborate for the purpose of producing original works or solving problems.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

Concept 3: Global Connections							
Create cultural understanding and global awareness using Catholic values by interacting with learners of other cultures.							
Pre-K	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
PO 1. Explore other cultures through digital resources.	PO 1. Explore other cultures through digital resources.	PO 1. Participate as a class in communication at a distance.	PO 1. Identify challenges and digital strategies as a class to effectively communicate with other cultures.	PO 1. Identify challenges and digital strategies as a class to effectively communicate with other cultures.	PO 1. Identify challenges and digital strategies as a class to effectively communicate with other cultures.	PO 1. Communicate with individuals from different cultures or geographic areas to explore a variety of perspectives.	PO 1. Participate in communication at a distance with others of different cultures or geographic areas to gain different perspectives of topics.

## Strand 3: Research and Information Literacy

Concept 1: Planning							
Plan strategies to guide inquiry using technology.							
Pre-K	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
PO 1. Explore a variety of information sources.	PO 1. Generate key words for a search from a teacher-posed question or topic.	PO 1. Generate key words and synonyms for a search.	PO 1. Generate key words and synonyms from a posed question for a search.	PO 1. Determine key words for use in information searches.	PO 1. Determine key words for use in information searches.	PO 1. Predict and use key words and phrases that narrow or broaden information searches.	PO 1. Predict and use key words and phrases that narrow or broaden information searches.
	PO 2. Explore a variety of information sources.	PO 2. Explore information and online sources.	PO 2. Differentiate types of information and online sources.	PO 2. Differentiate types of information and online sources.	PO 2. Predict which information sources will provide the desired data.	PO 2. Predict which information sources will provide the desired data.	PO 2. Predict which information sources will provide the desired data.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

Concept 2: Processing							
Locate, organize, analyze, evaluate, synthesize and ethically use information with respect to Catholic values from a variety of sources and media.							
Pre-K	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	
PO 1. Use preselected sources.	PO 1. Conduct a search using multiple keywords.	PO 1. Conduct a search using multiple keywords.	PO 1. Conduct a search using keywords to narrow or broaden a search.	PO 1. Conduct a search using keywords to narrow or broaden a search.	PO 1. Use multiple search strategies to locate information.	PO 1. Locate and synthesize information to revise search strategies.	PO 1. Locate and synthesize information to revise search strategies.
PO 2. Recognize things are real or make-believe.	PO 2. Use preselected sources.	PO 2. Use preselected sources.	PO 2. Use primary and secondary sources.	PO 2. Select and use primary and/or secondary sources.	PO 2. Select and use primary and/or secondary sources.	PO 2. Select and use authoritative primary and/or secondary sources.	PO 2. Use authoritative primary and/or secondary sources.
PO 3. Identify and follow rules regarding the use of information resources.	PO 3. Demonstrate knowledge of real versus make-believe.	PO 3. Differentiate between a fact, untruth, and an opinion.	PO 3. Differentiate between a fact, untruth, and an opinion.	PO 3. Differentiate between facts and opinions and inaccurate information.	PO 3. Differentiate between fact and opinion, bias, and inaccurate information.	PO 3. Evaluate between fact and opinion, bias, inaccurate and misleading information by consulting more than one source.	PO 3. Evaluate information and media through determining facts, opinion, bias, and inaccuracies by consulting multiple sources.
	PO 4. Sort information into major topics.	PO 4. Sort information into major topics.	PO 4. Sort information into major topics and create a list of ideas.	PO 4. Organize information into major topics and create a list of ideas.	PO 4. Use appropriate digital tools to synthesize research information and to develop new ideas.	PO 4. Use appropriate digital tools to synthesize research information and develop new ideas.	PO 4. Use appropriate digital tools to synthesize research information to develop new ideas and/or create new understanding.
	PO 5. Identify and follow rules regarding the use of information resources.	PO 5. Identify and follow ethical behaviors when using resources.	PO 5. Identify and follow legal and ethical behaviors during research and cite resources appropriately.	PO 5. Follow copyright laws when using text and media, obtain permission to use the work of others, and cite resources appropriately.	PO 5. Follow copyright laws when using text, images, videos and/or other sources and obtain permission to use the work of others, and cite resources appropriately.	PO 5. Follow copyright laws when using text, images, videos and/or other sources and obtain permission to use the work of others, and cite resources appropriately.	PO 5. Follow copyright laws when using text, images, videos and/or other sources and obtain permission to use the work of others and cite resources appropriately.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

## Strand 4: Critical Thinking, Problem Solving, Decision Making

Concept 1: Investigation						
Identify and define authentic problems and significant questions for investigation.						
	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Pre-K PO 1. Collaborate to explore an essential question for investigation.	PO 1. Collaborate as a class to select an essential question to research using digital resources.	PO 1. Collaborate as a class or small group to select an essential question to research using digital resources.	PO 1. Identify an authentic issue and collaborate as a class to define an essential question using digital tools and resources.	PO 1. Identify an authentic issue and collaborate as a class to define an essential question using digital tools and resources.	PO 1. Identify an authentic issue and collaborate as a class to define an essential question using digital tools and resources.	PO 1. Write essential questions to investigate a topic or issue using digital tools and resources.
Grade 6 PO 1. Write essential questions to investigate a topic or issue using digital tools and resources.						

Concept 2: Exploring Solutions						
Using the framework of our Catholic faith, plan and manage activities to develop solutions to answer a question or complete a project.						
	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Pre-K PO 1. Participate in a learning project using digital planning tools.	PO 1. Participate in a group learning project using digital tools to answer a question.	PO 1. Participate as a group to manage a learning project and identify sources.	PO 1. Participate as a group to manage a learning project and identify sources.	PO 1. Manage a learning project using digital planning tools to develop solutions.	PO 1. Manage a learning project using digital planning tools to develop solutions.	PO 1. Plan and manage research using credible digital resources to develop solutions to answer a question.
Grade 6 PO 1. Plan and manage research using credible digital resources to develop solutions to answer a question.						
Pre-K PO 2. Discuss data collected on a predefined question to explore solutions or results.	PO 2. Explore solutions or results as a class by discussing data collected.	PO 2. Propose solutions by discussing data collected to answer a question.	PO 2. Propose solutions by discussing data collected to answer a question.	PO 2. Generate alternative solutions using collected resources and data.	PO 2. Generate alternative solutions using collected resources and data.	PO 2. Generate solutions from different perspectives using collected resources and data.
Grade 6 PO 2. Generate solutions from different perspectives using collected resources and data.						

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

## Strand 5: Digital Citizenship

Concept 1: Safety and Ethics						
Advocate and practice safe, legal, and responsible use of information and technology consistent with our Catholic values.						
	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Pre-K PO 1. Identify use of personal devices and when it is appropriate to use them.	PO 1. Identify use of personal devices and when it is appropriate to use them.	PO 1. Recognize and discuss when it is appropriate to use a personal digital device.	PO 1. Recognize and discuss when it is appropriate to use a personal digital device.	PO 1. Explain when and why it is appropriate to use a personal digital device.	PO 1. Explain when and why it is appropriate to use a personal digital device.	PO 1. Explain the consequences of inappropriate use of a personal digital device.
PO 2. Identify and articulate rules for the use of digital tools.	PO 2. Identify and articulate rules for the use of digital tools as defined by school board policy and procedures.	PO 2. Define cyber-bullying.	PO 2. Identify cyber-bullying and discuss the effects of bullying on an individual.	PO 2. Describe cyber-bullying and describe strategies to deal with such a situation.	PO 2. Describe cyber-bullying and describe strategies to deal with such a situation.	PO 2. Describe cyber-bullying and describe strategies to deal with such a situation.
PO 3. Recognize and discuss why there are rules for using technology at home and at school.	PO 3. Discuss why it may be dangerous to visit certain Internet sites.	PO 3. Identify and articulate rules for the use of digital tools as defined by school board policy and procedures.	PO 3. Identify and articulate rules for the use of digital tools as defined by school board policy and procedures.	PO 3. Identify and articulate rules for the use of digital tools as defined by school board policy and procedures.	PO 3. Identify and articulate rules for the use of digital tools as defined by school board policy and procedures.	PO 3. Identify and articulate rules for the use of digital tools as defined by school board policy and procedures.
	PO 4. Recognize and discuss why there are rules for using technology at home and at school.	PO 4. Discuss why it may be dangerous to visit certain Internet sites.	PO 4. Identify and discuss ways to stay safe on the Internet.	PO 4. Identify and discuss why it is important not to provide personal information in online communication.	PO 4. Recognize and describe the potential risks and dangers associated with various forms of online communications.	PO 4. Identify and articulate strategies to protect personal information.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

<b>Concept 1: Safety and Ethics (cont'd)</b>							
Advocate and practice safe, legal, and responsible use of information and technology consistent with our Catholic values							
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
		PO 5. Recognize, discuss, and demonstrate appropriate behavior for technology use and show respect for technology equipment.	PO 5. Discuss and demonstrate appropriate behavior for technology use and show respect for technology equipment.	PO 5. Explain the importance of respecting the privacy of others' information and digital workspace.	PO 5. Recognize and describe the advantages and risks of making a personal spending choice online.	PO 5. Recognize and describe the potential advantages and risks of making an online purchase.	PO 5. Evaluate various websites to choose the best option for making an Internet purchase for a particular product.
					PO 6. Articulate how to respect the privacy of others' information and digital workspace.	PO 6. Exhibit legal and ethical behavior when using technology and discuss the consequences of misuse.	PO 6. Exhibit legal and ethical behavior when using technology and discuss the consequences of misuse.

<b>Concept 2: Leadership for Digital Citizenship</b>							
With respect to Catholic values, demonstrate leadership for digital citizenship.							
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
						PO 1. Exhibit digital citizenship by consistently leading by example and advocating social and civic responsibility to others.	PO 1. Promote digital citizenship by consistently leading by example and advocating social and civic responsibility to others.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

<b>Concept 3: Impact of Technology</b>							
<b>With respect to Catholic values, develop an understanding of the cultural, historical, economic and political impact of technology on individuals and society.</b>							
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	
PO 1. Recognize and discuss examples of technology used in daily life.	PO 1. Recognize and discuss examples of technology used in daily life.	PO 1. Recognize and discuss how students and families use technology to make their lives better.	PO 1. Recognize, discuss, and explain different types of technologies used in current and past cultures.	PO 1. Compare how past and present cultures used technology to improve their lives.	PO 1. Provide examples of technologies that might be used to solve a specific economic, environmental, health, political, scientific, or social problem.	PO 1. Explain the impact of technology on individuals and society from a historical, economic, environmental and political perspective.	PO 1. Research a current technology and describe its potential use to solve an economic, environmental, health, political, scientific, or social problem.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

## Strand 6: Technology Operations and Concepts

Concept 1: Understanding						
Recognize, define and use technology term, processes, systems and applications.						
Pre-K	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
PO 1. Identify basic technology terms.	PO 1. Identify basic technology terms.	PO 1. Define basic technology terms.	PO 1. Classify basic technology terms.	PO 1. Define and label various technical system terms.	PO 1. Describe the various technical system terms.	PO 1. Describe the various technical system terms.
PO 2. Identify technology process terminology.	PO 2. Identify technology process terminology.	PO 2. Identify and define technology process terminology.	PO 2. Apply knowledge of technology process terminology.	PO 2. Define and apply knowledge of various technical process terms.	PO 2. Define and apply knowledge of various technical process terms.	PO 2. Define and apply knowledge of various technical process terms.
PO 3. Identify technology applications for a given activity or project.	PO 3. Identify technology application for a given activity/project.	PO 3. Identify technology applications for a given activity/project.	PO 3. Identify and choose technology applications for a given activity/project.	PO 3. Choose technology applications for a given activity/project.	PO 3. Choose technology applications for a given activity/project.	PO 3. Choose technology applications appropriate for the audience and task.
PO 4. Demonstrate knowledge of electrical safety when using computers and other technology.	PO 4. Demonstrate knowledge of electrical safety when using computers and other technology.	PO 4. Demonstrate knowledge of ergonomics and electrical safety when using computers.	PO 4. Demonstrate knowledge of ergonomics and electrical safety when using computers.	PO 4. Demonstrate knowledge of ergonomics and electrical safety when using computers.	PO 4. Demonstrate knowledge of ergonomics and electrical safety when using computers.	PO 4. Recognize and demonstrate ergonomically safe and sound use of equipment.
				PO 5. Identify physical risks of using digital technology.	PO 5. Identify physical risks of using digital technology.	PO 5. Identify physical risks of using digital technology.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

## Concept 2: Application

Select and use applications effectively and productively.

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
<p><b>Pre-K</b></p> <p>PO 1. Use the mouse/track pad to perform computer functions such as accessing an application, indicating a choice or activating a link. Use the keyboard to type letters and numbers and know how to use special key functions.</p> <p>PO 2. Use technology to identify letters and numbers and differentiate between them.</p> <p>PO 3. Identify and use common navigational elements of a web page.</p>	<p>PO 1. Use the mouse/track pad to perform computer functions such as accessing an application, indicating a choice or activating a link. Use the keyboard to type letters and numbers and know how to use special key functions.</p> <p>PO 2. Use technology to identify letters and numbers and differentiate between them.</p> <p>PO 3. Use an interactive presentation system as part of classroom work.</p> <p>PO 4. Identify and use common navigational elements of a web page.</p>	<p>PO 1. Understand keyboarding techniques when using the keyboard to type letters, numbers and special key functions.</p> <p>PO 2. Compose a document that applies basic formatting.</p> <p>PO 3. Use multimedia presentation programs to create simple class assignments.</p> <p>PO 4. Identify and use common navigational elements of a web page.</p>	<p>PO 1. Understand keyboarding techniques when using the keyboard to type letters, numbers and special key functions.</p> <p>PO 2. Compose a document that applies basic formatting.</p> <p>PO 3. Identify and explain terms and concepts related to spreadsheets while using program to complete a given task.</p> <p>PO 4. Explain that computers can store and organize information so that it can be searched.</p>	<p>PO 1. Demonstrate speed and accuracy in use of keyboard and data entry tools with at least 5 wpm and 80% accuracy.</p> <p>PO 2. Compose a document that applies intermediate formatting.</p> <p>PO 3. Use spreadsheets to organize and sort data.</p> <p>PO 4. Define the term “database” and provide examples from everyday life.</p>	<p>PO 1. Demonstrate speed and accuracy in use of keyboard and data entry tools with at least 10 wpm and 80% accuracy.</p> <p>PO 2. Compose a document that applies intermediate formatting.</p> <p>PO 3. Use a spreadsheet to record, organize, and graph information.</p> <p>PO 4. Perform simple searches of existing databases.</p>	<p>PO 1. Demonstrate speed and accuracy in use of keyboard and data entry tools with at least 15 wpm and 80% accuracy.</p> <p>PO 2. Compose a document that applies intermediate formatting.</p> <p>PO 3. Apply spreadsheet formatting skills.</p> <p>PO 4. Perform searches of existing databases.</p>	<p>PO 1. Demonstrate speed and accuracy in use of keyboard and data entry tools with at least 20 wpm and 80% accuracy.</p> <p>PO 2. Compose a document that applies intermediate formatting.</p> <p>PO 3. Produce simple charts and graphs from data in a spreadsheet.</p> <p>PO 4. Perform simple operations in a database.</p>

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

<b>Concept 2: Application (Cont'd)</b> Select and use applications effectively and productively.							
	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
<b>Pre-K</b>	PO 5. Demonstrate appropriate use of log-in procedures.	PO 5. Demonstrate appropriate use of log-in procedures.	PO 5. Create and edit multimedia presentation using painting/drawing applications.	PO 5. Plan, create, and edit multimedia presentation.	PO 5. Create multimedia presentations with multiple pages, audio, and transitions for individual assignments.	PO 5. Create multimedia presentations with multiple pages, audio, and transitions for individual assignments.	PO 5. Create multimedia presentations with multiple pages, audio, images, and transitions for individual assignments.
			PO 6. Identify components and modules on a web page.	PO 6. Identify components and modules on a web page.	PO 6. Download, store, and accurately cite web resources.	PO 6. Use interactive web content to access, read, send, and receive information.	PO 6. Create a simple web page incorporating text, links, and graphics.
			PO 7. Demonstrate appropriate use of log-in procedures and network printing.	PO 7. Demonstrate appropriate use of log-in procedures and network printing.	PO 7. Explain the uses of and the means by which computers are networked.	PO 7. Use network storage drives to access information from a directory.	PO 7. Use network storage drives to access and share information from a directory.

# Technology Standards: Pre-K thru 6<sup>th</sup> Grade

<b>Concept 3: Troubleshoot Systems and Processes</b>						
Define problems and investigates solutions in systems and processes.						
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>
PO 1. Understand that there are different types of problems with technology.	PO 1. Devise a class plan on how to solve different types of technology problems.	PO 1. Understand that there are different types of problems with technology and identify the type of problem and the steps needed to solve.	PO 1. Identify and apply successful troubleshooting strategies for minor hardware and software issues/problems.	PO 1. Identify and apply successful troubleshooting strategies for minor hardware and software issues/problems.	PO 1. Use the help function within software and hardware to troubleshoot issues and problems.	PO 1. Use the help function within software and hardware to troubleshoot issues and problems.

<b>Concept 4: Transfer of Knowledge</b>						
Transfer current knowledge to learning of new technologies.						
<b>Pre-K</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>
PO 1. Demonstrate knowledge of technology used at home.	PO 1. Transfer knowledge of technology used at home to technology that will be used at school.	PO 1. Transfer understanding of current symbols and icons to learning new technologies.	PO 1. Transfer understanding of current symbols and icons to learning new technologies.	PO 1. Transfer understanding of current input/output devices and symbols to learning new technologies.	PO 1. Transfer understanding of current input/output devices and icons to learning new technologies.	PO 1. Transfer understanding of current input/output devices, symbols and icons, and applications to learning new technologies.

# **Technology Standards: 7<sup>th</sup> Grade thru High School**

# **7<sup>th</sup> Grade to High School**

# Technology Standards: 7<sup>th</sup> Grade thru High School

## Strand 1: Creativity and Innovation

<b>Concept 1: Knowledge and Ideas</b>	
Use technology to generate knowledge and new ideas.	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Analyze and evaluate information to generate new ideas, processes or products.	PO 1. Analyze and evaluate information to generate new ideas, processes or products.
	<b>High School (Grades 9-12)</b>
	PO 1. Analyze, evaluate, and synthesize information to generate new ideas, processes, or products.

<b>Concept 2: Models and Simulations</b>	
Use digital models and simulations to examine real-world connections, explore complex systems and issues, and enhance understanding.	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Summarize the relationship amongst interdependent elements of a digital model or simulation.	PO 1. Summarize the relationship amongst interdependent elements of a digital model or simulation.
PO 2. Analyze system processes and outcomes using models or simulations.	PO 2. Analyze system processes and outcomes using models or simulations.
PO 3. Analyze and apply understanding of how one system, digital models, or simulations operates by comparing it to another system of a different type that operates in a similar manner.	PO 3. Analyze and apply understanding of how one system, digital models or simulations operates by comparing it to another system of a different type that operates in a similar manner.
	<b>High School (Grades 9-12)</b>
	PO 1. Predict and test the relationships amongst interdependent elements of a digital model, simulation or system.
	PO 2. Propose or create a model, simulation, or system.
	PO 3. Predict how one system operates by comparing it to multiple systems, digital models or simulations.

<b>Concept 3: Trends and Possibilities</b>	
Use technology to forecast trends and possibilities.	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Identify patterns and trends to forecast possibilities from different perspectives.	PO 1. Identify patterns and trends to forecast possibilities from different perspectives.
PO 2. Ask questions and investigate a problem from different perspectives and formulate inferences from known facts.	PO 2. Ask questions and investigate a problem from different perspectives and formulate inferences from known facts.
	PO 3. Draw conclusions that reflect clear and logical links between the trends and patterns and the interpretations made from them.
	<b>High School (Grades 9-12)</b>
	PO 1. Analyze patterns and trends and their logical links to form inferences, and forecast possibilities providing novel insights.

# Technology Standards: 7<sup>th</sup> Grade thru High School

<p align="center"><b>Concept 4: Original Works</b></p> <p align="center">Using Catholic values as our guide, use technology to create original works in innovative ways.</p>		
Grade 7	Grade 8	High School (Grades 9-12)
<p>PO 1. Create innovative products or projects using digital tools to express original ideas.</p> <p>PO 2. Use digital collaborative tools to synthesize information, produce original works, and express ideas.</p>	<p>PO 1. Create innovative products or projects using digital tools to express original ideas.</p> <p>PO 2. Use digital tools to collaborate with a group to communicate original ideas, products, or projects effectively in a creative or innovative style.</p>	<p>PO 1. Create innovative products or projects using digital tools to express original ideas.</p> <p>PO 2. Use digital collaborative tools to synthesize information, produce original works, and express ideas.</p>

## Strand 2: Communication and Collaboration

<p align="center"><b>Concept 1: Effective Communications and Digital Interactions</b></p> <p align="center">Communicate and collaborate with others employing a variety of digital environments and media.</p>		
Grade 7	Grade 8	High School (Grades 9-12)
<p>PO 1. Collaborate and communicate with peers, experts, or others employing a variety of digital tools to share findings and/or publish.</p> <p>PO 2. Explain and demonstrate features, conventions, and etiquette of interactive digital environments to communicate with an appropriate audience.</p>	<p>PO 1. Collaborate and communicate with peers, experts, or others employing a variety of digital tools to share findings and/or publish.</p> <p>PO 2. Explain and demonstrate features, conventions, voice, and etiquette of interactive digital environments to communicate with an appropriate audience.</p>	<p>PO 1. Collaborate with peers, experts, or others in the global community employing a variety of digital tools to share findings and/or publish in a variety of ways.</p> <p>PO 2. Communicate information and ideas respectfully and effectively to multiple audiences using a variety of digital environments.</p>

<p align="center"><b>Concept 2: Digital Solutions</b></p> <p align="center">Contribute to project teams to produce original works or solve problems.</p>		
Grade 7	Grade 8	High School (Grades 9-12)
<p>PO 1. Communicate and collaborate for the purpose of producing original works or solving problems.</p>	<p>PO 1. Communicate and collaborate for the purpose of producing original works or solving problems.</p>	<p>PO 1. Communicate and collaborate for the purpose of producing original works or solving problems.</p>

<p align="center"><b>Concept 3: Global Connections</b></p> <p align="center">Create cultural understanding and global awareness using Catholic values by interacting with learners of other cultures.</p>		
Grade 7	Grade 8	High School (Grades 9-12)
<p>PO 1. Independently locate and interact with teacher approved global communities.</p>	<p>PO 1. Independently locate and interact with teacher approved global communities.</p>	<p>PO 1. Engage in a global community to contribute to a specific global issue.</p>

# Technology Standards: 7<sup>th</sup> Grade thru High School

## Strand 3: Research and Information Literacy

<b>Concept 1: Planning</b> Plan strategies to guide inquiry.		
<b>Grade 7</b>	<b>Grade 8</b>	<b>High School (Grades 9-12)</b>
PO 1. Predict the most effective keywords and phrases for use in information searches.	PO 1. Predict the most effective keywords and phrases for use in information searches.	PO 1. Identify and defend effective key words, phrases, and strategies for conducting information searches.
PO 2. Determine which information source will provide the desired data.	PO 2. Determine which information source will provide the desired data.	PO 2. Evaluate diverse information sources.
<b>Concept 2: Processing</b> Locate, organize, analyze, evaluate, synthesize, and ethically use information with respect to Catholic values from a variety of sources and media.		
<b>Grade 7</b>	<b>Grade 8</b>	<b>High School (Grades 9-12)</b>
PO 1. Locate and synthesize information utilizing advanced search strategies.	PO 1. Locate and synthesize information utilizing advanced search strategies.	PO 1. Locate and synthesize information utilizing advanced search strategies including a variety of search engines, metadata search engines, deep web searches and databases.
PO 2. Use authoritative primary and/or secondary sources.	PO 2. Evaluate and use authoritative primary and/or secondary sources.	PO 2. Defend the authority of primary and/or secondary sources used in research.
PO 3. Evaluate between fact and opinion, bias, inaccurate and misleading information by consulting multiple sources.	PO 3. Evaluate between fact and opinion, bias, inaccurate and misleading information by consulting multiple sources.	PO 3. Evaluate information identifying facts, opinions, bias, inaccurate and misleading information by analyzing multiple sources.
PO 4. Synthesize research information to create new understanding or develop new ideas.	PO 4. Synthesize research information to create new understanding.	PO 4. Synthesize research information to create new understanding and innovative solutions.
PO 5. Apply ethical use of information and media by respecting copyrights, intellectual property rights, using information and media technology responsibly, and citing resources appropriately.	PO 5. Apply ethical use of information and media by respecting copyrights, intellectual property rights, using information and media responsibly, and citing resources appropriately.	PO 5. Apply ethical use of information and media by respecting the principles of copyrights, intellectual freedom and property rights, using information and media technology responsibly, and citing resources appropriately.

# Technology Standards: 7<sup>th</sup> Grade thru High School

## Strand 4: Critical Thinking, Problem Solving, Decision Making

<b>Concept 1: Investigation</b>	
Identify and define authentic problems and significant questions for investigations.	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Write essential questions to investigate a topic or issue using digital tools and resources.	PO 1. Write essential questions to investigate a topic or issue using digital tools and resources.
	<b>High School (Grades 9-12)</b>
	PO 1. Write essential questions to investigate a complex (multi-step) issue using digital tools and resources.

<b>Concept 2: Exploring Solutions</b>	
<b>Using the framework of our Catholic faith, plan and manage activities to develop solutions to answer a question or complete a project.</b>	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Plan, conduct and manage research using appropriate digital resources to develop solutions for a question.	PO 1. Plan, conduct and manage research using appropriate digital resources to develop solutions for a question.
PO 2. Present defensible solutions and make decisions from multiple perspectives using collected resources and data.	PO 2. Present defensible solutions and make decisions from multiple perspectives using collected resources and data.
	<b>High School (Grades 9-12)</b>
	PO 1. Plan and manage an individual learning project that collects multiple data sets from diverse sources, creating planning adjustments and course corrections from the knowledge gained.
	PO 2. Present defensible solutions and make decisions from multiple perspectives using collected resources and data.

# Technology Standards: 7<sup>th</sup> Grade thru High School

## Strand 5: Digital Citizenship

<b>Concept 1: Safety and Ethics</b>		
Advocate and practice safe, legal, and responsible use of information and technology consistent with our Catholic values.		<b>High School (Grades 9-12)</b>
<b>Grade 7</b>	<b>Grade 8</b>	
PO 1. Assess situations in which it is appropriate and safe to use a personal digital device in the home, school, community, and in the work place.	PO 1. Assess situations in which it is appropriate and safe to use a personal digital device in the home, school, community, and in the work place.	PO 1. Determine when it is appropriate and safe to use various personal digital devices.
PO 2. Describe strategies to deal with cyber-bullying situations.	PO 2. Describe strategies to deal with cyber-bullying situations.	PO 2. Describe strategies to deal with cyber-bullying situations.
PO 3. Articulate and practice the school and district rules governing the use of digital tools as defined by school board policy and procedures.	PO 3. Articulate and practice the school and district rules governing the use of digital tools as defined by school board policy and procedures.	PO 3. Advocate and practice safe, legal, and responsible use of digital tools as defined by school board policy and procedures.
PO 4. Demonstrate safe online communication practices regarding personal information.	PO 4. Demonstrate safe online communication practices regarding personal information.	PO 4. Demonstrate safe online communication practices regarding personal information.
PO 5. Analyze and compare various aspects of e-commerce.	PO 5. Analyze and compare various aspects of e-commerce.	PO 5. Analyze and compare how web advertising influences consumer choices.
PO 6. Exhibit legal and ethical behavior when using technology.	PO 6. Exhibit legal and ethical behavior when using technology.	PO 6. Advocate and exhibit legal and ethical behavior when using technology.

<b>Concept 2: Leadership for Digital Citizenship</b>		
With respect to Catholic values, demonstrates leadership for digital citizenship.		<b>High School (Grades 9-12)</b>
<b>Grade 7</b>	<b>Grade 8</b>	
PO 1. Promote digital citizenship by consistently leading by example and advocating social and civic responsibility to others.	PO 1. Promote digital citizenship by consistently leading by example and advocating social and civic responsibility to others.	PO 1. Exhibit digital citizenship by consistently leading by example and advocating social and civic responsibility to others.

<b>Concept 3: Impact of Technology</b>		
Using Catholic values, develop an understanding of cultural, historical, economic and political impact of technology on individuals and society.		<b>High School (Grades 9-12)</b>
<b>Grade 7</b>	<b>Grade 8</b>	
PO 1. Analyze the potential benefits and hazards of a new technology and the possible short- and long-term consequences of implementing this technology.	PO 1. Analyze current economic, environmental, health, political, scientific, or social problems that have technological solutions and propose potential solutions for the problems.	PO 1. Develop a possible technological solution for a contemporary issue.

# Technology Standards: 7<sup>th</sup> Grade thru High School

## Strand 6: Technology Operations and Concepts

Concept 1: Understanding		
Recognize, define and use technology processes, systems, and applications.		
Grade 7	Grade 8	High School (Grades 9-12)
PO 1. Explain and correctly use terms related to networks and connectivity.	PO 1. Explain how systems are integrated detailing input, output, and network devices.	PO 1. Describe how the components of a system are integrated using appropriate terminology.
PO 2. Define and apply knowledge of various technical process terms.	PO 2. Define and apply knowledge of various technical process terms.	PO 2. Define and apply knowledge of various technical process terms.
PO 3. Choose technology applications appropriate for the audience and task.	PO 3. Choose technology applications appropriate for the audience and task.	PO 3. Choose technology applications appropriate for the audience and task.
PO 4. Recognize and demonstrate ergonomically safe and sound use of equipment.	PO 4. Recognize and demonstrate ergonomically safe and sound use of equipment.	PO 4. Recognize and demonstrate ergonomically safe and sound use of equipment.
PO 5. Identify physical risks of using digital technology.	PO 5. Analyze and evaluate physical risks of using digital technology.	PO 5. Investigate and evaluate physical risks of using digital technology.

Concept 2: Applications		
Select and use applications effectively and productively.		
Grade 7	Grade 8	High School (Grades 9-12)
PO 1. Demonstrate speed and accuracy with appropriate data entry tools with at least 25 wpm and 80% accuracy.	PO 1. Demonstrate speed and accuracy with appropriate data entry tools with at least 30 wpm and 80% accuracy.	PO 1. Demonstrate speed and accuracy using appropriate data entry tools.
PO 2. Compose a document that applies advanced formatting.	PO 2. Compose a multiple section document using advanced formatting.	PO 2. Compose a multiple section document that applies the most appropriate media and advanced formatting.
PO 3. Enter/edit data using simple formulas while using spreadsheet(s) to perform calculations.	PO 3. Apply formatting features while using spreadsheet programs to customize tables, charts, and graphs.	PO 3. Use spreadsheets to calculate, graph, organize, and present data in a variety of real-world settings.
PO 4. Define terms used in database creation and perform simple operations.	PO 4. Create a simple database for a content area.	PO 4. Use database features to export, organize, compile, and output data.
PO 5. Create and edit visual and audio material to generate a multimedia product.	PO 5. Create and edit visual and audio material to generate a stand-alone multimedia product.	PO 5. Compose media for the web with interactive capabilities.
PO 6. Identify criteria for evaluating technical and design qualities of a web site and then create web-based content from the identified criteria.	PO 6. Identify criteria for evaluating technical and design qualities of a web site and then create web-based content from the identified criteria.	PO 6. Create, evaluate and critique web structure and content.
PO 7. Identify and use network protocols for moving files and secure web access.	PO 7. Identify and use network protocols for moving files and secure web access.	PO 7. Use network protocols for moving files and secure web access.

# Technology Standards: 7<sup>th</sup> Grade thru High School

<b>Concept 3: Problem Solving</b>	
Define problems and investigate solutions in systems and processes.	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Generate and apply solutions to troubleshoot hardware and software issues and problems.	PO 1. Generate and apply solutions to troubleshoot hardware and software issues and problems.  PO 1. Identify and use online help and other support to learn about features of hardware, software, and connectivity as well as to assess and resolve problems.

<b>Concept 4: Transfer of Knowledge</b>	
Transfer current knowledge to learning of new technologies.	
<b>Grade 7</b>	<b>Grade 8</b>
PO 1. Transfer understanding of current technologies, input/output devices, symbols and icons, and applications to learning new technologies.	PO 1. Transfer understanding of current technologies to new and novel learning situations.

# Resources for Educational Technology

<http://www.iste.org/>

*Suggested texts available from ISTE:*

**The Computer Lab Teacher's Survival Guide: K-6 Units for the Whole Year, Second Edition by Holly Poteete**

**Digital Storytelling Guide for Educators by Midge Frazel**

**Differentiating Instruction with Technology in Middle School Classrooms by Grace E. Smith & Stephanie Throne**

**Global Education: Using Technology to Bring the World to Your Students by Dr. Laurence Peters**

**IT's Elementary! Integrating Technology in the Primary Grades, by Boni Hamilton**

<https://www.ideal.azed.gov>

*Resources available from Ideal:*

**Recipes 4 Success: Instructional guides/aides to teach technology**

<http://www.thinkfinity.org/>

*Resources available from Thinkfinity include Lesson Plans that integrate technology into the curriculum.*

<http://office.microsoft.com>

*Resources available from Microsoft include tutorials on how to use MS Office products (Excel, Word, PowerPoint)*

**Websites for Keyboarding:**

[www.typingtest.com](http://www.typingtest.com)

<http://www.topsy.org/keyboarding.html>

<http://www.freetypinggame.net>