

Digital Learning-Technology

4/2017

We are called to use science and technology in a full and constructive way, while recognizing that the findings of science always have to be evaluated in the light of the centrality of the human person, of the common good and of the inner purpose of creation.^[1]

- Pope John Paul II and Ecumenical Patriarch Bartholomew

Common Declaration, Pope John Paul II and Ecumenical Patriarch Bartholomew. Venice, 2002

Throughout history, the Catholic church has used every means possible for spreading the word of God. Innovation was often at the forefront of communicating the Gospel message. Today the world of digital communication and digital learning has exploded giving rise to a new way of spreading the Gospel message and engaging in God's creative process. .

Students in Catholic schools have the opportunity to leverage technology as they take an active role in choosing, achieving, demonstrating and assessing competency in their learning goals. Digital learning is an integrated approach to using digital tools and concepts across the curriculum.

Digital learning is a way of thinking about learning through communication, collaboration, critical thinking and creativity.

“How new generations understand the very nature of communication is of great interest to the Church. The very nature of how people communicate impacts how they will be able to hear, understand, and live the Good News of the Gospel, complete with its unique values and principles. As Pope Benedict XVI said:

New technologies are not only changing the way we communicate, but communication itself, so much so that it could be said that we are living through a period of vast cultural transformation. This means of spreading information and knowledge is giving birth to a new way of learning and thinking.” ^[8] www.faithandsafety.org

The standards and benchmarks are based on the 2016 ISTE Standards for Students. The standards are approached from seven domains: Empowered Learner, Digital Learner, Knowledge Constructor, Innovative Designer, Computational Thinker, Creative Communicator and Global Collaborator.

[Ideas for Technology Standards](#) - Link up ideas/lesson examples

Empowered Learner (should we make reference to Personalized Learning)

Pre Kindergarten/ Kindergarten	First	Second
<ol style="list-style-type: none"> 1. With guidance from an educator students: <ol style="list-style-type: none"> a. reflect on and evaluate choices in tasks to set goals and utilize a variety of technology to create and complete tasks b. learn about technologies that connect with others c. recognize the feedback from digital tools to adjust learning d. explore a variety of technologies to help with learning e. transfer knowledge of skills between tools f. recognize there are a variety of resources for help and assistance 2. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence 	<ol style="list-style-type: none"> 1. With guidance from an educator students: <ol style="list-style-type: none"> a. reflect on and evaluate choices in tasks to set goals and utilize a variety of technology to create and complete tasks b. use technologies that connect with others c. recognize and use the feedback from digital tools to adjust learning d. explore and use a variety of technologies to help with learning e. transfer knowledge of skills between tools f. know there are a variety of resources for help and assistance (Google It, ask a friend, YouTube...) 2. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence 	<ol style="list-style-type: none"> 1. With guidance from an educator students: <ol style="list-style-type: none"> b. reflect on and evaluate choices in tasks to set goals and utilize a variety of technology to create and complete tasks c. learn technologies that connect with others d. use the feedback from digital tools to adjust learning e. use a variety of technologies to help with learning f. transfer knowledge of skills between tools g. know there are a variety of resources for help and assistance (Google It, ask a friend, YouTube...) 3. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence

[Technology Scope & Sequence](#) [Pacing Guide by Grade - Learning.com](#)

Third	Fourth	Fifth
<ol style="list-style-type: none"> 1. In collaboration with an educator, students: <ol style="list-style-type: none"> a. select learning goals (voice and choice) b. select the technology to achieve the goals c. reflect and revise the learning process as needed to achieve the goals d. build a network of experts, peers and learning resources (within the school policy) e. customize the learning environment to enhance learning (select the best place to learn, make flash cards...) f. begin to transfer learning to different tools or learning environments 2. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence 	<ol style="list-style-type: none"> 3. In collaboration with an educator, students: <ol style="list-style-type: none"> a. select learning goals (voice and choice) b. select the technology to achieve the goals c. reflect and revise the learning process as needed to achieve the goals d. build a network of experts, peers and learning resources (within the school policy) e. customize the learning environment to enhance learning (select the best place to learn, make flash cards...) f. begin to transfer learning to different tools or learning environments 4. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence 	<ol style="list-style-type: none"> 5. In collaboration with an educator, students: <ol style="list-style-type: none"> a. select learning goals (voice and choice) b. select the technology to achieve the goals c. reflect and revise the learning process as needed to achieve the goals d. build a network of experts, peers and learning resources (within the school policy) e. customize the learning environment to enhance learning (select the best place to learn, make flash cards...) f. transfer learning to different tools or learning environments 6. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence

Sixth	Seventh	Eighth
<ol style="list-style-type: none"> 1. Students articulate learning goals <ol style="list-style-type: none"> a. interpret and use data to inform decisions b. select and manage appropriate technologies to achieve goals c. reflect on success and areas of improvement in working toward goals 2. Identify and develop online networks (within school policy) <ol style="list-style-type: none"> a. customize learning environments to support learning 3. Actively seek performance feedback from people including teachers, peers and functionality embedded in digital tools to improve the learning process 4. Select appropriate technology to demonstrate learning in a variety of ways. 5. Navigate a variety of technologies and transfer knowledge and skills to learn and use new technologies 6. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence 	<ol style="list-style-type: none"> 1. Students articulate learning goals <ol style="list-style-type: none"> a. analyze and use data to inform decisions b. select and manage appropriate technologies to achieve goals c. reflect on success and areas of improvement in working toward goals 2. Develop, evaluate and utilize online networks (within school policy) <ol style="list-style-type: none"> a. customize learning environments to support learning 3. Actively seek and use performance feedback from people including teachers, peers and functionality embedded in digital tools to improve the learning process and outcome 4. Select and use appropriate technology to demonstrate learning in a variety of ways. 5. Navigate a variety of technologies and transfer knowledge and skills to learn and use new technologies 6. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence 	<ol style="list-style-type: none"> 1. Students articulate learning goals <ol style="list-style-type: none"> a. analyze and use data to inform decisions b. select and manage appropriate technologies to achieve goals c. reflect on success and areas of improvement in working toward goals 2. Develop, evaluate and utilize online networks (within school policy) <ol style="list-style-type: none"> a. customize learning environments to support learning 3. Actively seek and use performance feedback from people including teachers, peers and functionality embedded in digital tools to improve the learning process and outcome 4. Select and use appropriate technology to demonstrate learning in a variety of ways. 5. Navigate a variety of technologies and transfer knowledge and skills to learn and use new technologies 6. Device operations and concepts <ol style="list-style-type: none"> a. See scope and sequence

Digital Citizen

Students recognize the dignity and rights of all people and understand the responsibilities and opportunities of living, learning and working in an interconnected digital world as they act and model virtuous, safe, legal and ethical use.

Pre Kindergarten/Kindergarten	First	Second
<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices <ol style="list-style-type: none"> a. clean hands b. proper handling of the device c. follow safety rules d. respect the work of others e. appropriate use 2. Understands online safety and privacy 	<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices <ol style="list-style-type: none"> a. clean hands b. proper handling of the device c. follow safety rules d. respect the work of others e. appropriate use 2. Understands online safety and privacy 3. Begins to understand what a virtuous 'digital footprint' looks and sounds like (THINK) 	<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices <ol style="list-style-type: none"> a. clean hands b. proper handling of the device c. follow safety rules d. respect the work of others e. appropriate use 2. Understands online safety and privacy 3. Begins to understand what a virtuous 'digital footprint' looks and sounds like (THINK)

Third	Fourth	Fifth
<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices <ol style="list-style-type: none"> a. clean hands b. proper handling of the device c. follow safety rules d. respect the work of others 	<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices <ol style="list-style-type: none"> a. clean hands b. proper handling of the device c. follow safety rules d. respect the work of others 	<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices <ol style="list-style-type: none"> a. clean hands b. proper handling of the device c. follow safety rules d. respect the work of others

<p>e. appropriate use</p> <ol style="list-style-type: none"> 2. Practices and encourages others in online safety <ol style="list-style-type: none"> a. understands elements of personal data b. understands how to keep personal data private c. understands how personal data might be shared online 3. Practices a virtuous 'digital footprint' 4. Demonstrates and respects the intellectual property of others with both print and digital media when using and sharing the work of others <ol style="list-style-type: none"> a. transfers knowledge of the commandments with all media in all content areas 	<p>e. appropriate use</p> <ol style="list-style-type: none"> 2. Practices and encourages others in online safety <ol style="list-style-type: none"> a. understands elements of personal data b. understands how to keep personal data private c. understands how personal data might be shared online 3. Practices a virtuous 'digital footprint' 4. Demonstrates and respects the intellectual property of others with both print and digital media when using and sharing the work of others <ol style="list-style-type: none"> a. transfers knowledge of the commandments with all media in all content areas 	<p>e. appropriate use</p> <ol style="list-style-type: none"> 2. Practices and encourages others in online safety <ol style="list-style-type: none"> a. understands elements of personal data b. understands how to keep personal data private c. understands how personal data might be shared online 3. Practices a virtuous 'digital footprint' 4. Demonstrates and respects the intellectual property of others with both print and digital media when using and sharing the work of others <ol style="list-style-type: none"> a. transfers knowledge of the commandments with all media in all content areas b. begins to understand creative commons resources and copyrighted materials
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Sixth	Seventh	Eighth
<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices 2. Students demonstrate and advocate for online safety <ol style="list-style-type: none"> a. understand elements of personal data 	<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices 2. Students demonstrate and advocate for online safety <ol style="list-style-type: none"> a. understand elements of personal data 	<ol style="list-style-type: none"> 1. Students practice responsible use and handling of devices 2. Students demonstrate and advocate for online safety <ol style="list-style-type: none"> a. understand elements of personal data

<ul style="list-style-type: none"> b. understand how to keep personal data private and secure c. understand how personal data might be shared online <ol style="list-style-type: none"> 3. Students demonstrate a virtuous 'digital footprint' by managing 4. personal digital identity and reputation <ul style="list-style-type: none"> a. understand how digital actions are never fully erasable 5. Students demonstrates and respect the intellectual property of others with both print and digital media when using and sharing the work of others <ul style="list-style-type: none"> a. transfer knowledge of the commandments with all media in all content areas b. understand creative commons resources and copyrighted materials c. use appropriate citation and attribution elements 	<ul style="list-style-type: none"> b. understand how to keep personal data private and secure c. understand how personal data might be shared online <ol style="list-style-type: none"> 3. Students demonstrate a virtuous 'digital footprint' by managing 4. personal digital identity and reputation <ul style="list-style-type: none"> a. understand how digital actions are never fully erasable 4. Students demonstrates and respect the intellectual property of others with both print and digital media when using and sharing the work of others <ul style="list-style-type: none"> a. transfer knowledge of the commandments with all media in all content areas b. understand creative commons resources and copyrighted materials c. use appropriate citation and attribution elements 	<ul style="list-style-type: none"> b. understand how to keep personal data private and secure c. understand how personal data might be shared online <ol style="list-style-type: none"> 3. Students demonstrate a virtuous 'digital footprint' by managing 4. personal digital identity and reputation <ul style="list-style-type: none"> a. understand how digital actions are never fully erasable 4. Students demonstrates and respect the intellectual property of others with both print and digital media when using and sharing the work of others <ul style="list-style-type: none"> a. transfer knowledge of the commandments with all media in all content areas b. understand creative commons resources and copyrighted materials c. use appropriate citation and attribution elements
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Knowledge Constructor

Students **critically select, evaluate and organize** a variety of resources using digital tools to construct knowledge. Students **create and produce** original artifacts to make meaningful learning experiences for themselves and others.

Pre Kindergarten/Kindergarten	First	Second
<ol style="list-style-type: none"> 1. With guidance from an educator, students use digital tools and resources, contained within a classroom platform or otherwise provided by the teacher, to find information on topics of interest. <ol style="list-style-type: none"> a. Use pre-selected books, apps, websites to find information 2. With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content. <ol style="list-style-type: none"> a. Selects appropriate app, website, or activity for the assigned task (studying butterflies, need to stay focused on that content) b. Reflects on the activity for knowledge gained (Did this activity help you with your learning?) 3. With guidance from an educator, 	<ol style="list-style-type: none"> 1. With guidance from an educator, students use digital tools and resources, contained within a classroom platform otherwise provided by the teacher, to find information on topics of interest. <ol style="list-style-type: none"> a. Use pre-selected books, apps, websites to find information 2. With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content. <ol style="list-style-type: none"> a. Selects appropriate app, website, or activity for the assigned task (studying butterflies, need to stay focused on that content) b. Reflects on the activity for knowledge gained (Did this activity help you with your learning?) 3. With guidance from an educator, 	<ol style="list-style-type: none"> 1. With guidance from an educator, students use digital tools and resources, contained within a classroom platform or otherwise provided by the teacher, to find information on topics of interest. <ol style="list-style-type: none"> a. Use pre-selected books, apps, websites to find information 2. With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content. <ol style="list-style-type: none"> a. Selects appropriate app, website, or activity for the assigned task (studying butterflies, need to stay focused on that content) b. Reflects on the activity for knowledge gained (Did this activity help you with your learning?) 3. With guidance from an educator,

<p>students explore a variety of teacher-selected tools to organize information and make connections to their learning.</p> <p>a. (i.e., Teacher created Hyperdoc, Smart Notebook, interactive whiteboard, Webquest, Amazing Race, book boxes, Google custom search engine)</p> <p>4. With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.</p> <p>a. Create a presentation about a solution to a real-world problem (i.e., photo story, video file, audio file, poster)</p>	<p>students explore a variety of teacher-selected tools to organize information and make connections to their learning.</p> <p>a. (i.e., Teacher created Hyperdoc, Smart Notebook, interactive whiteboard, Webquest, Amazing Race, book boxes, Google custom search engine)</p> <p>4. With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.</p> <p>a. Create a presentation about a solution to a real-world problem (i.e., photo story, video file, audio file, poster)</p>	<p>students explore a variety of teacher-selected tools to organize information and make connections to their learning.</p> <p>a. (i.e., Teacher created Hyperdoc, Smart Notebook, interactive whiteboard, Webquest, Amazing Race, book boxes, Google custom search engine)</p> <p>4. With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.</p> <p>a. Create a presentation about a solution to a real-world problem (i.e., photo story, video file, audio file, poster)</p>
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Third	Fourth	Fifth
<p>1. Students collaborate with a teacher to employ appropriate research techniques to locate digital resources that will help them in their learning process.</p> <p>a. Use a process model such as Big 6 in research strategies</p>	<p>1. Students collaborate with a teacher to employ appropriate research techniques to locate digital resources that will help them in their learning process.</p> <p>a. Use a process model such as Big 6 in research strategies</p>	<p>1. Students collaborate with a teacher to employ appropriate research techniques to locate digital resources that will help them in their learning process.</p> <p>a. Use a process model such as Big 6 in research strategies</p>

<p>2. Students learn how to evaluate sources for accuracy, perspective, credibility and relevance.</p> <ol style="list-style-type: none"> Locate the URL of a website and make a distinction between the suffixes .org, .com, .edu, .net, .gov and international domains Understand how search engines work Use age-appropriate search engines to find information Access online catalogs and databases for research Identify and use hyperlinks within web pages or documents <p>3. Using a variety of strategies, students organize information and make meaningful connections between resources.</p> <ol style="list-style-type: none"> Use digital tools or platforms to organize, display, annotate and/or share a curated collection Use tab browsing to navigate multiple pages Create bookmarks and add frequently used sites to the 	<p>2. Students learn how to evaluate sources for accuracy, perspective, credibility and relevance.</p> <ol style="list-style-type: none"> Locate the URL of a website and make a distinction between the suffixes .org, .com, .edu, .net, .gov and international domains Understand how search engines work Use age-appropriate search engines to find information Access online catalogs and databases for research Identify and use hyperlinks within web pages or documents Compares and contrasts websites, blog posts, forums, Wikipedia, social media posts, etc. for credibility and relevance <p>3. Using a variety of strategies, students organize information and make meaningful connections between resources.</p> <ol style="list-style-type: none"> Use digital tools or platforms to organize, display, annotate and/or 	<p>2. Students learn how to evaluate sources for accuracy, perspective, credibility and relevance.</p> <ol style="list-style-type: none"> Locate the URL of a website and make a distinction between the suffixes .org, .com, .edu, .net, .gov and international domains Explain how search engines work Use age-appropriate search engines to find information Access online catalogs and databases for research Identify and use hyperlinks within web pages or documents Compares and contrasts websites, blog posts, forums, Wikipedia, social media posts, etc. for credibility and relevance <p>3. Using a variety of strategies, students organize information and make meaningful connections between resources.</p> <ol style="list-style-type: none"> Use digital tools or platforms to organize, display, annotate and/or
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<p>bookmark bar</p> <p>d. Use a browser's History feature to locate previously visited sites</p> <p>4. Students explore real-world problems and issues and collaborate with others to find answers or solutions.</p> <p>a. Research community leaders on a real world issues</p> <p>b. Collaborate with peers to create and present a solution to a real-world problem for an authentic audience (i.e., photo story, video file, audio file, poster)</p>	<p>share a curated collection</p> <p>b. Use digital tools or platforms to organize, display, annotate and/or share a curated collection</p> <p>c. Use tab browsing to navigate multiple pages</p> <p>d. Create bookmarks and add frequently used sites to the bookmark bar</p> <p>e. Use a browser's History feature to locate previously visited sites</p> <p>4. Students explore real-world problems and issues and collaborate with others to find answers or solutions.</p> <p>a. Research community leaders on a real world issues</p> <p>b. Collaborate with peers to create and present a solution to a real-world problem for an authentic audience (i.e., photo story, video file, audio file, poster)</p>	<p>share a curated collection</p> <p>b. Use digital tools or platforms to organize, display, annotate and/or share a curated collection</p> <p>c. Use tab browsing to navigate multiple pages</p> <p>d. Create bookmarks and add frequently used sites to the bookmark bar</p> <p>e. Use a browser's History feature to locate previously visited sites</p> <p>4. Students explore real-world problems and issues and collaborate with others to find answers or solutions.</p> <p>a. Research, contact, interview, and collaborate with community leaders on a real world issue</p> <p>b. Collaborate with peers to create and present a solution to a real-world problem for an authentic audience (i.e., photo story, video file, audio file, poster)</p>
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Sixth	Seventh	Eighth
<ol style="list-style-type: none"> 1. Students demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning. <ol style="list-style-type: none"> a. Locate required citation information on web-pages and other digital resources and cite in the appropriate style b. Identify a variety of search engines and their purpose 2. Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility and relevance. <ol style="list-style-type: none"> a. Compare and contrast the URL of a websites and make a distinction between the suffixes .org, .com, .edu, .net, .gov and international domains b. Understand the rules and guidelines in the school's Responsible Use Policy 3. Students locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes. 	<ol style="list-style-type: none"> 1. Students demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning. <ol style="list-style-type: none"> a. Locate required citation information on web-pages and other digital resources and cite in the appropriate style b. Identify a variety of search engines and their purpose 2. Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility and relevance. <ol style="list-style-type: none"> a. Compare and contrast the URL of a websites and make a distinction between the suffixes .org, .com, .edu, .net, .gov and international domains b. Understand the rules and guidelines in the school's Responsible Use Policy 3. Students locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes. 	<ol style="list-style-type: none"> 1. Students demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning. <ol style="list-style-type: none"> a. Locate required citation information on web-pages and other digital resources and cite in the appropriate style b. Identify a variety of search engines and their purpose 2. Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility and relevance. <ol style="list-style-type: none"> a. Compare and contrast the URL of a websites and make a distinction between the suffixes .org, .com, .edu, .net, .gov and international domains b. Understand the rules and guidelines in the school's Responsible Use Policy 3. Students locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes.

<ul style="list-style-type: none"> a. Conduct independent research, format and present the information b. Transfer the information learned from online sources into your own words c. Use digital tools or platforms to organize, display, annotate and/or share a curated collection d. Use digital tools or platforms to organize, display, annotate and/or share a curated collection e. Use tab browsing to navigate multiple pages f. Create bookmarks and add frequently used sites to the bookmark bar g. Use a browser's History feature to locate previously visited sites h. Follow the guidelines of Digital Citizenship <p>4. Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.</p> <ul style="list-style-type: none"> a. Research, contact, interview, and collaborate with community leaders on a real world issue b. Collaborate with peers to 	<ul style="list-style-type: none"> a. Conduct independent research, format and present the information b. Transfer the information learned from online sources into your own words c. Use digital tools or platforms to organize, display, annotate and/or share a curated collection d. Use digital tools or platforms to organize, display, annotate and/or share a curated collection e. Use tab browsing to navigate multiple pages f. Create bookmarks and add frequently used sites to the bookmark bar g. Use a browser's History feature to locate previously visited sites h. Follow the guidelines of Digital Citizenship <p>4. Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.</p> <ul style="list-style-type: none"> a. Research, contact, interview, and collaborate with community leaders on a real world issue b. Collaborate with peers to 	<ul style="list-style-type: none"> a. Conduct independent research, format and present the information b. Transfer the information learned from online sources into your own words c. Use digital tools or platforms to organize, display, annotate and/or share a curated collection d. Use digital tools or platforms to organize, display, annotate and/or share a curated collection e. Use tab browsing to navigate multiple pages f. Create bookmarks and add frequently used sites to the bookmark bar g. Use a browser's History feature to locate previously visited sites h. Follow the guidelines of Digital Citizenship <p>4. Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.</p> <ul style="list-style-type: none"> a. Research, contact, interview, and collaborate with community leaders on a real world issue b. Collaborate with peers to
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<p>create and present a solution to a real-world problem for an authentic audience (i.e., photo story, video file, audio file, poster)</p> <p>c. Create an artifact to share the results of research and collaboration with community leaders (i.e., Public Service Announcements, sharing end result to stakeholders)</p>	<p>create and present a solution to a real-world problem for an authentic audience (i.e., photo story, video file, audio file, poster)</p> <p>c. Create an artifact to share the results of research and collaboration with community leaders (i.e., Public Service Announcements, sharing end result to stakeholders)</p>	<p>create and present a solution to a real-world problem for an authentic audience (i.e., photo story, video file, audio file, poster)</p> <p>c. Create an artifact to share the results of research and collaboration with community leaders (i.e., Public Service Announcements, sharing end result to stakeholders)</p>
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Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions to serve others.

Pre Kindergarten/Kindergarten	First	Second
<ol style="list-style-type: none"> 1. With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems and share their learning. <ol style="list-style-type: none"> a. Use “Discovery Time” to design and test ideas 2. Students are aware of the step-by-step process of designing. <ol style="list-style-type: none"> a. Begins to understand a step by step design process such as the LAUNCH Cycle: Look, Listen and Learn, Ask Questions, Understand the process or problem, Navigate ideas, Create a prototype, Highlight and Fix - Share with others 3. Students use a design process to develop ideas or creations, and they test their design and redesign if necessary. <ol style="list-style-type: none"> a. Use age-appropriate digital and non-digital tools to 	<ol style="list-style-type: none"> 1. With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems and share their learning. <ol style="list-style-type: none"> a. Use “Discovery Time” to design and test ideas 2. Students are aware of the step-by-step process of designing. <ol style="list-style-type: none"> a. Begins to understand a step by step process such as the LAUNCH Cycle: Look, Listen and Learn, Ask Questions, Understand the process or problem, Navigate ideas, Create a prototype, Highlight and Fix - Share with others 3. Students use a design process to develop ideas or creations, and they test their design and redesign if necessary. <ol style="list-style-type: none"> a. Use age-appropriate digital and non-digital tools to 	<ol style="list-style-type: none"> 1. With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems and share their learning. <ol style="list-style-type: none"> a. Use “Discovery Time” to design and test ideas 2. Students are aware of the step-by-step process of designing. <ol style="list-style-type: none"> a. Begins to understand a step by step process such as the LAUNCH Cycle: Look, Listen and Learn, Ask Questions, Understand the process or problem, Navigate ideas, Create a prototype, Highlight and Fix - Share with others 3. Students use a design process to develop ideas or creations, and they test their design and redesign if necessary. <ol style="list-style-type: none"> a. Use age-appropriate digital and non-digital tools to

<p>design something (i.e., makerspace, Legos, blocks, cardboard, etc.)</p> <p>4. Students demonstrate the virtue of perseverance when working to complete a challenging task.</p>	<p>design something (i.e., makerspace, Legos, blocks, cardboard, etc.)</p> <p>4. Students demonstrate the virtue of perseverance when working to complete a challenging task.</p>	<p>design something (i.e., makerspace, Legos, blocks, cardboard, etc.)</p> <p>b. Use 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas</p> <p>c. Use 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas</p> <p>4. Students demonstrate the virtue of perseverance when working to complete a challenging task.</p>
<p style="text-align: center;">Third</p>	<p style="text-align: center;">Fourth</p>	<p style="text-align: center;">Fifth</p>
<p>1. Students explore and practice how a design process works to generate ideas, consider solutions, plan to solve a problem or create innovative products that are shared with others.</p> <p>a. Understand a step by step design process such as the LAUNCH Cycle: Look, Listen and Learn, Ask Questions, Understand the process or problem, Navigate ideas, Create a prototype, Highlight and Fix - Share with others</p>	<p>1. Students explore and practice how a design process works to generate ideas, consider solutions, plan to solve a problem or create innovative products that are shared with others.</p> <p>a. Use a step by step design process such as the LAUNCH Cycle: Look, Listen and Learn, Ask Questions, Understand the process or problem, Navigate ideas, Create a prototype, Highlight and Fix - Share with others</p>	<p>1. Students explore and practice how a design process works to generate ideas, consider solutions, plan to solve a problem or create innovative products that are shared with others.</p> <p>a. Applies a step by step design process such as the LAUNCH Cycle: Look, Listen and Learn, Ask Questions, Understand the process or problem, Navigate ideas, Create a prototype, Highlight and Fix - Share with others</p>

<p>2. Students use digital and non-digital tools to plan and manage a design process.</p> <ol style="list-style-type: none"> Create a storyboard, flow chart, graphic organizer, timeline etc. to plan a design Use 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas Use 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas <p>3. Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.</p> <p>4. Students demonstrate the virtue of perseverance when working with open-ended problems.</p>	<p>2. Students use digital and non-digital tools to plan and manage a design process.</p> <ol style="list-style-type: none"> Create a storyboard, flow chart, graphic organizer, timeline etc. to plan a design Use 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas Use 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas <p>3. Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.</p> <p>4. Students demonstrate the virtue of perseverance when working with open-ended problems.</p>	<p>2. Students use digital and non-digital tools to plan and manage a design process.</p> <ol style="list-style-type: none"> Create a storyboard, flow chart, graphic organizer, timeline etc. to plan a design Apply 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas Apply 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas <p>3. Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.</p> <p>4. Students demonstrate virtue of perseverance when working with open-ended problems.</p>
Sixth	Seventh	Eighth
<p>1. Students engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.</p> <ol style="list-style-type: none"> Use the Cardinal Virtues as a moral guide in design 	<p>1. Students engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.</p> <ol style="list-style-type: none"> Use the Cardinal Virtues as a moral guide in design 	<p>1. Students engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.</p> <ol style="list-style-type: none"> Use the Cardinal Virtues as a moral guide in design

<p style="text-align: center;"><u>thinking</u></p> <ol style="list-style-type: none"> 2. Students select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks. 3. Students engage in a design process to develop, test and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement. <ol style="list-style-type: none"> a. Apply 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas b. Apply 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas 4. Students demonstrate the virtue of perseverance and handle greater ambiguity as they work to solve open-ended problems. 	<p style="text-align: center;"><u>thinking</u></p> <ol style="list-style-type: none"> 2. Students select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks. 3. Students engage in a design process to develop, test and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement. <ol style="list-style-type: none"> a. Apply 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas b. Apply 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas 4. Students demonstrate the virtue of perseverance and handle greater ambiguity as they work to solve open-ended problems. 	<p style="text-align: center;"><u>thinking</u></p> <ol style="list-style-type: none"> 2. Students select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks. 3. Students engage in a design process to develop, test and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement. <ol style="list-style-type: none"> a. Apply 2D design tools to create prototypes, models and simulations to demonstrate solutions and ideas b. Apply 3D design tools to create prototypes, models, and simulations to demonstrate solutions and ideas 4. Students demonstrate the virtue of perseverance and handle greater ambiguity as they work to solve open-ended problems.
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Computational Thinker

Students develop and employ strategies for identifying, understanding and solving authentic problems using data and processes to automate solutions.

Pre Kindergarten/Kindergarten	First	Second
<ol style="list-style-type: none"> 1. With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions. <ol style="list-style-type: none"> a. Understand the relationship between cause and effect b. Practice sequencing and order of events c. Understand step by step process 2. With guidance from an educator, students analyze age-appropriate data and look for similarities in order to identify patterns and categories. <ol style="list-style-type: none"> a. Identify patterns b. Categorize and group objects c. Use Venn diagrams and other graphic organizers to organize objects 3. With guidance from an educator, 	<ol style="list-style-type: none"> 1. With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions. <ol style="list-style-type: none"> a. Understand the relationship between cause and effect b. Practice sequencing and order of events c. Understand step by step process 2. With guidance from an educator, students analyze age-appropriate data and look for similarities in order to identify patterns and categories. <ol style="list-style-type: none"> a. Identify patterns b. Categorize and group objects c. Use Venn diagrams and other graphic organizers to organize objects 3. With guidance from an educator, 	<ol style="list-style-type: none"> 1. With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions. <ol style="list-style-type: none"> a. Understand the relationship between cause and effect b. Practice sequencing and order of events c. Understand step by step process 2. With guidance from an educator, students analyze age-appropriate data and look for similarities in order to identify patterns and categories. <ol style="list-style-type: none"> a. Recognize and explain patterns b. Categorize and group objects and tell reason c. Use Venn diagrams and other graphic organizers to organize objects

<p>students break a problem into parts and identify ways to solve the problem.</p> <p>4. Students understand how technology is used to make a task easier or repeatable and can identify real-world examples.</p> <ol style="list-style-type: none"> a. Use shortcuts to operate the the computer or other device b. Use basic drawing tools (redo, undo, etc.) c. Use functions such as copy, paste, color code, etc. to modify and enhance a product d. Use text tool to add text features to artwork 	<p>students break a problem into parts and identify ways to solve the problem.</p> <p>4. Students understand how technology is used to make a task easier or repeatable and can identify real-world examples.</p> <ol style="list-style-type: none"> a. Use shortcuts to operate the the computer or other device b. Use basic troubleshooting steps to solve problems c. Use functions such as copy, paste, color code, etc. to modify and enhance a product d. Use text tool to add text features to artwork e. Open and save a document 	<p>3. With guidance from an educator, students break a problem into parts and identify ways to solve the problem.</p> <p>4. Students understand how technology is used to make a task easier or repeatable and can identify real-world examples.</p> <ol style="list-style-type: none"> a. Use shortcuts to operate the the computer or other device b. Use basic troubleshooting steps to solve problems c. Use functions such as copy, paste, color code, etc. to modify and enhance a product d. Open and save a document
<p>Third</p>	<p>Fourth</p>	<p>Fifth</p>
<p>1. Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.</p> <ol style="list-style-type: none"> a. Use spreadsheets, databases, charts, graphs and tables to make predictions, solve problems, draw 	<p>1. Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.</p> <ol style="list-style-type: none"> a. Use spreadsheets, databases, charts, graphs and tables to make predictions, solve problems, draw 	<p>1. Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.</p> <ol style="list-style-type: none"> a. Use spreadsheets, databases, charts, graphs and tables to make predictions, solve problems, draw

<p style="text-align: center;">conclusions</p> <ol style="list-style-type: none"> 2. Students select effective technology to represent data. <ol style="list-style-type: none"> a. Choose an appropriate tool to represent information from a defined task b. Use technology tools to represent solutions to problems in a variety of ways including text, sounds, pictures, and numbers 3. Students break down problems into smaller parts, identify key information and propose solutions. <ol style="list-style-type: none"> a. Define an algorithm as a sequence of instructions and use the basic steps of algorithmic thinking to solve problems and design solutions (basic coding) 4. Students understand and explore basic concepts related to automation, patterns and algorithmic thinking. <ol style="list-style-type: none"> a. Use visual programming to build a game, tell a story, or solve a problem (i.e., Scratch Jr, Code.org, Bee-bots, robotics, Osmo, etc.) 	<p style="text-align: center;">conclusions</p> <ol style="list-style-type: none"> 2. Students select effective technology to represent data. <ol style="list-style-type: none"> a. Choose an appropriate tool to represent information from a defined task b. Use technology tools to represent solutions to problems in a variety of ways including text, sounds, pictures, and numbers 3. Students break down problems into smaller parts, identify key information and propose solutions. <ol style="list-style-type: none"> a. Define an algorithm as a sequence of instructions and use the basic steps of algorithmic thinking to solve problems and design solutions (basic coding, basic spreadsheet formulas) 4. Students understand and explore basic concepts related to automation, patterns and algorithmic thinking. <ol style="list-style-type: none"> a. Use visual programming to build a game, tell a story, or solve a problem (i.e., Scratch Jr, Code.org, Bee-bots, robotics, Osmo, 	<p style="text-align: center;">conclusions</p> <ol style="list-style-type: none"> 2. Students select effective technology to represent data. <ol style="list-style-type: none"> a. Choose an appropriate tool to represent information from a defined task b. Use technology tools to represent solutions to problems in a variety of ways including text, sounds, pictures, and numbers 3. Students break down problems into smaller parts, identify key information and propose solutions. <ol style="list-style-type: none"> a. Define an algorithm as a sequence of instructions and use the basic steps of algorithmic thinking to solve problems and design solutions (basic coding, basic spreadsheet formulas) 4. Students understand and explore basic concepts related to automation, patterns and algorithmic thinking. <ol style="list-style-type: none"> a. Use visual programming to build a game, tell a story, or solve a problem (i.e., Scratch Jr, Code.org, Bee-bots, robotics, Osmo,
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Sixth	Seventh	Eighth
<p>1. Students practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.</p> <ol style="list-style-type: none"> Use spreadsheet data to create tables, charts and graphs Use spreadsheets to calculate formulas and functions <p>2. Students find and organize data and use technology to analyze and represent it to solve problems and make decisions.</p> <ol style="list-style-type: none"> Use spreadsheet to organize and create databases Use database to sort, order and query information Use surveys to collect data <p>3. Students break problems into component parts, identify key pieces and use that information to problem solve.</p> <p>4. Students demonstrate an understanding of how automation works and use algorithmic thinking</p>	<p>etc.)</p> <p>1. Students practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.</p> <ol style="list-style-type: none"> Apply spreadsheet data to create and analyze tables, charts and graphs Apply formulas and functions to calculate numerical equations using spreadsheets <p>2. Students find and organize data and use technology to analyze and represent it to solve problems and make decisions.</p> <ol style="list-style-type: none"> Use spreadsheet to organize and create databases Use database to sort, order and query information Use surveys to collect data <p>3. Students break problems into component parts, identify key pieces and use that information to problem solve.</p> <p>4. Students demonstrate an understanding of how automation</p>	<p>etc.)</p> <p>1. Students practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.</p> <ol style="list-style-type: none"> Apply spreadsheet data to create and analyze tables, charts and graphs Apply formulas and functions to calculate numerical equations using spreadsheets <p>2. Students find and organize data and use technology to analyze and represent it to solve problems and make decisions.</p> <ol style="list-style-type: none"> Use spreadsheet to organize and create databases Use database to sort, order and query information Use surveys to collect data <p>3. Students break problems into component parts, identify key pieces and use that information to problem solve.</p> <p>4. Students demonstrate an understanding of how automation</p>

to design and automate solutions.	works and use algorithmic thinking to design and automate solutions.	works and use algorithmic thinking to design and automate solutions.
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Creative Communicator

Students communicate clearly with integrity and express themselves creatively through digital media using platforms, tools, styles, and formats appropriate to their learning goals.

Pre Kindergarten/Kindergarten	First	Second
<ol style="list-style-type: none"> 1. With guidance from an educator, students choose different tools for creating something new or for communicating with others. 2. Students use digital tools to create original works. 3. With guidance from an educator, students share ideas in multiple ways—visual, auditory, kinesthetic, etc. 4. With guidance from an educator, students select technology to share their ideas with different people. 	<ol style="list-style-type: none"> 1. With guidance from an educator, students choose different tools for creating something new or for communicating with others. 2. Students use digital tools to create original works. 3. With guidance from an educator, students share ideas in multiple ways—visual, auditory, kinesthetic, etc. 4. With guidance from an educator, students select technology to share their ideas with different people. 	<ol style="list-style-type: none"> 1. With guidance from an educator, students choose different tools for creating something new or for communicating with others. 2. Students use digital tools to create original works. 3. With guidance from an educator, students share ideas in multiple ways—visual, auditory, kinesthetic, etc. 4. With guidance from an educator, students select technology to share their ideas with different people.
Third	Fourth	Fifth

<ol style="list-style-type: none"> 1. Students recognize and utilize the features and functions of a variety of creation or communication tools. <ol style="list-style-type: none"> a. Explore a variety of creation and communication tools b. Use the features and functions of creation and communication tools. 2. Students create digital artifacts to communicate ideas visually and graphically. 3. Students learn about audience and consider their expected audience when creating digital artifacts and presentations. 	<ol style="list-style-type: none"> 1. Students recognize and utilize the features and functions of a variety of creation or communication tools. <ol style="list-style-type: none"> a. Identify the appropriate creation or communication tool for a task b. Use the features and functions of creation and communication tools. 2. Students create original works and learn strategies for remixing or repurposing to create new artifacts. 3. Students create digital artifacts to communicate ideas visually and graphically. 4. Students learn about audience and consider their expected audience when creating digital artifacts and presentations. 	<ol style="list-style-type: none"> 1. Students recognize and utilize the features and functions of a variety of creation or communication tools. 2. <ol style="list-style-type: none"> a. Identify the appropriate creation or communication tool for a task b. Use the features and functions of creation and communication tools. 3. Students create original works and learn strategies for remixing or repurposing to create new artifacts. 4. Students create digital artifacts to communicate ideas visually and graphically. 5. Students learn about audience and consider their expected audience when creating digital artifacts and presentations.
Sixth	Seventh	Eighth
<ol style="list-style-type: none"> 1. Students select appropriate platforms and tools to create, share and communicate their work effectively. <ol style="list-style-type: none"> a. Identify the appropriate creation or communication tool for a task 	<ol style="list-style-type: none"> 1. Students select appropriate platforms and tools to create, share and communicate their work effectively. <ol style="list-style-type: none"> a. Identify the appropriate creation or communication tool for a task 	<ol style="list-style-type: none"> 1. Students select appropriate platforms and tools to create, share and communicate their work effectively. <ol style="list-style-type: none"> a. Identify the appropriate creation or communication tool for a task

<p>b. Publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences</p> <p>2. Students create original works or responsibly repurpose other digital resources into new creative works.</p> <p>3. Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, kinesthetically, etc.</p>	<p>b. Publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences</p> <p>2. Students create original works or responsibly repurpose other digital resources into new creative works.</p> <p>3. Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, kinesthetically, etc.</p>	<p>b. Publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences</p> <p>2. Students create original works or responsibly repurpose other digital resources into new creative works.</p> <p>3. Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, kinesthetically, etc.</p>
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Global Collaborator

Students use digital tools to broaden their perspectives of God’s world and cultures as they enrich their learning through effective collaboration with others locally and globally.

Pre Kindergarten/Kindergarten	First	Second
<ol style="list-style-type: none"> 1. With guidance from an educator, students use technology to communicate with others and to look at problem from different perspectives. 2. With guidance from an educator, students take on different team roles and use age-appropriate technologies and other means to complete projects. 3. With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions. 	<ol style="list-style-type: none"> 1. With guidance from an educator, students use technology to communicate with others and to look at problem from different perspectives. 2. With guidance from an educator, students take on different team roles and use age-appropriate technologies and other means to complete projects. 3. With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions. 	<ol style="list-style-type: none"> 1. With guidance from an educator, students use technology to communicate with others and to look at problem from different perspectives. 2. With guidance from an educator, students take on different team roles and use age-appropriate technologies and other means to complete projects. 3. With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions.

Third	Fourth	Fifth
<ol style="list-style-type: none"> 1. Students use digital tools to work with friends and people from different backgrounds or cultures. 	<ol style="list-style-type: none"> 1. Students use digital tools to work with friends and people from different backgrounds or cultures. 	<ol style="list-style-type: none"> 1. Students use digital tools to work with friends and people from different backgrounds or cultures.

<ol style="list-style-type: none"> 2. Students use collaborative technologies to connect with others, including peers, experts and community members, to explore different points of view on various topics. 3. Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem. 4. Students work with others using collaborative technologies to explore local and global issues. 	<ol style="list-style-type: none"> 2. Students use collaborative technologies to connect with others, including peers, experts and community members, to explore different points of view on various topics. 3. Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem. 4. Students work with others using collaborative technologies to explore local and global issues. 	<ol style="list-style-type: none"> 2. Students use collaborative technologies to connect with others, including peers, experts and community members, to explore different points of view on various topics. 3. Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem. 4. Students work with others using collaborative technologies to explore local and global issues.
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Sixth	Seventh	Eighth
<ol style="list-style-type: none"> 1. Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures. 2. Students use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to gain broader perspective. 3. Students determine their role on a 	<ol style="list-style-type: none"> 1. Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures. 2. Students use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to gain broader perspective. 3. Students determine their role on a 	<ol style="list-style-type: none"> 1. Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures. 2. Students use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to gain broader perspective. 3. Students determine their role on a

<p>team to meet goals, based on their knowledge of technology and content, as well as personal preference.</p> <p>4. Students select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.</p>	<p>team to meet goals, based on their knowledge of technology and content, as well as personal preference.</p> <p>4. Students select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.</p>	<p>team to meet goals, based on their knowledge of technology and content, as well as personal preference.</p> <p>4. Students select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.</p>
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Jane Goodall - Roots and Shoots - problem solving for service learning <https://www.rootsandshoots.org/>

Examples:

Empowered Learner

PKK.1.a Making choices in the activities they are selecting. Choosing between teacher created challenges (robots) or creating their own.

PKK.1.b Connect with others through Skype, Google Hangouts, Video Conferencing,

1.1.b Classroom Twitter, Facebook, classroom blogs, classroom sites.

PKK.1.e Transfer skills - if I know how to scroll in one app, program...can do it in another.

[Technology Scope & Sequence](#) [Pacing Guide by Grade - Learning.com](#)