

K-5 Computer Science

Teacher Notes

Domain Standard (Competency): Creative Communicator



The Teacher Notes were developed to help teachers understand the depth and breadth of the standards. In some cases, information provided in this document goes beyond the scope of the standards and can be used for background and enrichment information. Please remember that computer science encompasses both fundamental skills, such as computational thinking and digital citizenship, that all students should be introduced to in order to be viable citizens in a digital society as well as discrete skills that are endemic to specific career clusters.

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Creative Communicator

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Creative Communicator

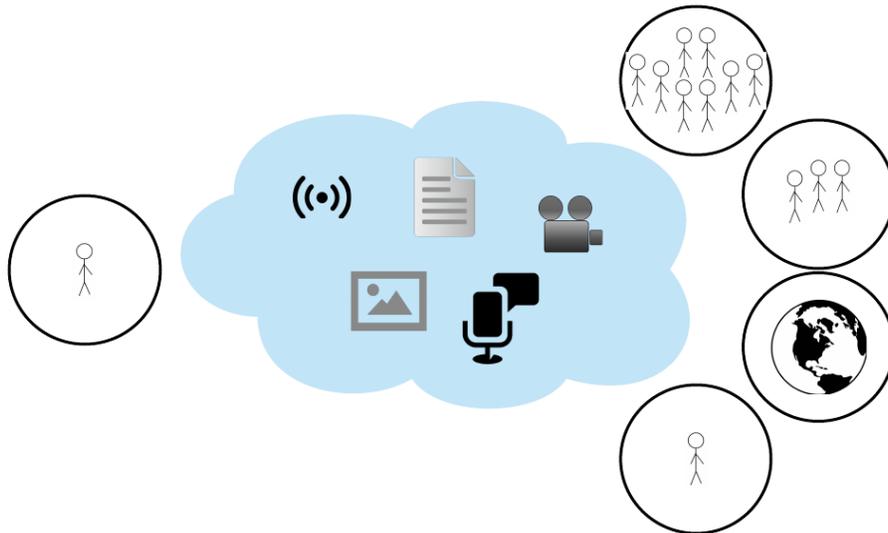
CSS.CC.K-2.6: Use digital tools to creatively share and express ideas.

CSS.CC.3-5.6 Select and use the most appropriate platform, tool, style, format and digital media to clearly and creatively express thoughts, messages, goals, or positions.

“When I first started YouTubeing, the idea was, ‘Oh, YouTube is going to be a stepping stone to get to other places,’ and I just totally don’t agree with that. I think YouTube is amazing. The digital space is amazing.” - Lilly Singh

Creative Communicator is a multifaceted domain that spans across every content area. This domain and the related standards are offered explicitly within the computer science standards as digital tools and understanding are essential in creativity and communication in this digital age.

Digital platforms open new ways of communicating one on one, within small groups, within large groups, and even with the global public including text, audio, images, video, and multimedia.



Examples of digital communication:

Text	Audio	Images	Video	Multimedia
Blogs Screen, keyboard, touchscreen, microphone (speech to text)	Podcasts Screen, microphone, speakers	Digital Photography Screen, digital camera	Vlogs Screen, mouse or touchpad, Microphone, videocamera or webcam	Infographics Screen, mouse or touchpad, keyboard
Articles Screen, keyboard, touchscreen, microphone (speech to text)	Digital Music Screen, microphone, speakers	Icons Screen, mouse or touchpad,	Animations Screen, mouse or touchpad,	Social Media/ Social Networking Screen, mouse or touchpad, keyboard, optional - microphone, videocamera or webcam
Email Screen, keyboard, touchscreen, microphone (speech to text)	Audio Interview Screen, microphone, speakers	Drawings Screen, mouse or touchpad, drawing tablet (optional)	Video Tutorial Screen, mouse or touchpad, Microphone, videocamera or webcam	Comics Screen, mouse or touchpad, keyboard, drawing tablet (optional)
Collaborative Writing Screen, keyboard, touchscreen, microphone (speech to text)	Sound Effects Screen, microphone, speakers	Digital Art Portfolio Screen, mouse or touchpad, keyboard	Documentaries Screen, mouse or touchpad, Microphone, videocamera or webcam	Poster/Flyer/ Newsletters Screen, mouse or touchpad, keyboard, drawing tablet (optional)
Instant Messaging, Text, Chat Screen, keyboard, touchscreen, microphone (speech to text)	Digital telecommunication s and teleconferencing (Voice over Internet) Screen, microphone, speakers	Visual Art Screen, mouse or touchpad, drawing tablet (optional)	Entertainment - TV, Movies Screen, mouse or touchpad, Microphone, videocamera or webcam	Website Screen, mouse or touchpad, keyboard, optional - microphone, videocamera or webcam
E-books Screen, keyboard, touchscreen, microphone (speech to text)	Voice recognition and text to voice Screen, microphone, speakers, keyboard or keypad	Data Representation s (e.g. charts, tables, and graphs) Screen, mouse or	News Broadcasts Screen, mouse or touchpad, Microphone, videocamera or webcam	Video Game Screen, mouse or touchpad, keyboard, optional - microphone, videocamera or webcam

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		touchpad,		
Listservs/ Forum Screen, keyboard, touchscreen, microphone (speech to text)	Environmental Sounds Screen, microphone, speakers	Storyboards Screen, mouse or touchpad,	Video Interview Screen, mouse or touchpad, Microphone, videocamera or webcam	Wiki Screen, mouse or touchpad, keyboard, optional - microphone, videocamera or webcam
Essays Screen, keyboard, touchscreen, microphone (speech to text)				Interactive Applications Screen, mouse or touchpad, keyboard, optional - microphone, videocamera or webcam
Journaling Screen, keyboard, touchscreen, microphone (speech to text)				Slideshows Screen, mouse or touchpad, keyboard, optional - microphone, videocamera or webcam

Hardware needed in red

The future will likely bring even more options.

It's important for students to know how to select an appropriate medium for the message they wish to convey. Age appropriate elements for them to consider are: Audience (size, reading level, distance away, etc.), purpose/nature of the message (urgency, private or public, etc.), and technology and storage space available. For example, blogs are suitable for large, public audiences, although they can be made private. They do however, require software to create and some storage. Text only blogs will require less space than blogs that contain images and/or sound.

Communication is an essential soft skill that is rapidly changing with advances in digital technology. It is important that we help students navigate the digital realm and be able to adapt and anticipate new technologies in the future. As social animals, deep and accurate communication is as necessary for global collaboration and progress as it is for building the relationships between individuals that promote health and happiness.

CSS.CC.K-2.6.1

Use digital tools to creatively share and express ideas.

1. **Create a variety of artifacts.**

This first element is about students using digital tools in addition to more traditional technologies (e.g. papers, markers, and pencils) to communicate their ideas. In the past students used slates with chalk in addition to oral recitation to share and express ideas. With advances in technology, this evolved into paper with pencils as well as other materials such as clay and cardboard to eventually include audio and video tape. Students created artifacts using these tools to practice skills and demonstrate learning. We now have access to a large array of digital tools that can be used for communication. As digital tools are becoming the standard of communication, students need to become familiar with these as early as possible by creating artifacts. Students can create artifacts using digital tools across the curriculum in the same way they use pencil/paper, clay, or a video recording.

In terms of communication, students in K-2 are learning to read and write, express themselves orally, and create basic images and shapes.

Reading - The Internet can give access to a larger quantity of reading material than a school can store with paper books. In addition, a computer with microphone and speakers can be used to record student reading for evaluation and diagnosis purposes.

Writing - Students can be taught keyboarding skills early in addition to learning to write digitally on touch screens when available. It is essential that students learn both keyboarding and handwriting. Keyboarding has the advantage of speed and ease of editing. Handwriting is associated with increased learning and retention.

Oral Expression - Students can practice oral expression via digital recording (video and/or audio) as well as live conversations using video/audio conferencing software. These tools can give students opportunities to communicate with a more diverse range of people.

Image and Shape Creation - Digital drawing programs are available via digital pens on touchscreen or drawing tablets as well via the use of a mouse with point and click. Students can use these to learn about shapes and colors as well putting these all together to create images including identifying and creating patterns.



Resource Links

Reading (optional - speakers for audio books)

<https://libwww.freelibrary.org/programs/kids/booklist.cfm>

<http://en.childrenslibrary.org/>

<https://www.oxfordowl.co.uk/for-home>

<https://www.storylineonline.net/>

https://openlibrary.org/subjects/children#sort=edition_count&ebooks=true

https://www.gutenberg.org/wiki/Category:Children%27s_Bookshelf

<http://www.read.gov/kids/>

<https://www.vooks.com/>

<https://www.readworks.org/>

Library or school subscription sites: <https://www.overdrive.com/> ,
<https://www.yourcloudlibrary.com/> , <https://www.hoopladigital.com/> ,
<https://www.tumblebooklibrary.com> ,

Writing (optional - touchscreen or drawing pad for digital handwriting)

<https://gsuite.google.com/>

<https://www.office.com/>

Typing: <https://www.typing.com/> , <https://www.bbc.co.uk/bitesize/topics/zf2f9j6/articles/z3c6tfr> ,
<http://bigbrownbear.co.uk/learntotype/> , <https://www.typinggames.zone/keyman> ,
http://mathandreadinghelp.org/kids_games/the_typing_of_the_ghosts.html ,
https://www.abcya.com/games/kids_typing_game , <https://www.crazymonkeygames.com/Type-Type-Revolution.html> ,

Oral Expression (Microphone and Speakers needed for sound, webcam needed for video)

Audio

Online: <https://www.audiotool.com/> , <https://www.ujam.com/> , <https://www.speakpipe.com/voice-recorder> , <https://online-voice-recorder.com/>

Windows: <https://sourceforge.net/projects/audacity/>

Mac: <https://www.apple.com/mac/garageband/>

Video

<https://www.loom.com> (free version is a Chrome extension; very easy to use) ,

<https://www.ispringsolutions.com/ispring-free-cam> , <https://tinytake.com/> ,

<https://www.techsmith.com/video-editor.html> (free 30 day trial) , <https://icecreamapps.com/Screen-Recorder/> , <https://screencast-o-matic.com/> , <https://www.freescreenrecording.com/>

Image and Shape Creation (optional - touchscreen or drawing pad for digital hand drawing)

<https://drawing-for-children.software.informer.com/2.2/> , <http://www.tuxpaint.org/> ,

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<https://picpick.app/en/> , <https://www.getpaint.net/index.html> ,

Online: <http://www.queeky.com/app> , <http://www.onemotion.com/flash/sketch-paint/>

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Richard Woods, *Georgia's School Superintendent*

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CSS.CC.K-2.6.2

Use digital tools to creatively share and express ideas.

2. Exchange information or ideas clearly and creatively using digital tools while considering audience and intended purpose.

The second element expands the emphasis to the consideration of audience and purpose in communication with digital tools. When communicating, students need to consider the following:

- Audience - who are we communicating to?
 - Peers?
 - Someone in authority?

- Purpose - what is the goal of the communication?
 - Inform?
 - Entertain?
 - Persuade?

- Role - who is doing the communicating?
 - On behalf of yourself?
 - On behalf of a group you belong to?
 - On behalf of others?

Considerations of audience, purpose, and role:

	Text	Audio	Images	Video	Multimedia
Audience	Literacy level	Vocabulary	Age appropriate	Age appropriate and vocabulary	Literacy, age appropriate, vocabulary
Purpose	Persuade, inform, or entertain				
Role	Self, self and group, or others				



Digital tools, such as concept mapping software, can be used to help students understand and plan their communications taking into account audience, purpose, and role. For this age group, using simple terminology in question for such as:

- what do you need to communicate?
- why are you communicating this?
- who are you communicating to?
- is the message from you?

Make explicit why particular digital formats are used based on audience, purpose, and role. For instance, a digital poster printed is a good choice to communicate a message with all students in their school. An email is a better choice if the message is for one particular student in the school.

Other considerations are privacy, and duration (does it need to be stored and for how long?).

Resource Links

<https://bubbl.us/>

<https://www.mindmup.com/>

<https://coggle.it/>



CSS.CC.K-2.6.3

Use digital tools to creatively share and express ideas.

3. Present information using a digital device.

The third element focuses on using digital devices as a part of communicating, specifically presenting information. Information can be presented as text, as images, as video, as audio or some combination of these. A digital device is a piece of equipment that contains a digital computer. A digital computer, sometimes called a microcontroller, uses electricity to represent two values along with logic to process and store data. Some digital devices contain a computer to augment their function, for example a smart refrigerator or car. Here we are mostly referring to digital devices that consist entirely of a computer. Examples include: a desktop computer, a laptop computer, a tablet, a smartphone, etc. Peripherals such as monitors, projectors, speakers, printers (ink on paper as well as 3D with various materials), etc. will also be required.

For K-2 students, tablets can be especially useful. Students can share creations with other students and their teacher by holding up the tablet like they would hold up a drawing or book report.

Resource Links

<https://www.scratchjr.org/>

<https://www.creativeblog.com/features/the-best-drawing-tablet-for-kids>



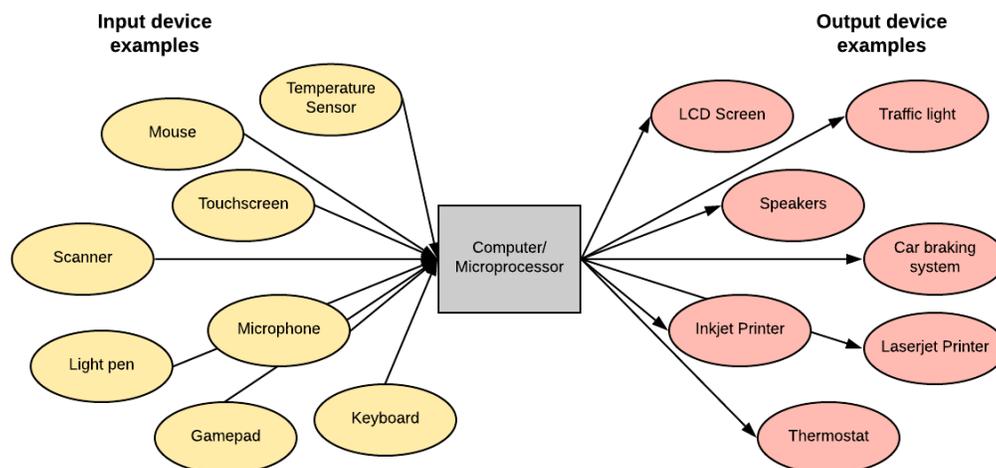
CSS.CC.K-2.6.4

Use digital tools to creatively share and express ideas.

4. Create artifacts for specific purposes that give and receive feedback.

The fourth element focuses on creating artifacts that can give and receive feedback. This refers to the interactive nature of digital artifacts. For example, games and interactive stories. This also refers to the fact that digital tools are input/output devices. Input can be from devices such as keyboards, mice, and touchscreen or from sensors. Output can be visual such as on screens and lights, auditory such as speakers, even tactile through devices that can vibrate or move.

The diagram below lists some examples of input and output devices. Use examples that are age appropriate for your students and that they are familiar with or you can demonstrate in class.



Since students are still developing literacy in K-2, interactive artifact creation should focus on images, words, and/or simple sentences. Scratch Jr. is a popular free resource for young children to create interactive programs using block based programming. Robotics is also a great option for helping students to create artifacts that give and receive feedback. There are a variety of robots available for students in K-2 grades. Examples of age appropriate robots include:

- Dash and Dot from the Wonder Workshop
- Cubelets from Modrobotics
- Ozobots
- Sphero
- Code & Go Robot Mouse Activity Set
- Roamer

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These robots are all created for educational purposes and have curriculum materials available both for teaching computer science concepts as well as for use in other subjects. f

Resource Links

<https://www.scratchjr.org/>

<https://www.makewonder.com/robots/>

<https://www.modrobotics.com/>

<https://ozobot.com/>

<https://www.sphero.com/>

<http://www.roamer-educational-robot.com>



CSS.CC.3-5.6.1

Select and use the most appropriate platform, tool, style, format and digital media to clearly and creatively express thoughts, messages, goals, or positions.

1. Create original works or responsibly repurpose or remix digital resources into new creations.

This first element is about advancing students' use of digital tools in creating artifacts. It includes for the creation of completely original work as well as using existing digital resources in new creations. Students not only need to learn how to use the digital tools, but also about the rules governing the use of intellectual property.

There is a wealth of software available for creating digital communications. Some is free with ads while others have a purchase price or require a subscription. It is important to choose carefully, considering educational needs, age appropriateness, and budget. Check teacher reviews and use any software yourself before using with students. This website reviews educational software: <https://www.commonsense.org>. Some software apps are available online, but some require downloading so consult district IT. Note that software comes in and out of existence, so software that is available one school year may no longer be available the next. The following are examples of software, not necessarily recommendations.

Software examples for creating artifacts, elementary appropriate:

Text	Audio	Images	Video	Multimedia
Blogs https://wordpress.com	Podcasts https://sourceforge.net/projects/audacity/ and https://freesound.org/ https://www.apple.com/mac/garageband/	Digital Photography https://www.photogrid.app/?hl=en	Vlogs https://screencast-o-matic.com/	Infographics https://www.canva.com/
Articles https://storybird.com/	Digital Music https://www.soundtrap.com/edu/	Icons https://www.getpaint.net/index.html	Animations https://www.animaker.com/ https://telligami.com/	Social Media/ Social Networking https://www.kidzworld.com/
Email https://www.kidsemail.org/	Environmental Sounds https://environment.ambient-mixer.com/	Drawings https://tayasui.com/sketches/ https://www.sumopaint.com/	Video Tutorial https://camstudio.org/	Comics https://www.commonsensemedia.org/app-reviews/strip-designer



Collaborative Writing https://storiumedu.com/	Sound Effects https://creatingsound.com/sound-effects/free-sound-effects/	Digital Art Portfolio https://edublogs.org/	Documentaries https://www.movavi.com/videoeditor/?AFFILIATE=78241&__c=1	Poster/Flyer/Newsletter https://www.smore.com/
Instant Messaging, Text, Chat https://play.google.com/store/apps/details?id=com.facebook.talk&hl=en_US	Digital telecommunications and teleconferencing (Voice over Internet) https://www.skype.com/en/	Visual Art https://krita.org/en/	Entertainment - TV, Movies https://toontastic.withgoogle.com/	Website https://www.wix.com
E-books https://crello.com/create/ebooks/ http://bookbuilder.cast.org/	Voice recognition and text to voice https://www.text2speech.org/	Data Representations (e.g. charts, tables, and graphs) Google Sheets	News Broadcasts https://spark.adobe.com/make/video-maker/	Video Game https://www.gamemaker3d.com
Listservs/ Forums http://soft.com/catalist.html		Storyboards https://www.storyboardthat.com/storyboard-creator	Video Interview https://zoom.us	Wiki https://kidblog.org/home/
Essays Google Docs				Interactive Applications https://scratch.mit.edu/ http://get-puppet.co/
Journaling https://mygratitudejournal.org/				Slideshows https://www.commonsense.org/education/app/shadow-puppet-edu

The two most important intellectual property types that students will need to understand is trademark and copyright. “Trademarks identify the source (maker or provider) of products and services. Trademarks are usually words, designs, or a combination of words and a design. Other types of trademarks include colors, sounds, scents, and the way a product looks! Copyrights protect original artistic and literary works, like plays or books” (United States Patent and Trademark office).

Intellectual property examples:

	Text	Audio	Images	Video	Multimedia
Trademarked	Product Name	Jingle	Logo icon	NA	Logo that combines text and images
Copyrighted	Novel, play	Song	Photograph, painting	Movie	Video game

Resource Links

<https://www.readingrockets.org/article/creating-podcasts-your-students>

<https://www.uspto.gov/kids/ipeverywhere1.html>

<http://www.readwritethink.org/classroom-resources/lesson-plans/students-creators-exploring-copyright-1085.html>

<https://lawforkids.org/intellectual-property>

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

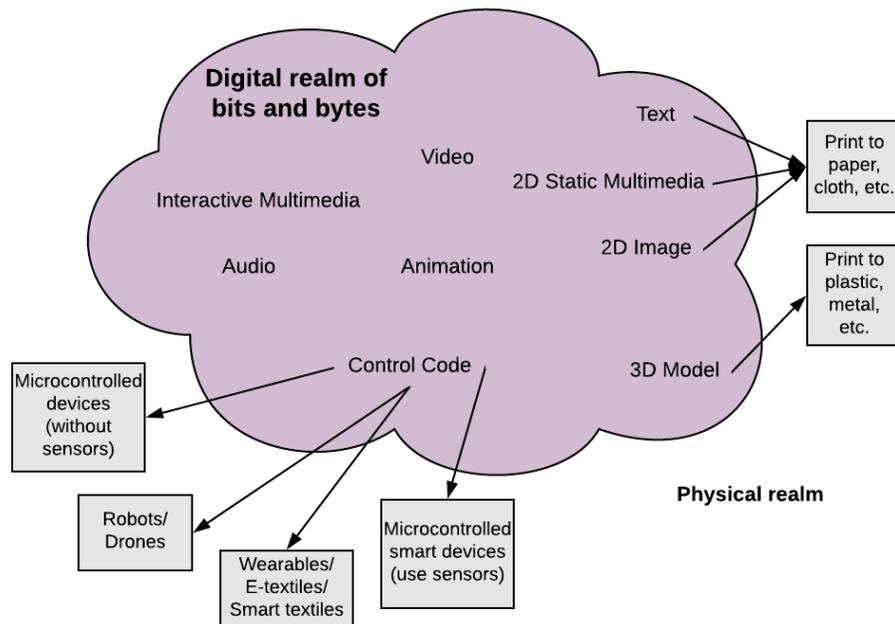


CSS.CC.3-5.6.2

Select and use the most appropriate platform, tool, style, format and digital media to clearly and creatively express thoughts, messages, goals, or positions

2. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects.

The second element expands digital creation in two ways, expressing more complex ideas and creating/using digital objects. Any of the digital creations listed in element one can be used to express complex ideas. Organization will be a key component of complex expression. Going beyond computer screens, however, opens up new possibilities for digital expression. Digital objects include objects created in the digital realm that only exist in the digital realm (although some can be printed), but also include physical objects with a digital component such as programmable circuits like e-textiles and wearables, as well as drones and robotics. These objects may be connected to the Internet (Internet of Things) or not. All of these objects can be created and used to express complex ideas.



The diagram above shows a variety of digital object types and how they relate to the physical world. While a webpage cannot easily have a representation in the physical world beyond projection onto a screen, the images and text from the webpage can be printed onto paper. Control code can be written in the digital realm that can be downloaded into a robot that can



follow a path or to a circuit embedded in a pair of shoes that causes LEDs to light in a particular pattern.

Most personal computers (desktop, laptop, tablet, and even a smartphone) can be used to create digital realm objects. See earlier in the document for other hardware needed. To manifest digital objects in the physical world requires a printer or a microcontroller connected to physical components. There are numerous vendors that sell products and designed for educational use that allow students to create a variety of digital objects. Arduino and Raspberry Pi are the two varieties of single board computers and each comes in different sizes. These in conjunction with other components can be used in the creation of robots, microcontrolled devices, as well as wearables and e-textiles.

Resource Links

<https://littlebits.com/>

<https://www.sparkfun.com/>

<http://e-textiles.net/>

<https://projects.raspberrypi.org/en/>

<https://chibitronics.com/education/>

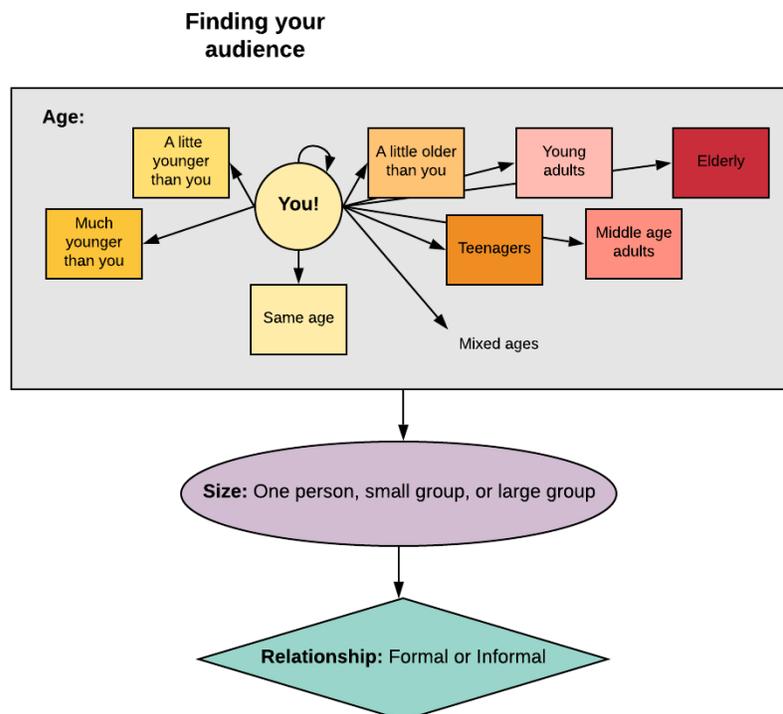


CSS.CC.3-5.6.3

Select and use the most appropriate platform, tool, style, format and digital media to clearly and creatively express thoughts, messages, goals, or positions.

- Publish or present content that customizes the message and medium for their intended audiences.**

The third element expands on customizing messages and the selected medium for the intended audience. For elementary age kids, important elements of audience include the age(s) of their audience, the size of their audience, and whether they have a formal or informal relationship with (or intent towards) their audience. It is important for students to understand the audience for their message before selecting an appropriate medium.



Medium suggestions by audience

Formal					
Individual			Group		
Kids	Teen/YA	Adult	Kids	Teen/YA	Adult
Journal	Letter	Report	Animation	Podcast	Infographic

Informal					
Individual			Group		
Kids	Teen/YA	Adult	Kids	Teen/YA	Adult
Chat	Instant Message	Email	Vlog	Social Network	Listserv

An advantage of digital communication is that distance is less of a factor. Using video conferencing software and the appropriate hardware, we are able to give presentations to an audience thousands of miles away. However, language and culture then become an important factor to consider for effective communication. Digital communication across distance can provide excellent opportunities to teach students about different languages and cultures by connecting them with other people across the world.

Another important element of audience is accessibility issues. Communication using digital media should be accessible to everyone in the audience and to take into account potential disabilities that can hinder understanding. Disabilities that need consideration can be in any of the following areas:

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- Visual
- Auditory
- Physical
- Cognitive
- Speech

Examples of Good Practice for Visual Disabilities

- Images and controls should have equivalent text alternatives
- Text, images, and page layouts should be able to be resized without losing information
- Video content should have text, or audio alternatives, or audio-description track
- Text and images should have sufficient contrast between foreground and background color
- Consistent, predictable navigation should be provided
- Avoid using color alone to identify links or controls

Examples of good practice for auditory disabilities

- Audio content, including videos, should have captions or transcripts
- Media players should provide volume controls
- Media players should provide options to adjust caption text size and colors
- Avoid interactions that rely on using voice only

Examples of good practice for physical disabilities

- Full keyboard support should be provided
 - All links, menu items, controls accessible via keyboard (Tab, Shift+Tab, & Return keys)
 - No keyboard traps
- Sufficient time should be provided to complete tasks
- Consistent, predictable, simple navigation and page functions should be provided
- Link targets, buttons should be of sufficient size

Examples of good practice for cognitive disorders

- Simple navigation and page layouts that are easy to understand and use should be provided
- Avoid, when possible, complex sentences that are difficult to read or unusual words
- Avoid moving, blinking, or flickering content (or provide method to disable these)
- Video, animations, or audio content should be able to be paused or stopped

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- Simple text should be supplemented by images, graphs, or illustrations

Examples of good practice for speech disorders

- Ensure options in addition to speech input

Resource Links

<https://www.w3.org/WAI/fundamentals/accessibility-principles/>

<https://www.usability.gov/accessibility>

<https://www.interaction-design.org/literature/article/accessibility-usability-for-all>

<https://zoom.us/>

<https://www.skype.com/en/>



Related Vocabulary

K-2:

Digital communication - electronic transmission of information that has been encoded digitally (as for storage and processing by computers)

Digital tool - software or hardware tools that facilitate the creation of digital artifacts

Audience - receiver(s) of a message

Digital device - a piece of equipment that contains a digital computer. A digital computer, sometimes called a microcontroller, uses electricity to represent two values along with logic to process and store data.

Digital artifact - A digital creation; it can be of any content types including text, audio, video, image, animation or a combination.

3-5:

Accessibility - The design of products, devices, services, or environments taking into consideration the ability for all users to access, including people who experience disabilities or those who are limited by older or slower technology.

Digital media - any media that is encoded in a digital format and can be created, viewed, distributed, modified and preserved on digital electronics devices; includes webpages, digital videos, digital images, digital audio, etc.



References

<https://code.org/curriculum/docs/k-5/glossary>

<https://www.iste.org/standards/for-students>

<https://techterms.com/>

<https://www.thefreedictionary.com>



Grade by grade progression

Kindergarten

Description of Creative Communicator for kindergarten:

In kindergarten, students are just beginning to develop literacy skills. Technology can be utilized to help pair written symbols to sounds and to help students develop fine motor skills for drawing and writing.

Some artifacts that kindergarteners can create include digital drawings using colors, shapes, letters, and simple words; video recordings; audio recordings.

Sample activity: Have students use a touch screen and light pen or a drawing tablet to draw capital and lowercase letters. Students can record the sounds letters can make and these can be added to a multimedia environment such that when a hand drawn letter is clicked, the sound(s) play. Students can practice their letters and select the best ones to be paired with their recording.



First grade

Description of Creative Communicator for first grade:

In first grade, students are still early in their literacy journey. Technology can be utilized to help students learn to read, especially in connecting sounds and letter combinations. Speech to text and text to speech can help with this process. Students can record themselves reading for the teacher to listen at a later time. Students can practice reading and create a video or audio recording to share with others. Technology can be a continuing aid in fine motor skill development.

Some artifacts that first graders can create include digital drawings using colors, shapes, letters, and simple words/sentences; video recordings; audio recordings; text files and emails with simple sentences; edited photos.

Sample activity: Students can write and edit simple sentences that they can then record audio and make digital illustrations for.



Second grade

Description of Creative Communicator for second grade:

In second grade, students are developing their reading skills, especially in the realm of reading comprehension. This requires students to develop flow to their reading. Technology can help students get more practice reading aloud using recording software as well as video conferencing. Students are still developing handwriting at this point and the modern world will likely require they start developing keyboarding skills as well.

Some artifacts that second graders can create include digital drawings using colors, shapes, words/sentences; video recordings; audio recordings; text files and emails with simple sentences; edited photos; simple web page; simple interactive media such that could be created using Scratch, Jr.

Sample activity: Set up video conferencing to allow students to read to outside volunteers. More volunteers may be able to help students with reading practice if it's not a requirement that they come to the school physically.



Third grade

Description of Creative Communicator for third grade:

In third grade, students are continuing to develop reading comprehension to prepare to shift from 'learning to read' into 'reading to learn'.

Some artifacts that third graders can create include digital drawings using colors, shapes, sentences; video recordings; audio recordings; text files and emails; edited photos; simple web page; simple interactive media such that could be created using Scratch.

Sample activity: Students can create interactive stories using Google Docs or Scratch with a focus on teaching others about something. This can help them start making the connection between utilizing media to learn new things.



Fourth grade

Description of Creative Communicator for fourth grade:

In fourth grade, students are reading to learn and required to master continuously more complex and technical vocabulary. They are expected to have readable handwriting that they can produce in a reasonable amount of time. They will also be more and more expected to have some keyboarding ability at this age and their test scores may suffer without this familiarity.

Some artifacts that fourth graders can create include digital drawings using colors, shapes, sentences; video recordings; audio recordings; text files and emails; edited photos; simple web page; simple interactive media such that could be created using Scratch; posters; flyers; newsletters; infographics; slideshows; 3D models; podcasts; blogs.

Sample activity:

Create illustrated, vocabulary slideshows to share with classmates.



Fifth grade

Description of Creative Communicator for fifth grade:

In fifth grade, students are preparing for middle school and will face increasingly complex topic coverage in their subject areas that they will need to learn through oral and written communication. They will also need to be able to use communication to express what they have learned. Students with reading difficulties will be identified for remedial instruction in middle school. Students are becoming more social and face to face communication will hinder or facilitate peer relationships. Technology, and especially social media, will impact students' social development and modes of communication.

Some artifacts that fifth graders can create include digital drawings using colors, shapes, sentences; video recordings; audio recordings; text files and emails; edited photos; simple web page; simple interactive media such that could be created using Scratch; posters; flyers; newsletters; infographics; slideshows; 3D models; podcasts; blogs.

Sample activity: Email or video pen-pals from another part of the country or the world.

