

Technology that Builds Brains: Coding, Apps, and More!

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Children will be surrounded by technology throughout their education journey and into their careers. Technology-enriched preschool experiences can optimize the potential for children's learning and development. However, the proliferation of technology requires the application of principles of developmentally appropriate practice.

PreK Guidelines—Four-Year-Olds can:

- open and navigate through digital learning applications and programs
- use and name a variety of digital tools that support and enhance learning
- use apps and websites to contribute to class-made digital products
- use technology to access appropriate information with adult assistance
- follow safe behavior

NAEYC and the Fred Rogers Center Joint Position Statement

- 30 min/day in a half-day program and 1 hr/day in a full-day program for children for ages 3>.
- Few educational benefits for <2 years
- All children in the class should have equal access to digital technology.
- Be reflective about our practice with digital media—with how our children are using tools, if and what they are learning, and ways we can improve and support learning via technology.

CHILD-READY WEBSITES

Science

- Science Kids: www.sciencekids.co.nz/
- NASA activities: www.nasa.gov/audience/forchildren/kidsclub/flash/index.html
- Science games: <http://pbskids.org/games/science.html>
- National Geographic Kids: <http://kids.nationalgeographic.com/kids>

Math & Reading

- Interactive games & activities: www.sheppardsoftware.com/math.htm#earlymath
- Sesame Street games: www.sesamestreet.org/games
- Math games: <http://pbskids.org/games/math.html>
- Matching games: <https://pbskids.org/games/matching>

Engineering

- LEGO® DUPLO® Parent Activity Guide: https://www.lego.com/en-us/themes/duplo/games/duplo-town?consent-modal=show&age-gate=grown_up

Open-Ended Apps that Spark Creativity

Note: Apps change quickly and vary in quality; the free versions may contain pop-up ads or in-app purchases. Download apps in advance and try them yourself—as you would any classroom materials—before you give them to children.

App	Type	Platform	Benefits
ABC—Magnetic Alphabet (Lite) for Kids	Scene creation Digital manipulation	iPad, Android	Letters, numbers, seasonal magnet packs, and voiceover for the letter/numeral names when tapped. Users can explore patterning, letter/numeral names, and create scenes that could be a springboard for storytelling.
Book Creator	Drawing & painting Scene recording	iPad, Android	Drawing, typing, photo-importing, and voice-recording tools; e-books can be saved/shared as video, ePub, or PDF. Includes a “read-to-me” function. Users can create texts that can be revisited and shared to devices outside the classroom.
Draw & Tell HD	Drawing & painting Scene creation Scene recording	iPad	Drawing/painting tools, “sticker” manipulation/recording, voice recording. Files are saved automatically and can be exported. Users can engage in storytelling and demonstrate visible thinking/concept explanation.
Geoboard	Digital manipulation	iPad, Web version	Different size/shape boards, multicolored rubber bands, shading, grid-numbers, drawing, and math-text features. Users can explore shapes, vertices, grids, and numbers.
Monster Mingle	Digital manipulation	iPad, Android	Items for creating a monster (e.g., bodies, eyes, noses, arms, legs, wings) who can be moved to different locations (sky, water, land) and engage in a variety of activities. Users can create monsters and engage in dramatic play
Quiver	Drawing & painting (coloring)	iPad, Android	Online coloring pages for download (some paid, some free). When app is pointed toward a coloring page, the design becomes 3-D with some interactive features. Users can explore science, community, and seasonal concepts, depending on the color sheets available online.
ScratchJr	Scene creation Digital manipulation	iPad, Android	Backgrounds, characters, sounds, and drawing tools for character creation, as well as coding blocks to animate the characters. Users can create animations, stories, or games in an infinite number of ways, while engaging in simple visual programming.
Shadow Puppet Edu	Scene creation	iPad	Backgrounds, images, and maps that can be combined for recording with voice-over; video can be saved and shared. Users can create multimedia videos to share stories, songs, and rhymes.
Toca Boca Jr	Digital manipulation	iPad, Android	Blocks, characters, and items that can be combined to make new features; these can then be combined to create a digital world that the player can move the characters through. Users can build multiple worlds, play inside them, and share them with others.
Toontastic 3D	Scene recording	iPad, Android	Premade characters (e.g., astronauts, pirates, princesses, animals), tools for drawing additional characters, backgrounds, voice recording, and music. Users can create animated stories, newscasts, or nonfiction videos (e.g., about family, friendship, or the community).

