

Technology Can Spark Creativity

What is Creativity?

Characteristics of Creativity:

- Fluency –
- Flexibility –
- Elaboration –
- Originality –

The Creative Process:

- Preparation
- Incubation
- Illumination
- Verification/Experimentation
 - Evaluation
 - Elaboration
 - Implementation

Divergent vs Convergent Thinking:

Doodle the Creative Process:

Playground vs Playpen:

Selecting Apps for open-ended exploration:

1. Minimal text-based instructions?
2. Multiple tools and features for exploration, experimentation, and creation?
3. User control of app (including sound) – variety of choices?
4. Easy response to user manipulation?
5. Wide variety of template materials?
6. Does it support more than one user?

Action Plan:

Additional Resources:

- Buckleitner, Warren. "Art, Creativity and Music Apps for Early Learning." NAEYC, www.naeyc.org/our-work/families/art-creativity-and-music-apps-early-learning.
- Buckleitner, Warren. "Selecting Apps to Support Children's Learning." NAEYC, www.naeyc.org/our-work/families/selecting-apps-support-children.
- Buckleitner, Warren. "Social Play and ESL Apps for Early Learning." NAEYC, www.naeyc.org/our-work/families/social-play-and-esl-apps-early-learning.
- Buckleitner, Warren. "Tips on Tablets and Apps for the Early Childhood Classroom." NAEYC, www.naeyc.org/our-work/families/tips-tablets-and-apps-early-childhood-classroom.
- Moore, Holly Carrell. "'Look What I Made!' Open-Ended Apps that Spark Creativity." *Young Children*, Nov. 2017.
- Spencer, John. "Convergent Thinking Versus Divergent Thinking." *YouTube*, YouTube, 18 Feb. 2019, www.youtube.com/watch?v=cmBf1fBRXms.



Tech Tips for Families

1. Use technology for communication.
FaceTime or Skype with Grandma. Read a bedtime story together from afar. Email family and friends so children can know and communicate with extended family.
2. Model using technology as a tool.
Take photos with your smartphone or iPad. Watch a short video of a volcano erupting, if your child shows an interest. Use the calculator to add. Use the magnifying app to examine nature. Listen to music on an iPod. Use the online dictionary to spell or find the meaning of words. Technology is an everyday tool.
3. Be involved.
Resist the temptation to routinely use technology as a babysitter, and instead use it as a way to connect with your child. If you are reading a book on an e-reader, read together. Write emails together. Play games together. Look at science video clips together. Engage together.
4. Make sure your child is getting hands-on play experiences daily.
Before you buy an iPad or other technology for your 3- to 5-year-old make sure he already enjoys building with blocks, creating artwork, reading books, engaging in dramatic play, and playing board games. And remember to provide plenty of playtime outside. Make real-world experiences the priority.
5. Create boundaries.
Like a previous generation's creation of boundaries around watching television, you need to decide what is desirable for your child in terms of screen time, whether television, movies, computer, tablet, or cell phone. Is it 30 minutes a day? Is it when you need focused time to pay bills? Is it not interrupting their creative engagement? Establish your family's technology boundaries.
6. Be a critic for your child's sake.
Pay attention to G ratings, but remember that the raters don't know your child—you do! If you decide on screen time, preview what they view and watch with your child to help her process what she sees. And consider the value of the apps you choose—are they active and do they promote creativity, innovation, and problem solving? Use the apps together so you can make a good decision. Make intentional choices.
7. Don't let technology get in the way.
Family meals are a great time for conversation, catching up on the day, and developing relationships. Car rides are a great time for talking, singing, and playing games like I Spy. Cooking together not only supports relationships but also engages your child in using math and literacy skills. Consider whether technology is getting in the way of precious family time together.

8. Model healthy behaviors yourself.

It's time to look in the mirror. Do you watch hours of television or movies each night? Is the television on in the background, even when no one is watching? Do you have your cell phone at the dinner table? Do you play games online in the middle of the night? Consider what your technology use models for your child. Your child learns from you.

9. It's okay to say no.

There are plenty of families who live their lives without smartphones, cable, televisions, or computers. Follow your instincts for your family, and remember, technology companies market to you as a consumer, so be smart. Be intentional about your decision to add technology to your child's day—or not.

10. Be smart; be safe.

Pay attention to your privacy settings. Share your rules about posting on social media with your friends and families. Make sure your early childhood program asks your permission before posting images of your child on Facebook or a website.

Bongiorno, Laurel. "Uncharted Territory: 10 Technology Tips for Preschool Parents." NAEYC, www.naeyc.org/our-work/families/technology-tips-for-preschool-parents.

"Children And Media - Tips For Parents"

- Treat media as you would any other environment in your child's life. The same parenting guidelines apply in both real and virtual environments. Set limits; kids need and expect them. Know your children's friends, both online and off. Know what platforms, software, and apps your children are using, where they are going on the web, and what they are doing online.
- Set limits and encourage playtime. Tech use, like all other activities, should have reasonable limits. Unstructured and offline play stimulates creativity. Make unplugged playtime a daily priority, especially for very young children. And—don't forget to join your children in unplugged play whenever you're able.
- Families who play together, learn together. Family participation is also great for media activities—it encourages social interactions, bonding, and learning. Play a video game with your kids. It's a good way to demonstrate good sportsmanship and gaming etiquette. And, you can introduce and share your own life experiences and perspectives—and guidance—as you play the game.
- Be a good role model. Teach and model kindness and good manners online. And, because children are great mimics, limit your own media use. In fact, you'll be more available for and connected with your children if you're interacting, hugging and playing with them rather than simply staring at a screen.
- Know the value of face-to-face communication. Very young children learn best through two-way communication. Engaging in back-and-forth "talk time" is critical for language development.

Conversations can be face-to-face or, if necessary, by video chat, with a traveling parent or far-away grandparent. Research has shown that it's that "back-and-forth conversation" that improves language skills—much more so than "passive" listening or one-way interaction with a screen.

- Create tech-free zones. Keep family mealtimes and other family and social gatherings tech-free. Recharge devices overnight—outside your child's bedroom to help children avoid the temptation to use them when they should be sleeping. These changes encourage more family time, healthier eating habits, and better sleep, all critical for children's wellness.
- Don't use technology as an emotional pacifier. Media can be very effective in keeping kids calm and quiet, but it should not be the only way they learn to calm down. Children need to be taught how to identify and handle strong emotions, come up with activities to manage boredom, or calm down through breathing, talking about ways to solve the problem, and finding other strategies for channeling emotions.
- Apps for kids – do your homework. More than 80,000 apps are labeled as educational, but little research has demonstrated their actual quality. Products pitched as "interactive" should require more than "pushing and swiping." Look to organizations like Common Sense Media (www.commonsensemedia.org) for reviews about age-appropriate apps, games and programs to guide you in making the best choices for your children.
- It's OK for your teen to be online. Online relationships are part of typical adolescent development. Social media can support teens as they explore and discover more about themselves and their place in the grown-up world. Just be sure your teen is behaving appropriately in both the real and online worlds. Many teens need to be reminded that a platform's privacy settings do not make things actually "private" and that images, thoughts, and behaviors teens share online will instantly become a part of their digital footprint indefinitely. Keep lines of communication open and let them know you're there if they have questions or concerns.
- Remember: Kids will be kids. Kids will make mistakes using media. Try to handle errors with empathy and turn a mistake into a teachable moment. But some indiscretions, such as sexting, bullying, or posting self-harm images, may be a red flag that hints at trouble ahead. Parents should take a closer look at your child's behaviors and, if needed, enlist supportive professional help, including from your pediatrician.

“Children And Media - Tips For Parents.” AAP.org,
www.aap.org/en-us/about-the-aap/aap-press-room/Pages/Children-And-Media-Tips-For-Parents.aspx

App	Type	Platform	Benefits
ABC— Magnetic Alphabet (Lite) for Kids	Scene creation Digital manipulation	iPad, Android iPhone	Includes letters, numbers, multiple 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 <i>Book Creator One Free Version</i>	Drawing & painting Scene recording	iPad, Android	Offers 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 fiction and nonfiction multimedia texts that can be revisited and shared to other devices outside the classroom.
Draw & Tell HD	Drawing & painting Scene creation Scene recording	iPad iPhone	Provides 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 iPhone	Includes 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 2.99	Digital manipulation	iPad, Android	Offers multiple 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 iPhone	Provides 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.

App	Type	Platform	Benefits
Sago Mini Doodlecast 3.99	Drawing & painting Scene recording	iPad	Offers drawing prompts and the ability to record the drawing session (image and sound) via automatically saved videos that can be shared. Users can create stories based on the prompt, talk and create simultaneously, and voice their thinking.
ScratchJr	Scene creation Digital manipulation	iPad, Android	Includes multiple 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 iPhone	Provides backgrounds, images, image searches, image importing, and maps that can be combined in a specified order for recording with voice-over; the resulting video can be saved and shared. Users can create multimedia videos to share stories, songs, and rhymes.
Sock Puppets	Scene recording	iPad iPhone	Offers a selection of puppets, backgrounds, changeable voices, and props that can be recorded, saved, and shared. Users can create narratives and explore social and emotional learning concepts.
Toca Blocks 3.99	Digital manipulation	iPad, Android iPhone	Includes 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.
Toca Mini 3.99	Digital manipulation	iPad, Android iPhone	Provides outline character shapes, animated facial features, stamps, and colors for creating creatures. Users can create characters in a simple format and share photos of their character.

App	Type	Platform	Benefits
Toontastic 3D	Scene recording	iPad, Android iPhone	Offers premade characters (e.g., astronauts, pirates, princesses, and animals), tools for drawing additional characters, backgrounds, voicerecording, and music for recording shareable animated video files. Users can create animated stories, newscasts, or nonfiction videos (e.g., about family, friendship, or the community).
Train Kit 3.99	Digital manipulation	iPad iPhone	Includes tracks, bridges, tunnels, trains, and scenery that can be combined in multiple ways. Users can explore trains by designing their own digital tracks and viewing their running train from a bird's-eye view and a conductor's view.



App Review Checklist

Evaluation Criteria	App Name:	App Name:	App Name:	App Name:	App Name:	App Name:
1. Minimal text-based instructions?						
2. User control of app – variety of choices?						
3. Multiple tools and features for exploration, experimentation, and creation?						
4. User control of sound features?						
5. Easy response to user manipulation?						
6. template materials? Wide variety of						
7. Does it support more than one user?						