

Kids as Coders

- **Talk to your child's school.**

Talk to your kid's teacher and school administrators about what types of activities they may or may not be doing around coding. Some schools have actual computer programming classes, while others encourage kids' curiosity about programming through media labs, lunch groups, school clubs, or after-school offerings. At a minimum, some schools are participating in more one-and-done efforts (they are a start!) such as the [Hour of Code](#).

- **Encourage the 4 C's for 21st-century learning.**

The Partnership of 21st Century Skills (P21) outlines 4 C's — learning and innovation skills that relate to 21st-century readiness: critical thinking, communication, collaboration, and creativity. So how can you complement what your child is doing at school or at home? Learning to code has many benefits similar to solving a math problem, reading music, or learning another language.

Aligned to the constructive theory of learning, it gives kids ample time for trial and error, experimentation, exploration, and failing forward. Seymour Papert (Schwarz, 1999), one of the best-known advocates for teaching computer science and programming in schools, sums this up well: "Anyone who has witnessed a toddler using a computer has probably experienced a sense of awe at that child's facility with what for adults can be an infinitely frustrating gadget. It's one thing for a child to play a computer game; it's another thing altogether for a child to build his or her own game. And this, according to Papert, is where the computer's true power as an educational medium lies — in the ability to facilitate and extend children's awesome natural ability and drive to construct, hypothesize, explore, experiment, evaluate, draw conclusions — in short to learn — all by themselves. It is this very drive, Papert contends, that is squelched by our current educational system."

The 4 C's for 21st-century learning is presented by the Partnership for 21st Century Skills (P21): www.p21.org/storage/documents/4csposter.pdf

- **Find resources online.**

There is a plethora of coding opportunities online. From YouTube videos to sites like Scratch to games like *Minecraft*, kids (and adults) can learn the fundamentals through many easy-to-follow online activities. Some present the basics in block format, while others help structure the thinking process. Many of the apps and sites encourage kids to apply these programming concepts to their interests, whether gaming, fashion, storytelling, or artist expression.

*For more examples of coding apps, see our [Graphite top picks](#).