Welcome to the NGCP National Webinar

Finding and Using High-Quality Digital STEM Resources
August 12, 2020

Please Respond to the Poll Below:
Vision

The National Girls Collaborative Project brings together organizations committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).
NGCP Goals

1. Maximize access to shared resources within organizations interested in engaging girls in STEM.
2. Strengthen the capacity of programs by sharing exemplary practice research and program models.
3. Use the leverage of a network to achieve gender equity in STEM.
NGCP Activities

Virtually:
- Distribution and Content Projects
- *The Connectory – Collaboration Tool*
- *FabFems – Role Model Tool*
- E-Newsletter and Social Media
- Webinars – *Exemplary Practices*

Local Collaboratives:
- Professional Development: *Conferences and Forums*
- Incentives to Collaborate: *Mini-Grants*
- Newsletters and Local Resources
National Network of Collaborative Teams
What You Should Consider When Choosing STEM Resources
We rate, educate, and advocate for kids, families, and schools.
Session Goals

1. How to choose the best digital tools for learning. What are the key traits to look for in a quality edtech tool?

2. How to evaluate a privacy policy. An Introduction to Common Sense Privacy Evaluations.

3. How to choose digital tools for high quality learning experiences. Top pick lists curated by editors at Common Sense Education.
EdTech Tools Ratings and Reviews

Find a Tool
EdTech Reviews
Top Picks Lists
About Our Reviews

Teaching with Tech
EdTech Videos
Teaching Strategies
Teacher-Created Lessons

Privacy Program
Privacy Risks of the Top 5 Distance Learning Apps
About the Privacy Program
Privacy Evaluations
Privacy Articles
Top Picks for Learning

STEAM Games, Apps and Websites

Best Robotics Apps and Websites for Classrooms

After School Enrichment Programs and Clubs

STEM Apps for Higher Order Thinking

10 Great Movies for the STEM Classroom

✅ common sense education
Top Picks Lists

Resources for After-School Enrichment Programs and Clubs

Great after-school programs offer students the time and space to learn and experiment on their own terms. Free from curricular pressures, and classroom periods, educators can offer students sustained, deep learning in nontraditional topics like game development, robotics, storytelling, and beyond. These enrichment programs can also provide students with the academic support, test prep, and homework help they need to build skills and confidence. Whether you’re running a chess club, a game development program, or a makerspace, or helping students develop their reading and math skills, we’ve curated some of our favorite digital tools, lesson plans, and curricula. These resources will fit well in after-school contexts, and in many cases they offer students exciting, unique, and interest-driven opportunities that rarely make their way into classrooms.
Resources for After-School Enrichment Programs and Clubs

TOP PICKS | 39 TOOLS
Resources for After-School Enrichment Programs and Clubs

STEM and Coding Resources

Root Coding
First-rate versatile robot for all ages
Bottom line: By encouraging artistic design and creative problem-solving, Root Coding fits right into your STEAM curriculum.
Grades: Pre-K–12 Price: Free, Paid

Scratch
Creative sandbox opens the door to coding in any subject area
Bottom line: Scratch draws students of all types into coding and lays a foundation for future learning.
Grades: 1–12 Price: Free

Gizmos & Gadgets
Top-notch tool empowers kids to invent, build, and control wirelessly
Bottom line: Easy-to-use, versatile electronic invention set that works wirelessly with your hand-held device.
Grades: 2–8 Price: Free, Paid

Cozmo
A little robot with big personality brings code to life
Bottom line: From Cozmo’s engaging personality to endless programming possibilities, this little robot will capture your heart and spark imagination.
Grades: 2–12 Price: Free, Paid
Project Squirrel

Solid citizen-science site with good extension projects

Learning rating ★★★★★
Community rating ★★★★★
Privacy rating Not yet rated

Editorial review by Common Sense Education
Based on 1 review

Grades 1–12
Subjects & Skills Science, Critical Thinking
# Project Squirrel

<table>
<thead>
<tr>
<th>How Can I Teach with This Tool?</th>
<th>What Is It?</th>
<th>Is It Good for Learning?</th>
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*Project Squirrel* is one of the missions of the citizen-science site *Project Noah*. Whereas *Project Noah* is more visually appealing and has a teacher dashboard to track students' squirrel "spotting," *Project Squirrel* provides opportunities that move beyond entering data on number and location. Kids can follow detailed instructions on setting up data-gathering stations to observe squirrel behavior in food gathering.

It would be an improvement if kids could see the raw data from all users and how it grows in real time. This would allow students to form their own conclusions from the data.

**Standout Activities**

"Record Squirrel Observations": Observe and record the number and location of gray and fox squirrels.

"Collect Foraging Patch Data": Build foraging patches and observe where squirrels eat the most food.

"Share Squirrel Photos": Take pictures of local squirrels and submit them to the site via email.
Check Privacy

Student Data Privacy Look Fors

✓ Does this website collect student information?
✓ Check for encryption or an https:// address, especially when logging into a website.
✓ Look for the websites Privacy Policy. It should be located on the page that you would log in.
✓ If the website is for kids, check to see if they are asking for kids ages. Kids under 13 will need permission from their parents.
✓ Check to see if there is a Privacy Evaluation on Common Sense Education.
Privacy Ratings

At home and in schools and districts, parents and educators make decisions about privacy based on their specific needs. The privacy evaluation process is designed to support families and educators as they make informed choices about the media and technology they use with kids at home or in the classroom. Our expert reviewers read the privacy policies and terms of use for hundreds of products in order to evaluate those tools across key privacy concerns. Then, each one is assigned one of the following ratings:

- **Pass** Meets our minimum requirements for privacy and security practices;
- **Warning** Does not meet our recommendations for privacy and security practices; and
- **Fail** Does not have a privacy policy and/or does not use encryption and should not be used.
 protections
Other Traits to Consider

✓ Does the product support a diverse range of learners?
✓ Does the product encourage kids' collaborative and collective learning?
✓ Can students get constructive feedback and advice?
✓ Is diversity (gender, race, and culture) presented without bias or stereotype?
✓ Does it offer assessment data while also balancing the need for kids' privacy and safety?
Over 75 Partners Strong

Content + Community + Equity
Communication & Collaboration for an Authentic Audience

PenPal Schools

https://www.commonsense.org/education/website/penpal-schools
Protecting the Planet
513 active PenPals
Ages 8+

Robotics
86 active PenPals
Ages 10+

Meteorology & Weather
222 active PenPals
Ages 12+

Plant & Animal Adaptation
67 active PenPals
Ages 10+
Communication & Collaboration for an Authentic Audience

KQED Education

https://www.commonsense.org/education/website/kqed-education
KQED LEARN

In Investigations students will:

1. Ask
2. Investigate
3. Create
4. Reflect
5. View
Resources

✓ Edtech ratings and reviews by Common Sense
✓ STEAM Games, Apps and Websites
✓ Best Robotics Apps and Websites for Classrooms
✓ STEM Apps for Higher Order Thinking
✓ 10 Great Movies for the STEM Classroom
✓ Common Sense privacy evaluations
✓ Common Sense Privacy Course
✓ After School Enrichment Programs and Clubs
✓ STEAM Games, Apps and Websites
✓ Best Robotics Apps and Websites for Classrooms
✓ Classroom Tips: Articles and Advice
✓ Distance Learning with Common Sense on YouTube channel (20 minute PD sessions)
✓ Wideopenschool.org
  ○ What is it? (short video)
✓ Sign up for our newsletter
✓ Commonsense.org
✓ Twitter @jehehalt
What Do We Do?

- Design “maker” experiences for undergraduate & graduate preservice teachers
- Partner with schools to support their adoption and integration of “making” in education
- Community outreach STEAM events

Lesley STEAM • steam.lesley.edu • 2020
Making in an Education Context

Here is what we notice:

● Increase in students’ ability to describe their thinking (metacognition)
● Increase in student engagement with a corresponding decrease in unwanted behavior
● Increase in student interpersonal & collaboration skills
Lesley STEAM Guidelines

Let’s Play: Learning as “Hard Fun”\(^1\)

Let’s Think Out Loud: Learning as Social

Let’s Ask the Room: Learning as a Network of Thinkers

\(^1\)Papert, 1980

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From Simple to Complex

Finding Ways to Inspire and Ignite Curiosity

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Setting the Stage for Inquiry

Hands-on Learning and Collaboration

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Connecting with the Community

Creating Authentic Opportunities for Engagement

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What is Scratch?
Scratch Learning Resources

Low Floors
Make it easy for anyone to get started

Wide Walls
Appeal to a wide range of interests and passions

High Ceiling
Provide scaffolding for an extensible experience
Scratch Educator Resources

Getting Started Guide

**GETTING STARTED**

You can use Scratch online at: scratch.mit.edu

You can use Scratch online at: scratch.mit.edu

Once you’ve navigated to scratch.mit.edu, click Create.

This will bring you to the Scratch Editor, where you can start creating projects.

Comprehensive overview of Scratch editor, tutorials, and educational resources.

Scratch for Educators Page

**Scratch for Educators**

Your students can use Scratch to code their own interactive stories, animations, and games. In the process, they learn to think creatively, reason systematically, and work collaboratively — essential skills for everyone in today’s society. Educators are integrating Scratch across many different subject areas and age groups.

Includes educator guides, a lot of downloadable resources such as Scratch Cards, and details on Teacher Accounts.

Scratch in Practice (SiP)

**Scratch in Practice (SiP)**

SiP is the pedagogical offering to educators: includes curriculum connections, educators interviews, and workshop ideas.
Studios for Remote Learning

- A studio is like an online gallery: it’s a collection of projects based on a certain theme.
- Studios include a discussion forum (comments) and are a great way to keep track of student projects (shows projects added chronologically).
- Want to learn how to share a Scratch project to a studio? Here’s a step-by-step guide! (Hint: if you make all of your learners studio “curators” it’s way easier for them to add projects!)
Scratch Camp 2020: Scratch the Musical

**Starter Projects**
Scratch the Musical teaser project. Remix yourself into the musical! Also links to “backstage studio.”

**Studio Curators**
Provides an opportunity for learners to practice Digital Citizenship.

**Remixing**
Peer-to-peer interaction, learners can comment on each other's code and help debug.

Link to Scratch Camp page!
Continue your Scratch Journey!

Several online communities that welcome Scratch users of all levels...

ScratchEd: Connect with other educators through the Teaching with Scratch FB Group, and ScratchEd Meetups hosted by the Creative Computing Lab at the Harvard Graduate School of Education.

Learning Creative Learning: a free course and community exploring creative learning, hosted by the LLK Group, MIT. Create hands-on projects, explore new technologies, and share ideas.

WeScratch: Also hosted by LLK, a weekly online workshops for participants to experiment and create projects with Scratch – and to learn about the ideas and motivations underlying Scratch.
Keep in touch!
Sign up for our educator email list:

Brain Break!
Preparing brighter futures

Revolutionizing digital learning for science, math, and engineering
Virtual labs and hands-on digital tools designed to foster critical thinking and problem solving for students and equipped with resources and supports for instructors.

Available to you for free!
Cultivating curiosity to bring out the inner scientist in everyone

The Sensing Science curriculum supports early science learning of concepts involving matter and its changes. Particle Patty is a playful video animation that demonstrates the role of particle motion in solids, liquids, and gases.
Enabling inquiry & experimentation with **scientifically accurate** virtual labs

*Intelligent Tutor*

*Out-of-School Time Guide*

*Real-Time Dashboard*

Genivventure engages students in exploring **heredity**, **genetics**, and the **protein-to-trait** relationship by breeding and studying virtual dragons.
With CODAP, you can explore, visualize, and learn from data in any content area. Our mission is to make data literacy accessible for all students.
Developing innovative approaches to understand and guide learning

Our Earth Science Resources help students understand Earth as a set of complex systems that are intricately interconnected, while explaining how Earth’s processes affect people and, in turn, how people affect Earth’s processes.
Reimagining engineering design with student-centered technologies

Through Paper Mechatronics, children can create true working devices – **machines, robots, toys, automata, kinetic artwork** – using paper as the foundational building material.
Join the revolution

STEM Resource Finder
learn.concord.org

All Resources
concord.org/resources
...but now what?

You have some great materials, but who are your learners and how can you best reach them?
We need to find and share more equitable ways to effectively measure students’ exposure to and knowledge of STEAM subjects.

These methods can be used to understand how culture affects students’ aspirations and involvement in STEAM.
“STEAM capital” offers an assets-based approach to teaching and learning that works with what students bring into the learning space.

Start with where they are at. They come with their own knowledge and skills.
I spent too much time in my head feeling like I didn’t belong, or wasn’t smart enough, that I couldn’t concentrate on my work.

Deana Crouser, a former chemical engineering major
For students from underrepresented groups, the knowledge/skills gap is wider than with other groups.

Culturally relevant teaching can provide access to tools and methods that connect students to where they come from in order to develop more effective ways to support their engagement in STEAM.
We know that every day children are coming to school carrying far more than the content of their backpacks.

Terrasi and Crain de Galarce, 2017
https://www.instructables.com/member/ngaskins/instructables
Science Story Quilts

https://www.instructables.com/id/Science-Story-Quilts
Questions and Discussion

common sense®

SCRATCH FOUNDATION

The Concord Consortium

Lesley UNIVERSITY
Upcoming NGCP Webinars

Participation in Structured and Unstructured Out-of-School Time (OST) Activities
Tuesday, August 18, 2020

Gender Equity in Online STEM Learning
Wednesday, September 2, 2020