**eLearning and Remote Resources - Arts, A/V, Computer Science, Communications; Manufacturing, Engineering Technology & STEM - 4.5.2020**

**Mike Fitzgerald, DDOE**

| **Grade Band or Level** | **Cluster** | **Title and/or Link** | **Description** | |
| --- | --- | --- | --- | --- |
| 6-12 | STEM | [25 Makerspace Projects For Kids](https://www.makerspaces.com/25-makerspace-projects-for-kids/) | | Collection of 25 STEM projects that use recycled or repurposed items such as cardboard, soda bottles, etc. |
| 9-12 | Computer Science | [Carnegie Melon CS Academy](https://academy.cs.cmu.edu/coronavirus2020) | | [Carnegie Melon CS Academy](https://academy.cs.cmu.edu/coronavirus2020) is offering free online   courses and resources |
| 6-12 | Computer Science | [CodeHS for Virtual Learning](https://help.codehs.com/en/articles/3798929-using-codehs-for-virtual-learning) | | Free Self-paced online computer science curriculum. |
| 9-12 | Computer Science | [CS Awesome](https://runestone.academy/runestone/books/published/csawesome/index.html) | | An interactive AP Computer Science A course (Java) with lots of coding exercises and practice questions. |
| K-12 | Computer Science | [Codelicious](https://www.codelicious.com/free-teacher-resources) | | Coding, digital citizenship, and more for grades K-12 |
| K-12 | Computer Science | [CS Unplugged](https://csunplugged.org/en/) | | Unplugged computer science activities that don’t require a device. |
| K-12 | STEM | [National Science Teaching Association (NSTA) free K-12 teaching resources](https://ngss.nsta.org/Classroom-Resources.aspx) | | National Science Teaching Association (NSTA) free K-12 teaching resources - Includes over 800 lesson plans, book chapters, videos, simulations vetted by NSTA curators. |
| K-12 | Computer Science | [Code.org](https://code.org/athome) | | Code.org curated computer science learning resources including “unplugged” activities, as well as smartphone-compatible activities for students who may not have immediate access to reliable internet or laptops. |
| 6-12 | Families, Educators | [STEM Ecosystems STEM at Home](https://stemecosystems.org/stemathome/) | | STEM activities for at Home from STEM Ecosystems |
| 6-12 | STEM | [Flux Online STEM Challenges](https://fluxspace.io/fluxosc/) | | Hosts daily STEAM challenges that families can complete and share to win prizes. |
| K-2 | STEM | [PictureSTEM](http://picturestem.org/) | | Instructional units for K-2 classrooms that use an engineering challenge and picture books as supports for learning science, mathematics, engineering, computational thinking and reading. |
| 6-8 | STEM | [30+ Awesome STEM Challenges for Kids](https://frugalfun4boys.com/awesome-stem-challenges/) | | 30+ Awesome STEM Challenges for Kids with inexpensive or recycled materials. |
| 9-12 | STEM | [**3D Design & Augmented Reality**](https://www.myextendedcampus.com/stemresources) | | Tinker cad tutorials |
| 6-9 | STEM | [Endeavor – STEM Career Exploration](https://everfi.com/courses/endeavor-stem-career-exploration/) | | Inspire students to tie individual interests to exploring STEM careers through online simulations they can relate to. |
| 6-12 | Computer Science | [Compuscholar](https://www.compuscholar.com/schools/) | | Free turn-key, online courses and curriculum with full teacher support in coding, web design, and game design. |
| 6-12 | STEM | [BrainPop Engineering](https://www.brainpop.com/technology/) | | BrainPOP Engineering & Technology s here to help you and your curious learners stay informed and on-track with free access during school closures. |
| 6-12 | STEM | [Crash Course](https://www.youtube.com/user/crashcourse) | | 46 episodes, Dr. Shini Somara will teach you how we built much of our world with engineering! This course is based on introductory college-level material across many different engineering |
| 6-12 | STEM | [Museum of Science and Industry Chicago](https://www.msichicago.org/science-at-home/hands-on-science/) | | Collection of STEM activities that can be replicated at home using common and recycled materials. |
| 9-12 | STEM | [SolidWorks](https://blogs.solidworks.com/teacher/) | | Downloadable software for installation on home computers, access to web based training |
| K-8 | Web based design software for young students | [SolidWorks Apps for Kids](https://www.swappsforkids.com/) | | Browser based design software for young students |
| 6-12 | STEM | [VEXcode VR](https://vexrobotics.us12.list-manage.com/track/click?u=e9a44ed57c310bb345af3d408&id=5a9992b746&e=d9c79aa96a) | | STEM learning can continue at home for students, teachers, and mentors with no access to their physical VEX robots. |
| 6-8 | STEM | [BlocksCAD](https://www.blockscad3d.com/parents) | | Integrated MATH, CAD, and Coding app for middle school students. |
| K-8 | Computer Science | [Code Monkey](https://www.codemonkey.com/covid-19/?utm_campaign=cm_fb_t_ta_covid&utm_adgroup=us_cs_t) | | An online computer science games for writing code. Free trial for teachers. Features include: classroom dashboard; 30 fun coding challenges; accounts for 30 students; over 5 hour-long courses; lesson plans. |
| K-12 | STEM | [*NASA eClips*](https://nasaeclips.arc.nasa.gov/) | | *NASA eClips to your list?* [*https://nasaeclips.arc.nasa.gov/*](https://nasaeclips.arc.nasa.gov/) |
| K-12 | All | [Discovery Education Network](https://den.discoveryeducation.com/participate/dailyde) | | Discovery Education grade-band appropriate learning activity for every day of the week |
| K-12 | All | [WGBH Distance Learning Center](https://search.yahoo.com/yhs/search;_ylt=AwrCmnoHBYJeJHYAEg6l87UF;_ylc=X1MDOTU4MTA0NjkEX3IDMgRmcgN5aHMtc2hubC0wMDEEZ3ByaWQDBG5fcnNsdAMwBG5fc3VnZwMwBG9yaWdpbgN1cy5zZWFyY2gueWFob28uY29tBHBvcwMwBHBxc3RyAwRwcXN0cmwDBHFzdHJsAzkwBHF1ZXJ5A2h0dHBzJTNBJTJGJTJGd3d3LmtoYW5hY2FkZW15Lm9yZyUyRmh1bWFuaXRpZXMlMkZoYXNzLXN0b3J5dGVsbGluZyUyRmltYWdpbmVlcmluZy1pbi1hLWJveAR0X3N0bXADMTU4NTU3OTI4MA--?p=https%3A%2F%2Fwww.khanacademy.org%2Fhumanities%2Fhass-storytelling%2Fimagineering-in-a-box&fr=yhs-shnl-001&fr2=sb-top-us.search&type=c110c8dfb738dfeec231f011370&hspart=shnl&hsimp=yhs-001&param1=IE&param2=1&param3=campaignID%3D102%26UserID%3D2078599843&param4=XPbueSzfBeG6K2MlxBpfELmmgzh8mOsLvk1mNxKnkuDjZrnCPluhQt3wIJvlBcR%2FTs5Jm44Cgtg7R+hyRCnFVOozp%2FbBA9RcRXMKqNHcVIgy8uRQIRCiUspplCoEeowDFBpgElk2Tl2iqSEklcJ+slrXkID4zAdu+htzCkjhH4oeWDSp1JObBGf3B+1zHwTwn4P9HSVFfUtT60JG+sHhLeXEQl3EqFa7d++6IDWlsTqYX7HnYW3IEmTmIxocPBW5x%2F3P5LzkJ20%2FIa9f9hz6cYMTfhwKmnJgrEs%2F0d3vGwdrDivWTASdq8faKbi6F%2FwR9sVvvzL+ng+HaRSyDzPkDz7iE62LWn6rXPEn%2F0+UYIkmqT6+GMxg4M2z5ZaE5VqwCwCmp24TrS0oB%2FN2Tpfo2RPopPEKEBcFQzdKA4aDt1D2wSLQPX0t%2FlSnrMBQd%2F28m0THlzPY8%2F5dHp1dC5MJYHOqQpHYJiWhzehtKNTISr4iZiv6PgdSwmavp6pWmOq3pR1bva044y9a1SenFo8+k9BkFHTUzBCrREoWTMR+Hvbfq9rkBlauOuvuQolQnpucwDTs%2FG6EgeUq1VTHkHklkB4V6qUU0wmes+BCAWafPStDQ1obrno2i%2FpExcPpYnNqEUmQjZpggBFAzLcsf7QI+ish4pfu9yTyWzGGwV7fU+gxPvgFx7TTzbXpvshpO6Hj5pNohXBSVe1pDWsOpmvcQw%3D%3D&iscqry=) | | free, trusted digital resources from PBS LearningMedia and our award-winning educational preschool programming. PBS LearningMedia resources span disciplines for grades PreK-12, are aligned to national and state standards, and include videos, comprehensive lessons, and other activities. |
| 6-8 | All | [The Ruler Game](https://www.rulergame.net/) | | Reading a ruler is a valuable skill that you will likely use on your job, in your hobbies, and in your personal everyday life. Without measuring devices like rulers (and people who can read them) we would still be living in caves! |
| K-12 | All | [PBS K-12 Resources](https://whyy.pbslearningmedia.org/collection/emergency-closings-collection/) | | Special collection of resources organized by grade and subject area. Find videos, lesson plans, and activities that support learning at home. |
| 9-12 | Arts, A/V, Communications | [Audacity](https://www.audacityteam.org/) | | Audacity is an easy-to-use, multi-track audio editor and recorder for Windows, Mac OS X, GNU/Linux and other operating systems |
| 6-12 | Arts, A/V, Communications, | [Adobe](https://www.creativebloq.com/news/adobe-free-student-access) | | Adobe gives free Creative Cloud access to students and teachers |
| K-12 | Arts, A/V, Communications, STEM | [Rube Goldberg Bar of Soap Video Challenge](https://www.rubegoldberg.com/) | | Rube Goldberg Bar of Soap Video Challenge sponsored by NRG. |
| 9-12 | Arts, A/V, Communications, STEM | [Sculptris](http://pixologic.com/sculptris/) | | Free download of digital sculpting and 3D design software |
| 9-12 | Arts, A/V, Communications, STEM | [Blender](https://www.blender.org/) | | Free and open source 3D creation suite that supports modeling, rigging, animation, simulation, rendering, compositing, motion tracking, video editing and game creation. |
| K-6 | Computer Science | [CyberPatriot Elementary School Cyber Education Initiative](https://www.uscyberpatriot.org/Pages/Special%20Initiatives/Elementary-School-Initiative.aspx) | | A set of three interactive learning modules aimed at increasing the awareness of online safety and cybersecurity principles with supplemental activities. |
| K-12 | Computer Science | [Code.org](https://code.org/athome) | | Recommendations for AP Exams, modifying curriculum, Code.org tools and links to resources. |
| 6-12 | Computer Science, STEM | [PHET](https://phet.colorado.edu/_m/) | | Resources for teaching with simulations and activities shared by teacher community. |
| K-8 | Computer Science, STEM | [Scratch](https://scratch.mit.edu/) | | Program interactive stories, games, and animations. |
| K-12 | Library | [Teach Engineering](https://www.teachengineering.org/) | | Free STEM resources gathered from around the web. Resources are filtered by category. Digital library comprised of standards-based curricula for K-12. |
| K-12 | Library | [Engineering, Go For It!](http://www.egfi-k12.org/index_noflash.php) | | Free STEM resources gathered from around the web. Resources are filtered by category. Digital library comprised of standards-based curricula for K-12. |
| K-12 | Library | [STEMfinity](https://www.stemfinity.com/Free-STEM-Education-Resources) | | Free STEM resources gathered from around the web. Resources are filtered by category. Digital library comprised of standards-based curricula for K-12. |
| K-12 | Library | [Discover E](http://www.discovere.org/our-activities) | | Free STEM resources gathered from around the web. Resources are filtered by category. Digital library comprised of standards-based curricula for K-12. |
| 6-12 | Library | [STEM Works](http://stem-works.com/) | | Free STEM resources gathered from around the web. Resources are filtered by category. Digital library comprised of standards-based curricula for K-12. |
| 6-12 | STEM | [Whitebox Learning](https://www.whiteboxlearning.com/) | | Integrated-STEM Learning system STEM Applications include [Dragster 2.0](https://www.whiteboxlearning.com/applications/dragster), [Gliders 2.0](https://www.whiteboxlearning.com/applications/gliders), [Structures 2.0](https://www.whiteboxlearning.com/applications/structures), [Green Car 2.0](https://www.whiteboxlearning.com/applications/green-car), [Rockets 2.0](https://www.whiteboxlearning.com/applications/rockets), [Mousetrap Car 2.0](https://www.whiteboxlearning.com/applications/mousetrap-car), [Prosthetics 2.0](https://www.whiteboxlearning.com/applications/prosthetics), [Rover 2.0](https://www.whiteboxlearning.com/applications/rover), [Survival Shelter 2.0](https://www.whiteboxlearning.com/applications/shelter), [KidWind 2.0](https://www.whiteboxlearning.com/applications/kidwind), [Solar](https://www.whiteboxlearning.com/applications/solar), and [Drone](https://www.whiteboxlearning.com/applications/drone). Students can compete virtually, from any browser. Free for use until end of June. |
| K-6 | STEM | [3Dux Design](https://www.3duxdesign.com/blogs/the-3dux-stem-show) | | The STEM show offers projects focused on simple machines, teaching, designing and creating. |
| 6-12 | STEM | [Animated Engines](http://www.animatedengines.com/) | | Animated illustrations that explain the inner workings of a variety of steam, Stirling, and internal combustion engines. |
| 6-12 | STEM | [Animated Polyhedron Models](https://www.mathsisfun.com/geometry/polyhedron-models.html) | | Resources for students to make and print models for studying and practice of [Euler's polyhedron formula.](https://plus.maths.org/content/eulers-polyhedron-formula) |
| 6-12 | STEM | [AutoDesk](https://www.autodesk.com/education/free-software/featured) | | CAD software including AutoCAD, Revit, 3DS Max, Inventor, etc. available for free to educators and students |
| 6-12 | STEM | [Bridge Designer](http://bridgedesigner.org/) | | Bridge designer simulates real life civil engineering challenges in the design and construction of a bridge available for free to students and educators. |
| K-6 | STEM | [Engineering is Elementary](https://eie.org/) | | Engineering is Elementary is a free curriculum for families to use at home. |
| 6-12 | STEM | [Flinn At-Home](https://www.flinnsci.com/athomescience/at-home-activities/) | | More than 50 free at home activities that students can use under parental supervision to keep their curiosity piqued. |
| 6-12 | STEM | [Flinn At-Home](https://www.flinnsci.com/athomescience/at-home-lab-series/) | | Free video labs with related teacher and student guides to help students continue making progress on key topics. |
| 6-12 | STEM | [Flinn Science Behind Series](https://www.flinnsci.com/athomescience/#sb) | | The Science Behind series connect science into context. Each topic contains FREE activities, fun videos and a downloadable poster or infographic. |
| 6-12 | STEM | [Franklin Museum](https://www.fi.edu/sparkofscience) | | #SparkofScience series showcase of science interpreters sharing experiments. |
| 6-12 | STEM | [Free CAD](https://www.freecadweb.org/) | | Free and open source CAD parametric modeling program. |
| 9-12 | STEM | [Home By Me](https://home.by.me/en/) | | A free web 2.0 architectural design CAD program. |
| K-12 | STEM | [ITEEA IdeaGarden](https://www.iteea.org/SamlHooks/168205.aspx) | | An educator-to-educator network where teachers share resources, ideas, and solutions for teachers of Integrative STEM. |
| 9-12 | STEM | [Khan Academy Imagineering](https://www.khanacademy.org/humanities/hass-storytelling/imagineering-in-a-box) | | Disney Imagineering in a Box allows you to explore different aspects of theme park design, from characters to ride development, as you design a theme park of your very own. |
| 6-12 | STEM | [NASA Express weekly newsletter](https://www.nasa.gov/stem/express) | | Weekly email features at-home activities to inspire learning and exploration. Find crafting ideas, science experiments with household items and videos to watch as a family. Updates on workshops, internships, contests and student challenges are also included. |
| 6-12 | STEM | [Paper Roller Coasters](https://www.instructables.com/id/Paper-Roller-Coasters-/) | | Project to reinforce Newton's Laws of Motion through roller coaster physics. The objective is to have a marble take the GREATEST amount of time to get from the top of the first hill to where the coaster ends |
| K-12 | STEM | [Pitsco STEM at Home](https://resources.pitsco.com/stem-at-home) | | Collection of free STEM activities and publications for families to use at home |
| 6-8 | STEM | [Pitsco SySTEM Alert!](https://resources.pitsco.com/stem-at-home?utm_campaign=STEM%20at%20Home&utm_source=hs_email&utm_medium=email&utm_content=85316498&_hsenc=p2ANqtz-9EVVoJFdMBulPvLK0bjAqpyYNHwqP72zyPRDMzl7Soq2ir69cghoDT7y9rsn0pu6lmn5ePA_3omVFBZJQon-QI50FcRw&_hsmi=85316498) | | SySTEM Alert! publication - Find everyday STEM, fast facts, trends and related topics. Each issue includes a quiz and answer key. |
| 6-8 | STEM | [PLTW Gateway at Home](C://Users/Aidan%20Fitzgerald/Downloads/Continuing_PLTW_Gateway_at_home_FinalEdited.pdf) | | Distance learning recommendations arranged by unit with description on how to adapt the PLTW Gateway unit activities, projects, and problems. |
| K-8 | STEM | [PTO Today](https://www.ptotoday.com/family-science-night-stem-activities) | | Family Science Night: 20+ STEM Activities To Spark Imagination with our free Family Science Night planning kit, your group can help families experience science, technology, engineering, and math outside the classroom with hands-on, cross-generational stem activities. The kit has more than 20 easy-to-follow activities |
| 6-12 | STEM | [Sketchup](https://www.sketchup.com/) | | 3D modeling program available for free to students and educators |
| 6-12 | STEM | [STEM Ecosystems](https://stemecosystems.org/covid19-resource-library/) | | Resource Library with activities with practical tips for how to engage children in learning STEM at Home. |
| K-6 | STEM | [STEM Is Elementary](https://www.stemiselementary.com/) | | Collection of resources, lesson plans, and activities that may support learning at home. |
| 6-12 | STEM | [Stop-Motion Animation Video](https://tinkerlab.com/easy-stop-motion-animation-kids/) | | A project where an object is moved a tiny bit and a photo is snapped. Repeat this process twenty to ten thousand times, play back the sequence in rapid progression, and the object appears to move fluidly across the screen. |
| 6-12 | STEM | [TechDirections](http://www.techdirections.com/past-issues.html) | | A magazine and website for technology, CTE and engineering technology with engaging student activities. |
| 6-12 | STEM | [The Big Book of STEM Classroom Challenges - Book 1](https://www.iteea.org/File.aspx?id=156460&v=10fdeb69) | | The Big Book of STEM Classroom Challenges includes 100+ activities for classrooms and students project teams. |
| 6-12 | STEM | [The Big Book of STEM Classroom Challenges - Book 2](https://www.iteea.org/File.aspx?id=162611&v=23132da1) | | The Big Book of STEM Classroom Challenges includes 125+ activities for classrooms and students project teams. |
| 6-12 | STEM | [The Science Spot](https://www.sciencespot.net/Pages/junkbox.html) | | Junk Box Wars is a collection of ready-to-use STEM projects and challenges for students. |
| 6-12 | STEM | [TinkerCAD](https://www.tinkercad.com/) | | Free download of a simple 3D CAD program available for free to students and educators. |
| 6-12 | STEM | [TRAILS (Teachers and Researchers Advancing Integrated Lessons in STEM)](https://www.purdue.edu/trails/) | | Lesson plans include handouts, step-by step tutorials, and video training sessions. |
| 6-8 | STEM | [Verizon Innovation Learning Teacher/Parent Portal](https://vilteacher.com/) | | Offers free activities at home for grades 5-9. The portal offers lesson plans and student guidelines to support a variety of fun activities. |
| 6-12 | STEM | [VEX Robotics](https://blog.vex.com/2020/03/20/support-for-teachers-during-the-covid-19-outbreak/) | | STEM Labs for students and VEXcode activities |
| 6-12 | STEM | [Wings 3D](http://www.wings3d.com/) | | A free, open source 3D modeling program available for free to students and educators. |