

ComputerScience.org

The Ultimate STEM Resource Guide for Kids

STEM for Kids: Activities, Classes, Channels, and Websites

STEM FOR GRADE SCHOOL KIDS

ONLINE STEM CLASSES OR COURSES

- **CodeMonkey**
- CodeMonkey teaches the basics of programming languages like JavaScript through a series of game-based courses. After a 14-day free trial, the minimum subscription costs \$4.95 per month.
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- **Empow Studios**
- Students can attend live virtual courses to learn coding, robotics, animation, and engineering. With small classes and new options every week, Empow Studios charges on a course-by-course basis.
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- **Kodable**
- Using a game-based course sequence, Kodable's curriculum begins with foundational computer programming concepts, like sequencing and functions. Later activities transition to programming languages like JavaScript and Swift. After a free trial, the iOS-based app requires a subscription, which starts at \$6.99 per month.
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- **Science Nature Labs**
- Students can take single-day or week-long courses in topics like chemistry, nutrition, and the human body. Science club sessions help

- reinforce classroom lessons. Courses start at \$10 per day, depending on the subject.
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- **Kid Spark PK-2**
- With Kid Spark, parents purchase kits to accompany a full homeschooling curriculum (20+ hours). Each kit costs \$70 and includes engineering-based lesson plans and resources.
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- **Tinybop Schools**
- Packed full of science lessons on the human body, coral reef, weather, and simple machines, Tinybop Schools provides interactive lessons for students in grades K-8. Homeschool subscriptions start at \$50 per year.

YOUTUBE AND OTHER STEM-FOCUSED VIDEO CHANNELS

- **SciShow Kids**
- Using colorful animations and cartoon characters, the SciShow Kids YouTube channel addresses questions like, "How are raisins made?" and, "Why do we get nosebleeds?" Occasionally, videos include simple experiments for kids to try at home.
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- **Ask the StoryBots**
- Quirky cartoon robots quest to answer science-based questions for kids in this Netflix series. Parents will get a kick out of celebrity cameos, like Edward Norton and Zoe Saldana. Requires a Netflix subscription.
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- **TinkerLab**
- Featuring fun activities rooted in STEM concepts, the TinkerLab YouTube channel contains tutorials for hands-on projects like salad spinner art, natural Easter-egg dye, and instructions on how to make an Aladdin-inspired flying carpet.

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- **Vihart**
- Run by mathematician and musician Vi Hart, the YouTube channel engages young students through short videos like the calculus of bad driving, Pi Day, and pandemic response.
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- **The Magic School Bus Rides Again**
- Based on the popular book series, the rebooted Netflix series takes kids on fantastical adventures into the worlds of oceanography, physics, and biology under the tutelage of the eccentric Ms. Frizzle -- voiced in this version by comedian Kate McKinnon. Requires a Netflix subscription.
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- **mathantics**
- Produced specifically for grade-school students, this YouTube channel presents math principles like distance, subtracting mixed numbers, percentages, and rounding. More advanced topics include pre-algebra and the Pythagorean Theorem.

STEM ACTIVITIES, KITS, AND GAMES

- **DIY Nano**
- DIY Nano consists of short videos, activities, and experiments revolving around nanotechnology. The free app teaches about nanoscale technology related to biology, chemistry, and substance properties, plus science and engineering vocabulary.
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- **Curiosity Machine Challenges**
- Run by Technovation Families, Curiosity Machine Challenges introduce engineering concepts through videos before sending off students to produce projects like rockets, communication networks, and circuits.

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- **Funbrain**

- Kids can engage in science-based games involving problem-solving, space facts, and animals. The site also features read-along books, videos, and game-based math practice.

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- **Funology**

- With crafts, science experiments, recipes, games, and facts, Funology encourages kids to explore their interests. Science experiments delve into biology, physics, chemistry, and weather.

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- **Kids Ahead**

- Covering subjects like space, crime scene investigation, and under the sea, Kids Ahead offers articles, games, and activities. Kids can build galaxies, simulate floods, and create DNA fingerprints. They can play games teaching coding and animation.

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- **Scholastic Learn at Home**

- Scholastic Learn At Home features lessons for kids ages 4-10. Kids can read, practice vocabulary, play games, take quizzes, and participate in movement activities. Example topics include sharks, the moon, and bones. A subscription costs \$5.99 per month.

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- **Kids' Science Challenge**

- Kids can explore science careers by learning about experts in fields like paleontology, mineralogy, and seismology. The site also contains videos and games featuring science topics such as water quality, sports on Mars, and bio-inspired design.

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- **Sheppard Software Math**

- Game-based math lessons reinforce classroom practice and make math fun. Most games appeal to younger students, but the site also includes a few advanced topics, like algebra and probability.

- **Prodigy Math Game**

- With Prodigy Math Games, kids answer math questions, which help them complete exciting quests in a visually appealing world. Parents can also access curriculum progress. Kids can start playing for free, though premium access subscriptions start at \$4.99 per month, per child.

- **DIY Human Body**

- A free iOS app by the Lawrence Hall of Science, DIY human body teaches body systems through hands-on activities and videos. Kids learn about blood flow, bones, and the digestive system.

- **Wonderville**

- Featuring games, videos, experiments, and STEM career information, Wonderville encourages students to learn more about topics like solar energy, waste, hearing, biodiversity, and electrical concepts. After a 15-day free trial, the site charges \$4.99 per month.

- **Codemoji**

- Codemoji teaches the fundamentals of web-based coding in HTML, CSS, and JavaScript through image-based lessons. After a free trial, the site charges \$15 per month or \$55 per year.

- **Bugaboo Math Games**

- These visually appealing games cover geometry, addition, and early math concepts. The site also offers flash cards and coloring books.

- **Math Blaster**

- With Math Blaster, students and parents can explore math games by grade level or subject areas, like division, graphs, counting, and money.
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- **BrainPOP Jr.**
- Designed for students in grades K-3, BrainPop Jr. features science lessons in animals, plants, weather, space, and more. Kids can follow their interests through games, quizzes, jokes, and activities.

STEM CONTESTS

- **Beaver Computing Contest, Grades 5/6**
- Designed to introduce kids to computer science foundations, the school-sponsored Beaver Computing Contest requires students to answer 12 multiple choice questions.
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- **Ten80 Education Elementary Racing Challenge**
- Working in teams, students design and engineer remote control cars for optimal speed and stability. Teams can compete in optional National STEM League races to qualify for national finals.
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- **Fluor Engineering Challenge**
- A partnership between Science Buddies and Fluor, the challenge invites teams to engineer simple machines to win \$1,000 for their after-school programs. In 2019, the challenge involved creating a machine that could repeatedly knock down a wicket.
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- **National Science Bee - Elementary Division**
- Students compete for cash prizes by answering questions in biology, chemistry, astronomy, computer science, and other STEM-related subjects.
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- **The Tech Challenge**
- Administered by the Tech Interactive and sponsored by Dell Technologies, the challenge assigns a problem to teams of students, who address it through innovative, tech-based solutions.
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- **Junior FIRST LEGO League**
- A robotics challenge for kids from Pre-K to eighth grade, the FIRST LEGO League encourages STEM discovery through exploration, engineering design, and teamwork.

STEM WEBSITES

- **NASA Space Place**
- Produced by NASA, the Space Place engages students with topic-based collections of articles, games, crafts, and activities. Easy for kids to navigate, the site features subject areas including Earth, the solar system, and the universe.
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- **EPA Students**
- Run by the U.S. Environmental Protection Agency (EPA), EPA Students provides games, quizzes, and videos. Activities teach kids about topics like energy, water flow, habitats, and air quality.
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- **The Tech Interactive**
- The website for San Jose's immersive science museum provides instructions for creating STEM projects at homes. Through videos and simple instructions including information on key scientific concepts, the site presents cupcake transport mobiles, paper skyscrapers, and at-home roller coasters.
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- **National Geographic Kids**

- Focusing mainly on animals, the National Geographic Kids site teaches through games, quizzes, and videos. Kids can also find weird facts and explore interactive science experiments.
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- **Hooked On Science**
- Through its busy website full of videos and articles, Hooked On Science particularly engages kids through its weekly experiment series. Kids can access an archive packed with experiment ideas dealing with forces and interactions, energy, Earth science, and more.
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- **SciJinks**
- Tackling weather-based questions about wildfires, ice flow, trade winds, and the jet stream, SciJinks engages young students through informative animations, kid-friendly articles, and dramatic multimedia presentations.
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- **Weather Wiz Kids**
- Designed by meteorologist Crystal Wicker, Weather Wiz Kids provides kid-friendly articles on thunderstorms, tornadoes, weather forecasting, and a variety of weather-related topics. Kids can also explore jokes, folklore, and games.
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- **Carnegie Cyber Academy**
- Focused on promoting internet safety for kids, Carnegie Cyber Academy leads students through animated missions, which teach about spam, personal information, and cyber-bullying.
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