OHIO DEPARTMENT OF EDUCATION AND INFOHIO

Camp INFOhio

INFOhio
OHIO'S PreK-12 DIGITAL LIBRARY

Ohio | Department of Education

Camp INFOhio

Science, **T**echnology, **E**ngineering and **M**athematics = **STEM**. Now add **A**rt + Design and you have **STEAM** which = Innovation, excitement, and a prosperous future.

Join us for 5 days of STEAM fun as you explore INFOhio resources to create some amazing projects and learn more about the STEAM movement.

Rise and shine,
Feet on the floor,
Full STEAM ahead,
It's time for Camp INFOhio!

Important Note about the INFOhio Username and Password!

When you're at home using INFOhio resources, you probably won't need to enter a username and password. If you need your school username and password, visit infohio.org and click Get Password under Classroom at the bottom of the page.

Looking for an online version of Camp INFOhio with live links so you don't have to type in so many URLs? Go to infohio.org, click Site Search in the menu bar, and then enter Camp INFOhio. The Camp INFOhio PDF will be one of the top choices.

DAY 1

Session 1: Mad Scientists

Science surrounds us and is very important in helping us learn how things happen. It includes physical sciences (studying the world around us) and life sciences (studying living things).

Let's start by **reading** one of the popular eBooks found in Science Reference Center. (To get to Science Reference Center, go to infohio.org, click the yellow 6-8 button, and select Science Reference Center from the list.) On the Science Reference Center main page, scroll down until you see the collection of eBooks along the bottom. Click *Stars* and use the links on the left to read the book. Make sure to read the Star Patterns section. Have you ever looked at the stars at night and tried to find a constellation like the Big Dipper? Create your own star pattern using black paper and chalk and give it a name.

SNACK TIME. Take a short break, get a snack, and drink some water.

Session 2: Techno-Kids

Computers, video games, phones, iPads, eReaders—who can live without technology that invades every part of our lives? And it all begins with code. Did you know that codes and ciphers have been around for thousands of years?

Read more about the beginnings of codes and ciphers in Codes, Ciphers & Secrets (http://tinyurl.com/mns4tx4). Click the PDF Full Text icon on the left to read the article. Try to decipher the message at the bottom of the article. What does it say?

LUNCH. Wow! It's been a busy morning. Stars, constellations, codes – is your head spinning yet? Go have lunch and get ready for an afternoon of fun.

Want to try something new with food on your own? Go to World Book Kids. (To get to World Book Kids, go to infohio.org, click the purple PreK-5 button, and select World Book Kids from the list.) Click Activities at the bottom of the page, and then click Food Fun and try something that sounds interesting.

Session 3: Engineering FUNdamentals

What is engineering and why is it important? Engineers use science and technology to design, build, and use engines, machines, and structures. It's an exciting field that helps make people's lives easier and safer.

Watch this video, What is Engineering? (http://tinyurl.com/otpp65w), to learn more about how engineering touches every part of your day.

As you saw in the video, engineers do many different things. But this week we're going to be focusing on one kind of engineering marvel: roller coasters! Have you ever been to an amusement park? Engineers are the people who design the rides you enjoy, including roller coasters and water slides. What rides do you like best? **Read** Roller Coaster VS Water Slide (http://tinyurl.com/nrfmt3n). Click the PDF Full Text icon on the left to read the article. Make a list of five reasons why you prefer one ride over all others.

DAY 1 (CONT.)

Session 4: Create a Masterpiece

Art, music, theater—all of these lead to more creative and innovative thinking. Let's explore your creativity and apply it to real situations.

Both art and science require technical skills. Art can be found in many forms including painting and sculpture. **Read** more about painting using ISearch (isearch.infohio.org). Enter "painting" in the search box and then click the Advanced Sources tab. Read the first entry, which is the Research Starter: Painting.

BREAK. Get a snack, take a break, and relax a few minutes.

Session 5: Got Math? What about Zombies?

Zombies and math??? How could these two topics be connected? **Read** When Zombies Attack! (http://tinyurl.com/h8lnt5m). Click the PDF Full Text icon at the top to read the article. You'll learn how a teacher in Canada and his students used math to determine the rate of zombie infection. See if you can use the formulas to forecast what would happen in a zombie invasion.

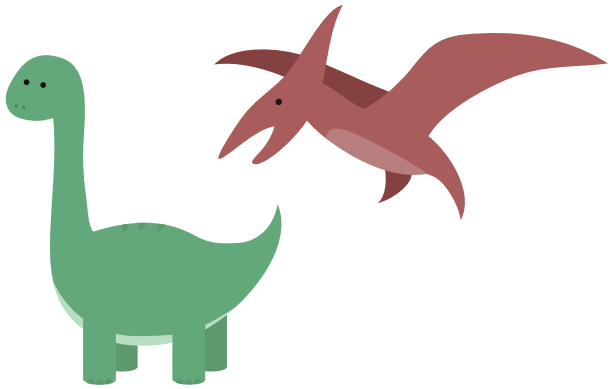
Wrap Up: Career Connection

We learned a lot about STEAM today, especially science. There are hundreds of different careers that involve science. Take a look at the Career Pathways (http://tinyurl.com/ndj65qz) from the Ohio Department of Education to find information about science-related careers.

DAY 2

Session 1: Mad Scientists

Who loves reading about dinosaurs? Do you have a favorite? One of the other popular sources in Science Reference Center is the *Encyclopedia of Dinosaurs*. (Do you remember how to find the eBooks in Science Reference Center? If not, look back at Mad Scientists on Day 1). Click the *Encyclopedia of Dinosaurs* and use the links on the left to find the section about the velociraptor. Click the PDF Full Text icon to read about this small but mighty dinosaur. What would you do if you came upon a velociraptor?



SNACK TIME. Take a short break, get a snack, and drink some water.

Session 2: Techno-Kids

Discover the secret code in your name with Decode Your Name from World Book Kids. (To get to World Book Kids, go to infohio.org, click the purple PreK-5 button, and select World Book Kids from the list.) Click Activities at the bottom of the page, and then click Crack the Code. Now choose Decode Your Name and follow the directions to discover your secret code.

DAY 2 (CONT.)

LUNCH. Wow! Between dinosaurs and secret codes, it's been a busy morning. Go have lunch and get ready for an afternoon of fun.

Want to try something new with food on your own? Go to World Book Kids. (Look at Techno-Kids from this morning if you need help finding it.) Click Activities at the bottom of the page, and then click Food Fun and try something that sounds interesting.

Session 3: Engineering FUNdamentals

Ohio has two major amusement parks, King's Island and Cedar Point, with some well-known roller coasters. **Read** Built for Thrills (https://tinyurl.com/y3akrq5e). Click the PDF Full Text icon on the left to read the article. You'll learn more about how important engineers are in designing roller coasters. If you designed a roller coaster, what would you call it? Why?

Session 4: Create a Masterpiece

You read all about painting yesterday. Now, let's paint. Go the World Book Kids (Remember how to get there? If not, take a look back at Techno-Kids from this morning). Click Activities at the bottom of the page, and then click Doodle and Design. Now click Make Your Own Palette. Using only red, blue, and yellow, you can create a palette of colors and paint a picture of your family, your pet, or anything else that you see.

BREAK. Get a snack, take a break, and relax a few minutes.

Session 5: Got Math?

What do you know about Egyptian numerals? The Ancient Egyptians used symbols to represent numbers. Go back to Crack the Code in World Book Kids. (Look at Techno-Kids from this morning if you need help finding it.) Click Count Like an Ancient Egyptian. How many symbols does it take to write 162,354? Which is easier for counting, symbols or numbers?

Wrap Up: Career Connection

Writing code for computers, video games, apps, and more is one of the careers expected to grow during the next decade. To learn more about the career, check out one of the Information Technology Career Pathways (http://tinyurl.com/nx3c92t) from the Ohio Department of Education.

DAY 3

Session 1: Mad Scientists

Part of being a scientist is conducting experiments following the scientific method. Go to World Book Kids. (Remember how to get to World Book Kids? If not, look under Techno-Kids from Day 2.) Click Science Projects at the bottom of the page, and then click Science You Can Use. Then click your first experiment: Is there a difference between the sizes of eggs? Follow the steps and then use the discussion questions to formulate your conclusions. How did you answer the questions about the sizes of eggs?

SNACK TIME. Take a short break, get a snack, and drink some water.

Session 2: Techno-Kids

Try your hand at writing some simple computer code using Crunchzilla, Code Com, Code Combat, or Scratch as shown on the INFOhio Coding Pinterest board (https://www.pinterest.com/infohio/coding/). If you don't have a Pinterest account and don't feel like creating one, you can just enter any of those sites into a search engine to find them. iPad apps like Daisy the Dinosaur, Alice, and Hopscotch are also great tools for learning how to create code.

LUNCH. Wow! What an amazing morning. Experiments and eggs along with writing computer code. What else is in store for you today? Go have lunch and get ready for an afternoon of fun.

Want to try something new with food on your own? Go to World Book Kids. (Look at Techno-Kids from Day 2 if you need help finding it.) Click Activities at the bottom of the page, and then click Food Fun and try something that sounds interesting.

Session 3: Engineering FUNdamentals

Each year roller coasters become more and more elaborate. **Read** about some extreme roller coasters in the U.S. in the article Going to the Extreme (http://tinyurl.com/ndat5p5). Click the PDF Full Text icon at the left to read the article. It features the Gatekeeper roller coaster at Cedar Point in Sandusky, Ohio.

Session 4: Create a Masterpiece

Every note of music and tone of an instrument is a sound wave. Learn more about The Science of Music (http://tinyurl.com/mklctzk) with Bill Nye in this video from INFOhio's Digital Video Collection. (If you're prompted for a password and don't know your school's INFOhio password, check out the Important Note on the first page of Camp INFOhio.) Watch the first segment, Big Idea, where Bill Nye introduces music around the world and shows how sound waves work. Like music? Watch the rest of the video.

BREAK. Get a snack, take a break, and relax a few minutes.

DAY 3 (CONT.)

Session 5: Got Math?

How good are your logic skills? Try this experiment with Square Logic. Go to World Book Kids (Remember how to find it? If not, look under Techno-Kids from Day 2). Click Activities at the bottom of the page and then click Logic Puzzles. Choose Square Logic and try to turn six squares into four. Good luck! Are you good at guessing? Then try Educated Guess under Logic Puzzles.

Wrap Up: Career Connection

Engineers do all kinds of work that involves planning and building structures and other systems. To learn more about careers for engineers and related jobs, check out Mechanical under Engineering and Science Technologies on the Career Pathways (http://tinyurl.com/ndj65qz) from the Ohio Department of Education.

DAY 4

Session 1: Mad Scientists

Let's go back to the experiments in World Book Kids. (Remember how to find it? If not, look under Techno-Kids from Day 2). Click Science Projects at the bottom of the page and then click Science You Can Use. Click Effects of Temperature on Microwave Popcorn. Follow the steps to find the answer to the question. If you don't have microwave popcorn at home, then click this experiment: How Long Before Bread Goes Bad? (Make sure your family knows the bread is for an experiment, not sandwiches!)

SNACK TIME. Take a short break, get a snack, and drink some water.

Session 2: Techno-Kids

British scientist Alan Turing cracked the German Enigma code in World War II and created the Turing test to gauge the intelligence of a computer. Turing was the subject of the recent movie *The Imitation Game*. **Read** more about this amazing man in this brief article from Hutchinson's Biography (http://tinyurl.com/q2w4exx).

LUNCH. Microwave popcorn, bad bread, and a scientist who helped beat the Germans in World War II. Are you ready for more? Go have lunch and get ready for an afternoon of fun.

Want to try something new with food on your own? Go to World Book Kids. (Look at Techno-Kids from Day 2 if you need help finding it.) Click Activities at the bottom of the page, and then click Food Fun and try something that sounds interesting.

DAY 4 (CONT.)

Session 3: Engineering FUNdamentals

Now that you have read all about them, are you ready to Design a Roller Coaster? (http://tinyurl.com/3bqp6g) Try your hand at designing your own digital roller coaster. You will be building a conceptual coaster using the physics concepts that are used to design real coasters. You won't need to compute any formulas, but you will need to determine the hills and slopes for your coaster and pass an inspection for safety and fun.

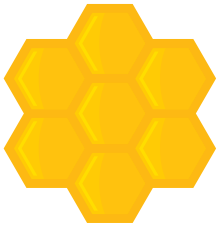
Session 4: Create a Masterpiece

You learned about sound waves with Bill Nye on Day 3. Now, let's Make Some Noise. We're back in World Book Kids. Click Activities at the bottom of the page and then click Make Some Noise. Choose to Toot a Flute, Blow Your Horn, play a Rubber-Band Strummer, or even make some Coffee-Can Bongos. For the truly adventurous, try the experiment with Sound Wave Maker.

BREAK. Get a snack, take a break, and relax a few minutes.

Session 5: Got Math?

How do bees create the perfect hexagonal shapes in honeycombs? Read this article to find the answer about Mathematician Bees (http://tinyurl.com/zahjufg). Click the PDF Full Text icon at the top to read the article. Can you determine how many degrees are in each angle of a regular hexagon? Try drawing your version of a honeycomb of hexagons.



Wrap Up: Career Connection

Want to learn more about career opportunities in the arts? Check out this information on Performing Arts (http://tinyurl.com/pc5szf7) or Visual Design and Imaging (http://tinyurl.com/ngnhrdn), a couple of the Career Pathways from the Ohio Department of Education.

DAY 5

Session 1: Mad Scientists

Thomas Edison was one of the most famous American scientists and inventors. Did you know that he was from Ohio and held over 1,000 patents for different inventions? **Read** about the man and his life in World Book Student and see how many of his inventions you can name. (To get to World Book Student, go to infohio.org and click the yellow 6-8 button. Scroll until you see World Book Student.) Search on "Thomas Edison." If you invented something, what would it be? Draw a picture that you might submit to the U.S. Patent and Trademark Office.

SNACK TIME. Take a short break, get a snack, and drink some water.

Session 2: Techno-Kids

Build a Secret-Code Wheel (http://tinyurl.com/l5uf8wv) by following these step-by-step instructions. Click the PDF Full Text icon at the left to read the article. Send a secret message to your friends.

LUNCH. Inventions and secret codes. Do you feel like a scientist yet? Go have lunch and get ready for an afternoon of fun.

Want to try something new with food on your own? Go to World Book Kids. (Look at Techno-Kids from Day 2 if you need help finding it.) Click Activities at the bottom of the page, and then click Food Fun and try something that sounds interesting.

Session 3: Engineering FUNdamentals

Bill Nye talks about roller coasters and other machines in this Simple Machines video (http://tinyurl.com/pbov2uj) from INFOhio's Digital Video Collection. (If you're prompted for a password and don't know your school's INFOhio password, check out the Important Note on the first page of Camp INFOhio.) Have you ever wondered why you don't fall out of a roller coaster when it turns upside down? Listen to the Disney Ambassador Team answer the question in this video from the roller coaster article in World Book Kids. Go to World Book Kids (see Techno-Kids from Day 2 for how to get there) and enter "Roller Coaster" in the search box.

Session 4: Create a Masterpiece

When you think of theater, you usually think of live performers, but theater can also include puppets. Read about how puppets are used around the world to tell stories that audiences love in Hurray! It's a Puppet Show (http://tinyurl.com/hqu65av). Try your hand at making finger puppets and putting on your own show by reading the article Puppet Play (http://tinyurl.com/h4yhjgj). Check out Play with a Mini Animal Puppet (http://tinyurl.com/jxsvddl) to learn how to make animal puppets from egg cartons, or make shadow puppets by following the steps in It's In the Shadows (http://tinyurl.com/hstb7hg). For each article, click the PDF Full Text icon at the top to see the pictures.

BREAK. Get a snack, take a break, and relax a few minutes.

Session 5: Got Math?

Who invented the calculator? Watch this short video on the History of Calculators (http://tinyurl.com/lgrwylp) found in Science Online to learn more about this handy math tool. Then try some of these calculator activities found on INFOhio's Tech Skills for Online Testing (http://tinyurl.com/nsojodb).

Wrap Up: Career Connection

If you like math, there are all kinds of career paths waiting for you—everything from accountant, banker, and stockbroker to economist, astronomer, and even meteorologist. Take a look at the Career Pathways (http://tinyurl.com/ndj65qz) from the Ohio Department of Education to find information about math-related careers.

Hope you had fun at Camp INFOhio.

Enjoy the rest of your summer and full STEAM ahead!