



# STEM @ Home



## **LearnAlberta.ca**

- **Description:** The Alberta Government has an extensive repository of science activities (amongst other subject matters) for all grade levels.
- **Access here:** <http://www.learnalberta.ca/Search.aspx?lang=en&search=&grade=&subject=Science>
- **Grade range:** K-12



## **University of Alberta - Massive Open Online Courses (MOOCs)**

- **Description:** The University of Alberta has partnered with Coursera to develop highly-engaging and rigorous versions of Massive Open Online Courses to the general public. Courses include: Astro 101: Blackholes, Bugs 101, Dino 101, Paleontology courses, Programming courses, etc.
- **Access here:** [https://www.ualberta.ca/admissions-programs/online-courses/index.html?fbclid=IwAR2T9\\_ZJznQpdzhonNNjscU1uuxnO2hIDh13B5uJe417hV-NAGwUX-GEE1A](https://www.ualberta.ca/admissions-programs/online-courses/index.html?fbclid=IwAR2T9_ZJznQpdzhonNNjscU1uuxnO2hIDh13B5uJe417hV-NAGwUX-GEE1A)
- **Grade range:** 7 - 12
  - They also have a handy chart that goes through how each course is aligned to Alberta Curriculum: <https://www.ualberta.ca/admissions-programs/online-courses/moocs-curriculum.html>)



### **Edmonton Public Library**

- Digital Resources Available: <https://www.epl.ca/blogs/post/more-digital-resources-than-ever/>
  - To access these resources, you must have an existing EPL library card
- Here's a selected list we wanted to highlight:
  - Kanopy
    - Description: A video streaming platform for libraries featuring hundreds of educational and entertaining children's videos available to stream whenever you want.
      - **Extended Content:** Similarly, Kanopy Kids is now also credit-free for 30 days.
    - Access here: <https://edmonton.kanopy.com/kids>
    - Grade range: various
  - OverDrive
    - Description: Borrow and enjoy free eBooks, audiobooks and more. This collection includes popular fiction, non-fiction, and technical titles.
      - **Extended Content:** More list creation and curation is being shared, and more copies are being ordered to reduce your wait times.
    - Access here: <https://epl.overdrive.com/>
    - Grade range: All



### **TELUS World of Science – Edmonton**

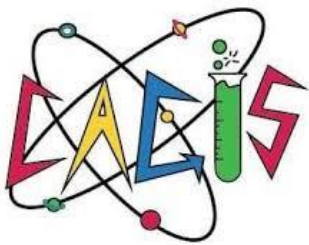
- **Description:** TELUS World of Science – Edmonton has put together a bunch of resources for families at home to continue doing science. From an eye spy activity of what you can spot in their fish tank, to DIY science experiments you can do from home, they are updating and adding new activities almost daily. You can access through their website below or through their social media platforms [Facebook](#), [Twitter](#), [Instagram](#).
- **Access here:** <https://telusworldofscienceedmonton.ca/explore/experiences/science-home/>
- **Grade range:** various



### **TELUS Spark**

- **Description:** Spark will share DIY experiments and citizen science, innovative online challenges, important science education content and curated content from STEAM community leaders.
- **Access here:** <https://sparksience.ca/spark-science-from-home>

**Grade range:** various



### **Canadian Association for Girls in Science (CAGIS)**

- **Description:** CAGIS is putting together a series of challenges, fun experiments, live Q&As with STEM professionals and more during this time. Follow along either on their website (below) or through their social media @GirlsInScience.
- **Access here:** <https://girlsinscience.ca/cagis-at-home/>
- **Grade range:** various



### **Ingenium.- Canada's Museums of Science and Innovation**

- **Description:** Ingenium has a repository of fun online science activities that you can do at home.
- **Access here:** [https://ingeniumcanada.org/education/search?program\\_location=Online&fbclid=IwAR1pDg3-8oMfdQHMEH0W\\_9e9o9L-bhS9BYxEZjTgip6uQ\\_O7mgJ07YFuGaA](https://ingeniumcanada.org/education/search?program_location=Online&fbclid=IwAR1pDg3-8oMfdQHMEH0W_9e9o9L-bhS9BYxEZjTgip6uQ_O7mgJ07YFuGaA)
- **Grade range:** K-12





### Brilliant Labs

- **Description:** Brilliant Labs is a hands-on technology and experiential learning platform. If you enjoy a daily challenge, Brilliant Labs is releasing a new make-at-home activity every week day as well as an outdoor activity or a digital learning skill.
- **Access here:** <https://www.brilliantlabs.ca/makerfun>
- **Grade range:** various



### National Geographic Kids

- **Description:** The same National Geographic we love but targeted specifically for kids! National Geographic Kids has a huge database of resources for kids to do right at home from quizzes about sharks and robots to videos about Amazing Animals and Planets to fun DIY science experiments you can do at home. National Geographic Kids is a phenomenal resource to keep STEM curiosity up in the household!
- **Access here:** <https://kids.nationalgeographic.com>
- **Grade range:** various
- **Example activities:**
  - <https://kids.nationalgeographic.com/explore/science/science-lab/> and <https://kids.nationalgeographic.com/videos/try-this/#/1266094147736> Science experiments including “color explosion”, “bottled egg”, “DIY Ice cream”, “squishy egg” and more
  - <https://kids.nationalgeographic.com/explore/space/> Facts and pictures of space
  - <https://kids.nationalgeographic.com/explore/nature/kids-vs-plastic/> Education about plastic
  - <https://kids.nationalgeographic.com/games/personality-quizzes/> Personality quizzes based off of planets, dinosaurs, etc.



### **Skype a Scientist**

- **Description:** Do you want to chat with a scientist over video chat from your living room? We will match you with a scientist for free! These sessions are Q&A conversations, so you and your kids/roommates can talk with a scientist about what makes YOU curious. We have lots of different scientists to choose from, so don't be shy! All you need is a zoom/google hangout/skype/ or other video chat client and an internet connection!
- **Access here:** <https://www.skypeascientist.com/for-families.html>
- **Grade range:** K-12



### **Royal BC Museum**

- **Description:** RBCM@home (Kids) is like a museum playdate online. Visit with members the museum staff who are working from home, along with families from across BC, as we make and learn together. Each session will have some kind of making activity, so get your paper and pencil crayons ready. RBCM @ Home (Kids) will take place on Wednesdays at 11 am, visit our calendar for topics and presenters. For further learning, RBCM @ Home takes place on Tuesdays and Thursdays at 12 pm. RBCM @ Home is designed for youth and adults, and will feature members of the curatorial and collections staff who are working from home. Discover how they do their work, how their work is reflected in their homes and what they're working on now.
- **Access here:** <https://royalbcmuseum.bc.ca/rbcmhome-kids>
- **Grade range:** K-12



## **Zoos and Aquariums – Online edition**

Webcams:

- **Description:** Want to spend some time observing animals up close like you do at the zoo or aquarium? Well now is the chance to do it in your living room on your couch in your pyjamas! These also make great background videos for when you want to convert your TV or computer monitor into an oasis!
  - San Diego Zoo: <https://zoo.sandiegozoo.org/cams/koala-cam>
  - Georgia Aquarium: <https://www.georgiaaquarium.org/webcam/ocean-voyager/>
  - Houston Zoo: <https://www.houstonzoo.org/explore/webcams/>
  - Zoo Atlanta: <https://zooatlanta.org/panda-cam/>
  - Monterey Bay Aquarium: <https://www.montereybayaquarium.org/animals/live-cams>



### **MindFuel**

- **Description:** Mindfuel is providing all of their resources for free during this time. Students can explore the wonder of STEM by engaging in hundreds of resources including game-based learning, hands-on activities, real-world videos and animations, hands-on experiments and STEM career showcases. Teachers can roll out lesson plans through Wonderville's online classroom management functionality and manage student progress.
- **Access here:** <https://mindfuel.ca/staysafe/>
- **Grade range:** K-12



### **Ryan's World**

- **Description:** A Youtube channel that has tons of science experiments and educational videos.
- **Access here:** [https://www.youtube.com/channel/UChGJGhZ9SOOHvBB0Y4DOO\\_w](https://www.youtube.com/channel/UChGJGhZ9SOOHvBB0Y4DOO_w)
- **Grade range:** k-6
- **Example activities:**
  - Easy DIY Science Experiments For Kids (<https://www.youtube.com/watch?v=087hssnar-0>)
  - Leak proof bag (<https://www.youtube.com/watch?v=xWYzFbCXouo>)
  - Why you should wash your hands for kids (<https://www.youtube.com/watch?v=0eQTCZbhtYU>)
  - How to make easy DIY tornado in a bottle with homemade lava lamp (<https://www.youtube.com/watch?v=QOCxiUgftsc>)

### **Math Games**



- **Math Playground**
  - **Description:** A website dedicated to engaging math games. No registration or login required. You can choose the topic you want to focus on.
  - **Access here:** <https://www.mathplayground.com/>
  - **Grade range:** 1-6



- **FunBrain**
  - **Description:** A website dedicated to engaging math games. No registration or login required. You can choose the topic you want to focus on.
  - **Access here:** <https://www.funbrain.com/>
  - **Grade range:** K-8



## Virtual Camps



- **Assiniboine Park & Zoo Virtual Spring Break Camp**
  - **Description:** Based out in Winnipeg, Manitoba, the Education team has put together fun educational activities for you to do at home and they have posted videos on their facebook page. Their first released video was on Tropical Adaptations! Tune in to find out what else you can learn from zoo experts!
  - **Access here:** <https://www.facebook.com/assiniboineparkzoo>
  - **Grade range:** 1-6



- **Ocean Initiative Marine Biology Camp**
  - **Description:** During the school shutdowns, we've decided to launch a (very) informal, impromptu, virtual marine biology camp. Follow us on [Facebook](#) or [Instagram](#), and you should see us in your news feed when we go live, Mondays and Thursdays at 11 am Pacific time.
  - **Access here:** <http://oceansinitiative.org/virtual-marine-biology-camp/>
  - **Grade range:** Younger audience



- **Exploring By The Seat Of Your Pants**
  - **Description:** Each month during the school year we host 25+ Google Hangout events for classrooms. We regularly host full day, week and month events focusing covering themes like oceans, biodiversity, women in science, space exploration, ocean plastics, climate change and more.
  - **Access here:** <http://www.exploringbytheseat.com>
  - **Grade range:** various



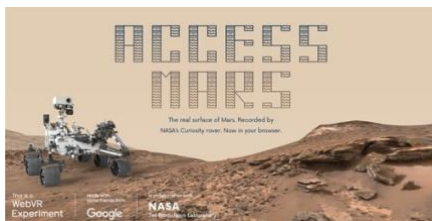


## Virtual Field Trip



### Future U. – Tour of Rocket

- **Description:** Join Boeing and Discovery Education on a mission to inspire the world through aerospace innovation with an exclusive virtual field trip to historic Johnson Space Center in Houston, Texas. This behind-the-scenes tour will introduce students to Boeing employees who are preparing to write the next chapter of space history with the launch of the Starliner/CST-100 spacecraft and the deployment of the Space Launch System (SLS).
- **Access here:** <https://www.boeingfutureu.com/virtual-field-trips/space>



### NASA- Access Mars

- **Description:** Access Mars lets you explore a 3D replica of Martian surface, exactly as it was recorded by the Curiosity rover. As Curiosity has travelled across Mars, it's taken digital photographs with two stereoscopic camera systems. By combining and analyzing these photographs, scientists at NASA JPL have created a 3D model used to study Mars and plan future experiments. For the first time, this same 3D model is now available here for anyone to explore in their browser using WebVR.
- **Access here:** <https://accessmars.withgoogle.com>



### Philip J Currie Dinosaur Museum

- **Description:** Based out of Wembley, Alberta, the museum will be releasing engaging activities and videos that you can participate in from home. Make sure to follow them on their social media to stay up-to-date [Facebook](#), [Instagram](#), [Twitter](#).
- **Access here:** <https://dinomuseum.ca/>
- **Grade range:** various
  - Example activity: Virtual Tour of the Museum ([https://www.youtube.com/watch?v=l5sYik1X-Cw&fbclid=IwAR1s1aqjWDbYz8caWsBw9H8Kcz1\\_K7tiT6KZmSSIBE2Kb6FQDKF0LfEni8c](https://www.youtube.com/watch?v=l5sYik1X-Cw&fbclid=IwAR1s1aqjWDbYz8caWsBw9H8Kcz1_K7tiT6KZmSSIBE2Kb6FQDKF0LfEni8c))



**Other sites that have put together a list of great resources** (some of which we have pulled from already):

- **Canadian Association of Science Centres**
  - **Description:** CASC compiled a list of all the Canadian science centres and science museums that are offering online programming and resources for families.
  - **Access here:** <https://www.canadiansciencecentres.ca/What-is-our-sector-doing>
  - **Grade range:** various
  
- **Milwaukee With Kids**
  - **Description:** They've put together a great google spreadsheet of resources out there organized by subject matter (Math, Science, Social Studies, Language Arts, Music & Movement, Art/Creation, Podcasts/Audio Books)
  - **Access here:** [https://mkewithkids.com/post/overwhelmed-by-all-the-ideas-we-put-them-in-one-place-for-you-by-subject?fbclid=IwAR3UaZ\\_8T7w\\_mbpRVAk4NO2Tb6ESGtxX\\_\\_0FGITWpiUF-PFwVzXRC9O8uMo](https://mkewithkids.com/post/overwhelmed-by-all-the-ideas-we-put-them-in-one-place-for-you-by-subject?fbclid=IwAR3UaZ_8T7w_mbpRVAk4NO2Tb6ESGtxX__0FGITWpiUF-PFwVzXRC9O8uMo)
  - **Grade range:** K-7
  
- **Teachers Pay Teachers**
  - **Description:** A website where educators can share and find resources, knowledge and inspiration for teaching. This website hosts a variety of activities and
  - **Access here:** <https://www.teacherspayteachers.com/Browse/Price-Range/Free/PreK-12-Subject-Area/Science>
  - **Grade range:** PreK-12



# Become a Citizen Scientist

## What is Citizen Science?

Citizen Science is when members of the general public help to collect or analyze data in a collaborative project with professional scientists. Projects can range from sending in photos of the northern lights to measuring the amount of precipitation you received in your backyard, to counting the number of elephants in a photo. There are so many citizen science projects out there, you're bound to find one that interests you! We've selected a few below to get you started!

### Zooniverse

- <https://www.zooniverse.org/projects?discipline=biology&page=1&status=live>
- This site hosts a number of citizen science projects across all sorts of disciplines including biology, climate, nature and physics just to list a few. A few of our favourite projects include the Snapshot series: Snapshot Elephants for Africa, Snapshot Camdeboo, Snapshot Grumeti, Snapshot APNR and Snapshot Mountain Zebra. You just go on the website and you'll be given a series of photos taken by camera traps to identify different animals. Instantly you get transported to a different part of the world and get to see what kind of wildlife live there while also collecting really useful data for scientists!
- These projects require that you have a computer or tablet with internet connection.

### Never Home Alone: The Wild Life of Our Homes

- <https://www.inaturalist.org/projects/never-home-alone-the-wild-life-of-homes>
- This project aims to document the species that live indoors with humans, including but not exclusive to arthropods (insects and their kin).
- You will need a computer and access to the internet to upload data. You can also add a photo to your observations so a smartphone/tablet with a camera, or a camera itself would be helpful.

### IceWatch

- <https://www.naturewatch.ca/icewatch/>
- IceWatch engages citizens to record ice events - the freeze and thaw dates of lakes and rivers. This information helps scientists understand the freeze-thaw cycles of Northern water bodies and how they're changing.
- You will need a smartphone or tablet and/or a camera and computer with internet access.

### Foldit

- <https://fold.it/portal/>
- This project takes the form of a computer game. It allows participants to explore different ways a protein can be structured since there can be so much variation. It's important for scientists to know the structure of a protein before they can create drugs to target it, so by playing the game, you can be part of collecting data on ways in which proteins can be structured to aid scientists in their further studies.
- You'll need a computer with internet access.

### Leaf Out

- <https://journeynorth.org/leaf/index.html>
- Record when the leaves start coming out of your adopted tree and measure the leaves. Gathering this information helps scientists understand seasonal changes.
- You will need a tree that you can easily and frequently access and a computer with internet access to upload the data.



## **Want to find more citizen science projects? Visit these portals:**

### **Citizen Science Portals**

- SciStarter
  - <https://scistarter.org/>
- National Geographic Citizen Science Projects
  - <https://www.nationalgeographic.org/idea/citizen-science-projects/?page=1>
- Government of Canada Citizen Science Portal
  - [http://science.gc.ca/eic/site/063.nsf/eng/h\\_97169.html](http://science.gc.ca/eic/site/063.nsf/eng/h_97169.html)
- NatureWatch
  - <https://www.naturewatch.ca/>
- Journey North
  - <https://journeynorth.org/>
- CitizenScience.org
  - <https://www.citizenscience.org/>
- Zooniverse
  - <https://www.zooniverse.org/>
- NASA Science Citizen Science
  - <https://science.nasa.gov/citizenscience>



# Feedback

Thank you for viewing our STEM @ Home Educational Resource Guide.

Did you find it helpful? Please let us know in a short 4 question survey [here](#).