

Developed in partnership with Black Member Alliance (BMA)
Member Resource Group (MRG)

Black History Month

Staying active. Learning together. #STEM@CGI

“STEM@CGI” offers STEM-based activity packets for children, including practical STEM activities and competitions. Get your family involved, share pictures, learn and have fun!

Black Member Alliance (BMA) is a CGI Member Resource Group (MRG) whose mission is—

- To effect change and serve as a catalyst to push the needle forward for CGI's Black members and allies.
- To engage and collaborate with the respective internal CGI organizations to initiate and/or support activities in the four key areas of internal education, mentoring and networking, monitoring and accountability and partnership in our communities.

We invite you to celebrate Black History Month with us as we focus on honoring the impressive historical and on-going contributions from notable Black Americans to the fields of Science, Technology, Engineering, Art, and Math (STEAM)!

Americans observe Black History Month from February 1 to March 1 each year.

Activity 1 –A Virtual Field Trip!

Science



Technology



Engineering



Art



Math



What is a virtual field trip? A virtual field trip is when you travel to a place you have never visited; hear sounds you have never heard, or listen to people you have never met by using online tools.

Ages - 5 and up

Click on the following the words **Science, Technology, Engineering, Art and Math** to

- **Visit websites** to tell you more about Black scientists making a difference today
- **Hear podcasts** of what it is like to be a computer scientist
- **Take virtual tours** of Historically Black Colleges and Universities (HBCUs) that offer Engineering and Computer Science programs
- **Visit the Library of Congress** to find out more about the Harlem Renaissance
- **Meet Black scholars** in the Mathematical Science

Activity 2 – Family Traits and Traditions Activity



What are family traits? Traits can include things like eye color, hair color, shape of your nose, dimples, chin shape (smooth, no cleft), how your ear lobes are attached (attached or free), height, whether or not you can roll your tongue.

Black families have a culture that comes from very diverse backgrounds. Traits and traditions are those characteristics that show how we are related and where we come from. We all have them!

In this activity, you will create a family tree of traits shared by your family members and traditions you hold most dear as a family.

Ages - 5 and up

1. **Download** the instructions to create your family tree of traits and traditions from [here](#).

What you need

- A PC/Tablet capable of running MS Paint or other image-editing software
- Printer
- Black, green, yellow, and red construction paper
- Scissors
- Pencils/markers
- Tape/glue

Activity 3 – Just call me “Gene”



What are genes? Genes define our family traits from skin color to the shape of our ears. They are stretches of DNA code produced in our bodies that make cells called proteins.

Proteins give instructions to other cells all over the body on our physical characteristics and what organ to belong to. This includes characteristics like skin color, whether or not we can roll our tongue, the shape of our eyes, height, eye color and much more!

Passed down from parents, genes define us all as human beings. Genes need special technology to be studied. One method scientists use to study genes is by creating models. Models explain how things work and ideas too complicated for us to understand using only words. Some software developers build video games as models to teach complex ideas like genes in a simple way!

In this activity, try some tutorials and create your own video game using the Python coding language.

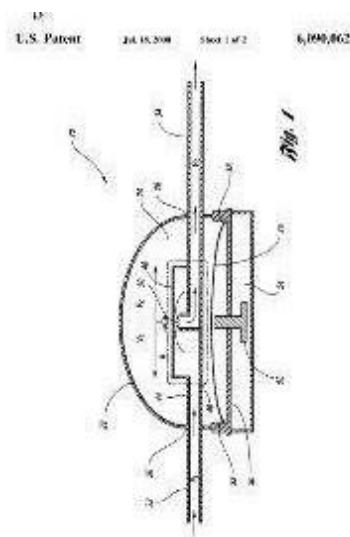
Ages - 8 and up

1. **Click** the Hour of Python link [here](#).

What you need

- Internet access

Activity 4 – STEM Highlight



Courtesy U.S. Patent Office

Dr. Alexa Irene Canady

Dr. Canady is the first Black female neurosurgeon in the U.S. As a neurosurgeon, she engaged in research to make advances in neurosurgical techniques specializing in pediatric care.

Her research led to the invention of a programmable anti siphon shunt to treat a hydrocephalus, a condition known by excess fluid build-up in fluid-containing cavities of the brain, which results in developmental, physical, and intellectual impairments. With this invention, she shares a U.S. patent with two fellow neurosurgeons.

Hear from Dr. Canady as she stresses the need to attract more young neurosurgeons and her experiences as a woman in STEM by clicking [here!](#)

Activity 5 – Art of Storyboarding Tell your story



What is storyboarding? Usually, a storyboard is a panel or series of panels on which a set of sketches is arranged in consecutive order to show the important changes of scene and action in a series of shots (as for a film, television show, or commercial). Meant to be used as a plan for storytelling, the idea first came about from the entertainment industry—cartoons, comics, movies.

Storyboards are sketches of a story that include a plot, a setting, and character(s) one scene at a time. In Business and IT industries, storyboarding is an important technique to support the development of products, mobile applications and websites.

In this activity, you will—

1. Create a storyboard to sketch the events of a story. The story can be about anything.
 - A personal/historical story
 - A creative story
 - A story from your family tree
2. Make your story come to life with the Scratch block-coding platform.

Ages - 5 and up

1. **Open** the *Black History Storyboarding Worksheet* link [here](#).
2. **Print** the worksheet follow the instructions found in the *Black History Month PowerPoint presentation* link [here](#).
3. **Draw** your storyboard on the worksheet using pen/pencil or create your own.
4. **Include** characters, setting, and plot in your story.

Ages – 8 and up

1. **Complete** steps 1 through 4 from above.
2. **Go to** [Scratch.mit.edu](https://scratch.mit.edu) to bring your story to life!

What you need

- Pen/pencil or color pencils
- PC/tablet with Internet access
- Printing device

Bonus Activities

Experience the story of our genes!



Ages - 11 and up

Try out [In and Beyond Africa](#) virtual video game to experience the story of our genes (genomic code)!

In & Beyond Africa (IABA) is an animated set of interactive learning game that opens with an overview of human migrations throughout Africa and beyond! [Find out more on Genome: Unlocking Life's Code.](#)

Objective—

Learn about the rudiments of prehistoric tool making, the genetic basis of human skin pigmentation and genetics facts of a number of domesticated crops and animals.

Virtual Harlem



Ages - 14 and up

Experience a 3D virtual representation of the Harlem Renaissance/Jazz Age in Harlem, New York!

Three-dimensional (3D) virtual reality and graphic art is becoming an increasingly popular technology used in the Computer Science and IT industry to create models and tell stories of objects, places and times we would never be able to experience in two-dimensional (2D) formats such as pictures or words.

Objective—

1. **Click and move** through interactive elements, collaborative possibilities, music of the period using the [Archive for Virtual Harlem](#) link [here!](#)
2. Try making your own 3D experience with [Alice3!](#)