



APRIL

Monthly Patch Program

Girl Scouts of Central Illinois

Barbara McClintock

“If you know you are on the right track, if you have this inner knowledge, then nobody can turn you off... no matter what they say.”

Barbara McClintock (June 16, 1902 – September 2, 1992) was an American biologist. She was a distinguished cytogeneticist who worked on inheritance in maize. McClintock was awarded the 1983 Nobel Prize in Physiology or Medicine.

Complete 3-Daisy, 4-Brownie, 5-Junior, 6-Cadette,
and 7-Senior/Ambassador steps to earn your patch.

All monthly patches are custom designed patches. Once we get the final number of patches after the 15th of each month, we place an order. Patches take about a month to create and then we mail them to you.

Order patch on-line by **May 15, 2021** at www.getyourgirlpower.org

Discover

1. Learn more about Barbara’s life. Look for books at your local library or look online to learn about whom she was and what she accomplished.
2. Barbara made discovery after discovery over the course of her long career in cytogenetics. But she is best remembered for discovering genetic transposition (“jumping genes”). What are other discoveries made by Barbara? Discuss with your troop.



Monthly Patch Program Girl Scouts of Central Illinois

3. Barbara won the Nobel Prize in 1983. She stated “The prize is such an extraordinary honor. It might seem unfair, however, to reward a person for having so much pleasure over the years, asking the maize plant to solve specific problems and then watching its responses.” What does winning a Nobel Prize mean to you? What are the qualifications in earning a Nobel Prize? Take some time to research Nobel Prizes winners, what did they discover, what are the qualifications to be a Nobel Prize winner, then discuss with your troop your findings.
4. At Cornell University, Barbara earned a master degree and a Ph. D in Botany. Botany is also called plant science, plant biology or phytology, is the science of plant life and a branch of biology. A botanist, plant scientist or phytologist is a scientist who specializes in this field. Research what Botanians do. Learn more about other Botany careers. Share your findings. Which botany career would you choose?

Connect

5. Barbara won the Nobel Prize for Jumping Genes. She was the first American woman to win an unshared Nobel Prize. In order to understand the jumping Genes discovery you need to research what variegated color pattern of maze colors are. Create your own pattern using any objects. It can be jelly beans, Legos, food, paint or any items you have. Ask someone in your troop or in your family to see if they can guess your pattern.
6. Barbara’s research on genes was very advanced for the time period, and many other scientists ignored her or said that her findings were not valid. It was hard to work in an environment such as that, so she stopped attempting to publish her work. Discuss with someone how you would feel if this happen to you. Do you think this kind of discrimination is still



Monthly Patch Program Girl Scouts of Central Illinois

happening today? What would you say to someone who kept ignoring your findings and you as a person?

7. Learn what DNA is in your body. What are you made up of? One of the most interesting features of DNA is its structure. The double helix model is quite eye-catching and something closely associated to DNA. Research what DNA structure looks like and create your own using food or any household items you find around your home. <https://redtri.com/explaining-dna-to-kids/>
8. What is a scientist? There are many different kinds of scientist out there in the world. Research the definition of a scientist. What kind of scientist would you be? Pick a scientist you like and discover their discoveries. Maybe do an experiment, read an article, or read a book about the person.

Take Action

9. Barbra's discoveries have had an effect on everything from genetic engineering to cancer research. Find ways how you can help support cancer research.
10. Barbra studied genes (and the cells that make up genes) of corn. She looked at corn cells under microscopes and with special dyes called stains to see the parts that make up the DNA of corn: the chromosomes. It was from this work that Barbara and another scientist named Harriet Creighton discovered that these small parts called chromosomes form the substance we now know is DNA, which forms our genes. Together they published a



Monthly Patch Program Girl Scouts of Central Illinois

paper on this topic in 1931. Try your own DNA experiment. Click [here](#) for the Strawberry DNA experiment. Explore other ways to extract DNA out of food.

11. Barbara's discoveries have had an effect on everything from genetic engineering to cancer research. During this time, many people with cancer aren't able to go out as often or have visitors due to covid-19. Create a care package(s) for a cancer patient. Write a letter, make a card, or create an activity packet. Before dropping off items please contact your local hospitals to see if it's allowed.