

Genetic Trait Bracelet

Big idea

See what genetic traits you have and represent them with a personalized bracelet.

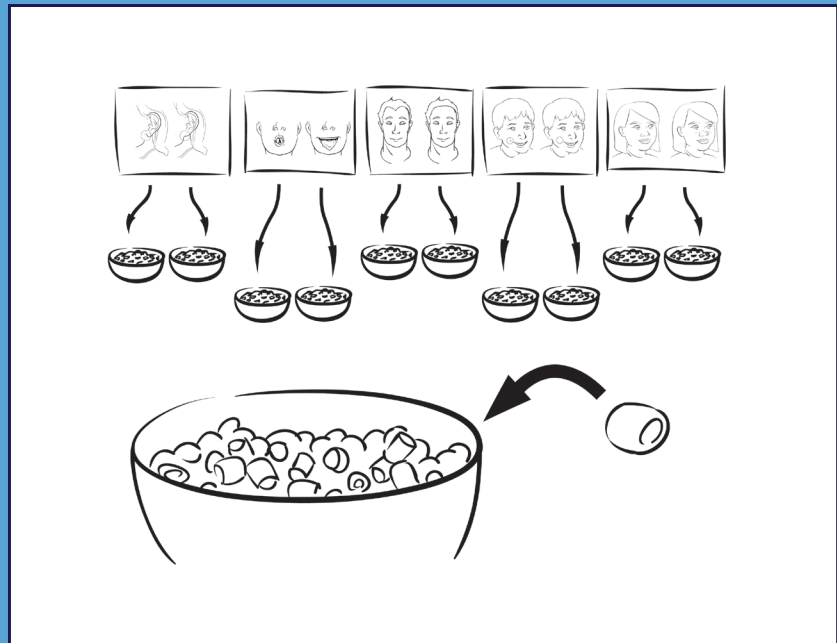
You will need

WHAT WE GAVE YOU:

- 10 colors of pony beads
- pipe cleaners
- Genetic Trait Bracelet instruction sheets

STUFF YOU PROVIDE:

- optional: mirror



Set it up

Lay out the trait cards in the order shown in the diagram. Open each container of beads and place the corresponding colors below each of the trait cards. Put the pipe cleaners on the left side of the table. Participants will start at the left and work their way to the right, adding beads to their pipe cleaners as they go.

It's showtime!

As families approach, invite them to learn about genetic traits. These are observable characteristics that are passed down from parent to child. Each person will have many traits they have in common with others, but their overall combination of traits makes them unique.

Ask participants to look at the pictures on each trait card and decide which trait they have, and then add a bead of the corresponding color to their pipe cleaner. They should end up with five beads representing their five traits. Then, they can twist the pipe cleaner around their wrist and wear it as a bracelet.

Encourage students to compare their bracelets with their family members and friends. They may notice that there are usually similarities within biological families.

Continued ›

Genetic Trait Bracelet

Why is this science?

Each of these traits is controlled by **genetics**, meaning that the trait you show on the outside is the result of your genes on the inside. **Genes** play an important role in determining **physical traits** — how we look —and lots of other stuff about us. They carry the information that makes us who we are and what we look like: curly or straight hair, long or short legs, even how we might smile or laugh. Many of these traits are passed from one generation to the next - or inherited - in a family by genes. For example, if your mom has freckles, you might have freckles too because you inherited the trait for freckles.

Genes are so small you can't see them. They are found on tiny spaghetti-like structures called **chromosomes**, which are found inside cells. Each cell in the human body contains about 25,000 to 35,000 genes. **Cells** are the very small units that make up all living things and your body is made of billions of them. A cell is so tiny that you can only see it using a strong microscope. The chromosomes inside the cell come in matching sets of two (or pairs) and there are hundreds — sometimes thousands — of genes in just one chromosome. In humans, a cell contains 23 pairs of chromosomes inside its nucleus. Half of the chromosomes come from one parent and half come from the other parent.

The chromosomes and genes are made of **DNA**. The DNA in a gene spells out specific instructions for making proteins in the cell. Proteins are the building blocks for everything in your body. Bones and teeth, hair and earlobes, muscles and blood, are all made up of proteins. Like chromosomes, genes also come in pairs. Each of your parents has two copies of each of their genes, and each parent passes along just one copy to make up the genes you have. The genes that are passed on to you help to determine many of your traits, such as those in this activity. **Source:** <https://kidshealth.org/en/kids/what-is-gene.html>

North Carolina connection

Genetic or DNA Testing is the analysis of the chromosomes (DNA) found in a sample of blood, hair or skin from a person. Tissue from the inside surface of the cheek is also commonly used. The testing can provide information about a person's genes and chromosomes and is done for various reasons, such as:

- Diagnostic testing -To diagnose or rule out a specific genetic or chromosomal condition
- Forensic testing – to identify a person for legal purposes
- Paternity testing – to establish biological relationships between people
- Genealogical testing – to determine ancestry or ethnic heritage

The variety of genetic tests and the availability of them has expanded throughout the years. In fact, now genetic test kits are available to purchase and use without even going through a health care professional. LabCorp, headquartered in Burlington, NC, was an early pioneer of genomic testing and develops genetic testing methods. LabCorp operates one of the largest clinical testing laboratory networks in the world and tests genetic test kit samples there. They perform all the testing for 23andMe DNA Test Kits, for example.



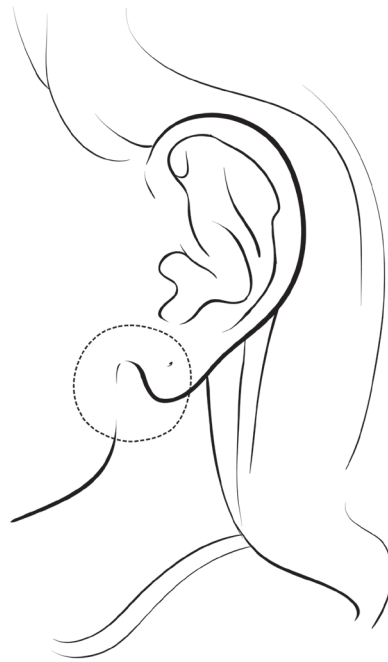
Genetic Trait Bracelet

Supplies

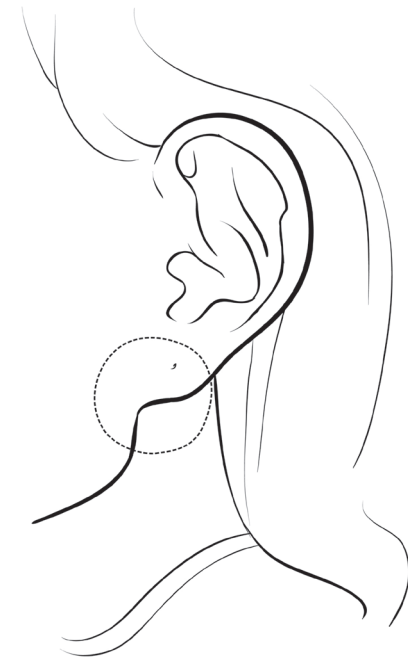
- pipe cleaner
- bright pink beads
- light pink beads

Take a look at your earlobes.

Do they hang free or are they attached to your head?



If your earlobes are free,
add a **bright pink** bead.



If your earlobes are attached,
add a **light pink** bead.



Genetic Trait Bracelet

Supplies

- pipe cleaner
- blue beads
- light blue beads

Try to roll your tongue like a taco.
Can you do it?



If you can roll your tongue,
add a **blue** bead.

If you can't roll your tongue,
add a **light blue** bead.



Genetic Trait Bracelet

Supplies

- pipe cleaner
- yellow beads
- ivory beads

Pull your hair back from your forehead.
Is your hairline pointed or straight?



If you have a pointed hairline,
add a **yellow** bead.



If you have a straight hairline,
add an **ivory** bead.



Genetic Trait Bracelet

Supplies

- pipe cleaner
- green beads
- light green beads

Smile! Do you have any dimples in your cheeks?



If you have any dimples,
add a **green** bead.

If you don't have any dimples,
add a **light green** bead.



Genetic Trait Bracelet

Supplies

- pipe cleaner
- purple beads
- light purple beads

Do you have any freckles?



If you don't have freckles,
add a **purple** bead.

If you have freckles,
add a **light purple** bead.

