



DNA Bracelet Activity

Originally developed for the Children's Museum of Pittsburgh

GRADE LEVELS: 2-5

TIME: 30-45 minutes

SUBJECT: Biology/ Genetics

CONCEPTS: DNA, relatedness, genetics

LEARNING OBJECTIVES

- All living things have DNA.
- DNA is a special molecule in your body that contains all the information about your body – the color of your hair and eyes for examples.
- Each person's DNA is unique. Your DNA makes you unique and different from everyone else.

MATERIALS

- String
- Beads (At least as many beads per color as number of students, 20 students 20 red, blue, green... etc beads)
- Bowls (to keep the beads in)
- "Station" mats

BACKGROUND INFORMATION

- DNA is a special type of molecule that holds your body's genetic information. This means it is like a "recipe book" on how to make you!
- Each person's DNA is unique; it is different from everyone else's. Some types of twins (identical twins) share the same DNA.
- Your DNA helps your body make you, you. It controls things like hair color, eye color, whether you are right or left handed, and all kinds of other traits.
- One piece of evidence that suggests that all living things are related evolutionarily is the fact that they all have DNA.

ACTIVITY

1. Inform students that they will be learning about a special molecule called DNA. Tell students that DNA is special because it is what makes everyone different and unique!

- Let your visitor know that:
 - Everyone and every living thing has DNA
 - Each person's DNA is unique; it is different from everyone else's. Some types of twins (identical twins) share the same DNA.
 - DNA is like a recipe book that tells your body how to make you, you!

2. Next, tell students that DNA controls traits (special characteristics) like hair color, eye color, or handedness.

- Tell the children to look around and notice the differences between themselves and their classmates. The differences are due, in part, to DNA.

Now pass out the pipe cleaners to the students.

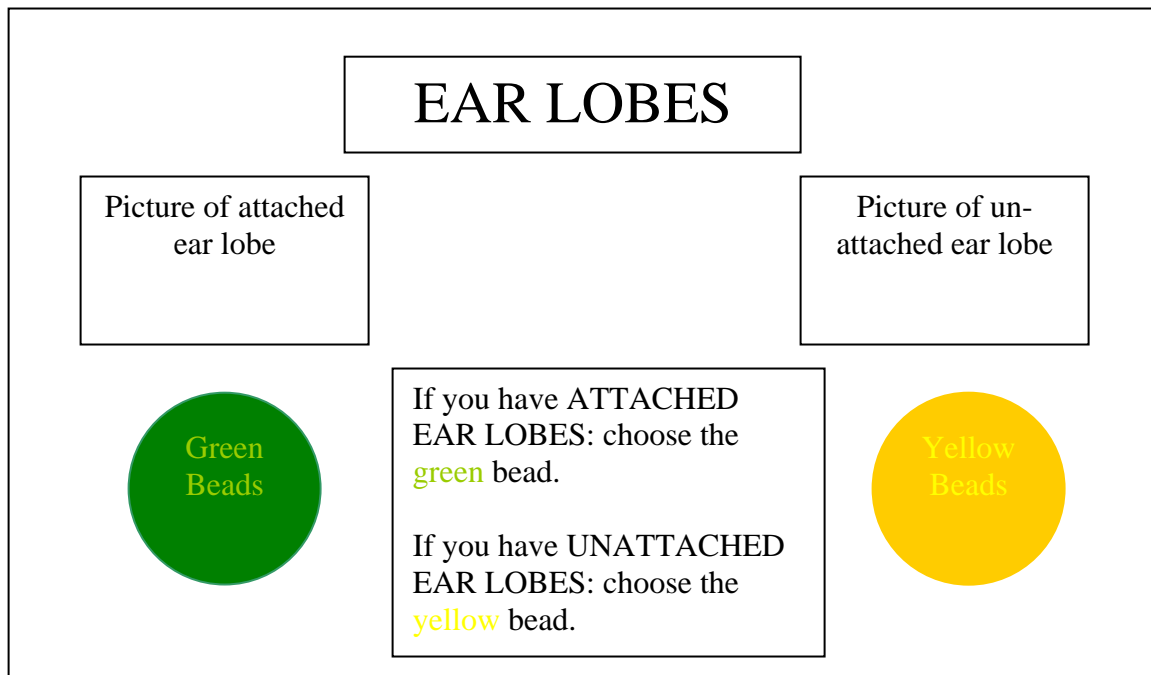
3. Instruct the students to visit each of the 8 stations and look at the trait listed. Tell the students to identify which "version" or the trait they have (i.e. right or left handed, dimples or no dimples, etc.)
 - Then have the students pick the bead which represents the trait they have (i.e. green bead for attached ear lobes, yellow bead for un- attached earlobes.)
4. Once the students have visited all of the stations, have them return to their seats and look at their completed bracelets.
 - Have them observe the similarities and differences between their bracelet and their classmates'.
5. Inform students that people who are related share more DNA than people who are not related.
 - If you have twins or siblings in your class, this is a good time to present their bracelets. (Their bracelets should be more similar to each other than to other students'.)
6. Ask students to give examples of what they have learned and how it relates to their bracelet.
 - Ex: "Does your bracelet match anyone else's exactly?"
 - "What are some differences you see between your bracelet and your friends' bracelets?"
7. Review the important information that was given at the beginning of the activity.
 - All living things have DNA.

- DNA is a special molecule in your body that contains all the information about your body – the color of your hair and eyes for examples.
- Each person’s DNA is unique. Your DNA makes you unique and different from everyone else.

The stations and phenotypes (bead options) can be as follows:

1. Hair Color-----blonde, brown, red, black-----4 colors needed
2. Handedness-----right handed, left handed-----2 colors needed
3. Hairline-----straight, widow’s peak-----2 colors needed
4. Tongue Rolling---roller, non-roller-----2 colors needed
5. Eye Color-----blue, brown, green, gray-----4 colors needed
6. Dimples-----dimples, no dimples-----2 colors needed
7. Ear Lobes----- attached, unattached-----2 colors needed
8. Hair Texture----- curly, straight-----2 colors needed

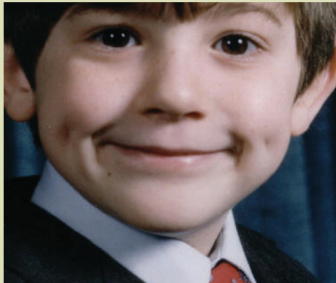
Example station:



Dimples



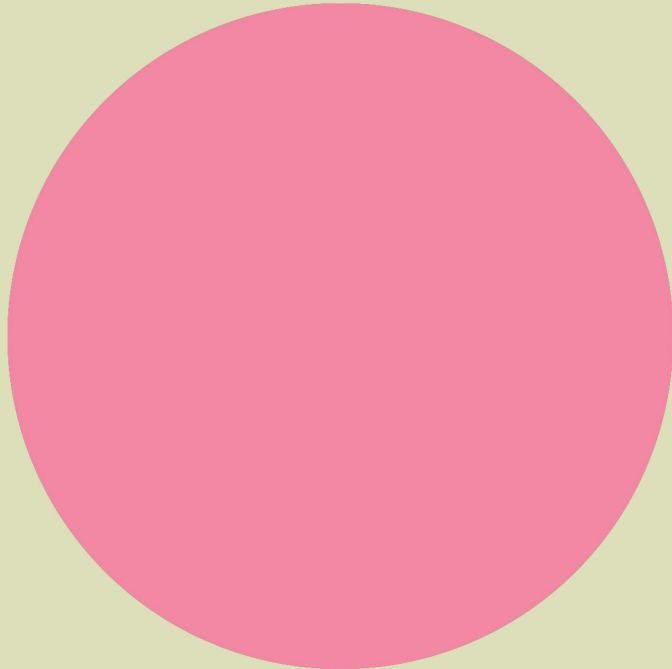
Dimples



No Dimples



Ear Lobes



Attached



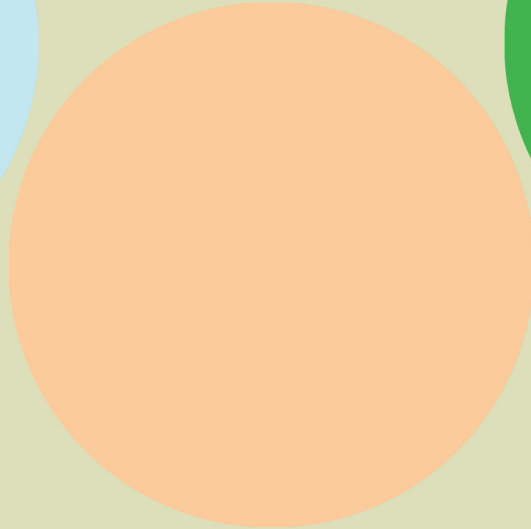
Unattached



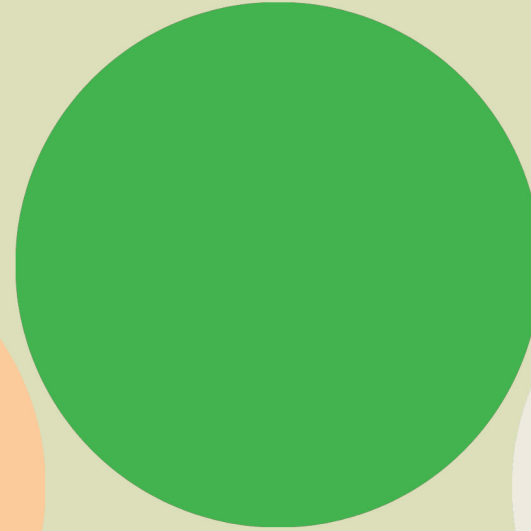
Eye Color



Blue



Brown



Green



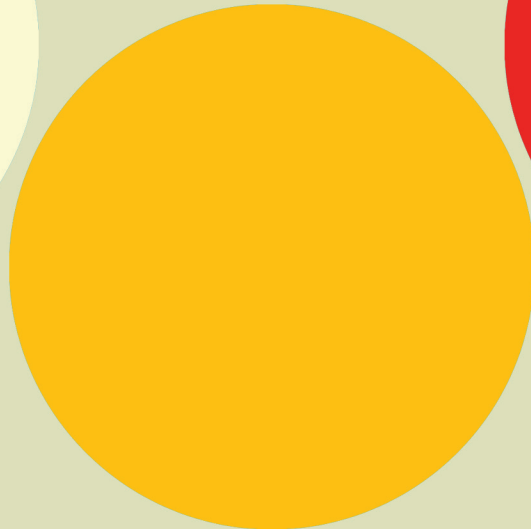
Gray



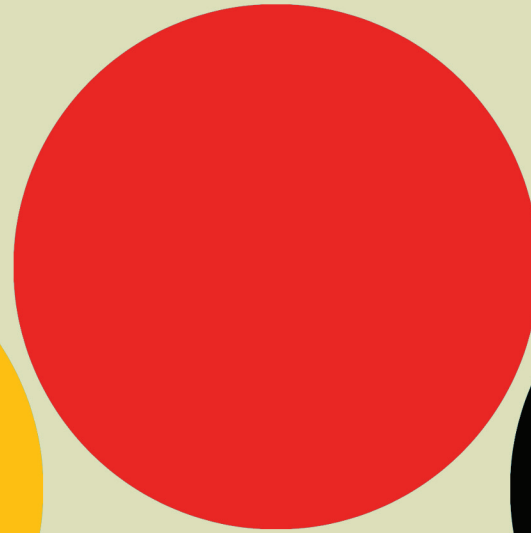
Hair Color



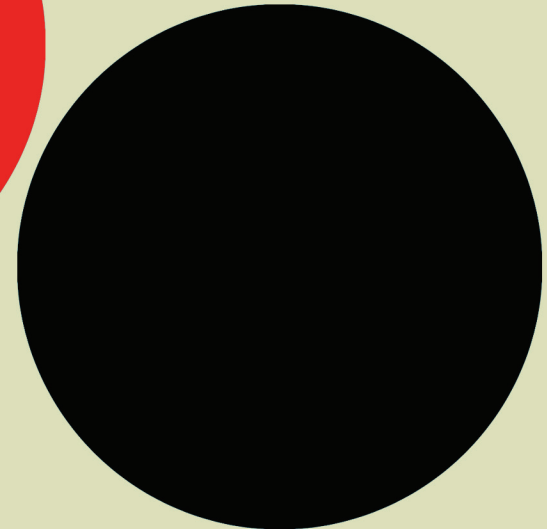
Blonde



Brown



Red



Black



Hairline



Straight



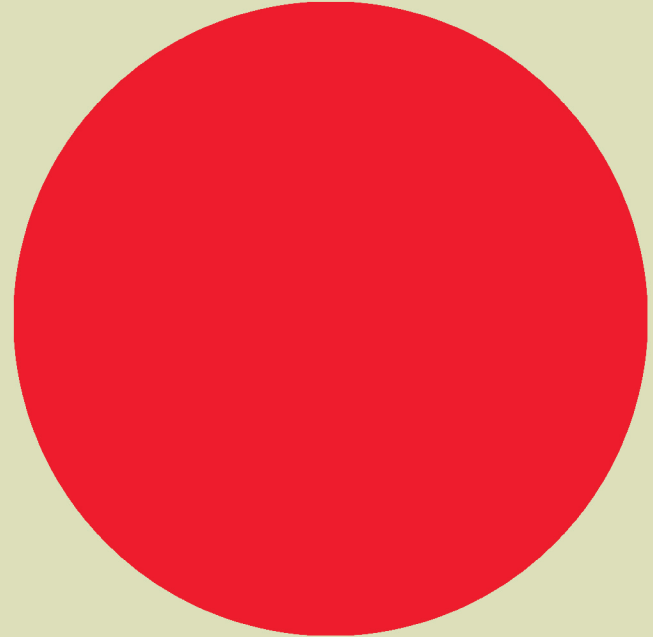
Widow's Peak



Hair Texture



Curly



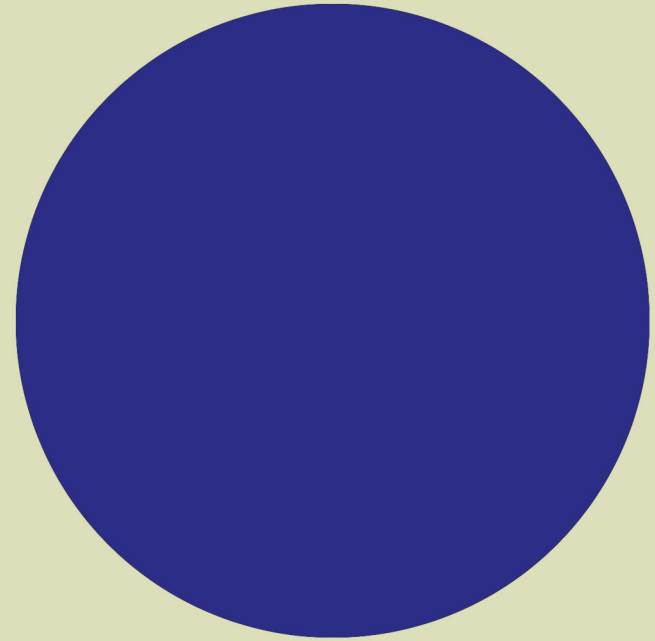
Straight



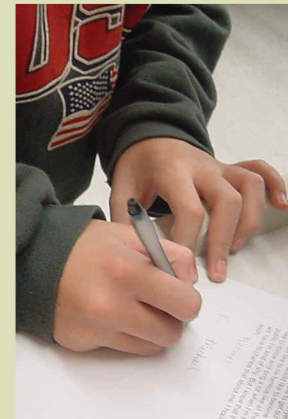
Handedness



Left-handed



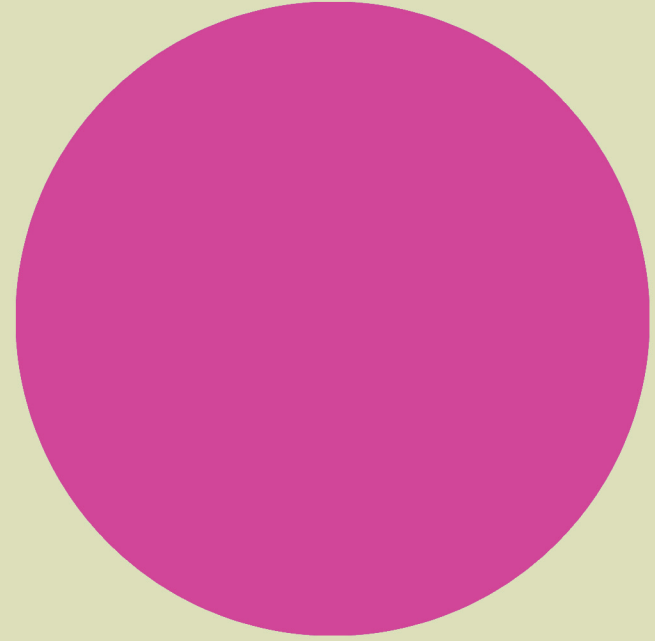
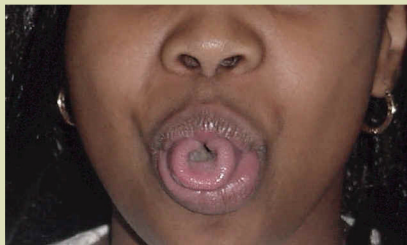
Right-Handed



Tongue Rolling



Roller



Non-Roller

