

## THE MANY HUES OF HUMANS: Skin Color Science!

### Description

Humans primarily use our sense of sight to recognize individuals, and we place much importance on visual cues. Skin color is both an adaptation to life under the sun, and a critical way we identify ourselves. Explore museum research and how studying human evolution better equips us to understand our general mammalian physiology. The many hues of humans reveal unique health issues our species faced as we began living in diverse habitats away from Africa more than 100,000 years ago.

### Objectives

- Describe how differences in skin color are biological adaptations to life under the sun.
- Describe the scientific basis for the statement: “We are all Africans”
- Identify examples of how studying human evolution better equips us to understand general mammalian physiology and the unique health issues of our species.
- Explain how science cannot support the term 'race' as a valid biological concept.
- Relate how the social and cultural concepts of 'race' continue to affect our treatment of others.

### Ohio’s Learning Standards

**Grade 8 Science:** Life Science - Species and Reproduction

**Grade 8 Social Studies:** Geography – Human Systems

**Grades 9-12 Science:** Biology – Heredity & Evolution

**Grades 9-12 Social Studies:** Social Transformations in the United States (1945-1994)

American Government - Basic Principles of the U.S. Constitution  
Contemporary World Issues – Global Connections  
Contemporary World Issues -Civil and Human Rights

## How You Can Help Make This Virtual Program A Success

- If you and your students are together in a classroom, and time/space allows, we may invite your students to move around the room and sort themselves into various categories.
- If you and your students are joining us from your homes, we will have an educator monitoring the Chat feature for questions. We request that you or another staff person serve as a Co-Host to help monitor students for any inappropriate Chat or camera behavior.
- If you will have a hybrid class (some at school, some joining from home), our educator will monitor the Chat and camera behavior, and we reserve the right to temporarily move any disruptive students to our Waiting Room so we or school staff can correct the undesired behavior.
- If you prefer, we can turn off all cameras and interact solely via the Chat feature.
- If time allows, have your students take a look at this website:  
<http://understandingrace.com>. This site is maintained by the American Anthropological Association, and shows images of their travelling exhibit “RACE: Are We So Different?” CMNH hosted this exhibit in 2008 and received permission to continue the discussion with this IVC program.

## Vocabulary

**adaptation:** Special genetically-based physical or behavioral characteristics that allows the possessor to survive and successfully reproduce.

**anthropology:** The scientific study of the origin, the behavior, and the physical, social, and cultural development of humans.

**Civil Rights Act:** Passed by the United States Government in 1964, this act prohibits employers from discriminating against employees in Employee Benefit Plans regarding contributions or benefits based on race or gender. The law also encouraged the desegregation of public schools and authorized the withdrawal of federal funds from programs practicing discrimination.

**deoxyribonucleic acid (DNA)** – the material found primarily in a cell’s nucleus that carries the instructions for making all the structures and functions of an organism.

**genotype:** The genetic makeup, of an organism or a group of organisms. More specifically, the combination of alleles located on homologous chromosomes that determines a specific characteristic or trait.

**“Jim Crow” Laws:** Enforced racial segregation in the U.S. South between 1877 and the 1950s. The term, taken from a minstrel-show routine, became a derogatory term for African Americans. Used in Southern states of the United States to preserve segregated schools, transport facilities, and housing, until the doctrine of ‘separate but equal’ was declared unconstitutional in 1954.

**phenotype:** The observable physical characteristics of an organism, as determined by both genetic makeup and environmental influences. The expression of a specific trait is based on genetic and environmental influences.

**race:** *as a biological concept:* A population whose members share a greater degree of physical and genetic similarity with one another than with other humans.



**race:** *as a social/historical concept:* an arbitrary classification of modern humans based on one or more physical characteristics such as skin color, facial form or eye shape. As a social concept, these characteristics are understood to have a positive or negative link to other characteristics such as intelligence, physical prowess and moral character.

**Scala Naturae:** (Latin for “The Great Chain of Being”) The belief that all things and creatures in nature are organized in a hierarchy from inanimate objects at the bottom to God at the top. This system of belief was popular in the seventeenth and eighteenth centuries.

**segregation:** to separate or set apart from others or from the general mass

**species:** a basic biological classification of organisms that resemble one another and may interbreed, producing fertile offspring

**trait** – a distinguishing characteristic or feature.

## Extension Activities

- The American Anthropological Association provides detailed Teacher’s Guides with their exhibit & website, found here: [http://understandingrace.org/resources/for\\_teachers.html](http://understandingrace.org/resources/for_teachers.html)
- Discuss the following list, as created by California Newsreel’s documentary Race: The Power of an Illusion.

### **TEN THINGS EVERYONE SHOULD KNOW ABOUT ‘RACE’**

1. Race is a modern idea. Ancient societies, like the Greeks, did not divide people according to physical differences, but according to religion, status, class or even language. The English word "race" turns up for the first time in a 1508 poem by William Dunbar referring to a line of kings.
2. Race has no genetic basis. Not one characteristic, trait or even gene distinguishes all the members of one so-called race from all the members of another so-called race.
3. Human subspecies don’t exist. Unlike many animals, modern humans simply haven’t been around long enough, nor have populations been isolated enough, to evolve into separate subspecies or races. On average, only one of every thousand of the nucleotides that make up our DNA differ one human from another. We are one of the most genetically similar of all species.
4. Skin color really is only skin deep. The genes for skin color have nothing to do with genes for hair form, eye shape, blood type, musical talent, athletic ability or forms of intelligence. Knowing someone’s skin color doesn’t necessarily tell you anything else about them.

5. Most variation is within, not between, “races.” Of the small amount of total human variation, 85% exists within any local population. About 94% can be found within any continent. That means, for example, that two random Koreans may be as genetically different as a Korean and an Italian.
6. Slavery predates race. Throughout much of human history, societies have enslaved others, often as a result of conquest or debt, but not because of physical characteristics or a belief in natural inferiority. Due to a unique set of historical circumstances, North America has the first slave system where all slaves shared a common appearance and ancestry.
7. Race and freedom were born together. The U.S. was founded on the principle that "All men are created equal," but the country's early economy was based largely on slavery. The new idea of race helped explain why some people could be denied the rights and freedoms that others took for granted.
8. Race justified social inequalities as natural. The “common sense” belief in white superiority justified anti-democratic action and policies like slavery, the extermination of American Indians, the exclusion of Asian immigrants, the taking of Mexican lands, and the institutionalization of racial practices within American government, laws, and society.
9. Race isn't biological, but racism is still real. Race is a powerful social idea that gives people different access to opportunities and resources. The government and social institutions of the United States have created advantages that disproportionately channel wealth, power and resources to white people.
10. Colorblindness will not end racism. Pretending race doesn't exist is not the same as creating equality.

