

## DNA DIASPORA

Kevin Reid

**Benjamin Franklin** *“Why increase the sons of Africa, by planting them in America, where we have so fair an opportunity, by excluding all black and tawny, or increasing the lovely white and red?”* (*What They Never Told You In History Class*)

**OVERVIEW:** The history curriculum that addresses slavery as taught in high school is too linear; it makes Africans appear as if they received a raw deal and no benefit inured to them during slavery this tawdry exchange in human cargo. This paper is designed to explore the notion that slavery cannot only be taught from the vantagepoint of commercial, philosophical, religious or moral grounds but also must be examined from a biological prospective. Nature abhors a vacuum even a genetic one. I will change the way slavery is presently viewed by examining the biological and genetic consequences of transporting millions Africans to the Americas. DNA Diaspora declares Africans the winners in the slave trade. African genes are here in the Americas upwards two hundred millions plus. African genes have even created hybrid racial groups in the Americas including colored, Puerto Ricans and Creoles. Finally, the ultimate of procreation is the spreading of genes by any means or methods necessary is legitimate for the “survival of the species”.

Teachers should use a multifaceted approach when teaching genetic Diaspora. In doing so there must be a thorough examination of the genetic consequences of slavery.

**RATIONALE:** Slavery and its Biological Manifestations. It is believed that upwards of one hundred million plus people were transported from Africa.

This rape of the continent and its people took place over a period of at least two thousand years often under horrendous conditions. In effect the capture and enslavement of millions of African people was nothing more than a culling processes taking the best genes and leaving the worst.

African captives brought a wide array of genes and genetic variances adding to the biological mixture of the Western Hemisphere. Thus Africans genes had a prodigious effect on the worldwide gene pool. This spread of DNA supplemented the gene pool established by primitive man whose ancestry originated from Africa.

African Diaspora requires us to investigate this array of biological adventures; in doing so several important questions must be asked and answered.

1. Just how was this genetic material commingled and absorbed into the rest of humankind?

It would be interesting to have students trace the genetic well springs arising out of Africa study the spill over into other racial admixture.

2. What genetic materials created racial groups, such as Semites and Hamities, Nilotics and Bantu Africans?
3. What are the Semites, half-and-half, that is half Caucasian and Negroid?

4. Do the features of both races, Negroid and Semite appear in Jews, Arabs and other peoples of the Middle East?

5. What are the special DNA markers that help to create the blue black skin of Nilotics such as the Watusi, Turkanna, and the Dinka people of East Africa?

## OBJECTIVES:

This curriculum is designed to acquaint students with the nuances of how nature helps to determine who are the winners in biological warfare. There are indeed unintended consequences from mans actions. One of the consequences of transporting millions of people to distant lands is the spreading of their genes. This fact is what we want students to know. Slavery, in all its horrendous details, had also some beneficial results. Results, we often over look or are afraid to admit. By noting the importance of the results of mapping the genome, students will come to appreciate the complexities of race and racial characteristics, especially in reference to African populations.

The study of African genetics can be a useful starting point for investigation. There exist two types of genes in humans, dominant and recessive. Certainly, only a cursory analysis of the genetics of African peoples can be made by high school students, but it represents a launching pad for futuristic conversation that invariably will result from new genetic discoveries.

Students might conclude there may have to be new definitions of racial classifications. Equally important, I have suggested that the depletion of much of the genetic stock of Africa has resulted in a genetic diminution of present day Africans. The process of slavery acted as a culling of the best genetic stock Africa had to offer, leaving the genetic dregs to create a different consanguinity. If nearly 100 millions Africans were selected from the indigenous population, surely, the culled remnants had to have represented a substantial array of inferior DNA, a vast but difficult load to bare on any race's genetic development.

Perhaps, this goes against the notion of "survival of the fittest suggesting that being the least fit offers protection from being carried off into bondage. These are some of the questions I hope to have students explore, discuss, debate and research.

Participation in the Teacher Institute will allow me to hone into the specifics of this endeavor setting the proper format on this controversial subject, a subject that needs exploration in the classroom.

The purpose of any specie is the continuation of its genes to the next generation. This genetic success is rewarded with continuous life of that specie. Nature books are replete with multiple ways animals and plants spread their DNA around the world. If animals and plants use whatever means necessary, why can't humans? Slavery is used, as a vector to spread African genes around the world, in my view is genetic success. If it were not for slavery, would the African gene have spread across the globe to the degree in which we find the Africans?

### **The concept of genetic viability**

The concept of genetic viability is to spread your genes, therefore your progeny, at any risk or cost that points to ultimate success. To make this point more apparent, the use of insects, plants and animals procreation models will be set forth.

In the animal world, the male walrus will compete with other male walrus, risking their lives, for exclusive mating rights to a herd of cows. They will engage in physical combat, trying to injure each other by stabbing their tusks into the neck region of the other. Males successful in attracting females, usually hold onto

their position for 1-5 days, are generally displaced by other males. In the plant world, dandelions use the wind to spread its seeds. At the risk of losing a majority of the seeds to outside forces, alternatively, many will reach maturation and continue the process. Insects like the female praying mantis and the female black widow spider will copulate; afterward they will kill their partner, sometimes devouring them. Africans in order to spread their genes knowingly or unknowingly, intentionally or unintentionally, across the Indian Ocean, to Palestine, Pakistan, India, Kuwait, United Arab Emirates, across the Atlantic to the Western Hemisphere and beyond, put themselves at great risk to spread their genes.

Would these genes have arrived in such abundance without exploitation of the hemisphere by Europeans?

The presence of Africans in the Americas predates Columbus and Cortez. The Mandingo was known to trade with Medieval Mexico. Columbus wrote in his diaries, that he found a dark skinned people in the Caribbean Islands trading with the Indians. He infers that they were people from the coast of Guinea (West Africa). Olmec culture began before 1000 B.C. and reached its peak between 800 and 500 B.C. In the jungles of Vera Cruz and Tabasco they erected ceremonial centers that flourished before the rise of Maya, Zapotec, Toltec and Totonac. Earth mounds were precursors to the soaring stone pyramids of the Maya and the Aztecs. Olmec Heads, stone heads which measure six feet in diameter, were described as “incredibly lifelike, strikingly dissimilar to any other American Indian sculpture... a gigantic portrait of a black man.” The African DNA has existed on the shores of America for thousands of years. Consequently, would these genes have arrived in such abundance without the exploitation of the hemispheres by the European?

## ACTIVITY:

We will explore mitochondria DNA on the Atlantic side to see results of their DNA. Therefore explore the isolated people of Guyana, Bahia Brazil, Trinidad Jamaica.

**STRATEGIES:** Students will explore the importance of mitochondria DNA in tracking genetic ancestry. Finding Eve is a study of the possibility of tracing maternal DNA back to primordial Africa.

This can be accomplished in a multifaceted approach by combining biology, anthropology and archeology with genetics

**ACTIVITY:** FINDING EVE

**Objective:** Explore the beginning of Humans using archaeology, theology and genetics.

Discuss the ramifications of anthropological discoveries by Louis Leaky.

Describe the significance of dominant and recessive genes.

Describe the significance of melanin.

**Procedure:** Have student to log of Microsoft Encarta Africana.

Use search engines such Oggles, or Ask Jeeves and type in Richard Leaky.

Read information pertaining to Richard Leaky and the Olduvia Gorge.

1. What is the significance of Leaky's discovery?
2. What can be concluded from these discoveries?
3. How will these discoveries impact history?

The above questions can be answered by using areas of study archaeology, theology,

### *Archaeology*

Whenever archaeologists trace the beginnings of humans they often excavate on the continent of Africa. The date or origins of early man has not been positively established. The most accurate date is about two to three million years. The savanna grasslands of South and East Africa is an anthropological treasure trove of ancient fossils. This is where the oldest known human fossils were excavated. The Olduvai Gorge is where archaeologists Louis Leaky, in conjunction with his wife, Mary Leaky located the partial remains of a 1.75 million-year-old fossil, hominid zinjanthropus, which remains the best archeological evidence that Africa is the starting point of all civilizations. It is believed that all humans evolved from this earliest human.

### **Theology:**

Holy Books as source materials to offer explanations concerning the roles played by Africans and Africa as a part of cultural and spiritual Diaspora.

Both the Bible, and Holy Koran state the first man, Adam, was fashioned from dust or black mud. The first woman, Eve, was created from the rib of Adam.

The three major religions, Judaism, Christianity, and Islam evolved from Africa.

Most of the Old Testament developed from African/Eden roots. The opening scenario of the Holy Scriptures talks of Egypt and Ethiopia. Very often in the Bible, Egypt and Ethiopia were considered one in the same. The term Egypt was once used to mean all of Africa, which was called the "Land of Ham".

The current name Africa is a misnomer, adopted by almost everyone today. This name derived from the Greek word Aprica or land of the sun. (This land was a massive continent, which had many names, Akebu-lan (Mother of Mankind) or (Garden of Eden), was used by the Moors, Nubians, Numidians, Khart-Haddans and Ethiopians. In ca. 200 B.C. historian Eratosthenes referred to Africa and present day Libya, as Libya Theriodes. (The original African Heritage Study Bible)

The creation of the first human took place in East Africa near Ethiopia. Genesis 2:10-14 mention the three rivers that flowed in this area. “ And a river went out of Eden to water the garden; and from thence it was parted, and became into four heads.” This passage gives the exact physical boundaries of the garden and the four rivers, Pishon, Gihon, Hiddekel, and Euphrates that actually encompassed this region. The Gihon is the Blue and White Nile River, while Hiddekel is the Tigris River. (The original African Heritage Study Bible)

Therefore it is reasonable to conclude that the original man, Adam, who was created in the image and likeness of God, was African. Eve, the mother of all nations, was created from the rib of Adam. From the Ethiopian region, humankind ventured to other parts of the world. The first move was toward northeast Africa, then into Asia and Europe.

*Genetics: The tracking of Mitochondria DNA, a special type of DNA found only in the mitochondria of the mother's cell, proves the original of the first humans were from the African continent. African Diaspora goes full circle from Africa to Europe to the Americans.*

### *DNA and The African/Edenic Woman*

*Inside the cell there exist two types of genes, recessive and dominant.*

*Recessive means weak, while dominant means strong. Some indicators of recessive genes are blonde hair, light or blue eyes, light or white skin. Indicators of dominant genes are dark or black hair, dark or black eyes, black or blue skin. The darker indicators depict the proximity to the original line of man.*

*Two dominants can produce a recessive (dark + dark = light), conversely two recessive cannot produce a light (light + light = dark). Over thousands of years, changing climatic conditions, and migration, can aid dominant gene mutation in producing recessive characteristic traits. Dominant + dominant = brown, brown + brown = yellow, yellow + yellow = white. The African/Edenic woman can be considered the tree of life, with the main trunk as the direct lineage (pure African).*

*The branches are the extensions or people whom evolved from the African/Edenic woman. One can indicate proximity to the trunk of the tree by examining their indicators.*

The product that distinguishes skin, hair, and eye color, is the amount of melanin in the body. Those with large quantities of melanin have darker or dominant traits. While those with smaller amounts of melanin have lighter or recessive traits. Melanin is used to protect the eyes from UV rays. It is responsible for much of the coloration throughout nature.

We are born with an initial supply of melanin. It is located just behind the retina where it acts, much like the black paint inside a camera, to reduce undesirable light scatter. Scientists believe that melanin serves another important protective role by functioning as an antioxidant along with vitamin C and E. Potentially harmful free radicals that would otherwise initiate a chain of damaging oxidation reactions in the retina are neutralized by melanin. Unfortunately this valuable protection is lost during the aging process, therefore the more one have at birth, increases the likelihood one will be protected during the aging process.

**ACTIVITY:**The importance of Mitochondria DNA and Africa Diaspora

**Objective:** Define Mitochondria DNA.  
Examine its significance in evolution.  
Explore Mitochondria DNA as it relates to racial groups.

**Material:** Log on <http://artsci.wustl.edu/~landc/html/cann/>

**PROCEDURE:** This time can be used for discussion or lecture.

Define: Mitochondria DNA: DNA is present inside the nucleus of every cell of our body, but it is the DNA of the cell's Mitochondria that has been most commonly used to construct evolutionary trees.

*Mitochondria DNA from 147 people, drawn from five geographic populations have been analyzed by restriction mapping. All these mitochondria DNA stem from one woman who is postulated to have lived about 200,000 years ago, probably in Africa. All the populations examined except the African population have multiple origins, implying that each area was colonized repeatedly.*

**ACTIVITY:** Tracing Mitochondria DNA

Students will complete a worldwide survey of mitochondria DNA.  
They will learn how this special type of genetic cellular material adds to knowledge of understand heredity.

The human gene pool will be examined in three ways:

First, Mitochondria DNA offer a magnified view of the diversity in the human gene pool. Mutations accumulate in this DNA several times faster than in regular DNA.

Secondly, mitochondria DNA is inherited maternally thus it is a useful tool for understanding the genetic relationship between racial groups.

Thirdly, mitochondria within a typical human are usually identical to one another.

**ACTIVITY:** Learning about Restriction mapping.

Mitochondria DNA divergence within and between five human populations

### Restriction maps

In a genetic study MtDNA was highly purified from 145 placentas and two cell lines, HeLa and GM 3043, derived from a Black American and an aboriginal South African (! Kung), respectively. The results aimed to show and understand how mitochondria can be used to show the interrelationship within and between the five populations studied.

Geneticists harvested 98 placentas from various sources including such as US hospitals, the remainder coming from Australia and New Guinea.

They created a sample study to represent the 5 geographic regions:

1. 20 Africans (representing the sub- Saharan region)
2. 34 Asians (originating from China, Vietnam, Laos, the Philippines, Indonesia and Tonga)
3. 46 Caucasians (originating from Europe, North Africa, and the Middle East),
4. 21 aboriginal Australians,
5. 26 aboriginal New Guineans.
6. Only two of the 20 Africans in our sample, those bearing mtDNA types I
7. 81 (see below) were born in sub-Saharan Africa.
8. The other 18 people in this sample are Black Americans, who bear many non-African nuclear genes probably contributed mainly by Caucasian mates. Those males would not be expected to have introduced any mtDNA to the Black American population.

Teacher note: include picture from <http://artsci.wustl.edu/~landc/html/cann/cann2a.gif>

**Table 1** MtDNA divergence within and between 5 human populations

Population	% sequence divergence				
	1	2	3	4	5
1. African	0.47	0.04	0.04	0.05	0.06
2. Asian	0.45	0.35	0.01	0.02	0.04
3. Australian	0.40	0.31	0.25	0.03	0.04
4. Caucasian	0.40	0.31	0.27	0.23	0.05
5. New Guinean	0.42	0.34	0.29	0.29	0.25

The divergence is calculated by a published method<sup>26</sup>. Values of the mean pairwise divergence between individuals within populations ( $\delta_x$ ) appear on the diagonal. Values below the diagonal ( $\delta_{xy}$ ) are the mean pairwise divergences between individuals belonging to two different populations, X and Y. Values above the diagonal ( $\delta$ ) are interpopulation divergences, corrected for variation within those populations with equation (1).

**Table 2** Clusters of mtDNA types that are specific to one geographic region

Geographic region	Number of region-specific clusters	Mean pairwise distance within clusters*	Average age of clusters†
Africa	1‡	0.36	90-180
Asia	27	0.21	53-105
Australia	15	0.17	43-85
Europe	36	0.09	23-45
New Guinea	7	0.11	28-55

\* For clusters represented by two or more individuals (and calculated for individuals, not for mtDNA types) in Fig. 3.

† Average age in thousands of years based on the assumption that mtDNA divergence occurs at the rate of 2-4% per million years<sup>15,30</sup>.

‡ Assuming that Africa is the source, there is only one African cluster.

Use the chart to examine the mtDNA types and clusters information on the first four groups are as described the New Guineans are mainly from the Eastern Highlands of Papua New Guinea.

**African origin:** Inference to be drawn from restriction mapping.

**ACTIVITY:** Students can create a basic restriction map.

Have students label world map with the five population groups.

Trace mtDNA-using statistics in Table 2.

Label mtDNA cluster and specify age.

Draw and label line between clusters. The lines will start and end in Africa.

We infer from the tree of minimum length that Africa is a likely source of the human mitochondria gene pool. Students can infer from the mapping that one of the two primary branches leads exclusively to African mtDNAs while the second primary branch also leads to African mtDNAs (types 37-41, 45, 46, 70, 72, 81, 82, 111 and 113).

By postulating that the common ancestral mtDNA was African, we minimize the number of intercontinental migrations needed to account for the geographic distribution of mtDNA types. It follows that b is a likely common ancestor of all non-African and many African mtDNAs.

### Multiple lineages per race

The second implication of the tree is that each non-African population has multiple origins-can be illustrated most simply with the New Guineans.

Take, as an example, mtDNA type 49, a lineage whose nearest relative is not in New Guinea, but in Asia (type 50). Asian lineage 50 is closer genealogically to this New Guinea lineage than to other Asian mtDNA lineages.

Six other lineages lead exclusively to New Guinean mtDNAs, each originating at a different place in the tree. A small region of New Guinea (mainly the Eastern Highlands Province) thus seems to have been colonized by at least seven maternal lineages (Tables 2).

ACTIVITY: African Diaspora in the Americas a genetic success.

Objective: Geographical starting and ending points of African Diaspora

Examine interrelations between geography, history and biology.

Material: Virtual Globe and Microsoft Africana to complete Diaspora mapping.

Procedure: Label the following places on map. Indicate aboriginal racial groups. Suggest admixture of racial groups. Create map key.

Origins

Race

Destination

1.	Nigeria	Yurbaba	West Indies
2.	Angola	Lunga	Brazil
3.	Mozambique	Bantu	Soa Paulo, Brazil
4.	Congo	Ewe	United States
5.	Ghana	Ashanti	United States
6.	Guinea	Akin	United States
7.	Mali	Dogon	Cuba
8.	Gambia	Mandingo	Jamaica
9.	Ivory Coast	Bantu	Gahanna

African's DNA moves to the Western Hemisphere in great numbers.

Millions of Africans left Cabinda, Luanda, and Lagos to populate the West Indies, Salvador, and Rio de Janeiro. Nations that developed in Africa exist in South America, with or without the consent of the enslaver. Shipping records show that people of huge nations like the Akan (Coromanti), Fon (Mina, Arara), and Angola (or Congo) Were so numerous that owners of large estates could not have avoided purchasing large numbers of them. For Example, Angolans made up as much as 70% of the Africans imported into Brazil in the seventeenth century. Angolans also made up some 60 percent of early imports into South Carolina and were probably predominant in the early Chesapeake and New York areas.

**Activity:** Examine the culture of the people of Gullah Island.

**Objective:** Indicate the cultural relationship of the African and the Gullah Islanders.

**Material:** <http://www.co.beaufort.sc.us/bftlib/gullah.htm>

**Procedure:** Locate on map the admixture of the inhabitants of Gullah Island and their voyage to Gullah Island. Indicate the year of its beginning, log a record of the first Africans. Make a key for map. Draw a chart indicating the background, marriage and kinship, medicine, religion food and burial customs.

## Must be the music

Music, like art and religion were expressions of life. Every event was suffused with religious significance; the climax of life was death. This religion gave the African the will to survive the Middle Passage and the ravages of slave life. Religion also survived the Middle Passage, taking root in the soil of Negro life. Today in many African American churches, sounds of shouting, spirit possession, and ecstasy can be heard during Sunday morning services. Religion was the soul sustaining force, which was evident in African Art.

Art, like religion was part of life. It was on all sides, the faces, the dress and the greetings of the African. One did not exist without the other.

“Music encompassed the expressions of religion and art. Before the coming of the white man, music and rhythms were everyday things in Africa. Music was everywhere and grounded in two techniques, which survived in the New World: Polyrhythmic percussive technique and the call-and-response pattern (leader and chorus alternating). The poetry of tom-toms, the symphonies of synchronized bodies: these ebbed and flowed with the rhythm of life.” Before The Mayflower

**Activity:** Gimme a beat!

**Objective:** Explore the role African music had in African life,  
African fortitude against the onslaught of the slave trade,  
Black Codes, Jim Crow and racism.

**Material:** The Internet

**Procedure:** Log on a search engine and type “African music history.”

Students will make a flow chart indicating the year, event and Genre of music and songs that signify protest, endurance, or emotion in regards to the event.

## An Artist's Impression of The Diaspora in America

African art is an expression of life. It expresses the emotions of the artists and their subjects. It was all around, on the faces and dress of the African. The art was not to be collected and placed into a museum, art and aesthetic expression were collective experiences in which all the people participated. There was no art, just for art's sake, but for life's sake. Jacob Lawrence captured the many aesthetic expressions of the African Diaspora. He devoted himself to portraying the African American experience. He painted scenes of African American History including Frederick Douglass, Harriet Tubman, the migration, and city life

### The Art and Life of Jacob Lawrence

#### African Diaspora as Depicted in Art

**Overview:** Diaspora movements take on a panoply of artistic motifs all designed to keep alive the spirit that somehow in some way the fragmented dispersal of homogeneous peoples will be reunited. Diaspora is a dream kept alive in many different types of cultural venues of which art is the most significant.

**Objective:** Themes in art are exemplars of the essences of cultural expression. African Americans used art and music as a medium to express their souls. Historical expressions that would otherwise go unnoticed had it not been for artists like Jacob Lawrence. Jacob Lawrence, premier virtuoso of the twentieth century, whose paintings adorn the walls of world-class museums such as the Phillips Collection, the Metropolitan Museum of NY, the Art Institute of Chicago, Whitney and the Museum of Modern Art. It is time for the public-at-large and especially students to be introduced to this American icon. Through Jacob Lawrence's art, students will examine African Diaspora.

### Jacob Lawrence

**Material:** Over The Line The Art and Life of Jacob Lawrence. 2000,

Settle: University of Washington Press

Slide collection: The Art of Jacob Lawrence

Carnegie Library Collection (Main Branch)

Web sites: Metropolitan Museum of Art

Chicago Institute of Art

Whitney Museum of Art

University of Washington Art Museum

Museum of Modern art, New York

Hampton University Museum of Art

Fisk University Art Collection

National Galley of Art, Washington, D.C.

**ACTIVITY:** Have students examine and comment on slides of

Lawrence's art. How do the paintings tell the story of African Diaspora in America? Special attention should be focused on the following series:

Harriet and the Promised Land Paintings: 1 through 17

The Migration Series: 1 through 60

The Life of John Brown: 1 through 22

**Procedure:**

1. Introduce students to vocabulary that describes art.
2. Examine the art in Jacob Lawrence's 60 panel series: The Migration of the Negro between 1940 and 1941.
3. Students will describe the conditions that precipitated the migration.
4. Students will label and follow on a map the starting and ending points of the migration.

5. Students will describe the conditions the African Americans faced at the end point of the migration.
6. Have students focus on color, geometric and collage like effects of the paintings.

**Activity:**

After viewing and study the life and art of Jacob Lawrence have design and fashion their own artistic statement to dramatize African Diaspora in America.

**Objective:**

The aim of this activity is to give the students hands on experience to express their spirit, feelings and emotions concerning African Diaspora.

**Materials:**

Art supplies, paint, oak tag, postal board etc. magazines, scissors, glue.

**Procedure:**

Students are to examine and select a favorite painting by Jacob Lawrence, Aaron Douglas, or Romare Bearden. They are to create a montage, collage or painting that depicts a major event in African Diaspora movement.  
Create an annotated display of students' artwork.

# COMMUNICATION STANDARDS

## PITTSBURGH PUBLIC SCHOOLS

1. All students use effective research and information management skills, including locating primary and secondary sources of information with traditional and emerging library technologies.
2. All students read and use a variety of methods to make sense of various kinds of complex texts.
3. All students respond orally and in writing to information and ideas gained by reading narrative and informational texts and use the information and ideas to make decisions and solve problems.
4. All students write for a variety of purposes, including narrating, informing, and persuading, in all subject areas.
5. All students analyze and make critical judgements about all forms of communication, separating fact from opinion, recognizing propaganda, stereotypes, and statements of bias, recognizing inconsistencies and judging the validity of evidence.
6. All students exchange information orally, including understanding and giving spoken instructions, asking and answering questions appropriately, and promoting effective group communications.

7. All students listen to and understand complex oral message and identify the purpose, structure and use.
  
8. All students compose and make oral presentations for each academic area of study that are designed to persuade, inform or describe.
  
9. All students communicate appropriately in business, work and other applied situations.

### Bibliography

The following texts, pamphlets, articles and web sites will assist educators in understanding and implementing the activities described in this curriculum, African Diaspora.

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#### Web Sites

<http://artsci.wustl.edu/~landc/html/cann/>

<http://animaldiversity.ummz.umich.edu/other/overview.html>

<http://www.co.beaufort.sc.us/bftlib/gullah.html>