

STE(A)M SCIENCE

LESSON PLAN

LEARNING GOALS

Students will be able to...

Recognize the scientific contributions of the Black Community

Identify and appreciate the inventions of Black scientists and engineers that impact our lives in profound ways

Gain Knowledge of how Black scientists or Black cultures used a hypothesis to solve problems through their innovation

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SUBJECTS Students will engage

The scientific method specifically hypothesis formulation

MATERIALS Students will be using...

Internet

Ancient African Culture

Art supplies

A Broader perspective of the Black scientific contributions to society and their importance

Computer

LESSON DESCRIPTION

The lesson instructs children to research any Black scientist or Black Culture and its scientific, technological and/or engineering achievements. The students will be examining the concept of a hypothesis, and the motivation for hypothesis formation, as used by the chosen culture or person. This examination leads into the scientific method where all science is founded. Using the hypothesis and scientific method, the students will develop an innovation that has the ability to meet an immediate and long reaching need of humanity; a timeless invention!

VOCABULARY (5 MIN)

1.

Innovation

2.

Hypothesis

3.

Scientific method

GUIDING QUESTIONS (5 MIN)

1. What is the students current concept of any Black scientific contributions?
2. What is the students current concept of Black contributions in general (not genre or industry specific)
3. Are the students aware of any ancient Black cultures that could be considered advanced? What are the aspects of an advanced culture from a science perspective?
4. What are the characteristics and motivations of Black cultures or scientists that drive them forward when developing innovations?
5. What are some things the students wish they could change through innovation?

INSPIRATION (5 MIN)

1. **My own ancestors** who used science and innovation daily simply to live. The usage of herbal medicine, a makeshift hitch for a wagon, and many more were all utilized with the same skill and creativity found in the scientific method
2. **Emperor Haile Selassie of Ethiopia** - an Ethiopian Emperor who ushered in a modern age of education, trade and scientific advancement for Ethiopia and the continent of Africa. He also cultivated relations between Ethiopia and those in the diaspora, by giving a land grant for those who wished to return and assist with the development of Ethiopia.
- 3.

ACTIVITY (25 MIN)

1. Students will research a Black scientist, or inventor, or Black culture, and identify their scientific contributions
2. Use the research to conclude a common motivating factor, the question (hypothesis), for the innovation.
3. Identify the greater implications of this innovation in terms of its longevity and usefulness.
4. Students will brainstorm to figure out what they will innovate and form a hypothesis, which will serve as the question for their creation to answer.
5. Students will make sure their invention fits the criteria of meeting an immediate need and having longevity. This can be as imaginary as the student likes.
6. The students will identify the materials, and other sourcing needed for the construction of their innovation, as if they were actually creating it as scientists.
7. A rendering of the innovation, a fake schematic, will be made by the students as a blueprint.
8. The students will go and look for funding through grants and other fundraising efforts to bring their creation to life! (You never know!)

DEBRIEF (5 MIN)

1. Has anyone had any change in their perspective of Black scientific contributions?
2. What is a simple way that each of us forms a hypothesis, then innovates to provide an answer? This can be as simple as having to find a replacement for a missing ingredient for a sauce that is already cooking.

FURTHER RESOURCES

<https://www.blackenterprise.com/black-woman-becomes-the-first-doctor-to-cure-cancer-in-mice-using-nanoparticles/>

<https://magazine.viterbi.usc.edu/fall-2020/alumni/sending-your-voice-over-the-internet-so-me-called-it-a-toy-not-marian-croak/>

<https://www.history.com/news/8-black-inventors-african-american>

<https://www.smithsonianmag.com/smart-news/renaissance-painters-ancient-egyptians-used-drying-techniques-make-their-words-stick-180976176/>

https://www.ancient.eu/Egyptian_Medicine/