

personal genetics education project

Social, Legal and Ethical Issues in Personal Genetics

Title: DNA and Crime

Aim: How will advances in DNA technology impact individuals, law enforcement, and our society?

Time: 1 day

Guiding questions:

- Is it fair to collect DNA from people when they are arrested, before they've been charged with a crime?
- How do we, as a society, balance people's civil rights with the rights of crime victims?
- How do we decide how to use DNA to solve crimes as the technology keeps changing?
- Are certain groups of people affected differently than others by the policies and procedures around DNA collection for law enforcement reasons?

Learning objectives:

By the end of the lesson, students will be able to:

- Discuss the ethical issues surrounding the use of familial searching to solve crimes
- Analyze some of the controversies in using DNA to solve crime, including the reliability of DNA testing
- Debate the issues around privacy, freedom, and public safety as they related to DNA technology and crime.

Materials: projector or Smartboard, laptop, article for homework

Common Core Standards:

RH.9-10.6. Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.

RH.11-12.3. Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

RH.11-12.6. Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence.

RH.11-12.7. Integrate and evaluate multiple sources of information

presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

Background reading for the teacher:

This article addresses the main topics in this lesson: the opposing viewpoints related to using DNA to solve crime, and the privacy issues it raises; collecting DNA from family members; and the impact on racial minority groups.

[From DNA of Family, a Tool to Make Arrests](#)

This article is also used for the homework, but you may choose to shorten it (though it is an interesting read that should hold students' attention).

Do Now: (5-7 min)

Have students answer the following questions individually; discuss as a group after students have completed the questions.

Imagine that there have been a string of murders that appear to be the work of the same person; the police have a few leads but little conclusive evidence. There is DNA believed to be that of the murderer at the scene, but it doesn't match DNA in the criminal databases. The police don't have enough evidence to get a warrant to search the lead suspect's house, but they do obtain a warrant to get a sample of DNA from a medical test of the suspect's daughter. She does not know about or consent to this.

1. Should the police be able to take a DNA sample, without permission, from the child of a suspect? Why or why not?
2. If you were a relative of one of the victims, would you support this method? Why?
3. If you were a relative of the suspect, would you support this? Why?

Activity: Slide show and video clip

Slide show (20 min)

1. Students will watch a slide show that gives an overview of how DNA of suspects and convicted criminals is collected in the US, and how this technology is helping to solve crimes. The slide show also addresses, and students will later discuss, the ethical issues that arise and how families are impacted by this practice.

2. Video Clip (15 min)

Next, students will watch a clip from *60 Minutes* that addresses the issues involved in familial searching, or searching for suspects based on a relative's DNA. The clip is [here](#). (The link to the clip is also in the PowerPoint slides in the notes section).

3. Discussion (10 min)

Discussion questions are also on the last slide of the slide show.

1. In the clip, who was more persuasive – the Denver district attorney or the attorney concerned about privacy rights? Why?
2. Do you think familial searching is a tool more law enforcement agencies should use? Why or why not? Is it fair that relatives of people in genetic databases are under “genetic surveillance” simply because they share DNA with someone in the database? Explain.
3. The reporter says, “Crime runs in families.” What is she referring to? Why or why not is this a reasonable conclusion?

Homework:

Have students read the article and answer the following questions (students may also draw on the slideshow information and class discussion):

[From DNA of Family, a Tool to Make Arrests](#)

1. Is it acceptable for law enforcement to use the DNA of a suspect’s relative to try to catch the suspect? What are benefits of conducting this kind of search? What might be troubling about this approach? Explain.
2. Why are some people concerned that there is not enough oversight of “local” DNA databases (those not controlled by the FBI or a specific state, but often controlled by a county)? Is it acceptable to keep the DNA samples of *victims* of a crime rather than suspects? Explain.
3. Certain groups – particularly African-Americans – are overrepresented in the criminal databases. It has been estimated that African Americans comprise approximately 40% of the database, despite comprising about 13% of the US population. By extension, then, relatives of African-Americans are also more likely to be identified in familial searches of a criminal database. Is this discrepancy acceptable? Should something be changed to bring this more in line with the racial makeup of the US population? Are race and privacy considerations important in thinking through these policies? Why or why not?

Additional readings and resources:

[Forensics, DNA Fingerprinting, and CODIS](#)

<http://www.innocenceproject.org/>

[DNA Sample from Son Led to Arrest of Accused ‘Grim Sleeper’](#)

[DNA, Forensics, and the Law](#)