

Community Science

UNIT 8 RECAP

DNA identification techniques can be used for many applications that go beyond determining ancestry. Identifying DNA sequences can give us the answers to many questions that communities face to help solve problems involving the economy, public health, conservation, and crime. The first step in utilizing DNA identification is to identify an issue that can be addressed or a question that can be answered by

leveraging one of the technologies used in sequencing. A data collection plan must be devised and once the data is collected, appropriate DNA ID techniques can be used to amplify or sequence the DNA. This will provide information about the source of the DNA or to compare it against known DNA sequences. These techniques include Sanger sequencing, PCR amplification, and NextGen sequencing. A project

that requires DNA analysis can be costly, so crowdfunding proposals can be created to share ideas with a target audience and stakeholders in the community. The goal of the creation and implementation of a project that uses genetic amplification and sequencing to help answer a question or solve a problem demonstrates the potential of DNA technology to create positive community change.

INSPIRATION 1

Once a final community science project is formulated, including identifying a problem, creating a plan for data collection and genetic analysis, surveying stakeholders, and the creation of a presentation, what are the next steps to take to put your plan into action? Are there groups, corporations, or universities that you can present your ideas to and get the materials and funding needed to collect and do a genetic analysis on the data?

PROBLEM

How do you find a group, corporation, or university that your group can partner with to help you move forward with your community science project?

SOLUTION DESIGN DRIVING QUESTIONS

- What genetics companies can provide genetic sequencing for the project?
- Are there local, national, or global grants available to fund student science projects?
- Are there organizations in the community that can assist in various parts of the project?
- What are the steps needed to secure funding for a genetic project?

RESOURCES

- [STEM Research Grants | Society for Science](#)
- [About The Challenge | Young Scientist Lab](#)
- [Research Funding | National Human Genome Research Institute](#)
- [Getting Started | America's Seed Fund powered by NSF](#)
- [DNA Genotek Science Education Program | DNA Geotek](#)
- [A focus on impact through grants and sponsorships | Illumina](#)
- [Science Education Grants | Community Resources for Science](#)
- [STEM Action Grants | Society for Science](#)



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INSPIRATION 2

When a scientific project is completed, what comes next? An important step in the scientific process is sharing findings for others to learn, analyze, and give feedback. One way of sharing is writing and publishing papers. Others choose to create research posters to present the project and findings to peers and professors. The internet and social media can also provide an easy way to communicate with local, national, and global organizations and allows for communication and commenting between researchers and stakeholders.

PROBLEM

Once you have completed your community science project, what are the next steps to share what you've learned with community members?

SOLUTION DESIGN DRIVING QUESTIONS

Who are the stakeholders or groups that would most benefit from learning about this project?

What is the most effective way to present your findings to this group?

How will you give your audience the opportunity to give feedback?

Is your data sample large enough to make claims or does further research need to be done?

What implications will your findings potentially have on community members?

RESOURCES

[Preparing and Presenting Effective Research Posters | PubMed Central | National Library of Medicine](#)

[Poster Presentation | Undergraduate Research | Michigan State University](#)

[Preparing and Publishing a Scientific Manuscript | PubMed Central | National Library of Medicine](#)

[Boosting Science Through Social Media | The University of Arizona Health Sciences](#)

[Ten tips for promoting your research | PubMed Central | National Library of Medicine](#)

