Grants come in all shapes and sizes, and sources can vary from federal/state level grants, to crowdfunding endeavors, your local Ed Foundation and even active community groups such as the Rotary Club or Kiwanis. Basic information about your need, goals and impact are key to telling your story. Below you will find an overview of the kinds of information commonly asked for on grants, an example submission, and descriptions of MiniOne technology to use in grant funding applications.

1. **Abstract**
   High level overview of what the project is about

2. **Needs Assessment/Scope**
   What challenges would this project help overcome. If other teachers/departments are involved identify the team.

3. **Description of the project/program/request**
   What is your goal and what would you need to achieve this goal. Keep this about the kids, how will it help them today and also in the future. Include technical information as necessary and explain what the value of the expense is.

4. **Overview of Program and Student Impact**
   Communicate which students are going to benefit by receiving this funding should the project be funded.

Grade/Course	Activity	Standards Alignment	Impact (# of students)
<fill in>	<fill in>	<fill in>	<fill in>

5. **Budget, including recurring costs to sustain**
   Provide details of the cost for the project. For classroom materials include what is consumable versus a one-time cost.

Category	Cost	Life Expectancy
Equipment		
Consumables		
Training		
Other		
Total		

6. **Project Assessment**
   How are you going to evaluate your project? Set specific goals and plans for when evaluation will take place, set a final assessment as well.

7. **Letters of Support**
   If you have any partners who are involved and will support your project in-kind, provide them with a template letter to have them sign. If you have a commitment from your administration to provide consumables for the next year or to send you to a conference to get additional training, or a third party willing to sponsor you to do a workshop, these make for great letters of support.

Sample Proposal

Abstract

We're in an era of booming personal genetic information, and biotech is the next "tech" as companies look to personalize treatments based on your genetic information. Genetic sequencing services are providing ways for any individual to gain access to their personal genetics. It is imperative that the general population become more fluent in basic genetics in order to be better informed about outcomes and understand potential treatments.

Needs Assessment

With the growing awareness of and willingness to get personal genetics evaluated in the general population, DNA technologies are no longer only for the lab nor reserved for students becoming scientists. Personal genetics will soon become as common to everyone as personal computers did years ago. Access to technology in the classroom helps students stay engaged with current topics and prepared for their futures.

Description/Technology Descriptions

PCR system - Polymerase Chain Reaction (PCR) is an essential technique in today's molecular biology and biotech applications. Starting with a small sample of DNA, scientists can produce billions of copies of a specific fragment quickly and affordably with this DNA copy machine. This Nobel prize winning technology was revolutionary, allowing scientist to study DNA in many more different ways since they have more DNA to make use of.

Not too long ago the idea of a PCR machine in the classroom would have been a costly and time-consuming endeavor, where students would often hand their samples to the teacher and get something back the next day. Today, PCR can be done by students in the classroom using the MiniOne PCR system, which was developed for the classroom and provides an intuitive environment for the students with it's bluetooth integration and app based software, all at an affordable price. With this system my students will get the chance to do science as it's done in research labs all over the world.

Gel Electrophoresis system

Gel Electrophoresis is a workhorse in the molecular biology lab. The technique is used to separate various sizes of DNA by running DNA through a molecular sieve called an agarose gel, which is a gelatinous matrix very similar to a well-known dessert. The separation is done by applying an electrical current across a gel in buffer that contains the samples. Since DNA has a negative charge, the DNA molecules in the gel will start to move towards the positive electrode. After some time, the different sizes of DNA will have moved a different distance creating "bands". Staining the bands makes them visible, and students can use the information based on the positions of the bands to piece together the molecular clues to help answer questions about the DNA samples.

The MiniOne Electrophoresis system brings together all of the critical components of electrophoresis in an intuitive, education friendly and safe system to allow my students to run gels and do real science in the classroom! This system will allow me and my students to DO MORE WITH LESS and spend more time on developing critical thinking skills. The small size and integrated system saves space and requires less reagents which saves money. The system uses non-toxic chemicals and a safe light source to see the DNA allowing students to be more involved with parts of the lab that they previously were not able to. This powerful combination translates into students being able to SEE their results the same day they run their activity, keeping them fully engage in their results.

My goal for getting three MiniOne PCR System and two classroom sets of MiniOne Electrophoresis systems for our department to share would be to provide a wide range of students with an opportunity to explore genetics like never before. The below overview of instruction shows how we would spiral the learning from 9th through 12th grade.

Overview of instruction and student impact

Grade/Course	Activity	Standards Alignment	Impact (# of students)	Teacher
9th, Gen Bio	Dye electrophoresis, DNA Paternity, Practice Loading Kit	Matter and Energy, Forces and Interactions	4 sections, 120 students	Mrs. Tami Brave
10th, Forensics	Crime Scene Investigation	Inheritance and Variation of traits, structure and function	3 sections, 90 students	Mr. James Ardenly
11th, AP Bio	Determination of PTC Genotype	Inheritance and Variation of traits	2 sections, 40 students	Ms. Joanne Cotton
12th, independent research	Student led projects	Student led projects	1 section, 15 students	Mrs. Sam Kealix

If funded we would start using the equipment in the spring semester, and the equipment would be used throughout the following school years.

Budget

Category	Cost	Life Expectancy
Equipment		
MiniOne PCR System, qty 3	$2397	5+ years
MiniOne Electrophoresis class set, qty 2	$4998	5+ years
Consumables		
Gel Loading Practice Kit, qty 5	$196	1 year
Colorful Dye electrophoresis, qty 5	$236	1 year
DNA Fingerprinting, qty 5	$276	1 year
CSI MiniLab, qty 3	$207	1 year
A Taste of Genetics, qty 1	$155	1 year
Training		
Travel to NSTA, all expenses	$1500	1 time
Other		
Total	$9965 (90% one time)	

Recurring costs
The majority of the amount requested is for capital expenses or training. The training would provide me with the confidence to train other teachers at the school and make for teaching the techniques seamless to the students. The capital expense is 74% of the total ask and would have a life expectancy of 5+years. Annual consumables would run approximately $1,077, which can be written in the departmental budget in future years.

Project Assessment
Pre and post-lab questions included in the lab guides will allow for an assessment of student learning for the specified activities.

<<Feel free to add more about assessment to help establish a value to what this project brings to your classroom>>

Examples of technology descriptions

Feel free to use these in your justifications!

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PCR 101 & Gel Electrophoresis
Polymerase Chain Reaction (PCR) is an essential technique in today's molecular biology and biotech applications. Starting with a small sample of DNA, scientists can produce billions of copies of a specific fragment quickly and affordably. With MiniOne's PCR 101 and gel electrophoresis MiniLab, students will make copies of a section of the Lambda phage genome to make enough copies so they can see the DNA fragments on a gel electrophoresis system. They will learn what equipment, steps and reagents are necessary to make a molecular copy machine, and how to see their results. By learning how to do PCR, my students gain skills that are performed daily in research labs by scientists trying to figure out the genetics of life.

A Taste of Genetics
Genetics gets personal as students extract and amplify their own DNA, then utilize the power of PCR and electrophoresis to determine their own genetic makeup for the PTC tasting trait using a restriction digest assay. Being able to taste PTC means you have inherited at least one allele that enables you to taste the bitterness of PTC. With the MiniOne Taste of Genetics kit, students will explore their own genetics by seeing if they can taste bitterness on PTC paper, enhance their knowledge about dominant and recessive traits, and delve into the reasons why they may or may not be tasters by using polymerase chain reaction and gel electrophoresis to create their own genetic profile. These techniques are used every day by molecular biologists in labs all around the world to study genetics. My students would get the chance to experience real science with this activity and learn about their own genetics.