

Sharks Bio-Lab Project Overview

Cross-disciplinary Integration:

Science, Language Arts and Social Studies

Cross-curricular Competencies being focused on/developed:

Think critically; Manage information; Demonstrate global and cultural understanding; Demonstrate good communication skills and the ability to work cooperatively with others

Premiss:

Researchers at Shark Bio-Labs are constantly working to modify organisms for the “better” and they are looking for new ideas to present to their board of directors for funding. Past endeavors have included attempts to improve strains of wheat that are resistant to blight, having sheep produce important human proteins in their milk, bacteria produce hormones to help people, plants produce fruit that is resistant to freezing and splitting and many more!

Your job, in your Research Teams, will be to come up with the next great idea! Remember that, in order for the Board to select your idea, there must be some benefit - either to people or to the organism itself.

Brainstorm ideas of organisms that you think you'd like to add a modification to - always remember that your goal is to have THE idea that the board of directors will choose to fund.

- determine which existing organism you will be proposing modification to and what the specific modification will be.
- Why is this modification important - will it be of benefit to itself or to humans or both?
- which variations already exist that increase this organism's chance of survival?
- is the organism found in a variety of different environments or just one specific ecosystem?
- if this modification is successful, would you want this organism released into its natural habitat? Why or why not?
- How does this organism reproduce? Will its method of reproduction make it more or less challenging for your modification to occur?
- How will this modification occur? Which technology will you utilize and why?
- Should this modified organism be released into nature? If so, are there any potential ramifications? ex. will it survive? could it become an invasive species?
- *what role does consumerism and economics play in the development of genetically modified organisms?*
- *what are the ethical issues surrounding genetically modified organisms?*
- *what role does governance have in creating these types of organisms?*

Throughout this unit you will learn important information and take part in a variety of activities that will need to be considered in the development of your idea. You will present your idea to the board of directors who will make a decision based on the following factors:

- perceived benefit or harm to the organism
- potential impact on biodiversity
- revenue generation