



Genes in Space classroom activity – brainstorm!

This challenge allows for large amounts of creativity and student imagination. By allowing students to design their own protocol rooted in scientific concepts, students bridge the gap between reading about science and transforming this to real-world applications. **This activity integrates Common Core Learning Standards (CCLS) and Next Generation Science Standards (NGSS).**

Students may use the questions below as a guide for building their proposal. Students can work individually or in pairs and/or use peer review to enhance their proposals.

Start thinking about Genes in Space:

Defining the problem

1. What is the question you are trying to answer? Be specific.
2. Why is this question relevant? Explain what answering this question would allow humans to do.

Developing a hypothesis

3. What is your hypothesis?
4. Can your hypothesis be tested through a single scientific experiment?
5. Does testing your hypothesis require the unique environment of the International Space Station?

Designing the experimental plan

6. What type of organism(s) would you run this experiment on?
7. What tools from the Genes in Space toolkit would you use to test your hypothesis?
8. What type of data would you collect?
9. What are the independent variables in your experiment? What is/are the dependent variable(s)?
10. What are the possible experimental outcomes and how would they support/refute the hypothesis?

Summary:

11. How would you explain your project to a fellow student, in less than 50 words? Be specific.

After peer review, go to www.genesinspace.org to submit your proposal!