6th Grade – Science: Human Impact on Environment Part 2

Standard (subject, number, text):

Science MS-ETS1-1.

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS1-2.

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Objective(s):

This lesson is a follow-up to lesson 2. Students will identify constraints of designing a solution to mitigate a previously identified human impact on the vine trial. They will finalize their design solution and monitoring strategy.

4Cs: Collaboration, Critical Thinking

Materials:

Science Notebooks and/or clipboard and paper, measuring tapes, cameras/phones, pencils

Prerequisite Knowledge (Vocabulary, part of trail, technology, etc):

6th grade Part 1 of this lesson; criteria, constraints

Lesson Summary (5-7 sentences):

Students revisit one of the areas they identified in lesson 2 as an area of human impact. They should review their proposed solution and discuss whether they think it would still be effective. Using measuring tapes and by taking photos, students

should draw out a map of their location, noting distances, area, slope, landmarks, etc.

Back in class, time should be given to identify the constraints students will have, i.e. money, permission, materials, as well as scientific principles, and finalize a design solution for the impact problem they noted. They should revisit what they wrote about how they would monitor the effectiveness of the solution and revise if necessary.

Map of Trail (state if zone specific):

Additional Resources:
Dig This: Erosion Investigation
Biosuit engineering