

ACTIVITY 2: READ ABOUT GENETIC ENGINEERING

The challenge of eliminating an invasive species from an ecosystem is complex, but could be achievable using genetic engineering. This activity introduces students to the way that genetic alteration technology is being used to control—and possibly eliminate—the sea lamprey population in the Great Lakes.

In this activity, students will use a **Think Pair Square Protocol** for discussing the what they will read.

First, have students partner up and distribute the article [Genetic Engineering: Researchers Take First Steps Toward Controlling Sea Lamprey](#) by Andrew Blok from *Great Lakes Now*. Allow time for students to individually read the article, and have them jot down three things they learned in the article.

Then, give students time after reading to discuss the article that they read with their partner. Have students share which three points they noted from the article and how those points connect to each other. The pair should come up with a statement to summarize all of their article takeaways.

Next, have two student pairs join up, standing near each other to form the four corners of a square, to discuss the article and what they talked about in their pairs. Encourage them to come to a consensus about which point they found most important or interesting in the article.



Image Credit: Great Lakes Now

Last, have each group come up with a summary statement of the most important point from their discussion and ask for a volunteer in each group to share that most important point with the whole group.

As student groups share out their most important point, record their ideas on the board and have students copy the list of student ideas down into their notebooks.

After the shareout is complete, ask students to return to their groups and discuss one last question* based on the article:

Based on the article, do you think it is actually possible to completely eliminate all the sea lamprey from the Great Lakes?

After giving the groups some time to discuss this question, invite conversation from the entire class to see what consensus can be reached.

**Alternatively, or additionally, they can consider this question: should scientists use genetic engineering to eliminate sea lamprey from the Great Lakes?*

Teaching Tip: Depending on the background knowledge of your students, it might be worth doing a high-level review of the central dogma of biology (DNA → RNA → Protein) before reading this article. You should also strategically connect this activity with Activity 3.