Teachers who participate in HRWC's education programs administer pre- and post-Student Education Surveys that help gauge student knowledge of river health and protection both before and after STEM educational events. Surveys consist of open-ended questions to assess students' understanding of human impacts on river systems and best practices to protect river health. When analyzing survey responses, we are looking for the use of more refined language to describe factors that impact ecosystem health in post-event surveys compared to pre-, as well as descriptions of concrete strategies for mitigating human impacts on river systems.

In post surveys, we consistently see students using more specific language to answer questions such as "How do you know if a river is healthy" and "What do people do that make rivers unhealthy." In pre-event surveys, students frequently respond to the former with "low pollution" and "the water is clear." Common responses to the latter include "pollute" and "pollute and litter." In contrast, post-event survey responses indicate a greater understanding of the scientific methods used to determine river health, the meaning of "pollutants," and means of pollutant transport:

How do you know if a river is healthy?

> "The amount of sediment deposited in a river."
>
> "An abundance of the high or good-to-high water quality macroinvertebrates."

What do people do that make rivers unhealthy?

> "People over fertilize their lawns and put pollutants in storm drains."
>
> "People remove plants around rivers" and "pave things that lead rainfall and washed up sediment into rivers."

Similarly, pre-survey responses to the question "What can we do to improve river health" primarily include "don't litter" and "control pollution." Survey responses following educational events demonstrate a greater understanding of specific strategies individuals and communities can employ to protect river systems:

> "People can plant trees and other plans along the riverbanks. As well as refrain from putting pollutants in storm drains."
>
> "Create buffer zones and pick up your dog's poop so it doesn't go into the runoff."
>
> "Make drainage gardens, ponds for collecting rainwater, not drain water directly to rivers."

HRWC is continuing to work with teachers to find efficient methods for administering surveys that will lead to a greater breadth of data from more classrooms. Further statistical analysis will be possible with a large dataset and allow us to better determine the educational impact of our events on school groups.