

Youth in Idaho and Oregon are learning to “Dabble in Dissection”

AT A GLANCE

“Dabble in Dissection” is a unique program where youth get up close and personal with eight specimens as they are taught safe and accurate lab skills using dissecting tools and dissection guides.

The Situation

The number of jobs in STEM that require some level of post-secondary training in science, technology, engineering or math in Idaho alone is expected to be 36,000 by 2024. To address these statistics, we need to place significant effort in providing opportunities to youth that will encourage middle and high school career exploration in STEM fields. It is documented that youth choose whether to pursue careers in STEM fields by eighth grade and choose whether they enjoy STEM content areas by as early as fourth grade.

Homeschool educators in southern Idaho asked University of Idaho Extension to develop STEM programs that engage youth in experiential learning opportunities with a specific focus on biological sciences.

Our Response

UI Extension is developing a “Dabble in Dissection” program to meet the 4-H Science Initiative goals of engaging more youth in science. It is designed to spark a curiosity in subjects like marine biology, veterinary medicine and health science. The interest in this program has grown to include educators from Oregon. Developing a quality curriculum that provides experiential learning opportunities which focuses on



Intern Kim Berg assists youth during a starfish dissection at a school enrichment program in Bonneville County.

problem solving, content knowledge and skill development often results in motivating youth to sustain their interest in STEM and eventually seek out careers in fields related to their individual interest in STEM.

The Dabble in Dissection curriculum encompasses learning about eight different animals. Our team created lesson plans to allow youth to explore how specimens in the animalia kingdom relate to one another on a body system scale. Every lesson includes a discussion about taxonomic rank, identification of internal and external anatomical structures, their functions and purpose, and how the entire body has adapted to its environment to survive. Small group work encourages communication and collaboration while studying the similarities and differences among organisms. After

completing pre-lab work, the youth use the NASCO Dissection Guides and the step-by-step instructions, complete in the curriculum, to aid them through their dissection. The instructions adapted from the NASCO Dissection Guides direct the youth to practice proper dissection techniques using authentic tools and safety procedures. The Dabble in Dissection program is designed for a multitude of settings including enrichment, afterschool, homeschool and out-of-school camps. The goal of this program is to provide a space for young people to identify and pursue their sparks, to encourage youth to try new things, even if they are uncertain, and build confidence in their critical thinking skill development.

Program Outcomes

The program has been taught to over 100 different youth within an enrichment or homeschool setting. During the time spent with these groups, a pre- and post-survey was given to the participants. The youth ranged in age from 10-18 throughout the two classes held. Youth were asked to rank their knowledge or confidence on a nine-point scale labeled low (one) to high (nine) with a midpoint marked as moderate (five). All youth completed a pre-test before the lesson started and the post-test the same day once instruction ended.

When asked their knowledge of the specimen's anatomy, pre-test averages for all specimens was 3.2. When asked on the post-test for their knowledge of the specimen's anatomy, the averages from all specimens was 5.9. The youth were also asked their knowledge of one system found within the specimen they'd be dissecting, and scores improved from an average of 2.7 on the pre-test to a 5.5 on the post-test. When the youth

were asked their confidence in dissecting each specimen, a majority of the post-tests showed increased confidence from the pre-test to the post-test. Average confidence from pre- to post-test across all specimens rose from a 6.6 to a 7.0.

We also received feedback from the youth after the program that was overwhelmingly positive and included comments such as;

- “My favorite part of the program was learning about being more confident with each specimen.”
- “I enjoyed finding things out about animals that I would not touch before.”
- “This was my test to see if I could handle being a veterinarian. I now know I can.”

The Future

This team is working together to create a “Dabble in Dissection” curriculum that can be utilized in a variety of situations such as in-school enrichment and out-of-school opportunities. We are connecting the Next Generation Science Standards to the curriculum content and providing an opportunity for STEM career exploration while utilizing the experiential learning model. There are at least six more sites in Idaho and Oregon that will be completing the “Dabble in Dissection” program throughout the next year. After each site completes the program, we will re-evaluate the curriculum and review the assessment of the youth to create the best program possible.

Cooperators and Co-Sponsors

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FOR MORE INFORMATION

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