PROJECT *OCEANOLOGY*

Squid Dissection

Overview Students, in small groups, will explore the organ systems of the long fin squid. They will create a revisable model to show organs interacting within each system, resources required for function and the hierarchical organization among other organ systems.

Performance Expectations

HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. *Students will work as a class and in small groups to create posters to serve as models of the external and internal anatomy of the squid. Each team will be responsible for an in-depth study of an assigned organ system through student-led dissection. Models will include sketches and diagrams with labels, student-generated definitions, comparisons to other model organisms, and observations and questions.*

Science and Engineering Practices

Developing and Using Models *Students will develop models based on their dissection observations to illustrate the relationships between systems or components of a system.*

Planning and Carrying Out Investigations *Student groups will need to plan the best use of their resources and time to complete their dissections and gather the data they need for their posters/models.*

Crosscutting Concepts

Systems and Systems Models *Student models will show interactions within and between organs and organ systems in the long finned squid.*

Structure and Function *Students will examine, in detail, the components and connections of structures within organs and systems to draw conclusions about function.*

Disciplinary Core Ideas

HS-LS1-A Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level.

Optional Post-Lab Assignment

Teachers can and should build upon this experience in the classroom. Ways to extend include:

1. Use multiple reliable sources to further research organs with their assigned system and revise/add to their models.
2. Have students present their models to the class to foster conversation about hierarchical organization within the whole organism.
3. Have students, alone or in groups, create a different form of model to represent the full anatomy of a squid-- digital presentation (Canva, Google Slides, video project), 3-D representation (sculpture, 3-D printing)
4. As an ELA connection, students can adopt the role of a squid researcher who has for the first time discovered the relationship between their assigned organ system and the other organ systems, and write a letter to another "squid researcher" describing their findings. They can refer to their poster models as if they were enclosing them with the letter.