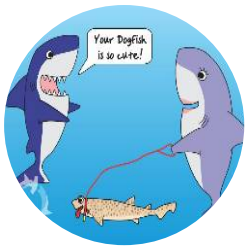

Shanking a Shark

Shark Dissection

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Grade Level	9th – 12th Grade	**Time Frame**	2-3 class period(s)
Subject	Science	**Duration**	200 minutes
Course	Biology		

Essential Question

Why do sharks have some adaptations but not others?

Summary

Shark dissections are a classic zoology lab. This lesson is best not only after students have had some gross anatomy but also when you trust students enough to have them use scalpels in the classroom.

Snapshot

Engage

Students engage in a Kick Me over anatomical positions

Explore

Students dissect a shark.

Explain

Students follow along as the teacher points out the organs of the shark.

Extend

Students generate questions and research answers to those questions

Evaluate

Students critically analyze the answers to their questions.

Standards

ACT College and Career Readiness Standards - Science (6-12)

IOD203: Find basic information in text that describes a simple data presentation
IOD302: Understand basic scientific terminology
IOD303: Find basic information in text that describes a complex data presentation
IOD401: Select data from a complex data presentation (e.g., a phase diagram)
SIN201: Find basic information in text that describes a simple experiment
SIN202: Understand the tools and functions of tools used in a simple experiment
SIN404: Identify similarities and differences between experiments
EMI201: Find basic information in a model (conceptual)
EMI301: Identify implications in a model
EMI401: Determine which simple hypothesis, prediction, or conclusion is, or is not, consistent with a data presentation, model, or piece of information in text
EMI502: Determine whether presented information, or new information, supports or contradicts a simple hypothesis or conclusion, and why
EMI505: Determine which experimental results or models support or contradict a hypothesis, prediction, or conclusion

Next Generation Science Standards (Grades 9, 10, 11, 12)

HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

Oklahoma Academic Standards (Biology)

B.LS3.1.1: All cells contain genetic information in the form of DNA molecules.

Attachments

- Anatomical Terms - Spanish.pptx
- Anatomical Terms.pptx
- Kick Me Anatomical Positions - Spanish.docx
- Kick Me Anatomical Positions.docx
- Lab Observations Explore - Spanish.docx
- Lab Observations Explore.docx
- Shark Dissection Guide Explore - Spanish.docx
- Shark Dissection Guide Explore.docx

Materials

- Copied Kick Me labels (Engage); enough so each lab group has one
- Lab Handouts for dissection (Explore); enough for each student
- Sharks for dissection (Explore); see resources for shopping options
- scalpels for dissection (Explore)
- Dissection pans (Explore)
- Gloves (Explore)
- Safety googles (Explore)
- Dissection pins (Explore)
- Document camera or projecting dissection microscope (Explain)
- Blank lined paper (Extend)
- Chromebooks, or other technology with internet browser access (Extend)

Engage

Print out enough of the "Kick Me" labels so each group can have a set of words (it's three sets per page). The students will be doing a modified Kick Me. That is because they will NOT put one word on each other's back. Rather, each lab team will race to put the anatomical positions on one of their lab group members correctly.

Teacher's Note: Prize Time

We recommend having a prize for the team that gets the answers correct first, but that's because we love a good competition. If you don't want to, you don't have to. Also, it's up to you as to whether or not you allow them to use technology to help them from the beginning of the activity, after they try one time, or not at all. You know your students and what they should or should not know.

Explore

Teacher's Note: The Magic Happens Here

The Explore of this lesson is the full dissection. Be prepared! This is where you get out your dissection pans, scalpels, gloves, trash bags, and a FIRST AID KIT!

Have students stay in their groups from the Engage activity. Direct them to put on gloves and goggles. Just remember that safety needs to be the first priority.

Give a lab handout to each student and a shark to each lab group. The handout has step-by-step instructions of how to dissect the shark, so try to allow them some autonomy to follow the instructions without turning it into a whole group dissection.

There are also images of the dissection here, so you could print these off for references for the students as well.

Teacher's Note: Don't Mess Up!

It is easy to freak out; sharks are expensive. BUT, be sure to explain to the students that they need to be careful, mindful, and respectful to the sharks. If you want to include a behavioral consequence, now would be the time.

As the students work through their dissections, walk around and help as needed.

Teacher's Note: Handouts

There are two handouts for the lab: one is the procedures and the other is for students to document their observations. This was done so you are able to print a class copy of the procedures and print observations handouts for each student.

Explain

After the students are done with their dissections, pick a particularly good dissection (either from the students or one that you have cut open yourself) and put it either under a document camera or a projected dissection scope so all the students in the class can see it. Guide the students by pointing out the different organs to clear up any questions the students had—especially with hard to identify organs.

Extend

Students will start with the strategy Generating Questions. Post this list on the board:

- Shark versus Human Anatomy
- Shark versus Fish Anatomy
- Cartilage versus Bones
- Survival
- Reproduction

Have students write one question that relates to each of the items on the list. Then, have them crumple up their paper and throw it across the room in a Commit and Toss activity.

Teacher's Note: Name It

Have the students write their names on their questions before they toss them, since they're coming back to them eventually.

Direct students to find a ball of paper, un-crumple it, and use their Chromebooks (or any other technology with Internet access) to answer the questions they picked up.

Evaluate

Have students return their answers to the person that wrote the questions. The person who wrote the questions needs to determine if the answers are good enough and write in feedback. Then that feedback is given back to the person who wrote the answers. Once students have received their feedback, give them time to change what they need to before turning it in (possibly for a grade).

Resources

- Shark Shopping (Explore): http://www.carolina.com/preserved-dogfish/dogfish-sharks-preserved-22-to-27-inches/FAM_226790.pr?intid=srchredir_shark&question=&jl_ctx=
- K20 Center. (n.d.). Commit and Toss. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f505b3d0
- K20 Center. (n.d.). Kick Me. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f505b77c
- K20 Center. (n.d.). Question Generating. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5076f00