

Leveled Questioning Activity Idea (AI): Elaboration and Description: A Piranha's Bite Expanding (Foundations 3–6)

This graphic describes the power of a piranha's bite.

Core Content Areas

Science

AVID Elementary Components

Student Success Skills, Partnerships, WICOR

This lesson refers to strategies and resources located in the curriculum guide, *AVID Elementary Foundations: A Schoolwide Implementation Resource* (2016 edition).

Common Core Connections

CCSS.ELA-LITERACY.CCRA.R.1

Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCSS.ELA-LITERACY.CCRA.R.7

Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

CCSS.ELA-LITERACY.CCRA.SL.1

Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-LITERACY.RI.4.2

Determine the main idea of a text and explain how it is supported by key details; summarize the text.

CCSS.ELA-LITERACY.W.4.1

Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

Preparation and Differentiation

1. Access the AVID Elementary Weekly graphic, "Built for biting." Determine whether the graphic will be provided in electronic or paper copy. The class may use the Class Login function on the AVID Elementary Weekly website for students to access the graphic electronically.
2. Determine the level of support required for all students (including General Ed, Special Ed, and ELL populations) to move successfully through the levels of thinking and build academic skills.

3. Identify collaborative groups for specific components of the lesson. (Collaboration)

Flexible Grouping: provides an opportunity to differentiate instruction within whole group, small group, one-to-one, or independent learning.

Support Tools: prepare and incorporate non-linguistic representations, teacher-created notes, CLOZE activities/reading, translations, etc.

Academic Language Scripts: provide an opportunity for oral language development by creating a structured way for students to engage in academic discourse for vocabulary and language development in a scholarly environment.

Rehearsal and Revision: engage students in practice of formal register (vocabulary and language development) in which they attempt, practice, and correct their own responses.

Sentence Frames: prepare and incorporate guiding prompts for questions and responses to provide scholarly visual anchors for students to add their own ideas.

Word Banks: prepare and incorporate lists of content or academic vocabulary that students are able to choose from to integrate into a personal written or oral response.

Writing + Speaking; Speaking + Writing: incorporate writing and speaking activities that are paired together to practice oral and written responses.

Inquiry-Based Differentiation

| Before (Level 1) | During (Levels 1, 2, 3) | After (Level 3) |
|------------------------------|--|------------------------|
| Establishing prior knowledge | Gathering information | Reflecting on learning |
| Gathering information | Thinking about and comparing information | Making connections |
| | Applying the information | |

Organization

This activity is intended to provide an opportunity for students to apply a visual framework to develop concepts, organize language, and comprehend key concepts across content areas. A graphic organizer is used to record students' responses as they organize and describe the relationship between all of the ideas connected to the main topic of the graphic. Students reflect on the graphic as they describe attributes and characteristics of a piranha and the relationship between its bite and its weight.

- Connect concepts and topic to grade-level-specific standards and/or frameworks.

Process

1. Using this graphic's title as a springboard, have students Think-Pair-Share about what they already know about a piranha. (Collaboration)
2. Provide students access to the AVID Elementary Weekly graphic, "Built for biting."
3. Students work with a study buddy to review the AVID Elementary Weekly graphic, "Built for biting," and the student handout: Graphic Organizer: Elaboration/Description, Option 2. (Collaboration and Organization 4.9b)
4. Engage in a teacher-led read-aloud of the graphic and model the use of the graphic organizer template. (Reading and Organization)
5. Partner groups work together to read the graphic and complete their graphic organizer template: Graphic Organizer: Elaboration/Description, Option 2. (Collaboration and Organization 4.9b)
6. Using information from the graphic, partners reflect on the graphic and describe the relationship between all of the ideas connected to the main topic of a piranha and its biting power. (Reading and Organization)
7. Students work independently to complete a Process Learning Log to reflect in writing on their learning. (Writing 1.7b)

Variations

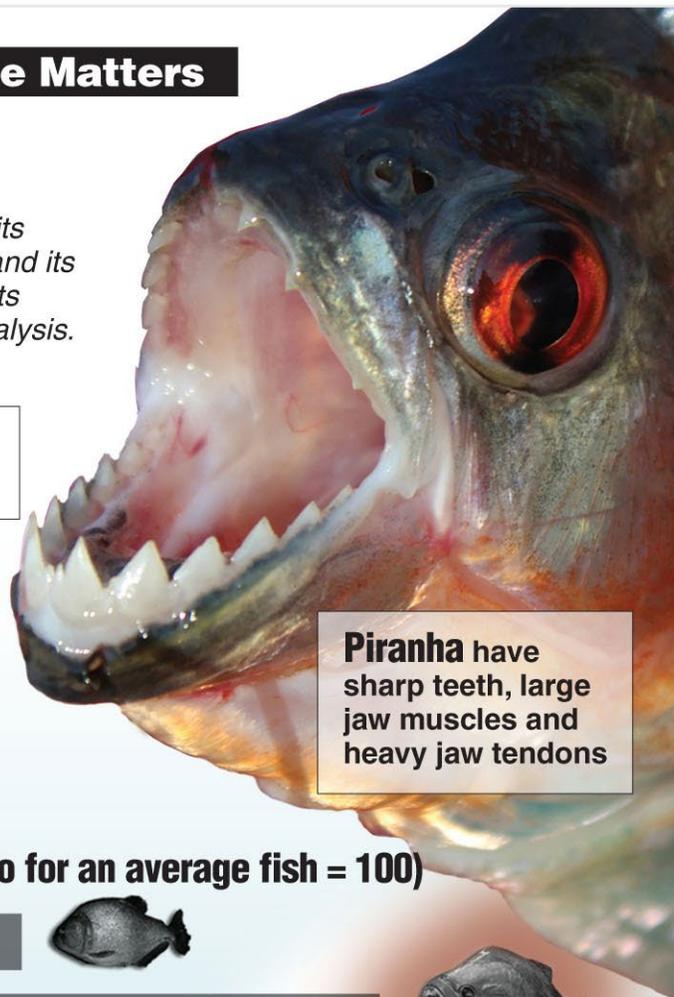
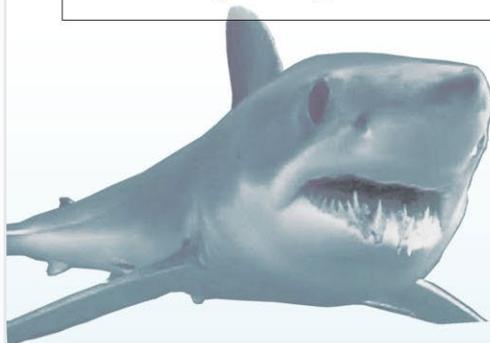
1. Using new vocabulary words or concepts from the graphic, research definitions and create a vocabulary poster. Include visuals on your poster.
2. Conduct additional research about piranhas. Create a PowerPoint presentation to reflect your learning.
3. Write an acrostic poem using the word "PIRANHA."
4. Choose two fish from the graphic and use the internet to conduct additional research about these fish. Use a graphic organizer to compare and contrast your chosen animals. (Organization 4.9d or 4.9e)
5. Conduct additional research about the piranha and create a "Habitat in a Box" to illustrate details about its habitat.

Science Matters

Built for biting

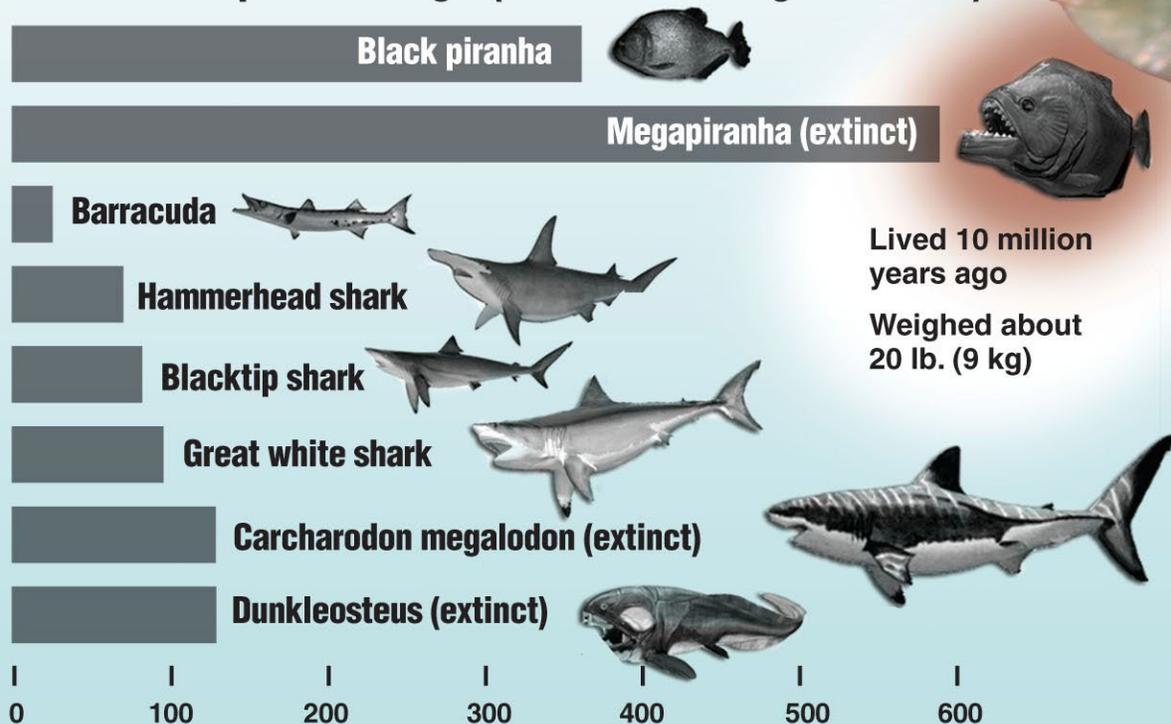
The piranha's bite power, in proportion to its weight, is three times that of an alligator, and its ancestor had even more bite strength for its weight, according to a new anatomical analysis.

Sharks have a strong bite and use their body strength to enhance it



Piranha have sharp teeth, large jaw muscles and heavy jaw tendons

Bite force compared to weight (ratio for an average fish = 100)



Source: Justin Grubich of the American University in Cairo (Egypt), Scientific Reports
Graphic: Helen Lee McComas