SN EDUCATOR GUIDE

April 28 & May 12, 2018

Fight Like an Animal

Cross-Curricular Discussion: Q

Directions: The following list of discussion questions is provided to help you take notes, brainstorm ideas and test your thinking in order to be more actively engaged in class discussions related to this article. All questions in this section are related to topics covered in "Fight like an animal."

EXPERIMENTAL DESIGN

Discussion questions:

1. What are variables in an experiment?

2. What are independent, dependent and confounding variables in an experiment?

Extension prompts:

3. In the "Beetle body size and horn length" graph in the article "Fight like an animal," what are the independent, dependent and possible confounding variables? What relationships among the variables does the graph show?

BIOLOGICAL SCIENCES

Discussion questions:

1. Look up an original study for an animal mentioned in "Fight like an animal" and read that study's abstract (citations are listed at the bottom of the online version of the *Science News* story.) What are the independent and dependent variables, and what is the hypothesis for the relationship between those variables?

2. If you were to do a science research project on animal weapons, what species would you choose to study?

3. What central question about that species's weaponry would you investigate?

Extension prompts:

4. What is your hypothesis (the answer you expect to find)? What are your independent and dependent variables?

5. What experiments could you conduct to investigate that question and hypothesis?

6. What supplies and requirements would you need to conduct your experiments?

7. What measurements would you need to make?

8. How could you minimize errors in your experiments?

9. How could you graph your results?

ENGINEERING

Discussion questions:

1. What engineering projects could you do based on animal weapons?

2. What supplies would you need to conduct your experiments?

Extension prompts:

3. What practical applications might result from your project?