Fangs in Focus:
Demystifying the Snake's Arsenal
Student Worksheet:
Middle School Edition

As you watch the slide presentation, answer these questions:

1. **Do all snakes have venom?**

2. **Why do snake's fangs have different shapes/ structures?**

Describe the different types of snake fangs and why they are different.

TYPE OF TOOTH	PICTURE	DESCRIPTION
Aglyphous		
Opisthoglyph	 https://allyouneedisbiology.files.wordpress.com/2015/01/68nigrifutand1.jpg	

Solenoglyph	 https://blog.wcs.org/photo/wp-content/uploads/2015/01/%C2%A9AMNHC.-Chesek-CC_DB_Skull-736x650.jpg	
Proteroglyph	 https://www.nps.gov/cabr/blogs/images/Proteroglyphous-Dentition.png	

Describe what you noticed about each of the ejection of the "venom". Measure the amount of venom that you were able to eject though the fang. If multiple groups tested their designs, gather their data as well and calculate the average "venom" ejected.

Type of tooth	"Venom" Flow observation	Effective?
Aglyphous		
Opisthoglyph		

Solenoglyph		
Proteroglyph		

Type of tooth	"Venom" Flow ejected				
	Group 1	Group 2	Group 3	Group 4	Average
Aglyphous					
Opisthoglyph					
Solenoglyph					

Proteroglyph					

GRAPH IT
Create a bar or line graph of the amounts of venom that was collected.

Which of the fang models were the most effective at sending out the venom? Defend your answer.

How are different fang types advantageous for specific types of prey and hunting strategies? Explain

Hypothesize: Look at the different liquids your teacher has provided. How do you think they will affect the amount of "venom" that each of the fang models will eject?

Use this format to write your hypotheses:
If we use (type of liquid) with the (type of fang), then the amount of "venom" that is ejected will be (greater/less) than the colored water "venom"

Identify:
Independent variable:

Dependent Variable:

Controls:

Describe your results! Be very specific!

Your challenge is to design a tool or device inspired by snake fangs. Each team will prepare a presentation highlighting their tool or device, and proposed biomimetic applications.

With your group, brainstorm 4-5 different ideas

Discuss the pros and cons of each of the ideas and choose one.
Which idea did you choose? Why did you choose it?

Design your tool! Draw it with as much detail as you can - use labels to help the viewer understand what each of the parts are and why it is included.

Prepare your presentation:

Name of your tool:

What does it do?

How does it work?

Explain the connection to the chosen snake fang and its inspiration:

Create your presentation: Use lots of visuals!

Reflection
The best part of this project was

Because

The part I didn't like was

Because

.
Summarize what you learned in 3-5 well constructed sentences.