Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ #\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_

Blue **Sound Vibration Station 5: Elephant Seals Rhythm and Pitch Article**

(20 point formative assessment)

**Part I Comprehension Questions Directions:** Use the article to answer the questions below; write the letter of the answer on the line provided.

Read the list of sentences from the article:

1. Vocalizations, including animal sounds and human speech, have rhythm, too.

2. The rhythm in our speech is part of how we recognize the voices of people we know.

3. Casey had previously shown that elephant seals can identify the calls of their rivals.

4. However, when the beta males heard the call with a considerably modified rhythm, they took no notice.

\_\_\_\_\_1. Which two sentences taken together provide the BEST evidence to support the idea that seals use rhythm to differentiate each other’s voices?

 (A) 1 and 2 (C) 2 and 4

 (B) 2 and 3 (D) 1 and 4

According to the article, the careful design of the study enabled a better understanding of the elephant seal's communication patterns.

\_\_\_\_\_2. Which paragraph BEST supports the idea outlined above?

 (A) Just as a musician divides a beat into long and short tones, a seal also subdivides the pulses of its calls. This study modified the tempo, or number of beats per minute, but Mathevon thinks the seals may even decipher rhythms at a finer level involving complex subdivisions of the beat.

 (B) “This research was beautifully designed,” said Andrea Ravignani, a researcher at the Seal Rehabilitation and Research Center in Pieterburen, Netherlands. His work focuses on the evolutionary basis of rhythm and the origins of music.

 (C) Unlike most projects, which use musical recordings to understand how animals make sense of rhythm, this study uses the animal's own calls, which Ravignani said “is more ecologically relevant.”

 (D) The next step in Mathevon’s research will be to look at the seal rhythms on a finer scale, by modifying more aspects of their calls. He plans to also examine female-to-female conversations, as well as communication between adults and their young.

\_\_\_\_\_3. Which of these statements would be MOST important to include in an objective summary of the article?

 (A) Mathevon likely observed the elephant seals for longer than was necessary in order to become more accustomed to recognizing individual animals by their voice rhythms.

 (B) The findings of the current study on the importance of rhythm to elephant seal communication provide important insight to human appreciation for rhythm.

 (C) The researchers quickly jumped to the conclusion that the rhythm of seals' calls is vital to their ability to recognize each other’s' voices.

 (D) Mathevon's research must continue to investigate seal rhythms in order to make the findings of this study truly significant.

\_\_\_\_\_4. The CENTRAL idea of the article is developed by:

 (A) describing the design and findings of a new study and outlining the implications of its discovery

 (B) incorporating quotes from leaders in the field on the importance of well-designed animal studies

 (C) highlighting how social mammals react to variations in rhythm in music

 (D) illustrating the importance of communication in seal interactions over mating

**Part II ABC Vocabulary Directions:** Use the article to list any vocabulary words that you think might be important in the ‘how do sound waves behave?” unit in the spaces below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | C | D | E |
| F | G | H | I | J |
| K | L | M | N | O |
| P | Q | R | S | T |
| U | V | W | X | y |