Why We Sleep

Compare explanations for sleep and dreams

SS24.P.8 "Compare theories about the functions of sleep and of dreaming."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline what each theory says sleep or dreams might do. Number the two sleep theories 1 and 2, then number the two dream theories 3 and 4 so you can compare their claims.

A Night of Sleep, Several Explanations

1. After a long day, a student falls asleep with sore legs and a new dance routine in mind. Why does sleep matter? Restoration theories propose that sleep gives the body and brain time to recover and regulate themselves. For example, tissues can recover, and sleep may help the brain clear some waste. Memory consolidation theories focus on another benefit: sleeping brains strengthen and reorganize information learned while awake. Practicing a routine before bed may help the steps stick the next day. These theories need not compete. One night of sleep may support both physical recovery and learning, though each theory emphasizes a different function.

2. Dream theories ask a different question: why do we have the experiences we remember as dreams? Imagine a student dreaming that the school hallway turns into a river and they must swim to safety. Threat simulation theory suggests that some dreams rehearse how to notice or respond to danger. In contrast, activation-synthesis theory proposes that the sleeping brain builds a story from bursts of neural activity, even when those signals have no planned message. The river dream could fit either account. It might reflect practice for danger, or it might be a story assembled from scattered signals and memories.

3. Comparing theories requires looking at both their claims and their limits. Restoration and memory consolidation describe possible functions of sleep itself; a person can benefit from sleep without remembering a dream. Threat simulation and activation-synthesis address dreams instead. A dream full of escape attempts fits threat simulation more readily than a dream about talking furniture, but one example cannot prove a theory. Activation-synthesis can explain strange details, yet it does not rule out useful dreams. Researchers can compare patterns across many dreams and measure changes in learning or recovery after sleep. No single dream tells us exactly why we sleep.

2 ANSWER WITH EVIDENCE

Use the passage

1. A student sleeps after weight training and studying vocabulary. How would restoration and memory consolidation theories explain different benefits of that night?

2. A person dreams of escaping a charging bear. How would threat simulation and activation-synthesis explain the dream differently?

3. Which sleep theory and which dream theory both propose a useful role for mental activity? What different benefits do they suggest?

4. How would a dream about floating purple numbers challenge threat simulation more than activation-synthesis?

3 YOUR TURN

Your own words

A teen sleeps after learning a new song and dreams of getting lost in a maze. In 4 to 5 sentences, compare how one sleep theory and both dream theories would explain these events, then name one observation that might help distinguish the dream theories without claiming that the dream proves either one.

Why We Sleep

PART 1 · READ AND MARK

Underline what each theory says sleep or dreams might do. Number the two sleep theories 1 and 2, then number the two dream theories 3 and 4 so you can compare their claims. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	A student sleeps after weight training and studying vocabulary. How would restoration and memory consolidation theories explain different benefits of that night?	**Restoration emphasizes recovery after weight training. Memory consolidation emphasizes strengthening the vocabulary learned while awake.**
2	A person dreams of escaping a charging bear. How would threat simulation and activation-synthesis explain the dream differently?	**Threat simulation treats the escape as possible practice for responding to danger. Activation-synthesis treats the dream as a story the brain builds from neural activity.**
3	Which sleep theory and which dream theory both propose a useful role for mental activity? What different benefits do they suggest?	**Memory consolidation proposes that sleep strengthens learning. Threat simulation proposes that some dreams rehearse responses to danger.**
4	How would a dream about floating purple numbers challenge threat simulation more than activation-synthesis?	**The dream has no clear danger to rehearse, but activation-synthesis can account for strange details assembled into a story.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Memory consolidation theory suggests that sleep could help the teen retain the new song. Threat simulation theory might treat getting lost in a maze as practice in finding a way out of danger. Activation-synthesis theory might instead treat the maze story as the brain's response to scattered signals during sleep. Researchers could compare many dreams to see whether danger and escape appear more often than harmless scenes. Such a pattern might favor threat simulation, but this one dream does not prove either dream theory.

Accept restoration as the sleep theory if the response proposes a plausible recovery benefit instead of song learning. The proposed observation should compare evidence relevant to the dream theories and avoid treating one dream as proof.