Educational Resources from *Phenomenon Science Education*

Student Proficiency Goals for **NGSS MS-LS1-8**

Information about MS-LS1-8

NGSS Performance Expectation MS-LS1-8.

Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

Clarification Statement.

No clarification statement is listed for this Performance Expectation.

Assessment Limits.

Assessment does not include mechanisms for the transmission of this information.

Science and Engineering Practice (Obtaining, Evaluating, and Communicating Information)

- Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence.

Disciplinary Core Idea (LS1.D: Information Processing)

- Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories.

Crosscutting Concept (Cause and Effect)

- Cause and effect relationships may be used to predict phenomena in natural systems.

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Student Proficiency Goals for **NGSS MS-LS1-8**

Student Proficiency Goals

SEP (Obtaining, Evaluating, and Communicating Information):

- Students gather information from multiple sources about how sensory receptors in organisms respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
- Students read and synthesize their gathered information.
- Students assess the credibility, accuracy, methods used, and possible biases of each information source.
- Students describe how the information presented in each source is supported or not supported by evidence.
- Students use their synthesized information as evidence to address phenomena related to sensory receptors in organisms responding to stimuli by sending messages to the brain for immediate behavior or storage as memories.

DCI (LS1.D Information Processing):

- Students know that each sensory receptor responds to a different type of stimulus (i.e., input), such as electromagnetic, mechanical, or chemical.
- Students know that sensory receptors transmit signals that travel along nerve cells to the brain.
- Students know that these signals are processed in the brain, resulting in immediate behaviors or memories.

CCC (Cause and Effect):

- Students consider that there is a causal link between sensory input and organism behavior and memory.
- Students consider that these cause and effect relationships can be used to predict behavioral and/or memory generation phenomena in organisms.
- Students consider that the causal link between sensory input and organism behavior and memory can be used to understand these phenomena.