

**Performance Task Analysis
Protocol Step 1
Standards Alignment**

Task Name: Living Membranes (7-8)

Developer/s:

Question # 1

Inquiry:

- **Grade Cluster Expectation: S :6** (Inquiry--Analyze Data) Using color, texture, symbols and other graphic strategies to clarify trends/patterns within a representation

Other:

- **Grade Cluster Expectation: S : 30** (Life Science—Structure/Function): by examining cells under a microscope and identifying cell wall, cell membrane, nucleus and chloroplasts.

Question # 2a, 2b

Inquiry:

- **Grade Cluster Expectation: S :2** Propose a hypothesis based upon a scientific concept or principle, observation, or experience that identifies the relationship between variables.
- **Grade Cluster Expectation: S :2** Predict results (evidence) that supports the hypothesis.

Question # 3

Inquiry:

- **Grade Cluster Expectation: S :4** Use technology to collect, quantify, organize, and store observations (i.e.: use of probe).
- **Grade Cluster Expectation: S :5** Draw scientifically:
 - a. Records multiple perspectives to scale (i.e.: magnification, cross section, top view, side view, etc.).

Other:

- **Grade Cluster Expectation: S : 30** (Life Science—Structure/Function) : by examining cells under a microscope and identifying cell wall, cell membrane.

Question # 4

Inquiry:

- **Grade Cluster Expectation: S : 7** Explain data:
 - a. Use scientific concepts, models, and terminology to report results, discuss relationships, and propose new explanations.
 - b. Share conclusion/summary with appropriate audience beyond the research group.

- **Grade Cluster Expectation: S : 30** (Life Science—Structure Function) by conducting experiments and recognizing that different concentrations of materials (inside vs outside a cell) will cause water to flow into or out of cells.

Concept: Some materials can pass into and out of cells as concentrations move toward equilibrium. (diffusion)

Question # 5

Inquiry:

- **Grade Cluster Expectation: S :4** Tools and procedures for collecting data and reducing error.
- **Grade Cluster Expectation: S :3** Considers and addresses experimental errors.
- **Grade Cluster Expectation: S :3** Identify limitations and/or sources of error within the experimental design.

Question # 6

- **Grade Cluster Expectation: S :3** Write a plan related to the question, hypothesis, and prediction that includes:
 - a. A diagram labeled using scientific terminology that supports procedures and illustrates the setup.
 - b. A procedure that lists significant steps that identify manipulated (independent) and responding (dependent) variables.
 - c. A control for comparing data when appropriate.
 - d. Tools and procedures for collecting data and reducing error

Question # 7

Inquiry:

- **Grade Cluster Expectation: S :8** Explain how findings can be generalized to other situations. (5-6)

Other:

- **Grade Cluster Expectation: S : 30** (Life Science—Structure/Function) - by conducting experiments and recognizing that different concentrations of materials (inside vs outside a cell) will cause water to flow into or out of cells.

Concept: Some materials can pass into and out of cells as concentrations move toward equilibrium. (diffusion)

Question # 8

Inquiry:

- **Grade Cluster Expectation: S : 8** Explain how findings can be generalized to other situations. (5-6)

Other:

- **Grade Cluster Expectation: S : 30** (Life Science—Structure/Function) by conducting experiments that recognizing that different concentrations of materials (inside vs. outside a cell) will cause water to flow into or out of cells.

Concept: Some materials can pass into and out of cells as concentrations move toward equilibrium. (diffusion)