Overview of the Seeds of Neuroscience Lessons

All lessons are available at *www.neuroseeds.org/Lessons*.

Lesson	Learning objectives and investigations
Lesson 1. Neuroscience 101	Introduce the nervous system (especially brain and neurons) and provide necessary vocabulary and ideas for the rest of the lessons.
Lesson 2. Infusions and Decoctions: Preparing Plant Extracts	Medicinal plants have been used in all cultures of the world to treat a wide variety of diseases, including neurological diseases. Create the plant extracts used in subsequent lessons.
Lesson 3. Botanical Heart Throbs: Investigating the Effects of Plant Extracts on Heart Rate in Blackworms	The brain receives information from the body and the nervous system controls the circulatory system. Investigate the effects of medicinal plants on pulsation rate in blackworms.
Lessons 4–8.	Explore the effects of medicinal plant extracts while learning about neuroscience and human body systems in a variety of investigations with planaria worms, cockroaches, bacteria, and chromatography.

Example class data table

Group	A	B	C	D	E
Plant extract					
Prediction: Stimulant or depressant?					
Result: Increase, decrease, or stay the same?					
Hypothesis: Supported or refuted?					

Rubric

Additional rubrics for this curriculum are available at www.neuroseeds.org/Lessons/heartthrobs.
[Please update.]

Dimension	Needs work (0 Points)	Basic (1 Point)	Proficient (3 Points)	Advanced (5 Points)
Records data and observations.	Data in the table are not accurate or cannot be read.	Data in the table are accurate and easy to read.	Data in the table are accurate and easy to read. Some observations recorded.	Data in the table are accurate and easy to read. Detailed observations recorded.
Names the plant extract tested by the group.	Incomplete or incorrect.	Correctly names the plant extract.	N/A	N/A
Provides hypothesis for the plant extract.	Incomplete or incorrect.	Provides a hypothesis for the plant extract tested.	N/A	N/A
Includes a description of how the plant extract affected pulsation rate.	No description provided.	Somewhat clearly described the changes in the pulsation rate among the control and the plant extract.	Clearly described the changes in the pulsation rate among the control and the plant extract.	Clearly described the changes in the pulsation rate among the control and the plant extract. Supported description with evidence.
States whether observations supported hypothesis and supports this statement with evidence.	No conclusion was apparent or important details were overlooked.	Provides a conclusion with some reference to the data and the hypothesis.	Provides a somewhat detailed conclusion based on the data and related to the hypothesis.	Provides a detailed conclusion clearly based on the data and related the hypothesis statement.