

Scare and Tell

I. Purpose

- A. Convey the basic principles of the autonomic nervous system to the lay public.
- B. Provide an interesting and interactive demonstration of how the nervous system interacts with the body's physiology to produce objective changes in chemistry.

II. Materials

- A. Electroencephaloneuromentiograph (E-machine) with variations (see issues)
- B. Stimulant cards (scary pictures) from WSU Psychology department
- C. Questioning board (for kids' lie-detecting experiment)
- D. Presentation board
- E. Candy
- F. Presentation aids that we may find or make (i.e. – Model of brain)

III. Procedure

- A. Two presenters will instruct the children on the workings of the autonomic nervous system and how that interacts with primarily uncontrollable bodily functions, and then proceed through a brief explanation of the E-machine.
- B. Children will be shown the stimulant cards from the Psych department and their palms will be tests to show how they sweat when scared.
- C. Children will then select a child from among the group they think is best able to tell a convincing lie.
- D. Elected child is to accurately fill out the pre-formulated set of approximately 15 questions, and then is instructed to fill out an identical set of questions with false data.
- E. Child holds one electrode in each bare hand, and answers questions that the "interviewer" presents according to the general form questionnaire previously answered. In one trial the child will answer truthfully, and in the other trial the child will answer unfaithfully.
- F. If child is able to "deceive" the machine the whole group will receive candy. If not they will be surprised to receive candy anyways.
- G. Reasoning behind why machine performs as such is explained.
- H. Construction of a simple circuit electroencephaloneuromentiograph machine.

IV. Issues

- A. No sweating – We must ensure sufficient nervousness of child.
- B. Understanding of autonomic nervous system – Our presentation must be conveyed in such a manner that the child understands the concepts, so we will have one or more education majors hear the presentation before the official date.
- C. Constancy of electroencephaloneuromentiograph current – We must make the machine such that it has control over the consistency of the current.

- D. Surface area dynamic – Since resistance is related to electrode-skin surface area, it is important that such interaction is kept stable and consistent.
- E. Polarization – Must account for polarization of the electrodes.
- F. Compromises of information
 - 1. Consider functions purely voluntary or involuntary.
 - 2. Exclude information on action potentials.
 - 3. Generalize processing areas of the brain.
 - 4. Exclude intermediary cells between the efferent neuron and affecter organ, such as pacemaker cells.

V. Lesson Plan

- A. Objective – Basic understanding of how the autonomic nervous system involuntarily changes one’s body functioning.
- B. Material
 - 1. Presentation board
 - 2. Electroencephaloneuromentimograph
 - 3. Stimulant Cards
 - 4. Incentive – Candy
 - 5. Handout stating basics of lesson
- C. Time – Fifteen minutes
- D. Key terms
 - 1. Autonomic nervous system – The part of the nervous system that controls the things that we do not consciously change, such as heart rate and blood pressure.
 - 2. Electroencephaloneuromentimograph – Machine that registers how much your hands are sweating.
 - 3. Involuntary – Not consciously controlled.
 - 4. Brainstem – Most posterior portion of brain.
 - 5. Cerebellum – Outermost portion of brain.
 - 6. Midbrain, thalamus – Routers for incoming and outgoing nerves.
- E. Warm Up – Sit on ground, each given a piece of candy.
- F. Main activity
 - 1. Rationale – See purpose under section I.
 - 2. Procedure – See procedure under section III.
 - 3. Processing – Questions pertaining to what was learned will be asked.
 - a. What controls our involuntary body functions?
 - b. How does this machine tell that you’re lying?
 - c. Any questions?
- G. Closure – The question “What did you like most?” will be asked if time permits.
- H. Homework – N/A
- I. Standards – N/A