Classroom Activities

PA State standards

The educational standards fulfilled by the activities in the “Exploration Adventure” Modules are detailed below for quick reference with activity summaries, materials needed and applicable State Standards. The activities were designed for fourth grade; however, they are suitable and adaptable for students in third through sixth. The PA Standards described below were found at http://www.pde.state.pa.us/k12/lib/k12/scitech.pdf.

Applicable Standards for All Modules:

Pennsylvania Academic Standards

Science and Technology
3.1.4: Unifying Themes (Grade 4)
A. Know that natural and human-made objects are made up of parts.
   - Identify and describe what parts make up a system.

3.2.4: Inquiry & Design (Grade 4)
A. Identify and use the nature of scientific and technological knowledge.

3.3.4: Biological Sciences (Grade 4)
B. Know that living things are made up of parts that have specific functions.
   - Determine how different parts of a living thing work together to make the organism function.

Mathematics
2.1.3: Numbers, Number Systems and Number Relationships (Grade 3)
B. Use whole numbers and fractions to represent quantities.
   I. Apply place-value concepts and numeration to counting
   J. Estimate, approximate, round, or use exact numbers as appropriate

2.3.3 Measurement and Estimation (Grade 3)
E. Determine the appropriate unit of measure

2.3.5 Measurement and Estimation (Grade 5)
   A. Select and use appropriate instruments and units for measuring quantities
   B. Select and use standard tools to measure the size of figures with specified accuracy

For ALL Activities:

» Heart Activity 1
» Heart Activity 2
» Bone Activity 1
» Bone Activity 2
» Bone Activity 3
» Spinal Cord Activity 1
» Spinal Cord Activity 2
E. Add and subtract measurements

2.5.5: Mathematical Problem Solving and Communication (Grade 5)
B. Use appropriate mathematical terms, vocabulary, language symbols and graphs to explain clearly and logically solutions to problems
C. Show ideas in a variety of ways, including words, numbers, symbols, pictures, charts, graphs, tables, diagrams, and models.
F. Use appropriate problem-solving strategies.

2.6.3: Statistics and Data Analysis (Grade 3)
A. Gather, organize, and display data using pictures, tallies, charts, bar graphs and pictographs.
B. Formulate and answer questions shown on graphs

Arts and Humanities

9.1.5: Production, Performance and Exhibition of…Visual Arts (Grade 5)
H. Use and maintain materials, equipment and tools safely at work.
• Describe some materials used

9.3.3 & 9.3.5: Critical Response (Grade 3 & 5)
A. Recognize critical processes used in the examination of works in the arts and humanities.
• Compare and contrast
• Analyze
• Interpret
• Form and test hypotheses
• Evaluate/form judgments

Additional Applicable Standards for Lessons:

Additional Pennsylvania State Standards: Bone Activity 2
Mathematics
2.11.3: Concepts of Calculus (Grade 3)
A. Identify least and greatest values represented in bar graphs and pictographs

Arts and Humanities

9.1.3 & .5: Production, Performance and Exhibition of…Visual Arts (Grade 3 & 5)
A. Know and use the elements and principles of each art form to create works in the arts and humanities.
• Elements
Visual Arts:
• color
• form/shape
• space
• texture