Art and Science Connect
Grades: 3 – 12
Length of tour: 1 hour

Tour Description
Science provides a lens through which students explore and analyze artworks. Participating in conversations, students will determine how artists use science to get viewers to see what the artist intended. Students will experience how to use science to examine a work of art by making meaningful connections between art and scientific concepts. Students will learn how the influence and impact of scientific developments over time have advanced artistic techniques and expressions. Students will be encouraged to use scientific inquiry and think critically as they discover creativity in science and the logic in art. The tour will build on students' curiosity of the scientific foundation of art.

Goals
• To observe and analyze how science is applied in art and how art informs science
• To use appropriate scientific and art terminology in interpreting artworks
• To apply knowledge of tools, techniques and scientific concepts to better understand the visual arts
• To explore scientific concepts which relate to composition, media, art movements and techniques

Rationale
Students are naturally curious and will discover that art and science impact each other in numerous and intriguing ways. We learn about art by using science; we learn about science by studying artworks. Advancements in science have expanded the toolbox and techniques of art and art has lead to new scientific understanding. Scientific thinking can be used to understand how artists solve problems creatively and how students can think critically about art.

Topics
• Application and influence of scientific concepts in creating art including optics, chemistry, metallurgy, science of color and light, etc.
• Artists' techniques and tools
• The characteristics of different media such as oil, tempera, gouache, ink, clay, metal, etc.
• Comparing and contrasting media, techniques and processes
• Basic physical and scientific properties of visual arts processes – painting, sculpture, printing, photography, digital, etc.
• Art movements
• Depictions of scientific events and/or developments

Arizona Education Standards

Visual Arts Standards
Strand 2: Relate
Concept #1 Artworlds
Concept #2 Materials, Tools, Techniques
Concept #3 Elements & Principles
Concept #4 Meanings & Purposes
Strand 3: Evaluate
Concept #1 Art Issues and Values
Concept #2 Materials, Tools, Techniques
Concept #5 Quality

Science Standards
Strand 1: Inquiry Process
Concept #3 Analysis and Conclusions

Strand 2: History and Nature of Science
Concept #1 History of Science as a Human endeavor
Concept #2 Nature of Scientific Knowledge

Strand 3: Science in Personal and social Perspectives
Concept #2 Science and technology in Society

Strand 5: Physical Science
Concept #1 Properties and Changes of Properties in Matter