

## ACADEMIC CONTENT STANDARDS SCALE

### FINE ARTS

#### STANDARD Connection, Relationships and Applications

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##### Benchmarks K–4

A. Demonstrate the relationship the visual arts share with other arts disciplines as meaningful forms of nonverbal communication.

B. Use the visual arts as a means to understand concepts and topics studied in disciplines outside the arts.

##### Benchmarks 5–8

A. Apply and combine visual art, research and technology skills to communicate ideas in visual art form.

##### Benchmarks 9–12

A. Formulate and solve a visual art problem using strategies and perspectives from other disciplines.

#### STANDARD Valuing the Arts / Aesthetic Reflection

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##### Benchmarks K–4

A. Apply basic reasoning skills to understand why works of art are made and valued.

B. Form their own opinions and views about works of art and discuss them with others.

C. Distinguish and describe aesthetic qualities in works of art.

##### Benchmarks 5–8

A. Demonstrate aesthetic inquiry and reflection skills when participating in discussions about the nature and value of art.

B. Analyze diverse points of view about artworks and explain the factors that shape various perspectives.

##### Benchmarks 9–12

A. Communicate how an aesthetic point of view contributes to the ideas, emotions and overall impact of personal artworks and the work of others.

B. Judge the merit of selected artworks and provide the aesthetic basis for their position.

Students can discuss why SCALE is a work of art and why art was used as a discipline to communicate the ideas presented in SCALE. Students can discuss the materials used in each part of the installation and why and how each part is effective and contributes to the whole. Students can also discuss why SCALE is in fact a work of art and how all the parts work together to create the overall effect.

#### STANDARD Analyzing and Responding

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##### Benchmarks K–4

A. Identify and describe the visual features and characteristics in works of art.

B. Apply comprehension strategies (e.g. personal experience, art knowledge, emotion and perceptual and reasoning skills) to respond to a range of visual artworks.

##### Benchmarks 5–8

A. Apply the strategies of art criticism to describe, analyze and interpret works of art.

B. Present and support an individual interpretation of a work of art.

##### Benchmarks 9–12

A. Apply the knowledge and skills of art criticism to conduct in-depth analyses of works of art.

B. Explain how form, subject matter and content contribute to meanings in works of art.

Students can critique the work of art and discuss what they liked and didn't like about it and how it was effective. They can record their responses in the interactive booth at the end of the exhibition.

### SCIENCE

#### STANDARD The Universe

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##### Benchmarks K–2

A. Recognize that there are more stars in the sky than anyone can easily count.

B. Observe constant and changing patterns of objects in the night sky.

##### Benchmarks 3–5

A. Explain that stars are like the sun, some being smaller and some larger, but so far away that they look like points of light.

B. Explain the characteristics, cycles and patterns involving Earth and its place in the solar system.

##### Benchmarks 6–8

A. Describe how the positions and motion of the objects in the universe cause predictable and cyclic events.

B. Explain that the universe consists of billions of galaxies that are classified by shape.

C. Examine the life cycle of a star and predict the next likely stage of a star.

##### Benchmarks 9–10

A. Describe the current scientific evidence that supports the theory of the explosive expansion of the universe, The Big Bang, over 10 billion years ago.

##### Benchmarks 11–12

A. Explain how astronomers infer that the whole universe is expanding by understanding how light seen from distant galaxies has longer apparent wavelengths than comparable light sources close to Earth.

#### STANDARD Understanding Technology

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##### Benchmarks 3–5

A. Describe ways that technology can yield helpful and/or harmful results.

##### Benchmarks 6–8

A. Examine how science and technology have advanced through the contributions of many different people, cultures and times in history.

##### Benchmarks 11–12

A. Explain how technology can be used to gather evidence and increase our understanding of the universe.

B. Explain how science often advances with the introduction of new technologies and how solving technological problems often results in new scientific knowledge.

#### STANDARD Doing Scientific Inquiry

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##### Benchmarks 3–5

A. Use evidence and observation to explain and communicate the results of investigation.

#### STANDARD Earth and Space Science

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##### Benchmarks 9–10

A. Explain how evidence from stars and other celestial objects provide information about the processes that cause changes in the composition and scale of the physical universe.

B. Explain how earth is made up of a series of interconnected systems and how a change in one system affects other systems.

### MATHEMATICS

#### STANDARD Mathematical Process Standard

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##### Benchmarks 3–4

A. Use mathematical strategies to solve problems that relate to other curriculum areas and the real world (e.g. use a time line to sequence events; use symmetry in artwork).

##### Benchmarks 6–8

A. Apply mathematical knowledge and skills routinely in other content areas and practical situations.

##### Benchmarks 11–12

A. Apply mathematical modeling to workplace and consumer situations, including problem formation, identification of a mathematical model, interpretation of solution within the model and validation to original problem situation.

Students can solve the mathematical problem with the model of the project titled Star Curtain: How many stars are there all together if there are 33 star panels and each panel is 90 cm by 345 cm with each square centimeter holding 1000 stars?

### SOCIAL STUDIES

#### STANDARD History

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##### Benchmarks K–2

A. Place events in correct order on a time line.

##### Benchmarks 3–5

A. Construct time lines to demonstrate an understanding of units of time and chronological order.

In the installation titled Connectivity, astronomers will be linked through a time line of events.