

Connections to Ohio State Mathematics Standards: 5-7

| Exhibit Module | Number, Number Sense, and Operations | Airplane | Airplane Shooter | Amazing Airways | Archimedes Screw | Bernoulli Fountain | Blue Screen | Brain Quiz | Catenary Arch | Crackle Screen | Echo Tube | Erosion Table | Gear Wall | Hurricane Chamber | Kapla Blocks | Laser Guitar | Lego Table | Magnet Wall | Peakaboo Window | PVC Pipe Organ | Rhythm machine | Stream Table | Video Browser | Water Table/Tide Pool | |
|--|--|----------|------------------|-----------------|------------------|--------------------|-------------|------------|---------------|----------------|-----------|---------------|-----------|-------------------|--------------|--------------|------------|-------------|-----------------|----------------|----------------|--------------|---------------|-----------------------|--|
| Academic Content Standards Benchmarks 5-7 | Number, Number Sense, and Operations | | | | | | | | X | | | | | | | | | | | | | | | | |
| | Represent and compare numbers less than 0 through familiar applications and extending the number line. | | | | | | | | | | | | | | | | | | | | | | | | |
| | Develop meaning for percents, including percents greater than 100 and less than 1. | | | | | | X | | | | | | | | | | | | | | | | | | |
| | Use models and pictures to relate concepts of ratio, proportion and percent. | X | X | | | | | | | | | | | | | | | | | | | | | | |
| Apply and explain the use of prime factorizations, common factors, and common multiples in problem situations. | | | | | | | X | | | | | | | | | | | | | | | | | | |
| Use and analyze the steps in standard and non-standard algorithms for computing with fractions, decimals and integers. | | | | | | | | | | | | | | | | | | | | | | | | | |
| Use a variety of strategies, including proportional reasoning, to estimate, compute, solve and explain solutions to problems involving integers, fractions, decimals and percents. | | X | | | | | | | | | | | | | | | | | | | | | | | |

| <p>Exhibit Module</p> <p>Academic Content Standards</p> <p>Benchmarks 5-7</p> | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| <p>Measurement</p> <p>Select appropriate units to measure angles, circumference, surface area, mass and volume, using:</p> <ul style="list-style-type: none"> • U.S. customary units; e.g., degrees, square feet, pounds, and other units as appropriate; • metric units; e.g., square meters, kilograms and other units as appropriate. <p>Convert units of length, area, volume, mass and time within the same measurement system.</p> <p>Identify appropriate tools and apply appropriate techniques for measuring angles, perimeter or circumference and area of triangles, quadrilaterals, circles and composite shapes, and surface area and volume of prisms and cylinders.</p> <p>Use problem solving techniques and technology as needed to solve problems involving length, weight, perimeter, area, volume, time and temperature.</p> <p>Analyze and explain what happens to area and perimeter or surface area and volume when the dimensions of an object are changed.</p> <p>Understand and demonstrate the independence of perimeter and area for two-dimensional shapes and of surface area and volume for three-dimensional shapes.</p> | | | | | | | | |
| Airplane | X | X | X | X | X | X | X | X |
| Airplane Shooter | | X | X | X | X | | | |
| Amazing Airways | | X | X | X | X | | | |
| Archimedes Screw | | | X | | X | | | |
| Bernoulli Fountain | | | | | X | | | |
| Blue Screen | | | | | | | | |
| Brain Quiz | X | | | | X | | | |
| Catenary Arch | | | | | X | | | |
| Crackle Screen | | | | | X | | | |
| Echo Tube | | | | | X | | | |
| Erosion Table | | | | | X | | | |
| Gear Wall | | | | | X | | | |
| Hurricane Chamber | | | | | X | | | |
| Kapla Blocks | | | | | X | | | |
| Laser Guitar | | | | X | | | | |
| Lego Table | | | X | | X | X | X | X |
| Magnet Wall | | | | | X | | | |
| Peakboo Window | | | | | X | | | |
| PVC Pipe Organ | | | | | X | | | |
| Rhythm machine | | | | | X | | | |
| Stream Table | | | | | X | | | |
| Video Browser | | | | | X | | | |
| Water Table/Tide Pool | | | | | X | | | |

| Exhibit Module Academic Content Standards Benchmarks 5-7 | | Mathematical Processes | | Clarify problem-solving situation and identify potential solution processes; e.g., consider different strategies and approaches to a problem, restate problem from various perspectives. | | Apply and adapt problem-solving strategies to solve a variety of problems, including unfamiliar and non-routine problem situations. | | Use more than one strategy to solve a problem, and recognize there are advantages associated with various methods. | | Use deductive thinking to construct informal arguments to support reasoning and to justify solutions to problems. | | Use inductive thinking to generalize a pattern of observations for particular cases, make conjectures, and provide supporting arguments for conjectures. | | Relate mathematical ideas to one another and to other content areas; e.g., use area models for adding fractions, interpret graphs in reading, science and social studies. | | Use representations to organize and communicate mathematical thinking and problem solutions. | |
|--|--|------------------------|--|--|--|---|--|--|--|---|--|--|--|---|--|--|--|
| Airplane | | | | X | | X | | X | | X | | X | | X | | X | |
| Airplane Shooter | | | | X | | X | | X | | X | | X | | X | | X | |
| Amazing Airways | | | | X | | X | | X | | X | | X | | X | | X | |
| Archimedes Screw | | | | X | | X | | X | | X | | X | | X | | X | |
| Bernoulli Fountain | | | | X | | X | | X | | X | | X | | X | | X | |
| Blue Screen | | | | X | | X | | X | | X | | X | | X | | X | |
| Brain Quiz | | | | X | | X | | X | | X | | X | | X | | X | |
| Catenary Arch | | | | X | | X | | X | | X | | X | | X | | X | |
| Crackle Screen | | | | X | | X | | X | | X | | X | | X | | X | |
| Echo Tube | | | | X | | X | | X | | X | | X | | X | | X | |
| Erosion Table | | | | X | | X | | X | | X | | X | | X | | X | |
| Gear Wall | | | | X | | X | | X | | X | | X | | X | | X | |
| Hurricane Chamber | | | | X | | X | | X | | X | | X | | X | | X | |
| Kapla Blocks | | | | X | | X | | X | | X | | X | | X | | X | |
| Laser Guitar | | | | X | | X | | X | | X | | X | | X | | X | |
| Lego Table | | | | X | | X | | X | | X | | X | | X | | X | |
| Magnet Wall | | | | X | | X | | X | | X | | X | | X | | X | |
| Peakaboo Window | | | | X | | X | | X | | X | | X | | X | | X | |
| PVC Pipe Organ | | | | X | | X | | X | | X | | X | | X | | X | |
| Rhythm machine | | | | X | | X | | X | | X | | X | | X | | X | |
| Stream Table | | | | X | | X | | X | | X | | X | | X | | X | |
| Video Browser | | | | X | | X | | X | | X | | X | | X | | X | |
| Water Table/Tide Pool | | | | X | | X | | X | | X | | X | | X | | X | |

