



A World In Motion



PRIMARY | ELEMENTARY | MIDDLE SCHOOL

Educating Students. Empowering Teachers. Engaging Volunteers.

Introduction

SAE International's [**A World In Motion® \(AWIM®\)**](#) program is an inquiry-based learning experience that brings STEM concepts to life, setting students on a path of lifelong discovery.

AWIM combines practical, hands-on learning with mentorship from volunteers to provide equitable access to STEM.

We invite you to explore our PreK-12 curriculum explorations and challenges!

AWIM Preschool (Ages 3-5) Exploration Series

We Explore Living Things

- Students investigate living things including plants, trees & animals
- Life science concepts
 - Living vs. non-living
 - Life cycles
 - Five senses
- Flexible 10 lesson sequence
 - Timing of activities may depend on conditions (location, season, weather)



We Explore Homes and Habitats

- Students investigate outdoor & indoor environments where animals find food & shelter
- Life science concepts
 - Animals' shared basic needs
 - Animals' unique needs
 - Habitat features
- Flexible 10 lesson sequence
 - Timing of activities may depend on conditions (location, season, weather)



We Explore Building

- Students identify, address & solve building problems
- Physical science & engineering concepts
 - Properties and characteristics of materials
 - Structural design
 - Balance and stability
- Flexible 10 lesson sequence
 - Activities can be integrated with regular building play



We Explore Weather

- Students investigate relationships between weather, living things & the environment
- Earth & space science concepts
 - Seasonal patterns
 - Observation and measurement
 - Cause and effect
- Flexible 10 lesson sequence
 - Timing of activities may depend on conditions (location, season, weather)



AWIM Primary (K-3) Series

Engineering Inspired By Nature

- Students investigate seed dispersal and design & build flying toys
- Core concepts
 - Newton's Laws of Motion
 - Forces
 - Engineering
- Suggested 9 lessons over 11 days



Making Music

- Students investigate, design & build musical instruments
- Core concepts
 - Sound
 - Longitudinal and Transverse Waves
 - Pitch
 - Amplification
- Suggested 7 lessons over 10 days



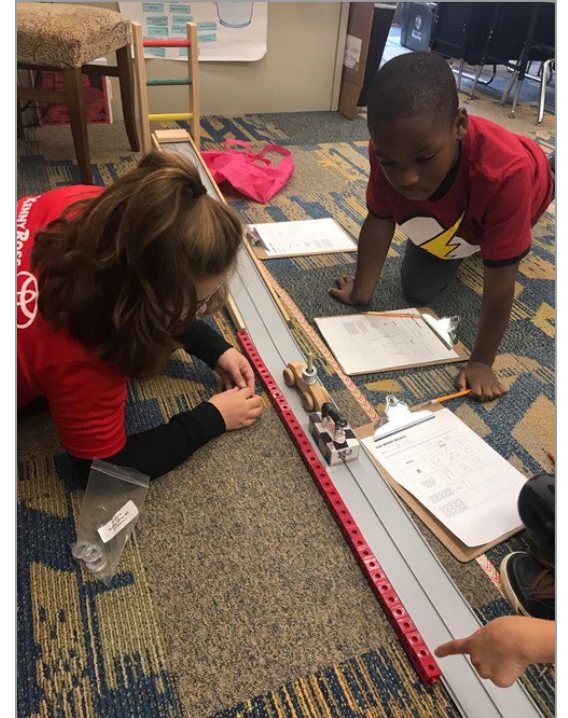
Pinball Designers

- Students design & build non-electronic pinball games
- Core concepts
 - Gravity
 - Potential and Kinetic Energy
 - Inclined Planes
 - Probability
- Suggested 8 lessons over 9 days



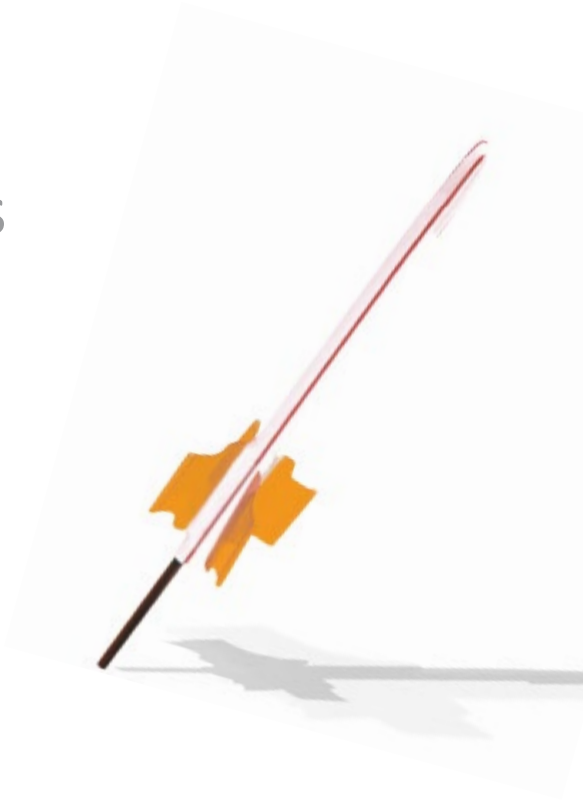
Rolling Things

- Students experiment with variable testing using cars & ramps
- Core concepts
 - Potential and Kinetic Energy
 - Mass
 - Gravity
 - Velocity
 - Momentum
- Suggested 7 lessons over 12 days



Straw Rockets

- Students design & build simple rockets
- Core concepts
 - Newton's Laws of Motion
 - Forces
 - Engineering Design
- Suggested 7 lessons over 8 days



AWIM Elementary (4-6) Series

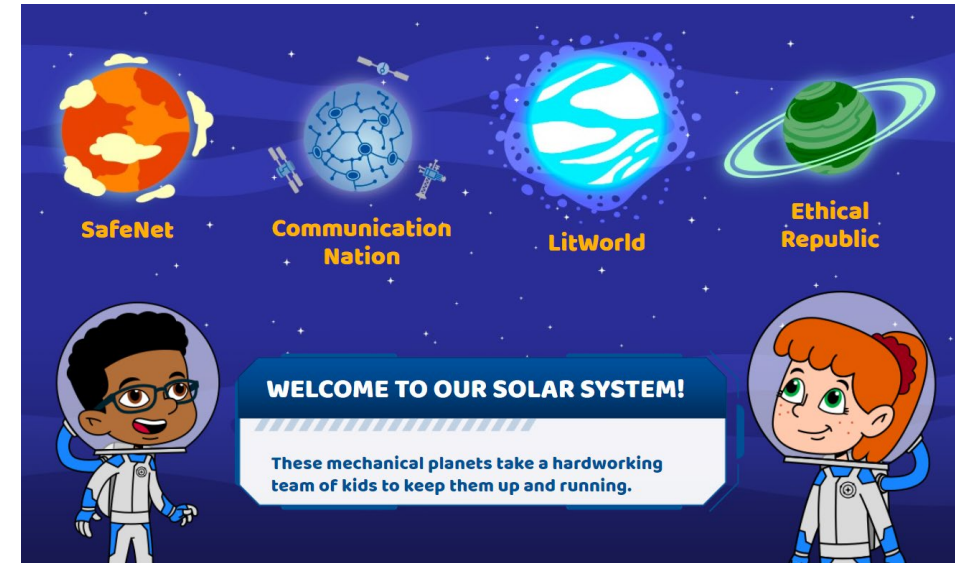
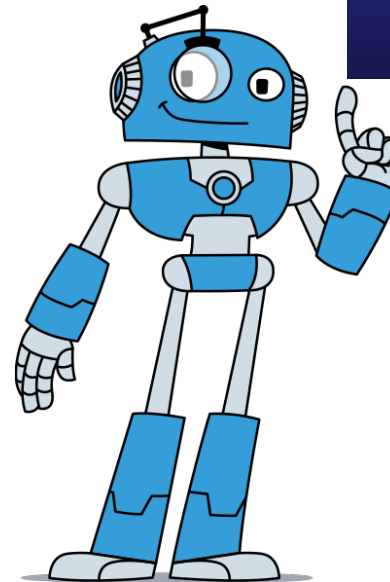
JetToy

- Students design balloon-powered cars
- Core concepts
 - Newton's Laws of Motion
 - Forces
 - Engineering
- Suggested 11 lessons over 15 days



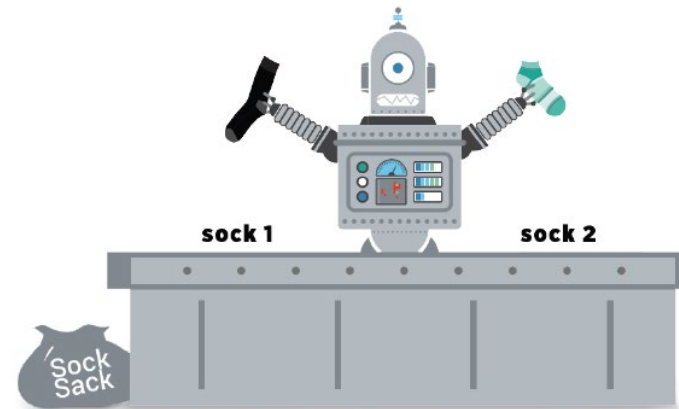
Navigating the Digital Universe

- Students learn about their rights & responsibilities as digital citizens through dynamic activities
- Core concepts
 - Digital safety
 - Communication
 - Media Literacy
 - Ethics
- Suggested 11 lessons over 15 days



Programming Each Other

- Students explore complex programming concepts by systematizing simple activities
- Core concepts
 - Computational thinking
 - Conditional statements
 - Looping
 - Error handling
 - Variables
- Suggested 11 lessons over 15 days



Skimmer

- Students design & build fan-propelled sailboats
- Core concepts
 - Air resistance
 - Balance and stability
 - Friction
 - Propulsion
 - Surface area
- Suggested 10 lessons over 15 days



AWIM Middle School and High School (6-12) Series

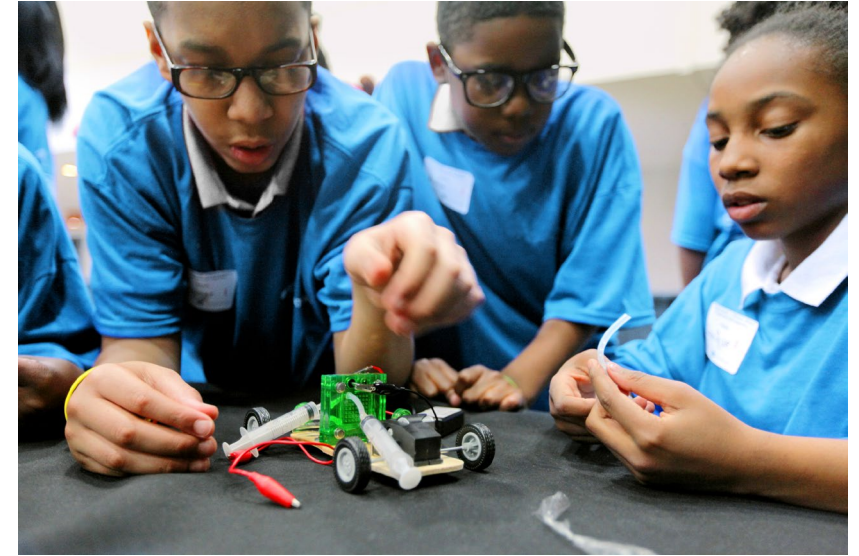
Cybersecurity: Keeping Our Networks Secure

- Students explore the structure of the internet & data protection
- Core concepts
 - Internet structure and protocols
 - Encryption and decryption methods
- Suggested 10 lessons over 12 days



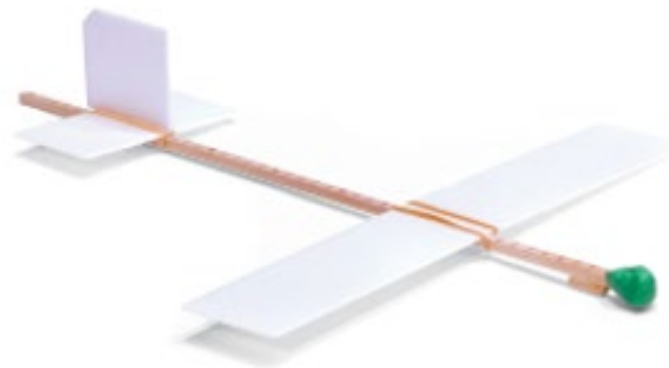
Fuel Cell

- Students explore alternative power sources to design & build toy cars
- Core concepts
 - Forces
 - Newton's Laws of Motion
 - Green design
 - Energy transformations
- Suggest 12 lessons over 15 days



Glider

- Students build, test & modify gliding toys
- Core concepts
 - Forces
 - Motion
 - Gravity
 - Engineering Design
- Suggested 18 lessons over 23 days



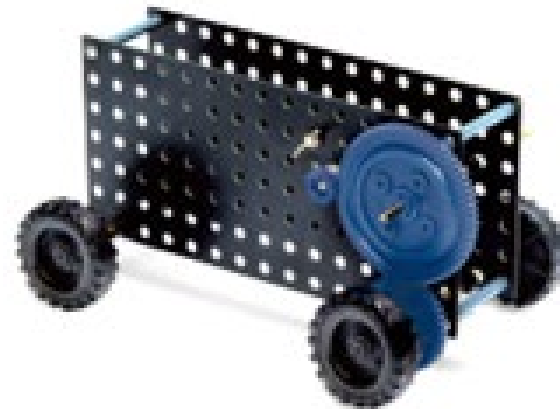
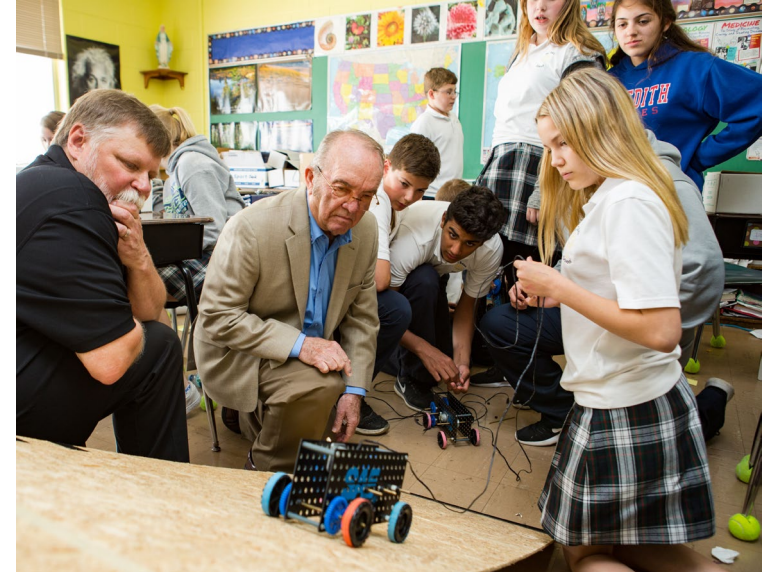
Gravity Cruiser

- Students build, test & modify vehicles powered by gravity
- Core concepts
 - Forces
 - Motion
 - Gravity
 - Engineering Design
- Suggested 10 lessons over 15 days



Motorized Toy Car

- Students design & build gear-driven toys
- Core concepts
 - Force
 - Speed
 - Torque
 - Simple machines
 - Gear ratios
- Suggested 17 lessons over 23 days



For more information,
visit sae.org/awim or contact awim@sae.org.