Club Invention Afterschool®

2014 Curricula Fact Sheet

Bolder Builders™

- Creates an understanding of engineering as children model and test shelters that will house town residents during different weather conditions.
- Demonstrates the ways that earthquakes impact buildings.
- Explores the engineering of bridges and the replication of structures.
- Utilizes the building abilities of different animals to build sturdy structures that withstand natural forces.

Castles, Catapults, and Coats of Arms™

- Examines medieval life scientifically.
- Explores the effects of Archimedes principle by sculpting clay boats that float across a moat while supporting cargo.
- Allows children to apply science and engineering principles to the construction of a castle wall.
- Demonstrates and explore the concept of center of gravity and the effect of momentum.
- Explore the use of simple machines by creating a weight-bearing drawbridge.

E.Z. Science™

- Uses mathematics and experimentation to create timepieces that measure specific time periods.
- Utilizes chemical reactions to create a specific amount of a gas to fill a balloon.
- Fosters creative problem solving though the creation of inventions.
- Utilizes methods of printmaking to create a magazine template.
- Uses mathematics and logical thinking to map out a route to deliver magazines.

Flight Sight™

- Explores the ways that invention has enabled flight.
- Examines different perspectives to look at Earth formations and create topographical maps.
- Investigates Bernoulli's principle and the concept of flight.
- Prompts children to imagine and create cockpits of aircraft that fly in outer space.

Passage to Planet ROG™

- Combines deductive thinking and creative problem solving to engage children in inquiry science.
- Fosters hands-on exploration of classification systems through unique clay sculpture creation.
- Utilizes principles of engineering as children solve challenges that help them with their fantasy space mission.
- Allows children to engage in communication, observation, collecting data, and teamwork.

Phys Ed: Physics in Motion™

- Uses Galilei's work as inspiration to build games that demonstrate the movement of objects.
- Uses Newton's theories to demonstrate center of gravity and create a tower of objects using unusual materials.
- Explores Newton's Laws of Motion while creating a golf game.
- Applies Bernoulli's theories of air pressure to create parachutes that move slowly and play an air pressure game.
- Utilizes Gilbert's description of magnetism to create games that use magnets to play.

SOS: Endangered Earth™

- Incorporates the concept of ecology to educate participants about preserving natural resources and protecting endangered species.
- Explores habitats of animals and challenges participants to build inventions to solve the challenges of human and wild animal interactions.
- Demonstrates the harmful effect of a simulated oil spill on birds and mammals.

Trash Island: A Garbage Patch Journey™

- Identifies ways that waste makes its way into water systems and oceans and explores the North Pacific gyre.
- Examines ways to build machines to clean contaminants from water systems.
- Encourages the use of eco-friendly, sustainable living through reducing, reusing, and recycling.
- Demonstrates how polluted waters can be cleaned by constructing filtration systems.
- Fosters the practice of recycling and its importance in sustainable living.
- Investigates the pH of mock polluted water and the construction of inventions to clean up contaminated water.

Echo and Axon: A Prototyping Adventure™

- Challenges children to explore alternative sources of energy.
- Provides children with an in-depth knowledge of real inventors and their technologies.
- Encourages the use of eco-friendly, sustainable living.
- Demonstrates practical use of mathematics, and how mathematics is used in engineering.
- Encourages children to design functional prototypes.
- Fosters an innovative spirit within children.