ISAAC - Middle School Program

S2S has developed the ISAAC (Improving Student Affinity and Aptitude for Careers in STEM) Middle School Program

The program consists of 3 visits to our Technology Center during the school year. The Technology Center is a commercial lab with scientific instruments like chromatographs and spectrophotometers that are not available in the classroom setting. Experiments conducted during the full- day visits to the S2S Technology Center align with key elements of the New Jersey Core Curriculum Content Science Standards and the National Science Education Standards for middle school students. During each visit, students perform 4 experiments using scientific methods to solve current day problems. Examples include: determination of environmental contaminates, identification of unknown pharmaceuticals, evaluation of food and consumer products. Students work alongside successful scientists and technical entrepreneurs who share their career experiences to inspire and motivate the students to pursue STEM related careers. This maximizes the overall effectiveness of the program.

Click here for Instructor Guides, Teacher Guides and Lab Procedures for each of these days

The three major topics covered during your visits are Matter, Solutions, and Separations.

Teachers can find below introductory PowerPoint presentations and guides to the individual experiments to be performed.

Introductory Slides for Day 1

Day 1 Topics - Properties of Matter

- Periodic Table
- Molecules and compounds
- States of matter

 Day 1 Experiments

- Acid + Base = BOOM!
- How Sweet it is!
- Science Cents
- Name That Salt

Day 2 Topics - Properties of Solutions

- Solubility and miscibility
- Ideal vs. non ideal solutions
- Mixtures and suspensions
- Physical characteristics

The Experiments

- Working With Solutions, and Why That's Not Always Ideal
- Ouch! How Sunscreens Work
- Time To Go Green (Plastics Recycling)
- I Can't Believe I Ate The Whole Thing (Acid / Base Titration)

Day 3 Topics - Separation Science

- Physical Separation
- Wet chemical Separation
- Chromatography

The Experiments

- What A Pain (isolate the active)
- Slip Sliding Away - Gulf Oil Spill Analysis
- Too Much? Caffeine in Energy Drinks
- Plop Plop, Fizz Fizz - Measuring how fast medicines dissolve

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