Full STE(A)M Ahead:

Implementing STEM Programs in Recreation Worcester

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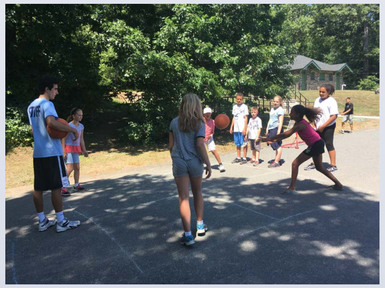
Introduction

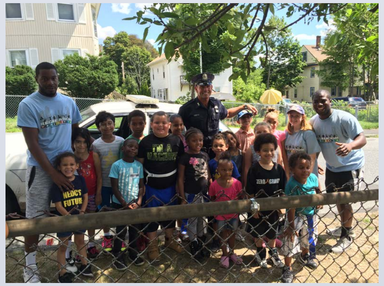
Recreation Worcester Summer Program

- Free summer program for children ages 7 – 12 years old
- Located in 10 public parks across the City of Worcester
- Runs from 9am – 5:30 pm
- Provides two free meals for participants
- Activities include fun games, athletics, arts, and educational programs
- Employs 100+ local youths as summer counselors

Population Served

- Recreation Worcester Summer serves 1000+ children each summer
- More than 60% of students in Worcester Public Schools are economically disadvantaged - many of whom attend Recreation Worcester Summer program
- In 2016, 63% of participants identified as Hispanic/Latino or African American



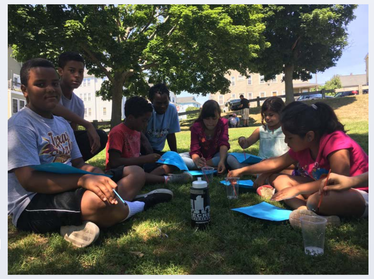


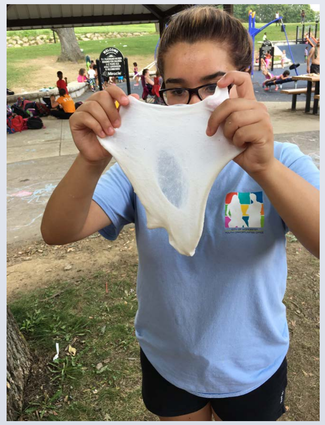
Objectives

- To engage students at a young age and inspire in them an interest in **S**cience **T**echnology **E**ngineering **M**ath (STEM) through hands-on experimentation
- To encourage students to consider a future in STEM careers
- To develop STEM programming for Recreation Worcester that can be used longitudinally in future summer and academic year programs

Project Outcomes

- Designed 6 week STEM curriculum for Recreation Worcester Summer 2018 filled with hands-on learning activities
- Piloted one week of activities during Summer 2017
- Example STEM Activities:
  - Human Body Week (Piloted)
    - Making Muscles Move – Examine how muscles and bones move our bodies through different exercises
    - Incredible Illusions – Explore how illusions trick our eyes and brains
    - Take Your Breath Away – Build a model lung to learn about how we breath

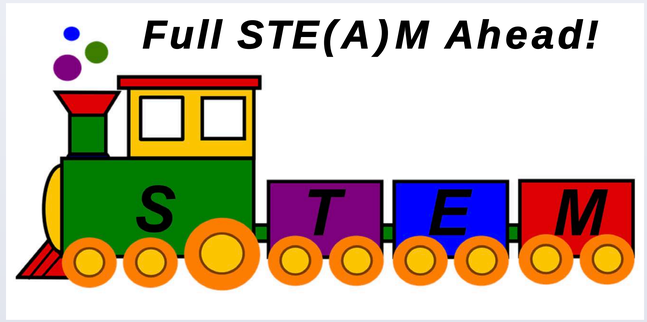




  - Chemistry Week
    - Turn Pennies Green – Learn about oxidation-reduction reactions and use them to turn pennies green
    - Super Spy Ink – Examine properties of acids and bases and pH by making colorful ink
    - Oozing Oobleck – Explore states of matter by making Oobleck which acts as both a solid and liquid
    - Rock Salt Ice Cream – Study the principles of freezing point depression and use it to make ice cream
  - Engineering Week
    - Design an Earthquake-proof Building
    - Build a Rube Goldberg Machine – Learn about simple machines and use to build a Rube Goldberg Machine
    - Pop Goes the Balloon (Drop) – Design and build a contraption that will prevent a water balloon dropped from 10 feet from popping

Future Directions

- Develop a better understanding of how students view STEM in school, in their lives, and in their future
- Evaluate whether STEM programming in Recreation Worcester changes how students view STEM
- Make further adjustments to curriculum to accommodate other age groups
- Develop additional STEM activities to be used by Recreation Worcester during the academic year



Acknowledgments

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Resources

Recreation Worcester Community Benefits Contribution FY2016 Funding Report, Raquel Castro-Corrazzini

http://www.nbcboston.com/news/local/Unique-Summer-Camp-to-Keep-Kids-Safe-Begins-in-Worcester-432744613.html