



# IGNITE Engineering Report

September, 2016



iSPACE and the Greater Cincinnati STEM Collaborative (GCSC), with P&G’s funding support, provided urban core students hands-on, LEGO-based engineering learning experiences as part of the region’s first-ever Summer of STEM 2016. iSPACE expanded its existing education standards-aligned IGNITE Engineering curriculum for 5<sup>th</sup>-6<sup>th</sup> graders and then taught it to 4<sup>th</sup>-6<sup>th</sup> grade students at four Cincinnati Public School (CPS) elementary schools during the district’s 5<sup>th</sup> quarter in June, 2016. 100 CPS students built and learned how to operate a variety of models, gained skills in free design, and experimented with LEGO elements. The region gained additional STEM education resources; IGNITE 5<sup>th</sup>-6<sup>th</sup> grade curriculum, laptops, robotics kits are now housed at iSPACE and will be broadly used across Greater Cincinnati going forward.



## Participating Cincinnati Public Schools

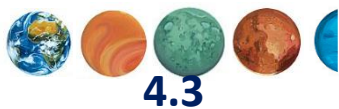
Carson School, Roselawn Condon School, Pleasant Hill Academy, Roberts Paideia Academy

### Student Impact



### Educator Assessment

On a Lickert scale of 1-5, 1 being the lowest 5 being the highest, iSPACE educators ranked IGNITE:



Engaged students and sparked their interest in STEM

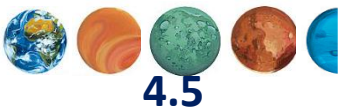


Built students’ STEM skills



If resources were available, I would like to teach again

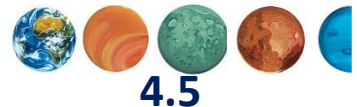
On a Lickert scale of 1-5, 1 being the lowest 5 being the highest, CPS school partners ranked IGNITE:



Engaged students and sparked their interest in STEM



Expanded my skills to nurture students’ interest in STEM



Was valuable for my school or sponsoring organization

## Improvement Opportunities

INGITE Engineering partners identified several important opportunities to strengthen summer and IGNITE Engineering programming going forward. Nearly all improvements are possible with more two-way communication and collaborative advance planning:

- Better align with schools' education priorities / focus areas and current level of student achievement. Provide more value to schools / educators by helping them meet their education objectives.
- Consider using an application process, similar to that used with GCSC STEM Bicycle Clubs and 3d Printers Clubs, to ensure school / school leader readiness to implement highly-effective programs with community partners.
- Encourage teacher participation in all schools, to increase student participation and help make connections with core K12 teaching and curriculum.
- Provide in-advance training to expose teachers to the IGNITE curriculum in advance and even further build their skills at leading hands-on learning experiences.
- Ensure student readiness and interest, perhaps by sign-ups, simple applications, etc. Help students understand the opportunity for a fun, engaging summer experience. Consider making participation a "reward" for achievement during the regular school year.
- Include student workbooks to enhance student learning (for note taking, to record reflections, etc.)
- Design in family engagement. For example, host a wrap-up event for families in which students "show off" their work and accomplishments.
- Better coordinate with transportation and reinforce the importance of consistent attendance to school partners, families, and students.

***"This program needs to be brought to more urban communities. Yes, it will be challenging, but sparking the interest of one student is potential for impacting the world." – CPS educator***

