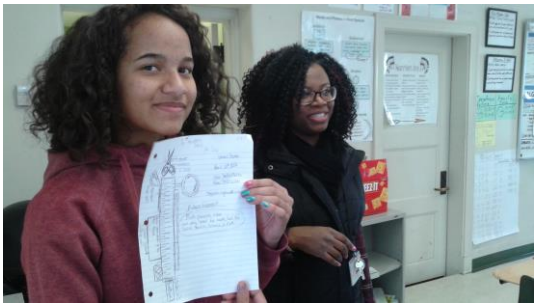
3d printers club

2016-2017 Accomplishments

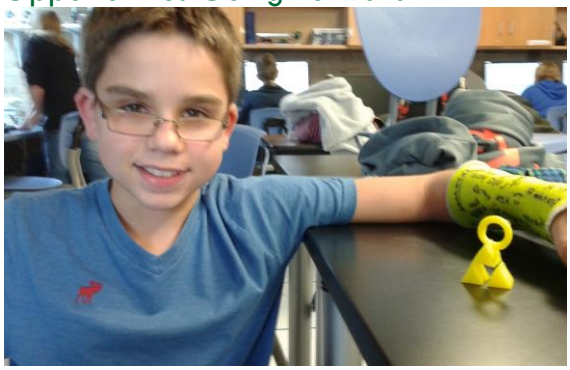


1. 25 clubs ran successfully across the Greater Cincinnati region, serving 450 students.
2. Clubs served students under-represented in STEM. 43% of students were girls, 32% of students were African American, 5% of students were Hispanic/Latino, and 9% of students identified as "Other" ethnicity (usually indicates mixed race).
3. The first ever "3d Printers Showcase" was hosted at the University of Cincinnati on April 27. The showcase was attended by more than 200 club students and 100+ teachers, volunteers, and family members and included campus tours. 19 projects were on exhibit from 16 clubs and two large Cincinnati-based companies exhibited their use of 3D printing in the workplace. Students were impressed to visit a university campus and see other student- and business- 3D printed creations.

Club Impact

1. Students reported high degrees of overall learning (71% strongly agreed, 12% agreed), learning about making and designing (77% strongly agreed, 19% agreed), and developing technology skills (56% strongly agreed, 22% agreed). These outcomes were based off a qualitative entry pre-club survey completed by students, which suggests the clubs met and exceeded expectations.
2. Club teachers and other club leaders reported the club engaged students and supported their interest in STEM (Science, Technology, Engineering, and Math) and strengthened students' STEM skills (4.6 and 4.5 on a 5-point Likert scale, respectively). They also reported the club expanded their skills to engage students in STEM learning and that they would like to run the 3d Printers Club again (4.6 and 4.8 on a 5-point Likert scale, respectively).
3. A UC doctoral student with no prior 3d Printers Club experience analyzed quantitative and qualitative club data in July 2017. This is her summary statement: "The data suggest that this program meets and exceeds many of the stated learning objectives and helps students to overall become more interested and engaged in STEM and problem-solving through the process of designing and creating their 3D printed inventions. Overall, this program appears to help students thrive in STEM fields while developing a love of learning and creativity."

Opportunities Going Forward



1. Extend the curriculum into math teaching and learning. 3D printing is, in students' words, "fun" and "cool". It's also full of geometry. GCSC and our partners have had various discussions about creating an additional club curriculum that focuses on math learning.
2. Broadly use the 3d Printers Club curriculum during the school day. The club curriculum was created by gifted teachers in Clermont County who learned how to leverage 3D printing to support students' core learning objectives. There's an opportunity to take the curriculum back into the school day now that more teachers in our region are getting comfortable with 3D printing and learning how to incorporate it into their practice.