Office of Shared Accountability
Applied Research and Evaluation

DATA BRIEF

2021-2022 Data Summary of Selected KID Museum Programs at Montgomery County Public Schools

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Purpose
The purpose of this data summary brief is to provide information about the students who participated in select KID Museum programs implemented in MCPS during the 2021-2022 school year.

Background
Since 2017, Montgomery County Public Schools (MCPS) has partnered with KID Museum to provide a district-wide STEM initiative to broaden students' access to hands-on, project-based learning experiences. The major goals of the initiative are to develop the creative problem-solving, adaptability, and technical skills of students.

KID Museum provides a STEM program where students experience working through an iterative invention cycle: developing an idea, designing plans, making a physical prototype, and adapting when challenges arise (KID Museum, 2019).

Research Questions
RQ1: How many MCPS elementary students participated in the KID Inventors program and what were their demographic characteristics?
RQ2: How many MCPS middle school students participated in the Invent the Future program and what were their demographic characteristics? By class and club format?
RQ3: How many MCPS middle school students participated in the Invent the Future Elective pilot course and what were their demographic characteristics?
RQ4: How many MCPS Grade 2-4 students participated in the Make It Classroom implemented during the 2021 Extended Learning Opportunity (ELO) summer program and what were their demographic characteristics?

Programs Included
This data summary includes the following KID Museum programs:

- **KID Inventors**: Includes students in Grades 2-4 and was implemented during class at 4 Title I Elementary Schools.

- **Invent the Future**: Includes students in Grades 6-8 and was implemented in class or at an afterschool club at 15 Middle Schools.

- **Invent the Future Imagineering Technology Elective Pilot Course**: Includes students in Grades 6-8 and was implemented as a Middle School elective course at 2 Middle Schools.

- **Make It Classroom**: Includes students in Grades 2-4 and was implemented during the 2021 MCPS ELO Summer program for Title 1 schools.
RQ1: How many MCPS elementary students participated in the KID Inventors program and what were their demographic characteristics?

A total of 1,079 Grade 2-4 students from four Title I Elementary Schools participated in the KID Inventors program during class.

**Students**

- Brookhaven: n=177 (Grade 2: 34%)
- Galway: n=345 (Grade 3: 34.8%)
- Georgian Forest: n=244 (Grade 4: 31.2%)
- Jackson Road: n=313

**Gender**

- 50% Female
- 50% Male

**Race/Ethnicity**

- Hispanic/Latino: 45%
- Black or African American: 42%
- White: 4%
- Asian: 6%
- Two or More Races: 2%

**Services Received**

- Free and Reduced-Price Meals System (FARMS): 70%
- Emerging Multilingual Learners (EML): 40%
- Special Education: 9%
RQ2: How many MCPS middle school students participated in the Invent the Future program and what were their demographic characteristics? By class and club format?

1,450 Total

A total of 1,450 students from 15 middle schools participated in the Invent the Future Program.

Grade 6 (n=558) 38.5%
Grade 7 (n=451) 31.1%
Grade 8 (n=441) 30.4%

Students

<table>
<thead>
<tr>
<th>Class</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class</td>
<td>1342</td>
<td></td>
</tr>
<tr>
<td>Afterschool Club</td>
<td>108</td>
<td></td>
</tr>
</tbody>
</table>

Gender

38% Female
62% Male

Race/Ethnicity

- Hispanic/Latino: 41%
- Black or African American: 28%
- White: 13%
- Asian: 13%
- Two or More Races: 5%

Services Received

- Free and Reduced-Price Meals System (FARMS): 52%
- Emerging Multilingual Learners (EML): 14%
- Special Education: 8%
### Middle School Invent the Future Program

#### In-Class
*(1,342 students at 11 schools)*

<table>
<thead>
<tr>
<th>Grade 6 (n=512)</th>
<th>38%</th>
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</thead>
<tbody>
<tr>
<td>Grade 7 (n=418)</td>
<td>31%</td>
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<tr>
<td>Grade 8 (n=412)</td>
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</table>

#### Afterschool Club
*(108 students at 6 schools)*

<table>
<thead>
<tr>
<th>Grade 6 (n=46)</th>
<th>42%</th>
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</thead>
<tbody>
<tr>
<td>Grade 7 (n=33)</td>
<td>31%</td>
</tr>
<tr>
<td>Grade 8 (n=29)</td>
<td>27%</td>
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</table>

### Invent the Future Schools by Class and/or Afterschool Club

<table>
<thead>
<tr>
<th>Middle School</th>
<th>Class</th>
<th>Afterschool</th>
<th>Middle School</th>
<th>Class</th>
<th>Afterschool</th>
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<tbody>
<tr>
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<td>X</td>
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<td>Roberto W Clemente</td>
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<td>X</td>
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<td>Rosa Parks</td>
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<td>Silver Spring</td>
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<td>X</td>
<td>White Oak</td>
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<tr>
<td>Odessa Shannon</td>
<td>X</td>
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<td>William H. Faquar</td>
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<td></td>
</tr>
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</table>
Middle School Invent the Future Program

**In-Class (N=1,342)**

- **Gender**
  - Male: 63%
  - Female: 37%

**Afterschool Club (N=108)**

- **Gender**
  - Male: 52%
  - Female: 48%

**Race/Ethnicity**

- FARMS: 33%
- EML: 2%
- Special Education: 10%
- Hispanic/Latino: 20%
- Black or African American: 40%
- White: 25%
- Asian: 8%
- Two or More Races: 6%
RQ4: How many MCPS Grade 2-4 students participated in the Make it Classroom implemented during the 2021 ELO summer program and what were their demographic characteristics?

A total of 2,942 rising Grade 2-4 students participated in the virtual ELO summer program which implemented a KID Museum curriculum during class.

Grade 2 (n=1041) 35%
Grade 3 (n=991) 34%
Grade 4 (n=910) 31%

Gender
46% Female
54% Male

Race/Ethnicity
Hispanic/Latino 64%
Black or African American 26%
White 4%
Asian 4%
Two or More Races 3%

Services Received
Free and Reduced-Price Meals System (FARMS) 78%
Emerging Multilingual Learners (EML) 54%
Special Education 14%
### Summary of Participants

#### KID Inventors Studio Program
- 1,079 Grade 2-4 students at 4 Title 1 Elementary Schools
- 87% Hispanic/Latino or Black or African American students combined
- 70% received FARMS services
- 40% received EML services

#### Invent the Future Program
- 1,450 Grade 6-8 students at 15 Middle Schools
- 93% of students participated during class vs. 7% afterschool club
- Majority of participants were male (62%)
- 69% Hispanic/Latino or Black or African American students combined
Although the in-class program was mostly in different schools than the afterschool program, the proportion of males (63% vs 52%), students receiving FARMS services (53% vs. 33%), EML services (15% vs. 2%), and Hispanic/Latino students (42% vs. 20%), was higher than the afterschool program.
- The program during the afterschool club included 40% Black or African American students vs. 27% in the in-class program.

#### Imagineering Technology pilot elective course
- 162 Grade 6-8 students at two Middle Schools
- Slightly higher percentage of male participants (57%)
- 71% Hispanic/Latino or Black or African American students combined
- 59% received FARMS services

#### Summer Make It Classroom (during ELO summer program)
- 2,942 Grade 2-4 students
- Slightly higher percentage of male participants (54%)
- 90% Hispanic/Latino or Black or African American combined
- 78% received FARMS services
- 54% received EML services