

## **School Board Meeting - January 10, 2017**

### **Science Technology Engineering Arts Math (STEAM)**

#### **Why STEAM?**

Our Equity Promise requires the District to analyze how our students experience the curriculum. In addition to the content, we believe that the Habits of Mind is a key component in the learning process. Our district STEAM narrative promotes a STEAM experience that will provide opportunities for students to imagine multiple outcomes and possibilities as they engage in interdisciplinary approaches to sharpen problem-solving skills that are required for post-secondary success. This approach offers authentic learning that mirrors the real world and allows students opportunities to be innovative in bringing our 12 Habits of Mind to life in relevant learning experiences with a focus on design, creativity and creation.

#### **Where have we been?**

- 2011 - Curriculum and Instruction began exploring STEAM as a focus for middle schools
- 2012 - Edgewood became a STEAM magnet and Highview and Chippewa implemented curricular plans that allowed for STEAM learning experiences for all students
- 2013-2015 - All middle schools have been refining practices and opportunities for students to be engaged in STEAM learning experiences
- 2015-2016 - Elementary and high schools begin exploring avenues to expand STEAM down into the elementary school and up into the high schools

#### **Where are we now?**

##### **MIDDLE SCHOOL**

##### Curriculum

- All middle schools have maker courses
- Maker courses are interdisciplinary
- Students are learning to engineer, design, create and code in these maker courses
- Structured time for inquiry-based, student-led learning

##### Facilities & Technology

- Redesigned industrial technology spaces to create flexible, collaborative learning environments which allow the use of high-tech equipment, power tools and hand tools, along with tables, benches and other furnishings that promote collaborative work and the design process
- Installed 3D printers, laser cutters and vinyl cutters in space which enhance ability to create
- Improved lighting, networking and visibility that support new uses of space
- Chromebook carts in all core classrooms

## **ELEMENTARY & HIGH SCHOOL**

### Facilities & Professional Development -

- All elementary specialists - Book Study - No Permission Required by Susan Riley
- Cross-level collaboration leadership teams with site visits
- Mounds View High School redesigned spaces in their library to allow for more collaboration and tools for designing, engineering and creating
- Irondale is in the process of designing an updated media center

### Curriculum & Technology

- Programming and Coding
- Maker Space Resources
- Chromebook Phase 3
- Specialist and classroom teachers designing STEAM learning experiences
- Lego League (IL- PLEC-SLEC)
- Science Olympiad (One team at each school)
- High School Computer Science and coding courses

### **Where are we going?**

- Increase collaboration across the District to provide coordinated uniqueness to STEAM experiences
- Teach and measure student's ability to demonstrate non-cognitive skills
- Integrate coding, computational thinking and computational participation in all math classes.
- Enhance and expand the use of flexible learning spaces as we move from consumption to creation of focused instructional models.