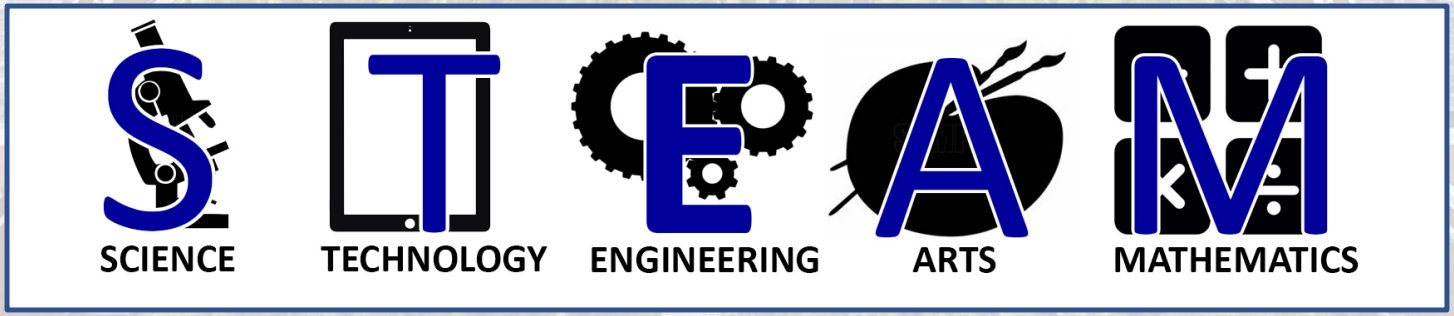
WYOMISSING AREA SCHOOL DISTRICT



NOVEMBER 20, 2017

WASD STEAM INNOVATION

STEAM education integrates the content and skills of **Science**, **Technology**, **Engineering**, the **Arts** and **Mathematics** through unique approaches to teaching and learning that fosters **Collaboration**, **Communication**, **Creativity** and **Critical Thinking** for all students.

Engage…Inspire…Connect

STEM

STEAM

Deductive Reasoning

Problem Solving

Inductive Reasoning

Problem Sensitivity

Creativity and Innovation

Critical Thinking and Problem Solving

Communication and Collaboration

Flexibility and Adaptability

Social and Cross Cultural Skills

PATH TO SUCCESS

Mapping our approach

WHY

Reinforce the importance of a **cross-discipline design perspectives.**

Develop critical thinking, creativity, collaboration and communication skills.

HOW

Staff Development
Project based curriculum focused on **design methodology** K-12.

WHAT

Design Centers at each school with Staff, Curriculum and Technology.

CONCEPT

Developed a summary for a strategic plan based on design thinking methodology.

COMPREHENSIVE PLAN

Develop 3-5 year strategic plan with phased implementation strategies and alternate timelines.

STEAM FACILITATORS

Identify facilitator(s) to lead STEAM implementation.

CURRICULUM

Develop curriculum and needs assessments for staffing, technology, professional development and facilities to support curriculum.

TECHNOLOGY

Develop technology use plans, with staged implementation, to coincide with curriculum.

SETTING THE STANDARD

HOW are we ensuring WASD STEAM vision

FULLY INTEGRATE ALL ASPECTS

Science: especially biological sciences. **Technology:** Provide space and technology for students to *produce*, not just *consume.* **Engineering. Arts:** liberal arts (life sciences), fine arts, visual arts**. Math.**

PROFESSIONAL PRACTICE

Shift methodologies that solve the problem for an individual to an audience of many. Incorporate professional partners: mentoring, internships, sponsored projects.

DESIGN THINKING

Utilize design thinking methodology in developing the curriculum that includes an approach incorporating: research, stating the problem, ideation, fabrication, testing and presentation skills to communicate.

21ST CENTURY SKILLS

Develop critical thinking, creativity, collaboration, communication, self- direction and technical literacy. Encourage an understanding how making personal and professional connections, both local and global, support innovation.

INTEGRATE THE ARTS

Hold the Arts to the same standards as the more technical aspects of the projects.

ENCOURAGE MINDFULNESS

Observe, reflect, understand, explore, engage, craft, community, persist

ASSESSING STANDARD

HOW are we ensuring WASD STEAM vision

CURRICULUM

Differentiated Approach - *WHAT*

K-4

Project based curriculum delivered through "specials" open to every student. WHEC Innovation Lab

5-6

Incorporated into standard curriculum and "specials". WREC Innovation Lab

7-8

Formal introduction to Design Thinking Methodology. STEAM classes incorporated into standard curriculum. JSHS Design Center

9-12

Introduction to concentrating in areas of interest and differentiated plans for the students. JSHS Design Center

STAFFING

Where to start

ACCOUNTABILITY

Holding the curriculum to the WASD STEAM Standard

CURRICULUM

Development of curriculum based on a shared vision

PD

Define/ Organize professional development supporting the curriculum

COLLABORATION

Communication and collaboration for curriculum, technology and facilities with each school

TECHNOLOGY

Match technology and facilities needs with the curriculum

STEAM FACILITATOR RESPONSIBILITIES

COMMUNITY

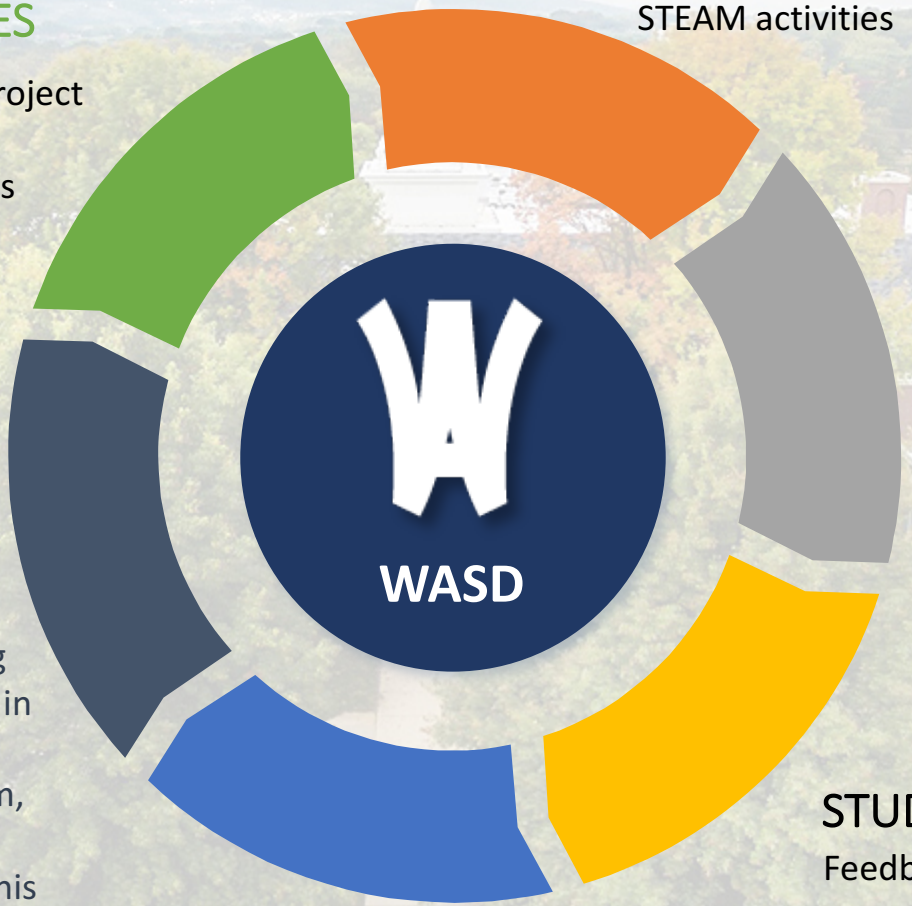
Our Greatest Asset

BOOSTERS

Community led extracurricular STEAM activities

COMMUNITY BUSINESSES

Initiative support, mentoring, project sponsorship, internship opportunities, STEAM days hosts



WAEF

Grants, facilitate community contributions

ADVISORY COMMITTEE

Initially, support the implementation of the WASD STEAM initiative through shaping the concept, active participation in implementation, providing guidance for: staffing, curriculum, technology, and facilities. As the initiative evolves, the profile of this committee may change

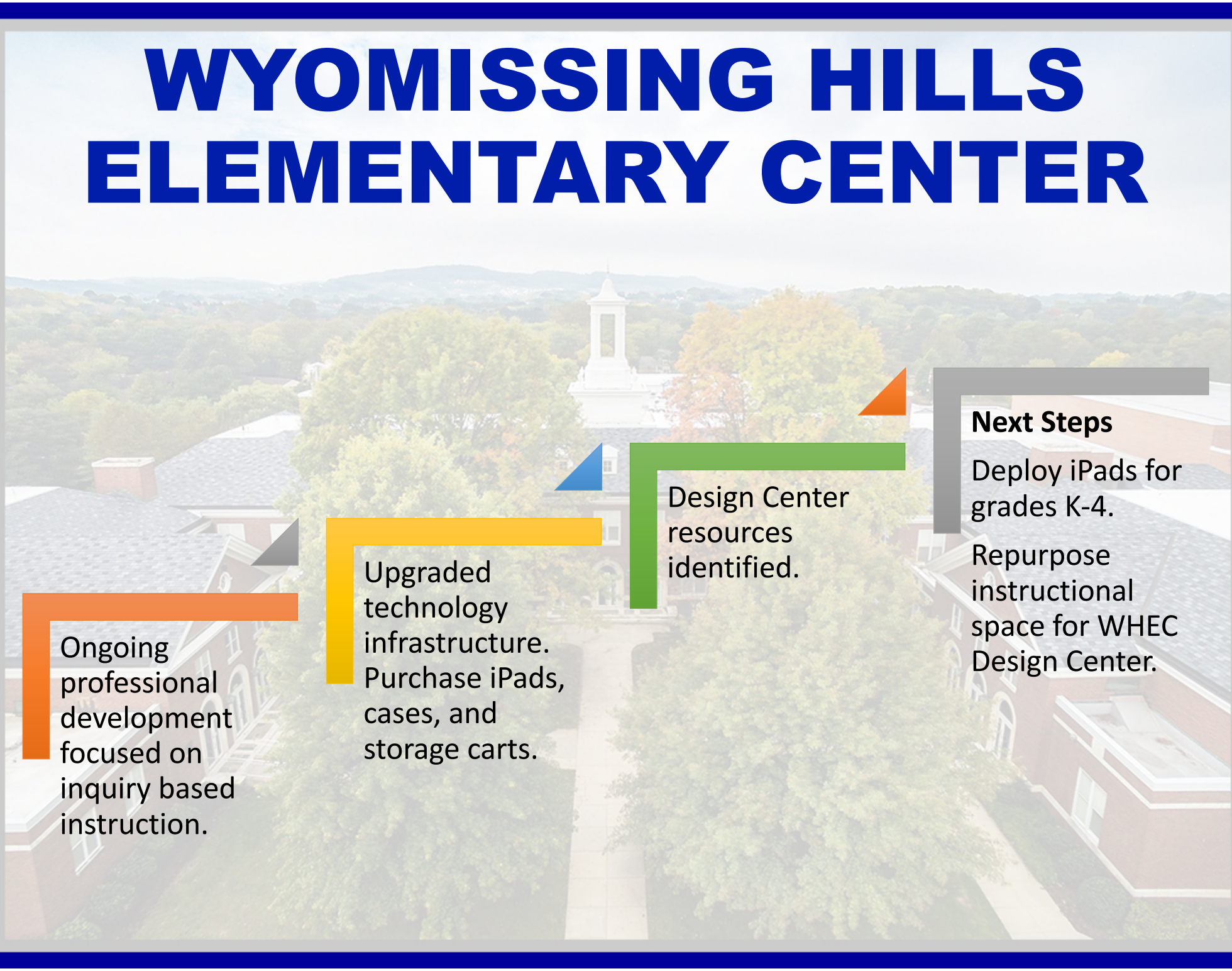
STUDENTS

Feedback

TEACHERS

Curriculum

WYOMISSING HILLS ELEMENTARY CENTER



WEST READING ELEMENTARY CENTER

Ongoing professional development focused on inquiry based instruction.

WREC STEAM Design Center established.

Purchase furniture and storage solutions for Design Center.

Next Steps

Implement redesigned Design Center.

JUNIOR SENIOR HIGH SCHOOL

Ongoing professional development focused on inquiry based instruction.

The JSHS Woodshop cleaned and prepared for instructional use.

Identified the scope of the STEAM Wing renovations.

Next Steps

Discuss JSHS STEAM Design Center Furniture and Storage Solutions.

JSHS – STEAM WING RENOVATION TIMELINE

Anticipated Schedule

Second Board meeting in January
WASD board authorizes project to be bid

February Facilities Committee
Review received bids

Second Board meeting in February
Approve received bids

April
Start Construction (woodshop and other unoccupied areas)

June
Construction on remaining classrooms

COMMUNICATING OUR PROGRESS


Wyomissing Area School District

STEAM

FREQUENTLY ASKED QUESTIONS

What is STEAM?

Why is STEAM important for our students?

What has the District done to prepare for STEAM?

- FAQ's
- Updates
- Timeline
- Renderings
- Photo Gallery


STEAM PROJECTED TIMELINE

STEAM

August/September

- Planned Inquiry Based Learning
- Professional Development
- Developed STEAM Summary Plan
- Discussed WASC Design Center Furniture and Storage Solutions
- (Oct) STEAM Wing Meeting with Architects and Teacher Group
- WASC Design Center Opened

October

- Continued WASC Design Center Furniture and Storage Solutions Discussions
- Discussed WAGT Grants with Executive Director
- Met with WHS STEM Parents Group Representative
- Cleared (Oct) Woodshop for instructional use as needed

November

- STEAM Presentation to STEAM teachers
- Develop STEAM Instructional Framework
- WASC Technology Integration Introduction Professional Development Session
- Identify WASC Design Center Resources Needed
- WASC Design Center Furniture and Storage Solutions Request to Finance Committee

December

- Discussion of WASC Design Center

January

- Implement classroom iPads at WASC
- Discuss WASC Design Center Furniture and Storage Solutions
- Implement WASC Design Center Furniture and Storage Solutions


STEAM UPDATES

STEAM

STEAM Innovation

Ad-Hoc STEAM Committee:

August 2017 - During the 2016-2017 school year, the ad hoc committee was formed. The committee is comprised of school board directors, district administrators and teachers. Together, the committee has discussed teacher development, curriculum, instructional practices, assessment and demonstration of skills, family engagement and real-world connections based on the Carnegie STEM Excellence Pathway Self-Evaluation. As a result, the committee has identified professional development for inquiry-based learning as the focus the 2017-2018 school year.

Update, September 2017 - The STEAM Ad Hoc committee met on August 21st to plan the professional development for teachers, which is scheduled for September 27th. This will be the first professional development session for teachers aligned with our STEAM focus of integrating inquiry based instruction. The importance of this training is to introduce teachers to the inquiry based learning conceptual through a shared experience mode.

Update, October 2017 - The STEAM ad hoc teachers planned and facilitated the first professional development session held on September 27. During the session, K-12 teachers were introduced to inquiry based learning through experiencing Break Out Boxes. In order to break out, the teachers had to communicate, collaborate, utilize critical thinking skills and demonstrate creativity.

Staff Inservice - Inquiry Based Learning


Thank You