Middle School Educational Specifications

WORTHINGTON SCHOOLS

BOARD OF EDUCATION
PRESENTATION

JANUARY 28, 2019

Middle School Educational Specifications

What is an Educational Specification?

An Educational Specification is a written communication from the owner or educator to design professionals, particularly the architect and engineers, describing the current and future educational activities that the school facility should accommodate and the characteristics, quantities and qualities of the spaces that should be planned.

What the Process was:

PLANNING: Development of Vision/Mission, Narrative of Program, Curriculum, and Function of the Facility, Draft of Space Requirements and Qualities, and Spatial Relationship Diagrams

What the Process was not:

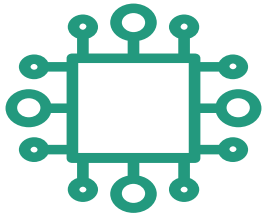
DESIGNING: Putting a Form around the Function, Schematic Designs, Assessment of Existing Building Conditions, Construction Documents

Mission Statement & Process

Worthington Middle Schools will be a safe and welcoming environment for a diverse student population, staff, and community. Our middle school buildings will foster life-long learning through collaboration and exploration in flexible, relevant learning settings.

Curriculum/ Instruction Interviews

Community / Staff Steering Committee



3 Planning Labs

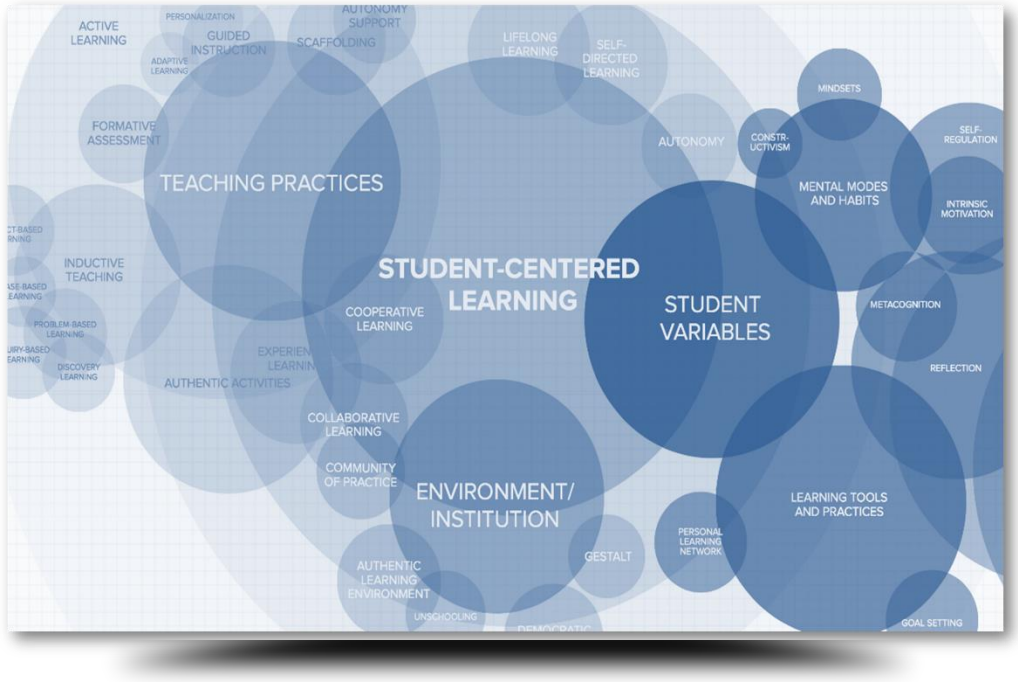
Architect Meetings & Final Report

Design Principles for Learning

The design principles for learning will provide a normative framework for how different types of learning should take place within a school building.

Learning Will Be:

- Authentic / Experiential
- Whole Life / Life Long
- Student Centered
- Community Focused
- Inquiry Based
- Interdisciplinary
- Collaborative
- Relational



ESSENTIAL ELEMENTS

Essential Elements of an Educational Specification
Sustainability, Safety, Site Standards, & Technology

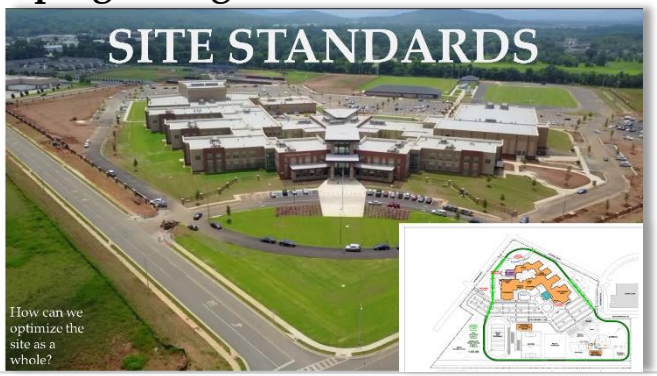
The Four Essential Elements

Site Standards

Core Group Feedback

- Traffic
- Separation of busses and personal vehicles and walkers, bikes
- Wide sidewalks and turning radiuses
- Parking
- Neighborhood friendly
- Adequate for school hours and events (athletic or otherwise)
- Lighting
- Smart, outdoor LED lights for safety; neighborhood friendly
- More natural lighting (windows) indoors
- Landscaping
- Hang out space
    - Hardscaping sitting areas

- KMS needs to utilize front yard (other schools optimize outdoor space)
- Sheltered/ Storage areas
- Sheltered area for various weathers
- Fields
- Outdoor access to restrooms (attached to main building)
- Playing fields should be top-notch (analyze data for potential turf!)



Technology

Core Group Feedback

- Technology to encourage communication
- Obvious or invisible (seamless)
- Tech as tools/ machines
- Monitor students/ access
- Glass tech./ screens (walls? large)
- Encourage participation and collaboration
- Inclusive of all (software)
- Wireless (speed) – Wheels!
- Outlets/ charging areas (open space)
- Maker space

The Four Essential Elements

Sustainability

Core Group Feedback

Preferred Implementation Techniques for Sustainability

- **Flexible spaces that change as student/ education needs evolve**
- **Collaborative**
- **Room to gather/ common/ shared space**
- **Outside gathering space**
- **Integrated – curriculum/ systemic**
- **Rain barrels (holding tank)/ solar panels**
- **Gardens that kids help with**
- **Get rid of Styrofoam for lunch**
- **Concrete flooring**
- **Movable walls**
- **Multiuse gyms with multiple levels**
- **Flexible seating**
- **Natural light**
- **Automatic lights**
- **Efficient windows and blinds**
- **turf**

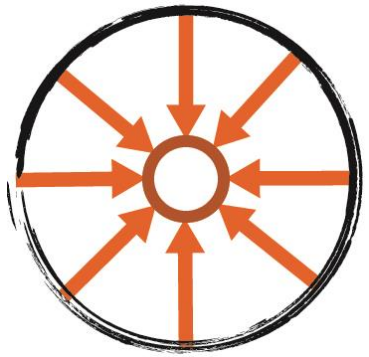
Safety

Core Group Feedback

- **Three concentric circles of safety measures**
- **The outer circle is the community**
  - **Neighborhood relationship**
  - **Community safety task force**
  - **Manage street traffic flow**
- **The middle circle is the site**
  - **Managing street traffic flow; busses/ cars, human walking**
  - **Access points**
  - **Perimeter detection and defense**
- **The inner circle is the building**
  - **Protected courtyard**
  - **Consider underground**

METAPHORS FOR SPACES & RESOURCES

Campfire

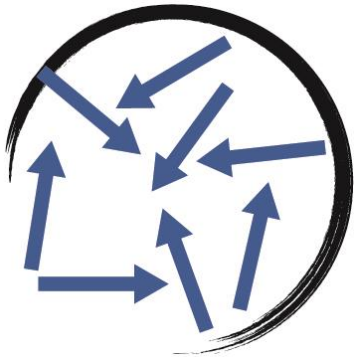


Learning from:

Experts/ Storytellers

A place characterized by communication flowing from one to many, where everyone can focus on the person(s) talking or presenting

Watering-hole



Learning from:

Peers

A place for exchanging communication, typically placed in a location you would naturally move to or through; where people gather in groups of various sizes and where you might bump into someone

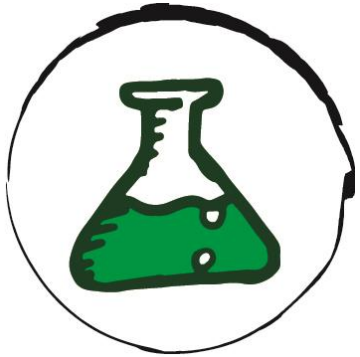
Cave

Learning from:

Oneself

A place for individual study, quiet reflection, to explore questions, make connections, and experience creative flow; a place where communication flows within oneself, requiring a physical frame that promotes seclusion

Life

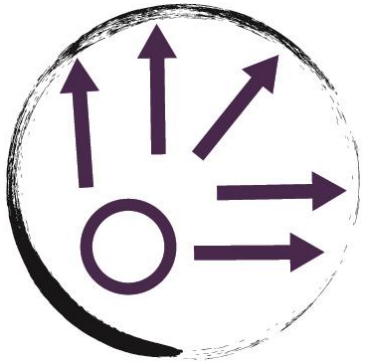


Learning from:

Real World

A place that encourages immersive student-centered hands-on real-world learning experiences where students can apply what they have learned and create meaning

Mountaintop



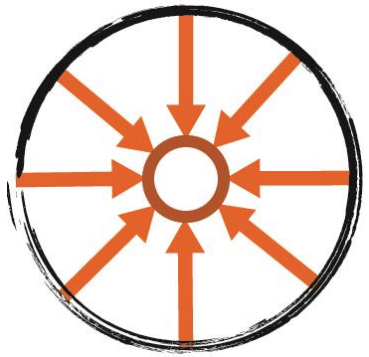
Learning from:

Showing & Sharing

A place where one person or a small group communicates towards the rest of the world, showing what they can do with what has been learned

Source:
David D. Thornburg, Ph.D., 2007
Campfires in Cyberspace: Primordial Metaphors for Learning in the 21st Century

Campfire

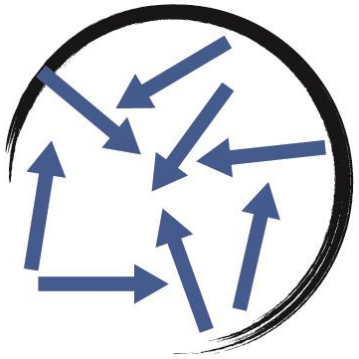


Learning from:

Experts/ Storytellers

Classroom
Lecture hall
Learning studio
Theater
Learning Lab

Watering-hole



Learning from:

Peers

Conference
Breakout
Collab
Café/ coffee
Project room
Small group area
Sticky space

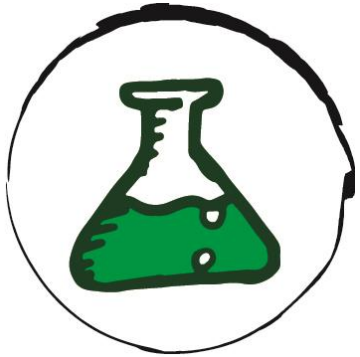
Cave

Learning from:

Oneself

Study carrel
Quiet space
Pod

Life

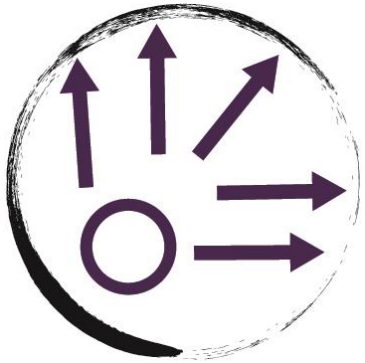


Learning from:

Real World

Project lab
STE(A)M Lab
CTE Lab
Maker-Space
Multi-Discipline lab
Learning lab
Wet lab
Experiential lab
Sandbox
Holodeck
Workplace
Community

Mountaintop



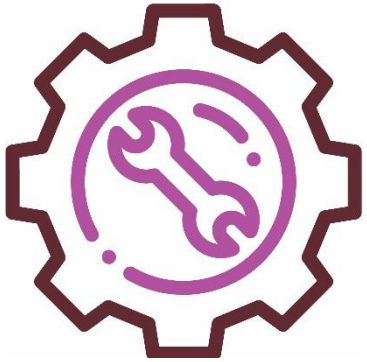
Learning from:

Showing & Sharing

Present space
Pitch platform
Shark tank
Gallery
Display
Share Space

METAPHORS
FOR LEARNING RESOURCES

Toolbox

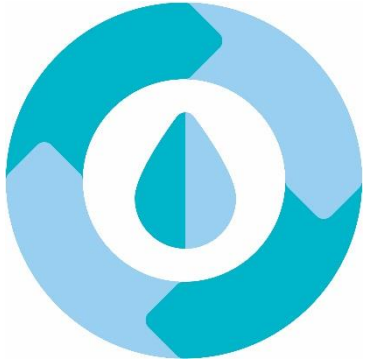


A condensed organized unit containing teaching and learning supplies and/ or raw materials for making; can be fixed or mobile

Genius Bar

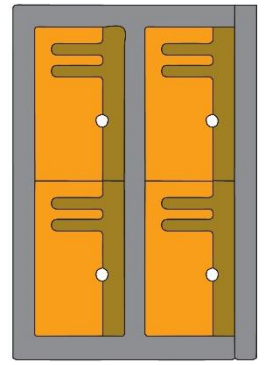
A technology rich help-station where students can plug in, print, and peer tutor; typically placed in a location you would naturally move to or through

Water



Provide access to cold and hot water and drainage to support learning processes and clean-up in types and quantities appropriate to the context

Student Storage

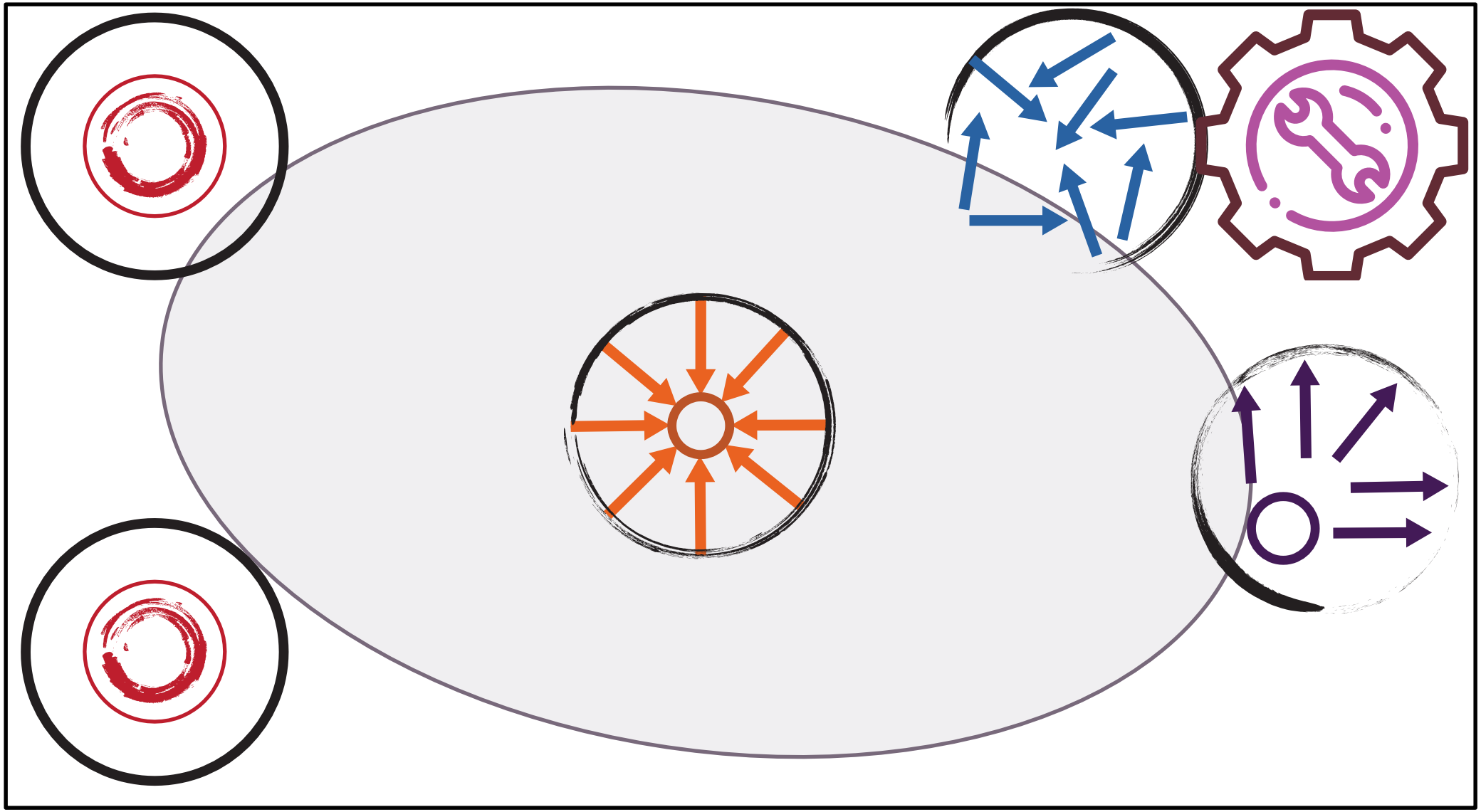


Provide a variety of student storage types, sizes and locations that facilitate just-in-time storage solutions versus storage as a hub solution; integrate with work surface space and charging stations

EXAMPLE SPACE: GENERAL CLASSROOM

CORE LEARNING

20 – 30 PEOPLE



Function
- Core learning

Activity level
- Low to moderate

Flexibility
- High

Furnishings
- Movable tables
- Movable chairs
- Soft seating
- Movable storage

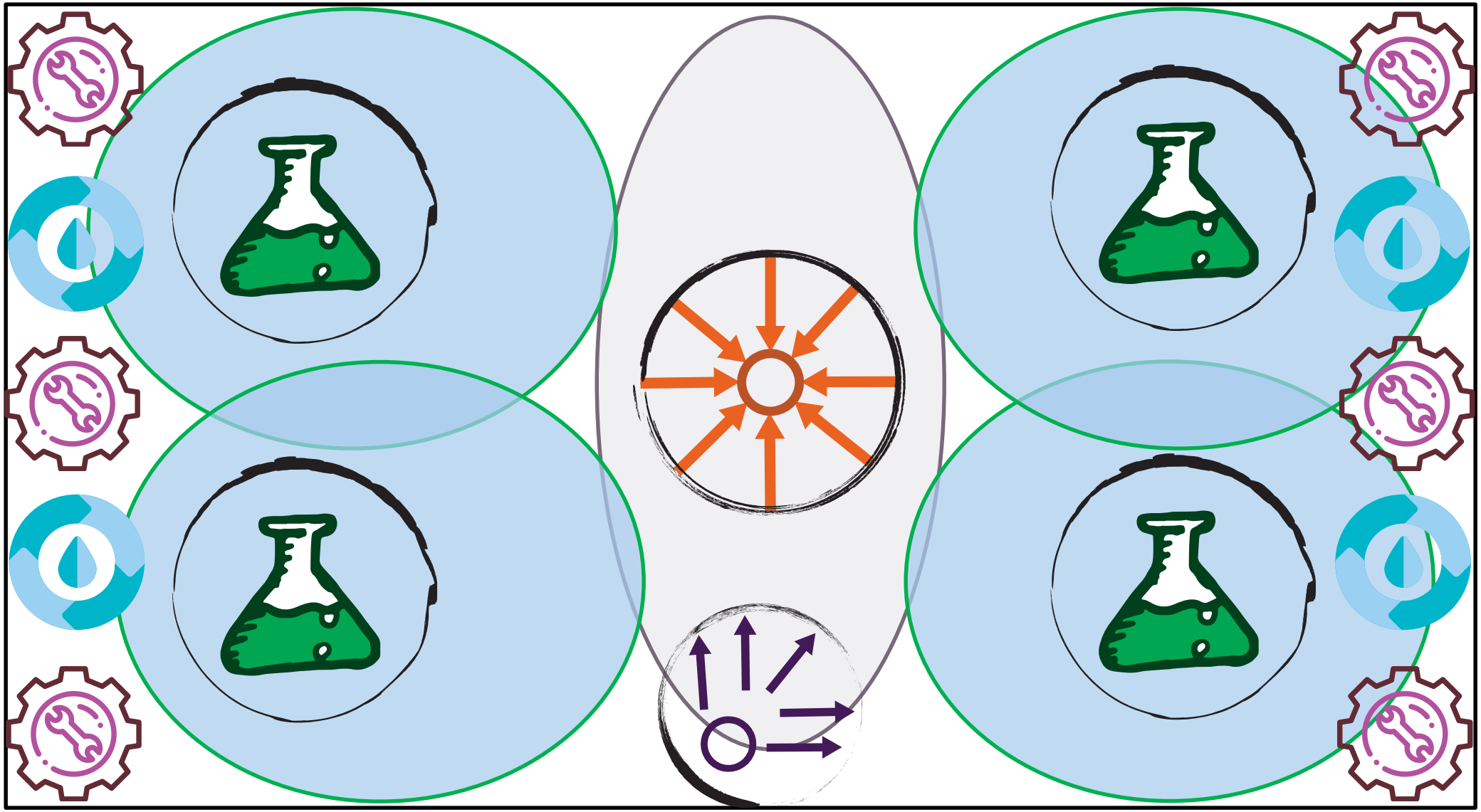
Technology
- White boards
- WiFi
- Display with Casting

Learning Resources
- Toolbox [mobile]

EXAMPLE SPACE: EXPERIENTIAL LAB

EXPERIENTIAL LEARNING

20 – 24 PEOPLE



Function
- Exploratory
- Experimental

Activity level
- Moderate to high

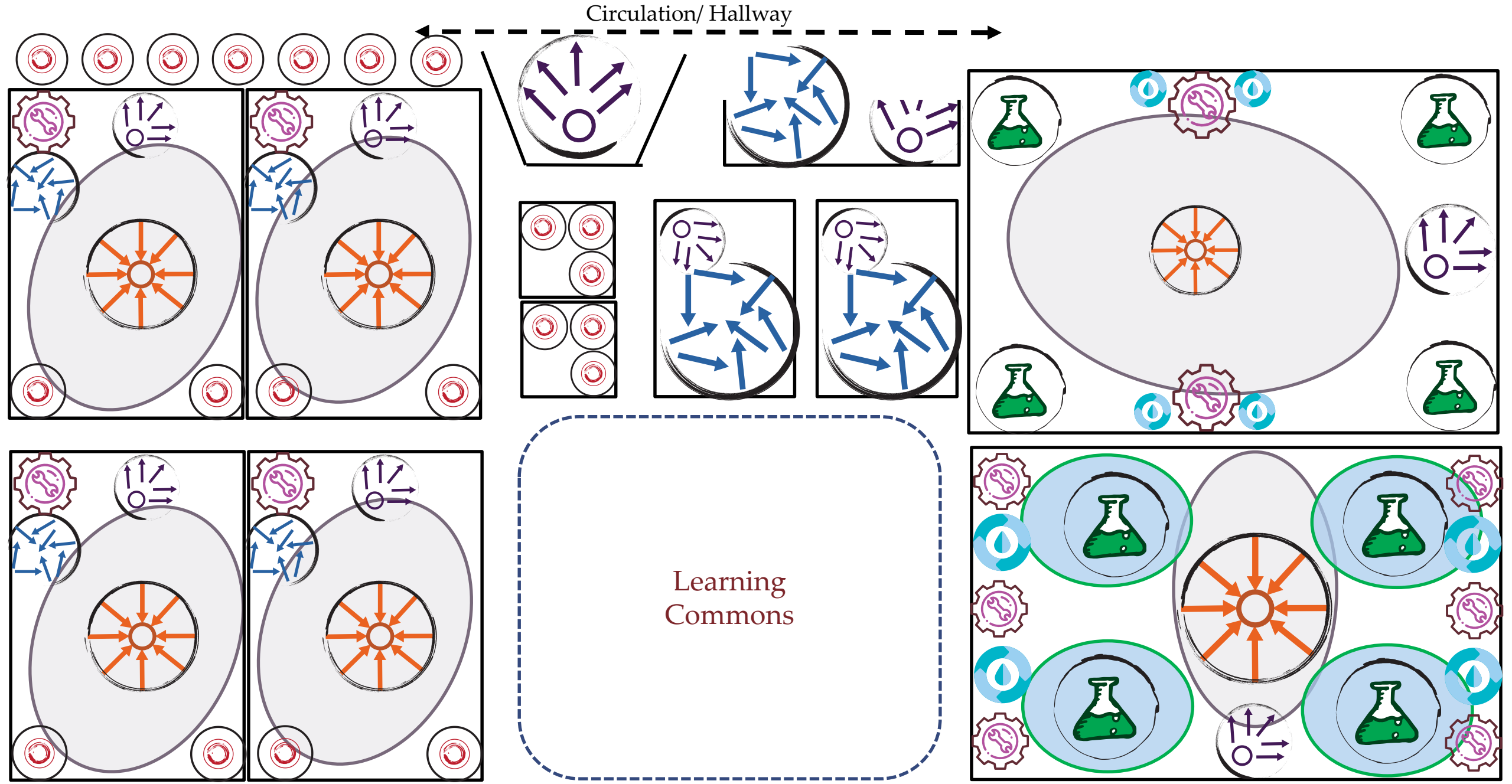
Flexibility
- Medium

Furnishings
- Movable tables
- Fixed tables
- Movable chairs
- Movable storage
- Fixed storage

Technology
- White boards
- WiFi
- Display with Casting

Learning Resources
- Toolbox [fixed]
- Toolbox [mobile]
- Water

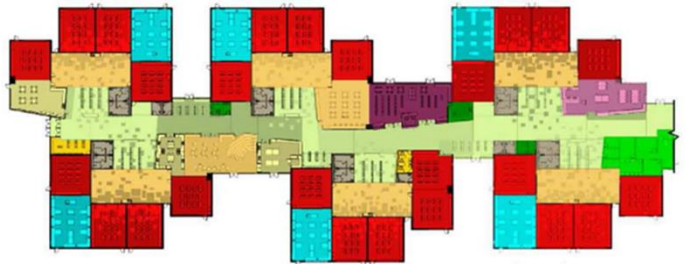
LEARNING COMMUNITY

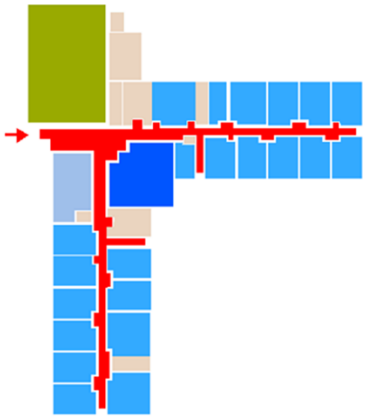


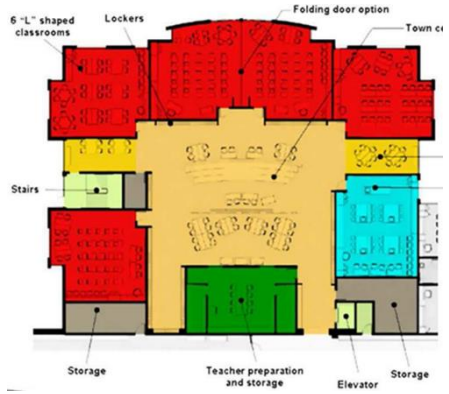
Building Organizational Models

Individual & Small Group Exercise

- **Identify Benefits & Challenges of Different School Design Floor Plans**







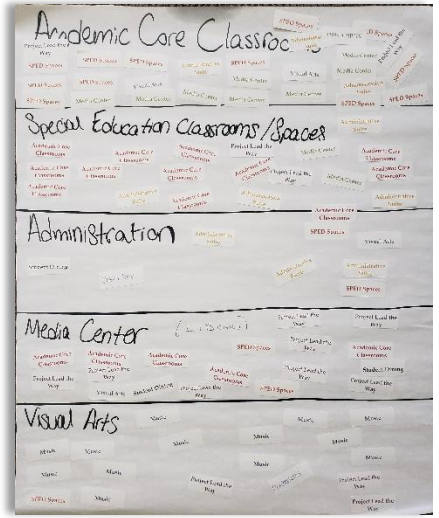
Paired Weighting Exercise

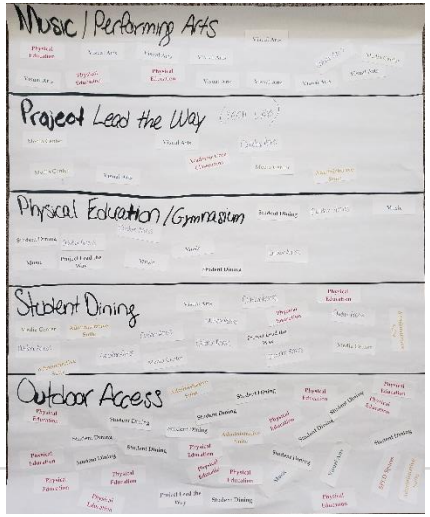
Response Counts Summary

GROUP RESULTS	Count	Proportion
A. POD	31	
B. EMBEDDED	57	
C. INTER-CONNECTED	55	
D. INTEGRATED	44	
E. DOUBLE LOADED CORRIDOR	10	

Notable Important Adjacencies

- · Academic Core Classrooms to Media Center
- · Academic Core Classrooms to Special Education Classrooms
- · Visual Arts to Music/ Performing Arts
- · Student Dining to Outdoor Access
- · Outdoor Access to Physical Education/ Gymnasium
- · Media Center to Project Lead the Way





Average of Repsonses	Academic core classrooms	SPED Spaces	Administrative Suite	Media Center	Visual Arts	Music	Project Lead the Way	Physical Education	Student Dining	Outdoor Access
Academic core classrooms										
SPED Spaces	1.6									
Administrative Suite	0.8	1.1								
Media Center	1.5	1.2	0.8							
Visual Arts	0.6	0.8	0.3	1.1						
Music	0.2	0.3	0.1	0.7	1.4					
Project Lead the Way	1.0	0.7	0.2	1.0	1.0	0.7				
Physical Education	0.2	0.5	0.1	0.3	0.6	0.8	0.5			
Student Dining	0.2	0.3	1.0	1.1	0.3	0.5	0.3	1.4		
Outdoor Access	1.0	1.1	1.3	0.8	1.2	1.2	0.9	1.8	1.5	

Kilbourne MS

The Kilbourne MS facility should have a capacity to hold 600 students.
Typically a school with that many middle grades students would have 18 core classrooms, 7 laboratories, and 1 special education classroom, however Kilbourne will need approximately five to six additional core academic spaces for special programming initiatives. This would bring the total square footage of the facility up by approximately 5,500 square feet. Despite the additional academic spaces, the facility should maintain its other spaces of a suitable size and count as would be normally appropriate for a 600 student middle school. The total square feet of the facility should be approximately and total approximately 91,500 square feet.

McCord MS

The McCord MS facility should be capable of accommodating 600 students, with a total square footage of approximately 86,000 square feet.

The current McCord facility will need to increase space to accommodate a 600 student enrollment. Feedback from school teachers and leadership and the community suggest reconfiguration of current space to expand cafeteria and visual and performing arts space. Capacity expansion can also include additional classroom space, in the form of newly constructed science labs and renovation of existing science space into classroom space.

Worthingway MS

The Worthingway MS facility should have appropriate academic spaces for 700 students, though its core spaces, such as the cafeteria, gym, and electives should be built for a 750 capacity.

This will allow for flexibility should there be some growth in the student body, without committing to constructing too much space before those students arrive.

Perry MS Campus

Perry MS will have particular facility needs based on its programming. The main part of the Perry campus will be serving 600 students. On the campus will also be Phoenix, which will be serving 250 students, Worthington Academy, which will be serving 60 students, and Rockbridge Academy..

The core spaces of this campus, such as the gym, cafeteria, music, art, and others will be shared by all students housed on this campus, and should therefore be constructed for a 1,000 student capacity. Core academic spaces and administrative areas will be maintained separately.

Therefore, Perry will look like a 600 capacity middle school with a core built for 1,000. Phoenix, Worthington Academy, and Rockbridge will have core academic and administrative spaces appropriate for their enrollment count, but share core spaces with the rest of the campus.

It will be important to continue to keep Worthington Academy students separated from other students in the facility, as these students are in grades 9-12, as opposed to the 6-8th graders on the rest of the campus. This separation may be achieved through separations in the facility itself, or through careful scheduling.

OHIO FACILITIES CONSTRUCTION COMMISSION

PROGRAM OF REQUIREMENTS

The OFCC Program of Requirements outlines the spaces required of a school by level and number of students served. Worthington will likely construct for 600 or 750 students. If Worthington is to receive state funding for the construction of any new facilities, it must comply with OFCC.

EXAMPLES		450 Students	600 Students	750 Students	1000 Students	1500 Students	2000 Students
		SF	SF	SF	SF	SF	SF
Grade Configuration: 6-8							
Number of Students		450	600	750	1,000	1,500	2,000
Square Feet Per Student		151.00	142.88	141.00	140.37	127.83	119.45
Total Gross Square Feet Funded		**67,950**	**85,725**	**105,750**	**140,370**	**191,742**	**238,908**
PROGRAM AREA							
M-AC	Academic Core Spaces	19,480	25,980	31,380	41,980	60,940	79,510
M-SE	Special Education Spaces	1,750	2,350	3,700	4,000	4,900	6,650
M-AD	Administrative Spaces	2,282	2,750	3,380	4,190	5,530	6,140
M-MC	Media Center Spaces	2,755	3,433	4,105	4,980	6,870	8,620
M-VA	Visual Arts Spaces	1,400	1,450	2,700	2,900	4,250	5,600
M-MU	Music Spaces	1,600	2,900	3,000	4,400	5,800	5,800
M-TE	Technology Education Spaces	1,450	1,450	2,750	4,050	4,200	5,600
M-FCS	Family and Consumer Science Spac	0	1,200	1,200	1,200	2,400	2,400
M-PE	Physical Education Spaces	9,300	9,825	10,600	16,575	20,050	22,250
M-SD	Student Dining Spaces	4,150	4,300	5,812	7,180	9,980	12,830
M-FS	Food Service Spaces	1,790	2,315	2,840	3,855	5,605	7,355
M-CU	Custodial Spaces	300	400	500	700	900	900
M-BS	Building Services	14,960	18,876	23,304	30,449	41,315	51,577
Facility Total		**61,217**	**77,229**	**95,270**	**126,459**	**172,740**	**215,232**
Construction Factor		0.11	0.11	0.11	0.11	0.11	0.11
Gross Square Feet Developed		**67,951**	**85,725**	**105,750**	**140,370**	**191,742**	**238,908**

Source: Program of Requirements (POR) 2200 MS Summary of Spaces
http://ofcc.ohio.gov/Resources/Design-Manual-OSDM/2017-OSDM

Middle School—600 Student Capacity

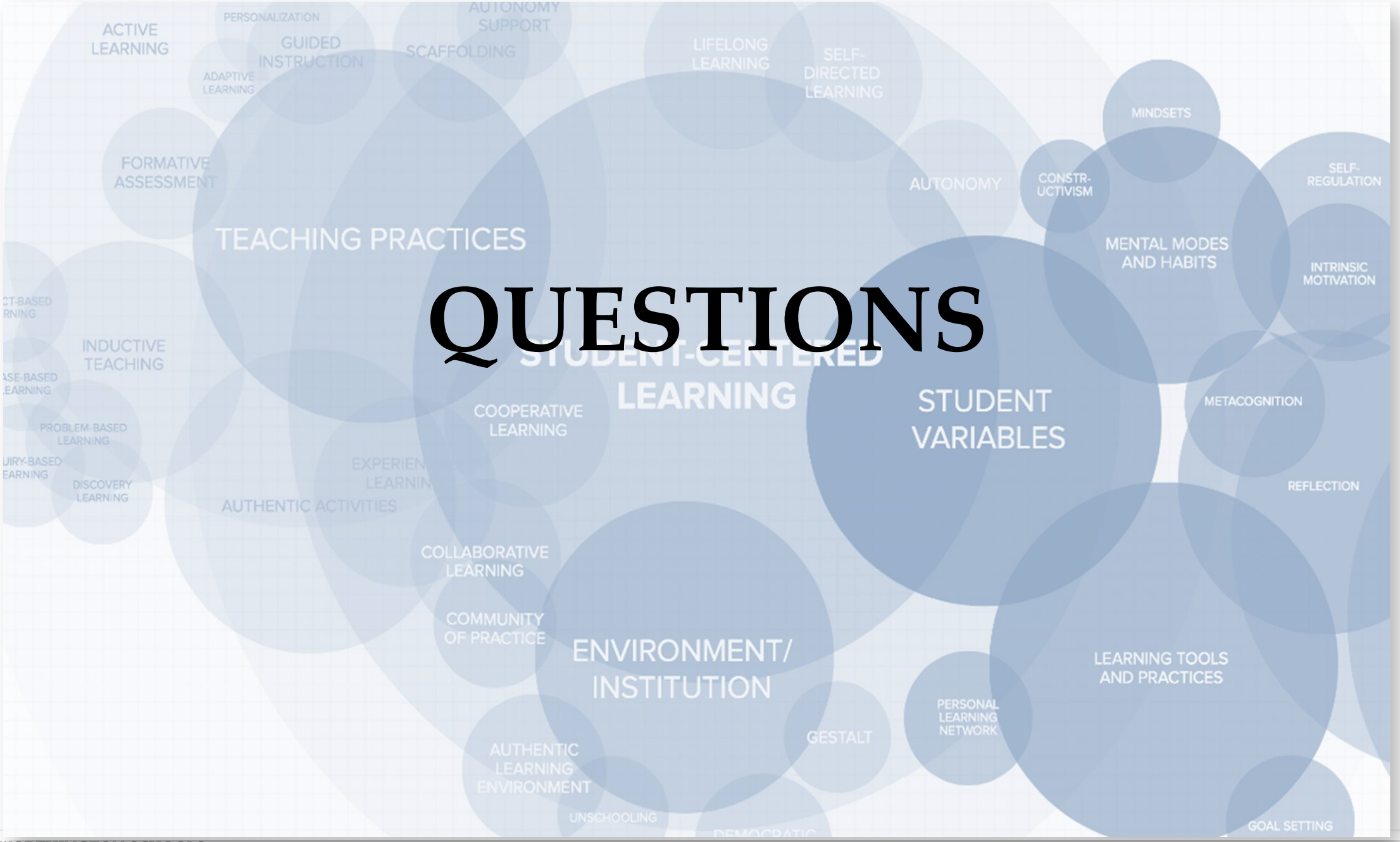
	Kilbourne	McCord	
auditorium	5,592	0	oversize
corridor	5,274	1,174	oversize
const factor	5,444	0	oversize
media ctr	1,359	1,210	oversize
std dining	(646)	(681)	undersize
classrooms	5 CRs	4 CRs	undersize

	Specification	Existing		Difference Between Specification and Existing	
	600 Students	Kilbourne	McCord	Kilbourne	McCord
	SF	SF	SF	Differences	Differences
Grade Configuration: 6-8					
Number of Students	600	600	600		
Square Feet Per Student	142.88	163.22	125.15		
Total Gross Square Feet	**85,725**	**97,932**	**75,089**		
PROGRAM AREA					
Academic Core Spaces	25,980	20,229	20,698	(5,751)	(5,282)
Special Education Spaces	2,350	1,936	1,937	(414)	(413)
Administrative Spaces	2,750	2,036	2,867	(714)	117
Media Center Spaces	3,433	4,183	3,669	750	236
Visual Arts Spaces	1,450	1,843	1,581	393	131
Music Spaces	2,900	3,034	2,524	134	(376)
Technology Education Spaces	1,450	1,427	2,656	(23)	1,206
Family and Consumer Science Spaces	1,200	1,081	0	(119)	(1,200)
Physical Education Spaces	9,825	10,967	11,451	1,142	1,626
Student Dining Spaces	4,300	9,935	3,107	5,635	(1,193)
Food Service Spaces	2,315	1,709	2,053	(606)	(262)
Custodial Spaces	400	305	115	(95)	(285)
Building Services	18,876	24,258	18,259	5,382	(617)
Facility Total	**77,229**	**82,943**	**70,917**	**5,714**	**(6,312)**
Construction Factor	0.11	0.18	0.06	1.18	1.06
Gross Square Feet Developed	**85,725**	**97,932**	**75,089**	**12,207**	**(10,636)**

Middle School—700 Student Capacity

	Worthingway	Perry
gym		(2,040)
dining	(1,595)	(2,048)
mech	(3,434)	(3,573)
admin	(1,514)	(1,326)
classrooms	11 CRs	13 CRs

	Specification	Existing		Difference Between Specification and Existing	
	700 Students	Worthingway	Perry	Worthingway	Perry
	SF	SF	SF	Differences	Differences
Grade Configuration: 6-8					
Number of Students	700	700	700		
Square Feet Per Student	141.04	93.13	96.72		
Total Gross Square Feet	**98,725**	**65,191**	**67,702**		
PROGRAM AREA					
Academic Core Spaces	29,747	16,649	18,347	(13,098)	(11,400)
Special Education Spaces	3,700	2,387	1,548	(1,313)	(2,152)
Administrative Spaces	3,260	1,746	1,934	(1,514)	(1,326)
Media Center Spaces	3,930	3,115	3,163	(815)	(767)
Visual Arts Spaces	1,500	1,310	1,652	(190)	152
Music Spaces	3,000	3,503	3,808	503	808
Technology Education Spaces	1,450	865	3,020	(585)	1,570
Family and Consumer Science Spaces	1,200	0	1,627	(1,200)	427
Physical Education Spaces	10,600	11,272	9,589	672	(1,011)
Student Dining Spaces	5,562	2,313	1,684	(3,249)	(3,878)
Food Service Spaces	2,665	1,368	943	(1,297)	(1,722)
Custodial Spaces	500	450	209	(50)	(291)
Building Services	21,828	14,516	13,469	(7,312)	(8,359)
Facility Total	**88,942**	**59,494**	**60,993**	**(29,448)**	**(27,949)**
Construction Factor	0.11	0.10	0.11	1.10	1.11
Gross Square Feet Developed	**98,725**	**65,191**	**67,702**	**(33,534)**	**(31,023)**


ACTIVE LEARNING
PERSONALIZATION
GUIDED INSTRUCTION
ADAPTIVE LEARNING
AUTONOMY SUPPORT
SCAFFOLDING
LIFELONG LEARNING
SELF-DIRECTED LEARNING
MINDSETS
FORMATIVE ASSESSMENT
AUTONOMY
CONSTR-UCTIVISM
SELF-REGULATION
TEACHING PRACTICES
MENTAL MODES AND HABITS
INTRINSIC MOTIVATION
INDUCTIVE TEACHING
STUDENT-CENTERED LEARNING
COOPERATIVE LEARNING
STUDENT VARIABLES
METACOGNITION
PROBLEM-BASED LEARNING
DISCOVERY LEARNING
AUTHENTIC ACTIVITIES
REFLECTION
COLLABORATIVE LEARNING
COMMUNITY OF PRACTICE
ENVIRONMENT/ INSTITUTION
LEARNING TOOLS AND PRACTICES
PERSONAL LEARNING NETWORK
GESTALT
AUTHENTIC LEARNING ENVIRONMENT
UNSCHOOLING
GOAL SETTING

QUESTIONS