BLENDED LEARNING

DESIGN GUIDELINES

OFFICE OF THE STATE
SUPERINTENDENT OF EDUCATION
Charter School Incubator Initiative

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we instead thank all involved together as what they truly are – a community.
Thank you for the ideas, time, expertise and, above all,
your passion for education.

BLENDED LEARNING
Design Guidelines

JUNE 2015

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TABLE OF CONTENTS

BLENDED LEARNING: WHAT IS IT?

PEDAGOGY AND TEACHING STRATEGIES

Blended Learning describes a range of teaching strategies that combine face-to-face instruction with individual, student-directed, computer-based learning programs. The relative balance between these two modalities varies between schools, but the essential strategy is common to all: engage digital technology at a personal level to overcome the most common impediments to learning, including time, financial resources, space, and differentiated learning abilities and pace. Blended learning provides a model for student-centered learning scaled to a school-wide context.

Most blending strategies currently fall into one of four models:

- Rotational
- Flex
- Self-blended
- Enriched Virtual

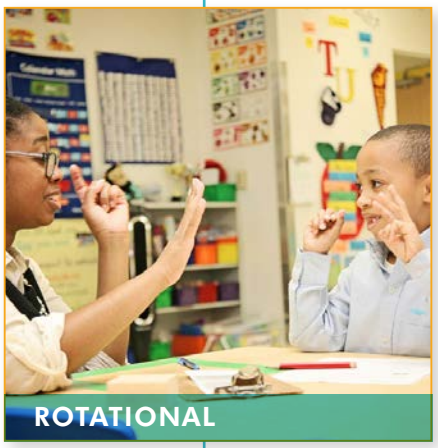
As blended learning continues to develop, new models and hybrids may emerge.

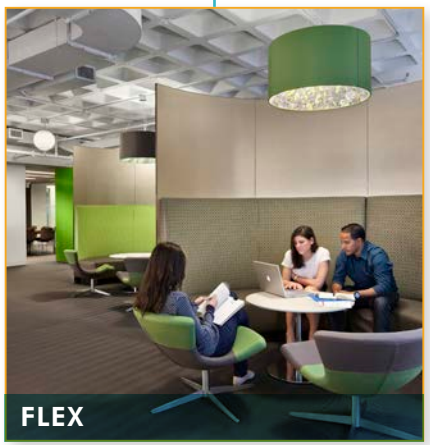
Each of these models takes advantage of advances in educational technology to provide varying degrees of integration and balance between the use of interactive and adaptive software and face-to-face engagement. In at least several of the models, rather than replacing student-teacher interaction, the on-line component is intended to enable a greater degree of individual and small group engagement directly with the faculty. In conjunction with the software's ability to assess a student's understanding of specific content, for example, a teacher can better evaluate that student's understanding of the material and direct attention during their interaction to address the student's specific needs.

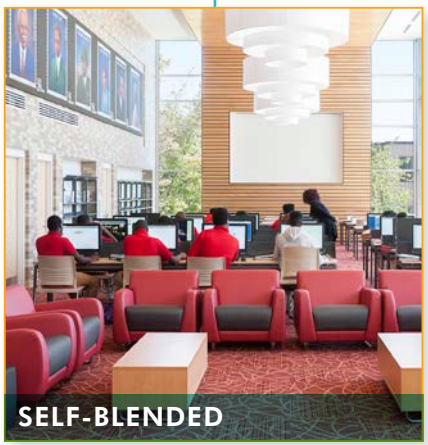
The design of a blended learning environment should respond directly in support of the school's goals and the desires driving the implementation of a blended curriculum. Whether the aim is to reduce the student-to-teacher ratio, leverage on-line content, facilitate asynchronous content delivery, or promote self-pacing, the strategies or models that best achieve those goals will employ specific activities and technologies. The design and organization of space should necessarily follow from the anticipated activities and scale of engagement.

In the following paragraphs we summarize each of the four models identified above, identify select schools that are applying these models, and begin a discussion of the implications for the design of the learning environment. In subsequent sections, we illustrate a prototypical design supporting one model through a case study for Washington, DC's Ingenuity Prep Public Charter School.

BLENDED LEARNING ENVIRONMENTS







- STATION-ROTATION MODEL
- LAB-ROTATION MODEL
- FLIPPED-CLASSROOM MODEL
- INDIVIDUAL-ROTATION MODEL

*Diagrams modeled on diagrams created by the Innosight Institute for "Classifying K-12 Blended Learning" by Heather Staker and Michael B. Horn.

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ROTATIONAL


3 Ducklings

ROTATIONAL

The rotational model is structured around generally defined blocks of time where students are typically working in small groups with a teacher or assistant teacher or working individually using instructive, interactive, and/or adaptive technology. Within the rotational model, four variations are typically defined:

- station rotation,
- lab rotation,
- flipped classroom, and
- individual rotation.

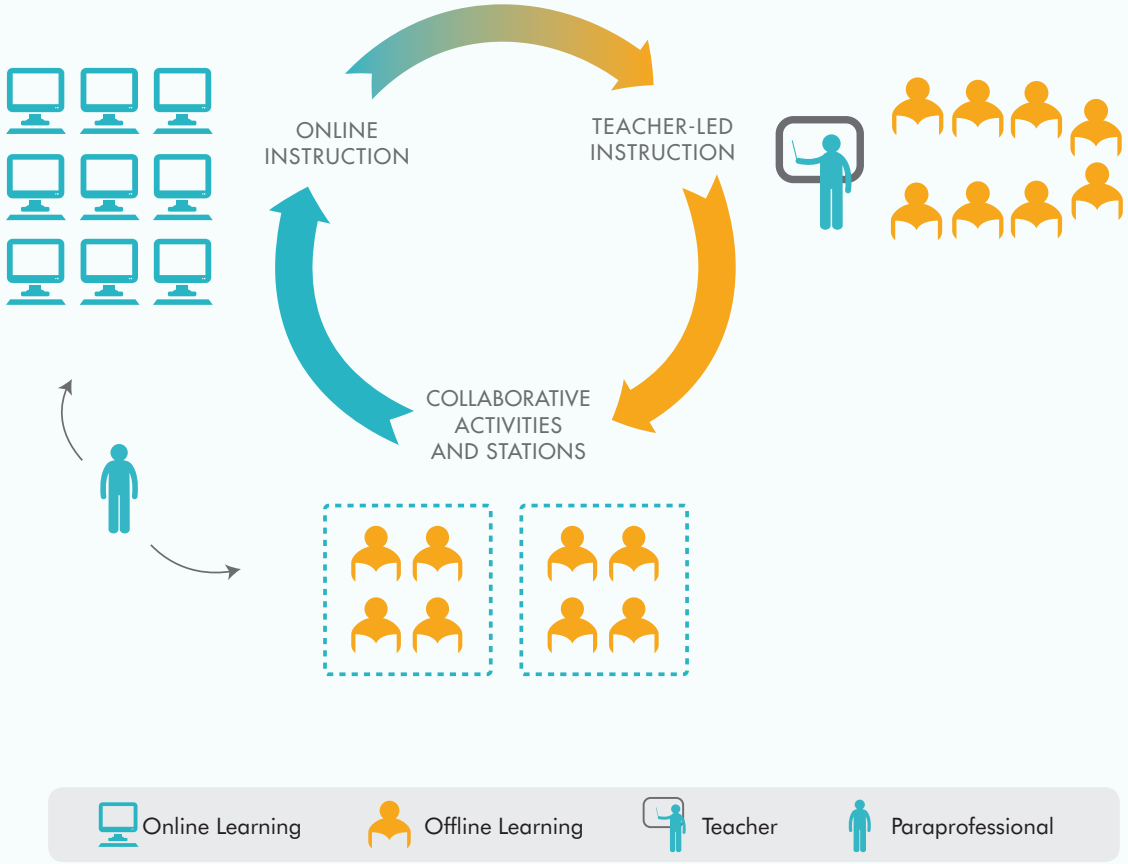
ROTATIONAL

STATION ROTATION

The activities within a station rotation model typically occur within a defined, single space with students moving from station to station within set periods of time. Class sizes in rotational models are often larger than is typical of schools using more traditional modes of instruction. Ingenuity Prep PCS, for example, has a typical section size of 32. However, because of the station rotation mode of instruction, student-to-teacher ratios typically range between 4:1 to 8:1, enabling more individualized attention for each student than more traditional modes. Attention to acoustics and lighting is important in this more active environment.

PRECEDENT SCHOOLS:

- Ingenuity Prep PCS, Washington, DC
- Intrinsic School, Chicago, Illinois

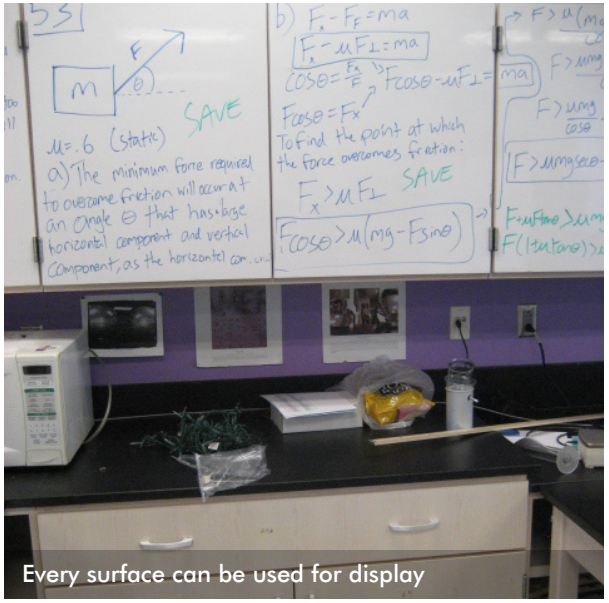


*Diagrams modeled on diagrams created by the Innosight Institute for "Classifying K–12 Blended Learning" By Heather Staker and Michael B. Horn

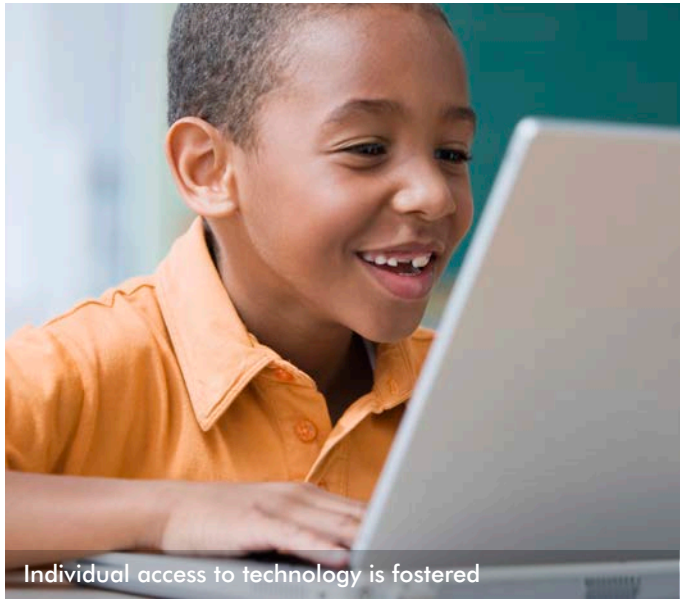
DESIGN CONSIDERATIONS

STATION ROTATION

Face-to-face engagement is often accommodated at stations comprised of moveable tables and chairs accommodating 4 to 8 students and a teacher. These small group stations may make use of white boards or large screen digital media to facilitate the interaction. Typically, at least one station in the rotation is designed for the individual use of digital media such as laptops or iPads.



Every surface can be used for display



Individual access to technology is fostered

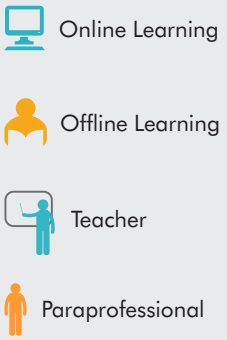
Furniture should foster small group interaction

ROTATIONAL

LAB ROTATION

PRECEDENT SCHOOLS:

- Rocketship, Multiple Locations



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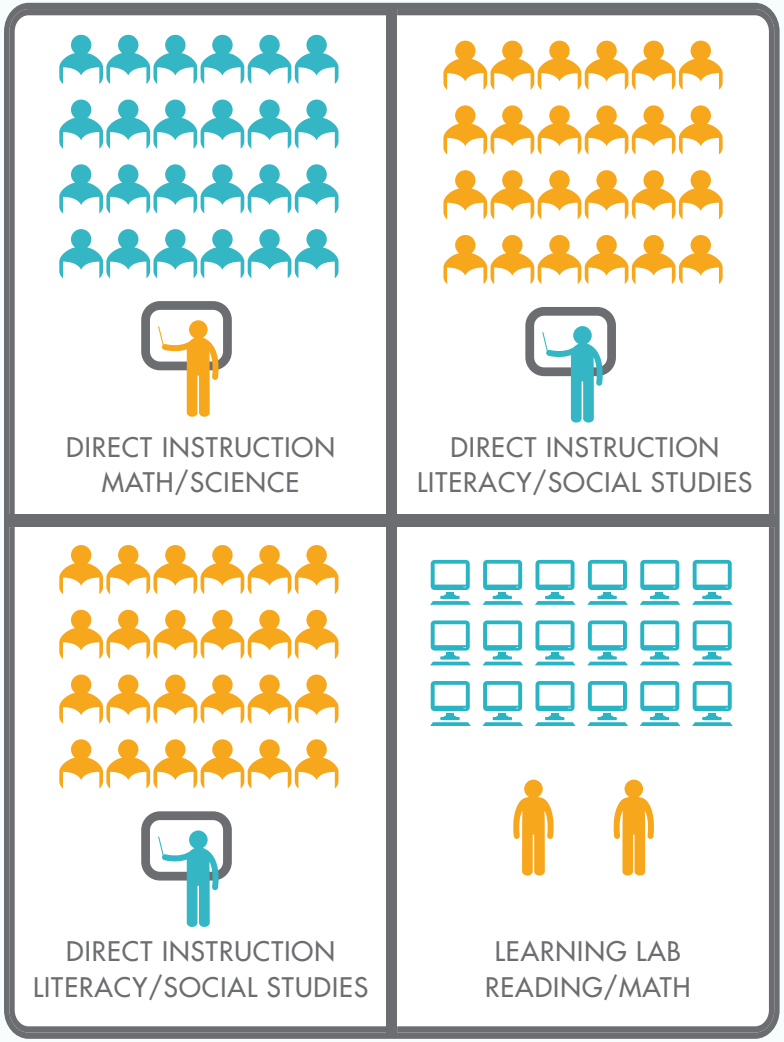
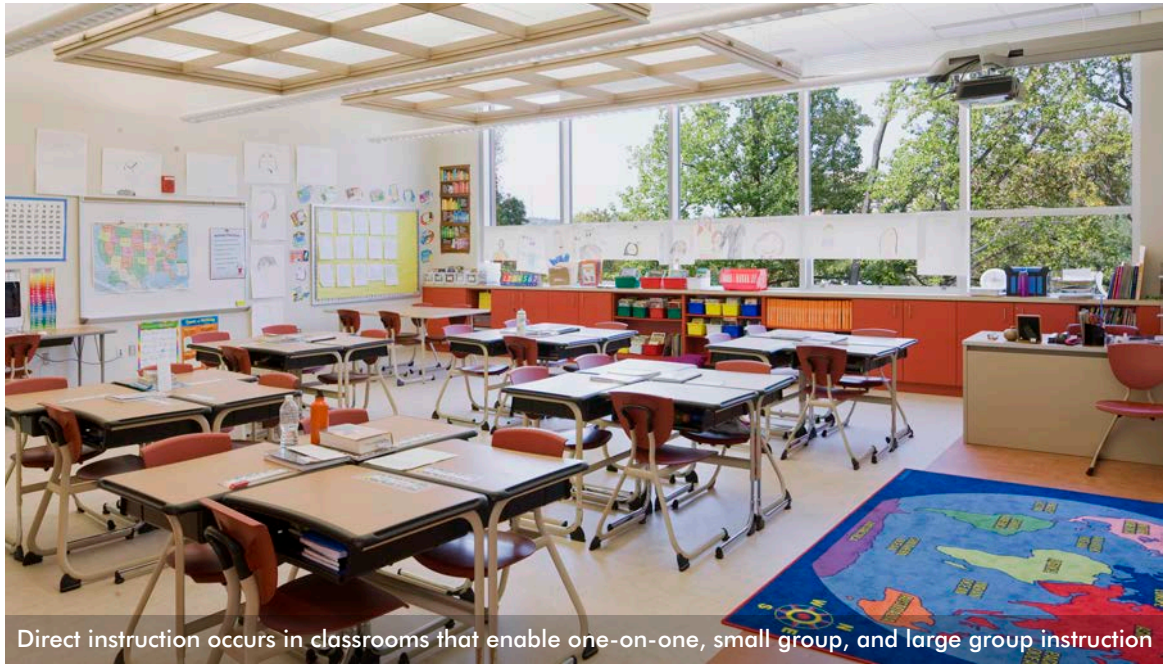


DESIGN CONSIDERATIONS

LAB ROTATION

Lab rotation is similar to, but distinguished from, station rotation in that students typically move or rotate from room to room. The lab rotation environment may look mostly conventional, using classrooms and what appear to be conventional computer labs, but the activities undertaken in these spaces are distinguished by the individualization of the instruction, particularly in the lab setting. Rocketship's learning lab, for example, is designed around individual computer workstations, not for direct instruction. Small group and team-based modes of instruction may also be used in the classrooms. In other schools, mobile technology allows for flexible location of the on-line content.

Individual access to technology occurs in the "learning lab"



Direct instruction occurs in classrooms that enable one-on-one, small group, and large group instruction

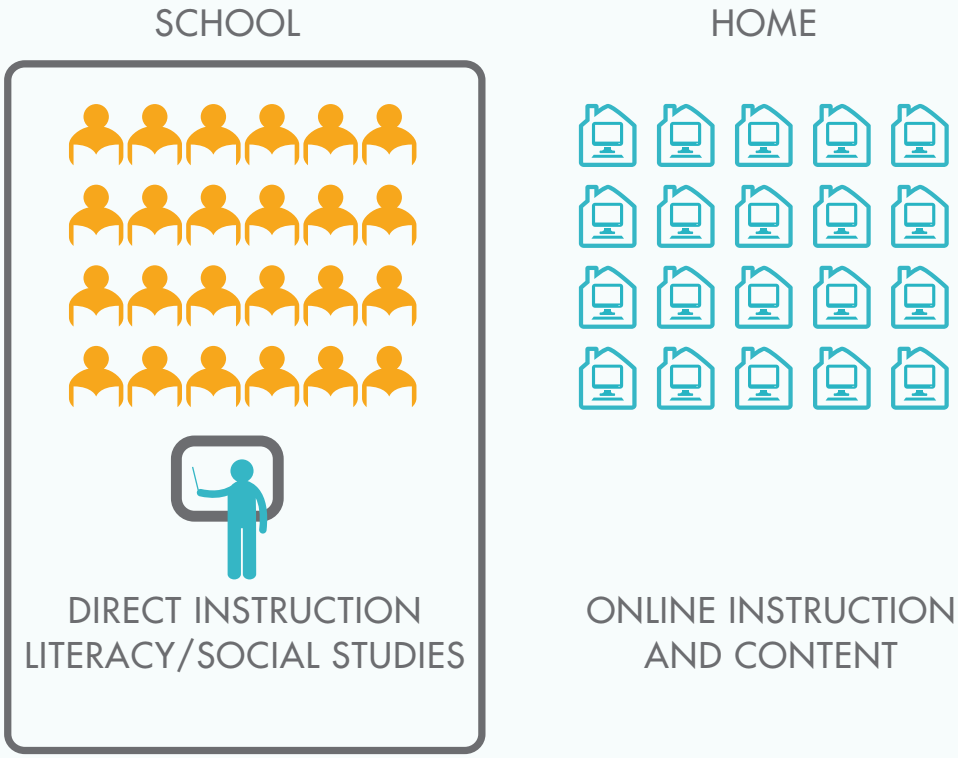
ROTATIONAL

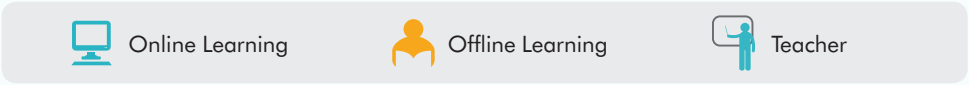
FLIPPED CLASSROOM

In the flipped classroom, the individual student accesses content delivered online, asynchronously, off-site, and outside of the school day. This content is accessed by the student prior to meeting with class, allowing in-class time to be used to assess individual understanding of the content and the active engagement of that content by students and the teacher via one-on-one, small group, and large group collaborative work. These activities are targeted at helping students achieve a deeper understanding of the subject matter.

PRECEDENT SCHOOLS:

- Clintondale High School, Clinton Township, Michigan





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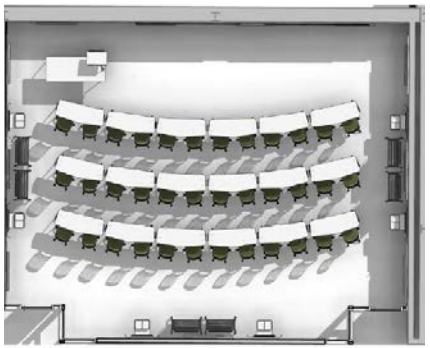
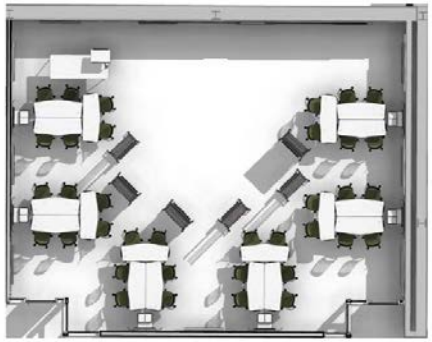
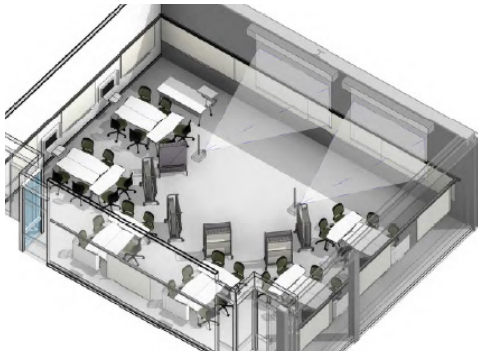
DESIGN CONSIDERATIONS

FLIPPED CLASSROOM

Environmental design implications are similar to those involved in creating flexible classrooms able to readily adapt to multiple teaching modalities including collaborative and project-based learning. Like the rotational model, flexible furniture and attention to acoustics and lighting is important in this more active environment.







Flipped classrooms should be flexible to accommodate a range of active learning modes

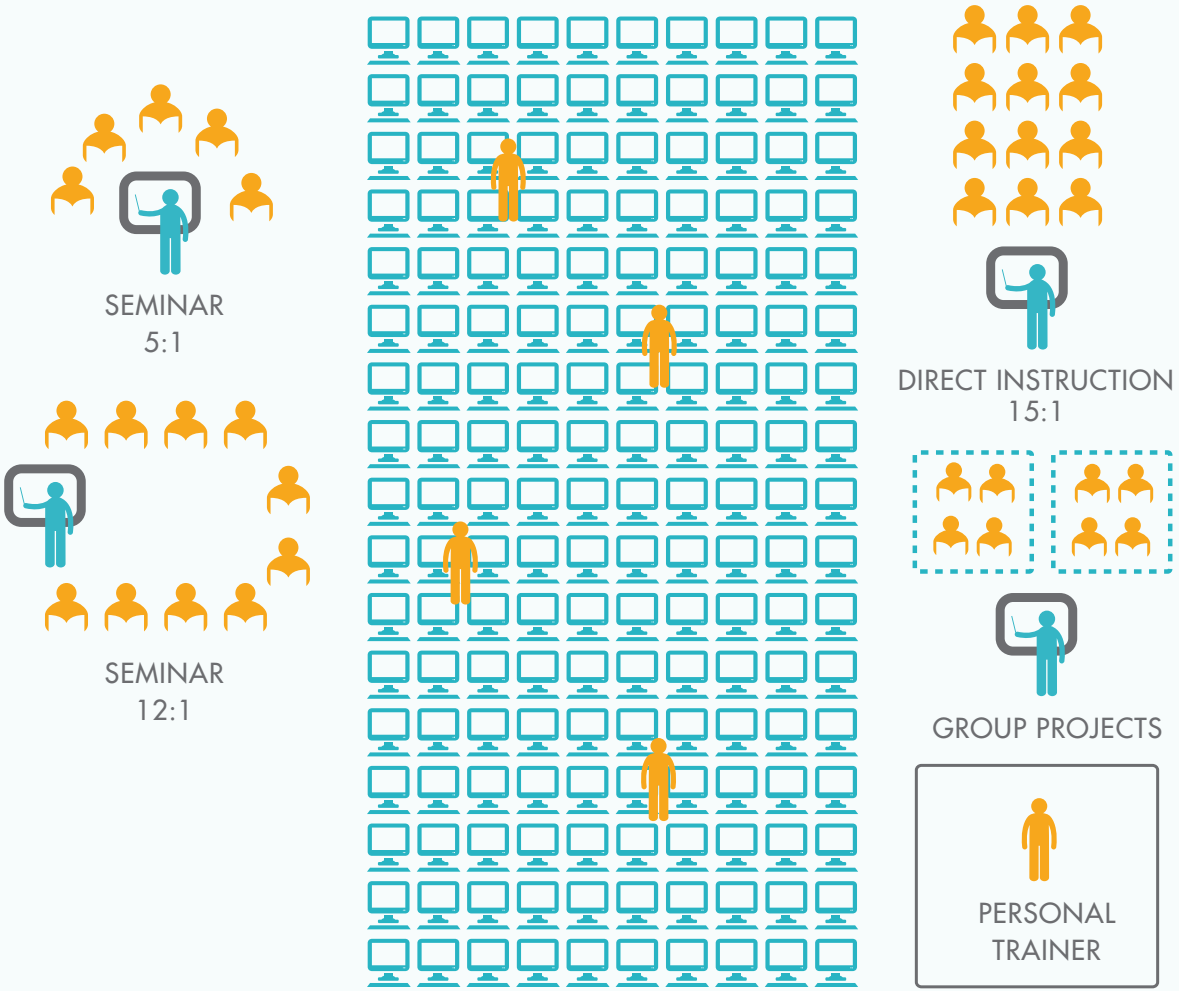
ROTATIONAL

INDIVIDUAL ROTATION

Individual rotation is distinguished from station rotation or lab rotation in that each student may have an individualized schedule. Where students in station rotation participate in each station, students in individual rotation participate in stations that are targeted at their specific needs.

PRECEDENT SCHOOLS:

- Carpe Diem, Phoenix, AZ



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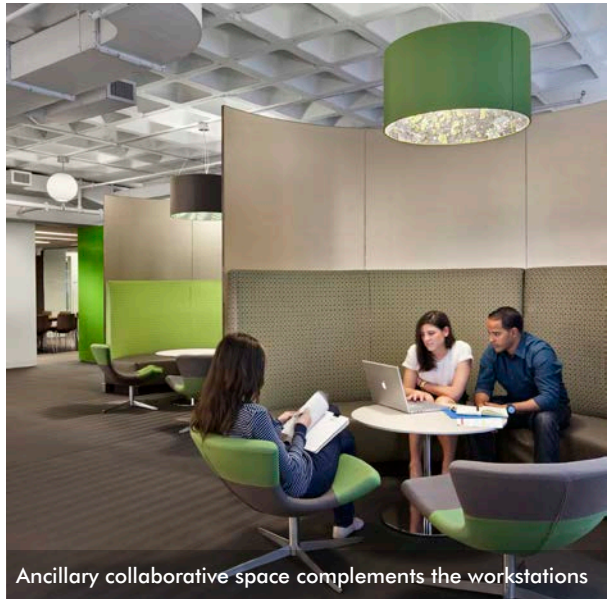
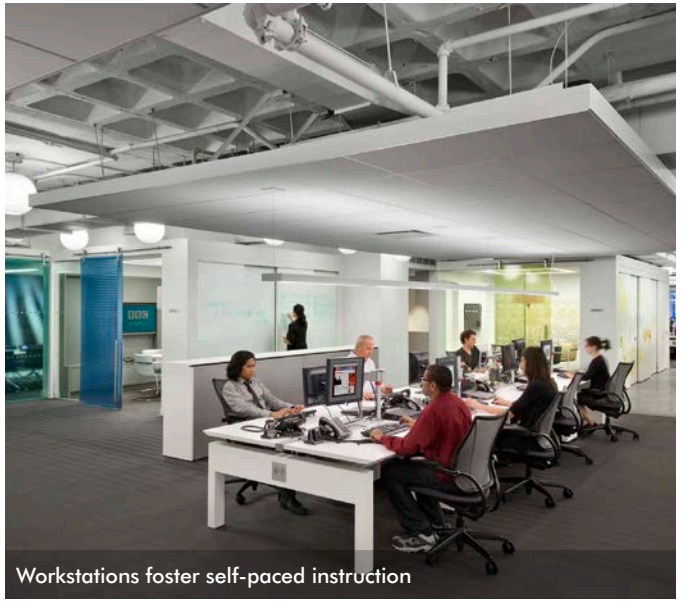
DESIGN CONSIDERATIONS

INDIVIDUAL ROTATION

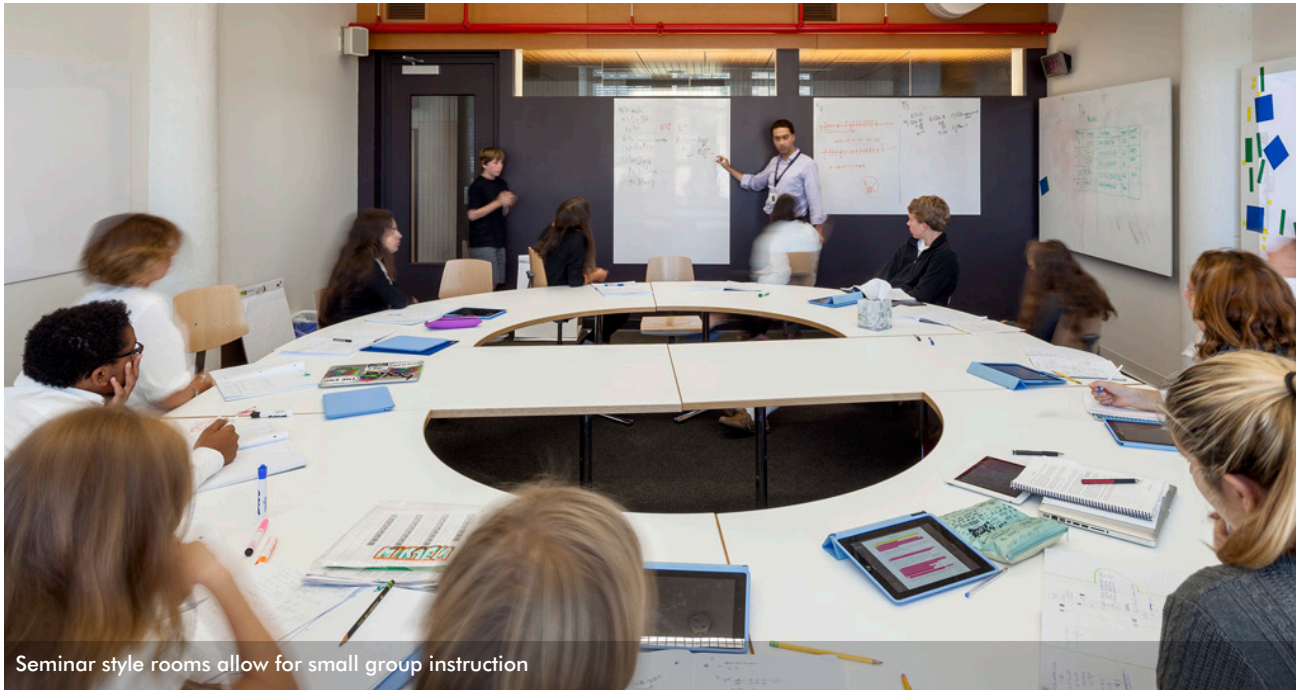
To allow for individualized scheduling, the environment of the schools using this model typically begins to depart from the typical classroom-based setting. Schools like Carpe Diem, for example, provide individual workstations to each student gathered together in a space resembling an open office plan. Surrounding these workstations are a variety of small group and breakout spaces, where teachers and students can complement the online content delivery with direct, face-to-face instruction.



Ancillary collaborative space complements the workstations



Workstations foster self-paced instruction



Seminar style rooms allow for small group instruction

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FLEX

FLEX

FLEX MODEL

The Flex model emphasizes individual, on-line instruction for the delivery of the majority of content. Face-to-face individual and small group interaction with a teacher occurs on an as-needed basis. This model is designed to allow students to work at their own pace while still having the opportunity for face-to-face engagement to bolster their understanding. The environment of the typical flex space is based upon an individual workstation for each student with convenient, ancillary pull-out and small group meeting space. Furthering the workplace analogy, "cyber cafes" may also be included to provide alternative settings for students to work and interact with their peers.

PRECEDENT SCHOOLS:

- San Francisco Flex
- Silicon Valley Flex

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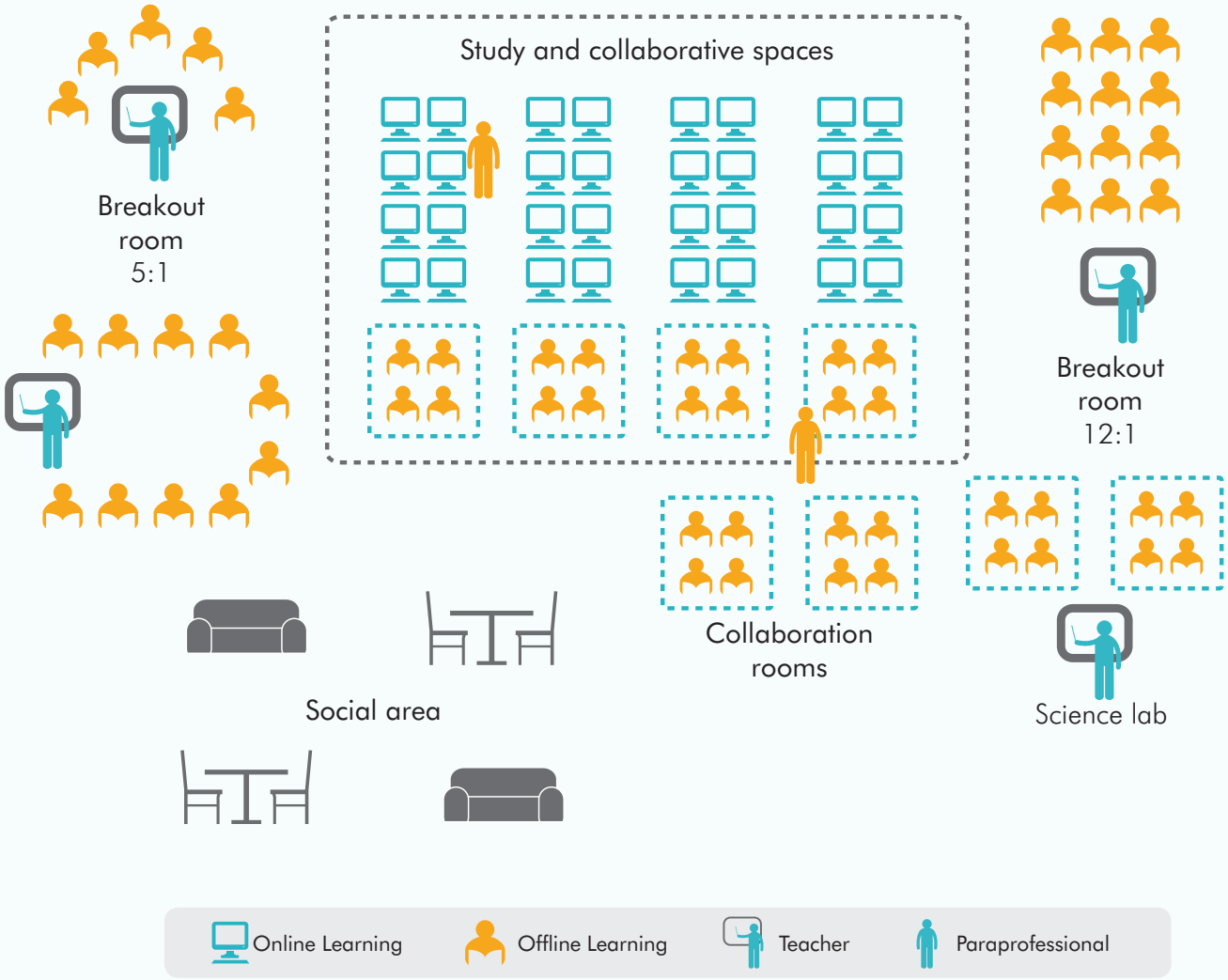
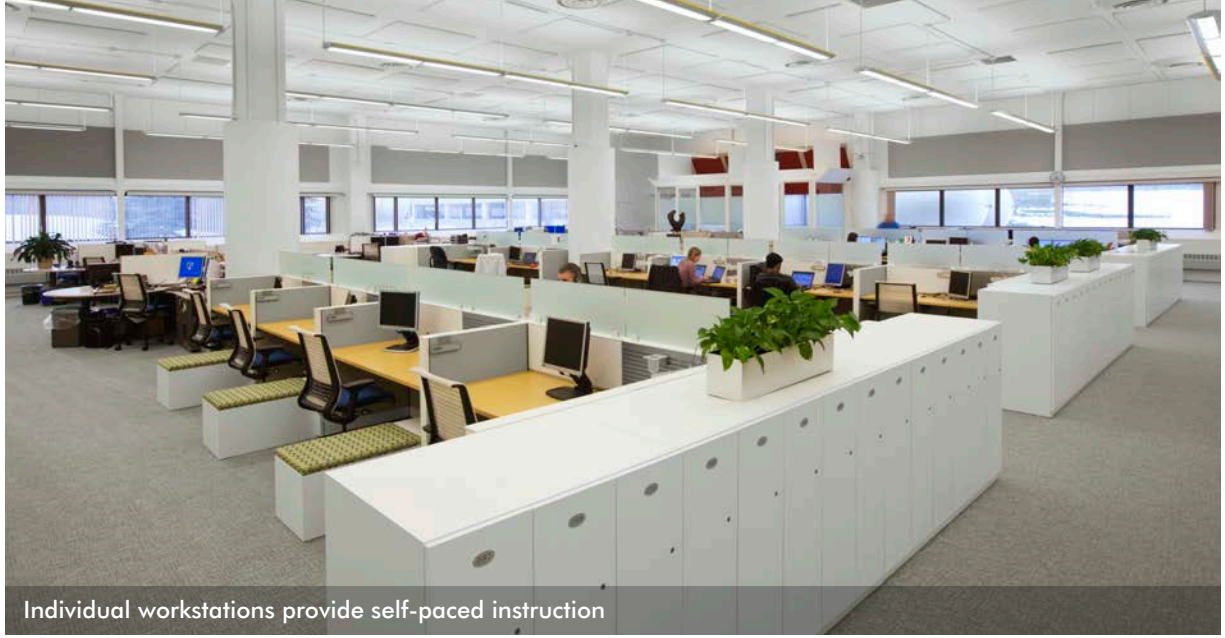


DESIGN CONSIDERATIONS

FLEX ENVIRONMENTS

The flex environment provides for a variety of spaces ranging from the individual workstation and small group breakout and direct instruction areas to more dynamic and social spaces. These spaces can, in many ways, emulate modern workplace environments.



Individual workstations provide self-paced instruction

Social Space provides alternative work environments and places for informal interaction

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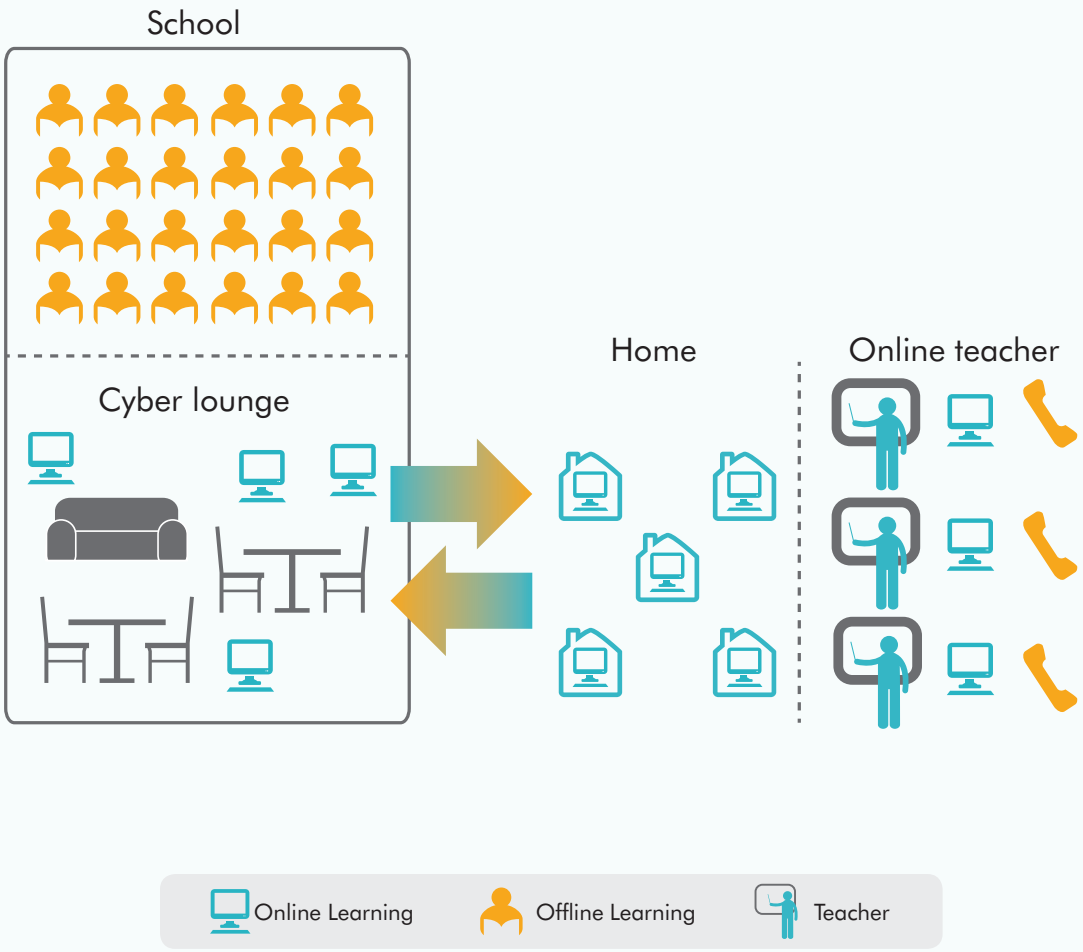
SELF-BLENDED

SELF-BLENDED

SELF-BLEND MODEL

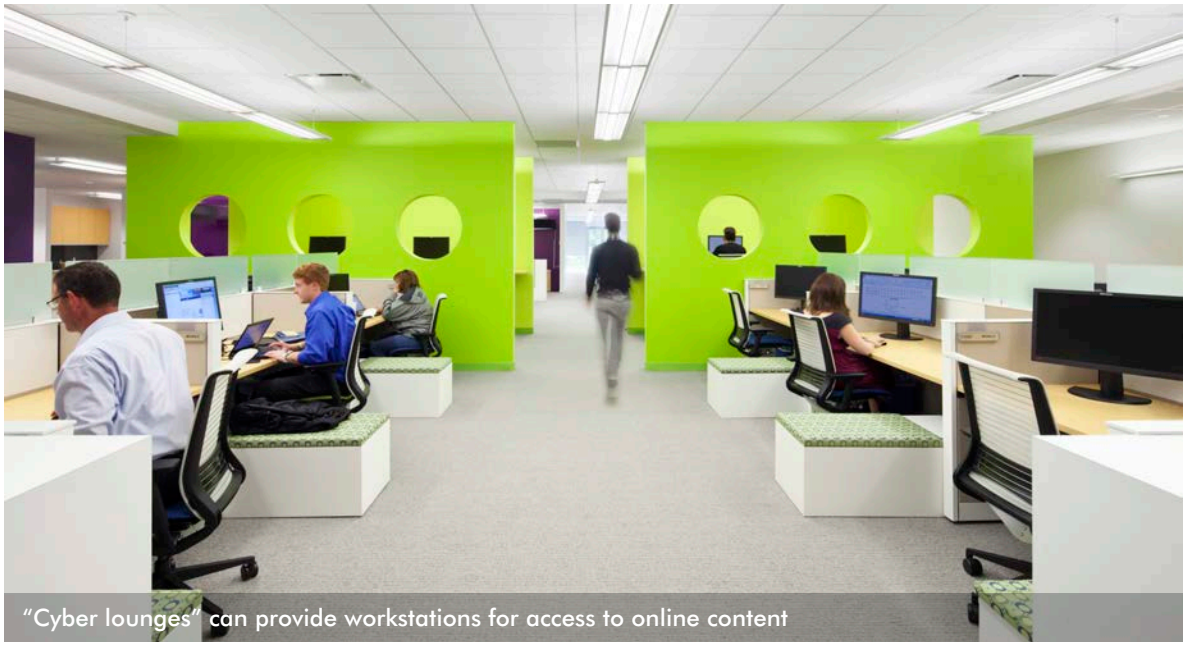
Self-Blended approaches involve delivering a portion of a student's course load primarily online. These courses complement courses delivered using more traditional approaches and modes (e.g., in person seminars, lectures and labs). The self-blended content can be delivered in a variety of locations in school or outside of school, enabling student choice regarding time and place.



DESIGN CONSIDERATIONS

SELF-BLENDED

"Cyber lounges" and other places where students can work individually using online media can be provided within the school.



"Cyber lounges" can provide workstations for access to online content

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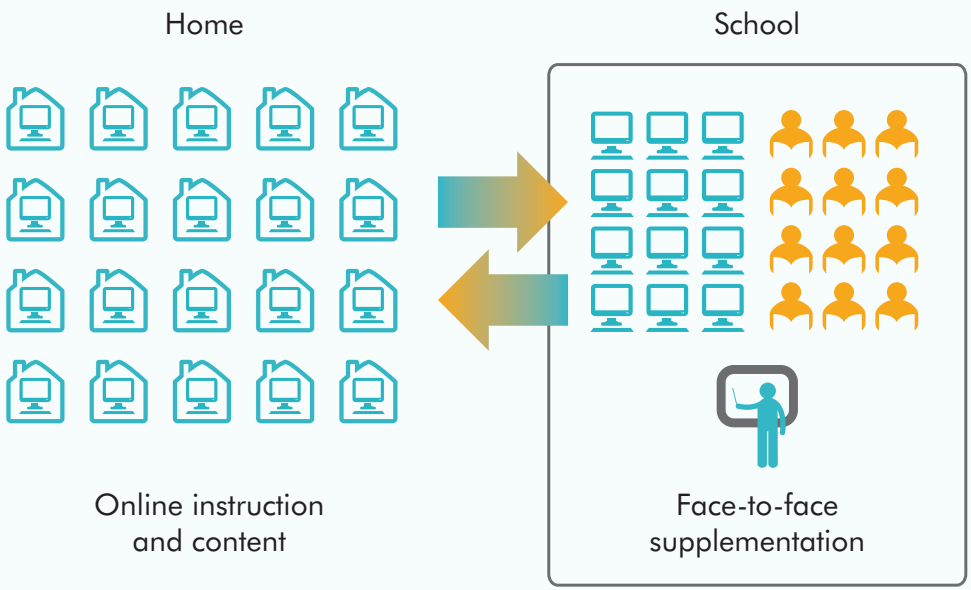
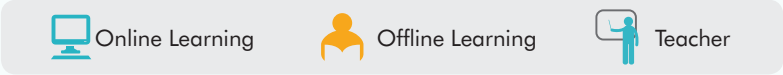
ENHANCED VIRTUAL

ENHANCED VIRTUAL

ENHANCED VIRTUAL MODEL

Expanding upon the self-blended model, Enhanced Virtual blended learning delivers a portion of every course online. This content can be delivered asynchronously and at a variety of locations. This asynchronous content is complemented by face-to-face interaction with teachers and peers in more conventional school settings. In contrast to most of the other blended learning models, students may not be on campus every day. Environmental considerations are similar to the self-blended model providing spaces for seminars, classes and labs, and cyber lounges for using online resources. Reduced attendance on a daily basis may reduce the overall square footage required for facilities.






The American Embassy School
MS/HS Library Resour
THE FALSE PRINCE

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CASE STUDY

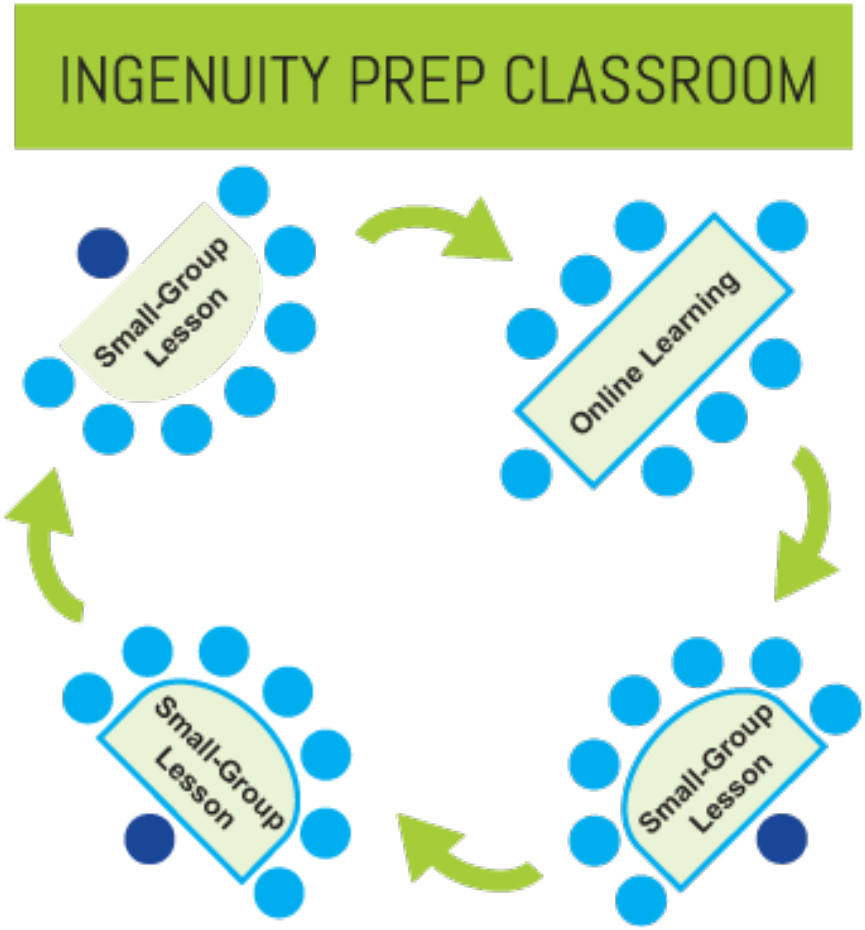
CASE STUDY:
INGENUITY PREP PUBLIC CHARTER SCHOOL

Currently serving 200 PreK3 - 1st grade students, Ingenuity Prep Public Charter School is located in the Charter School Incubator at the PR Harris Education Center in Southeast Washington, DC. The school plans to grow to serve PreK3 - 8th grade and it serves an area of the city with the greatest disparity of any between the number of students and the number of Tier 1 seats (DC uses a tiered ranking system for charter schools) and with 74% of its students designated as "at risk" students (TANF/SNAP/homeless). This is the highest percentage of at risk students of any charter elementary school in the city.

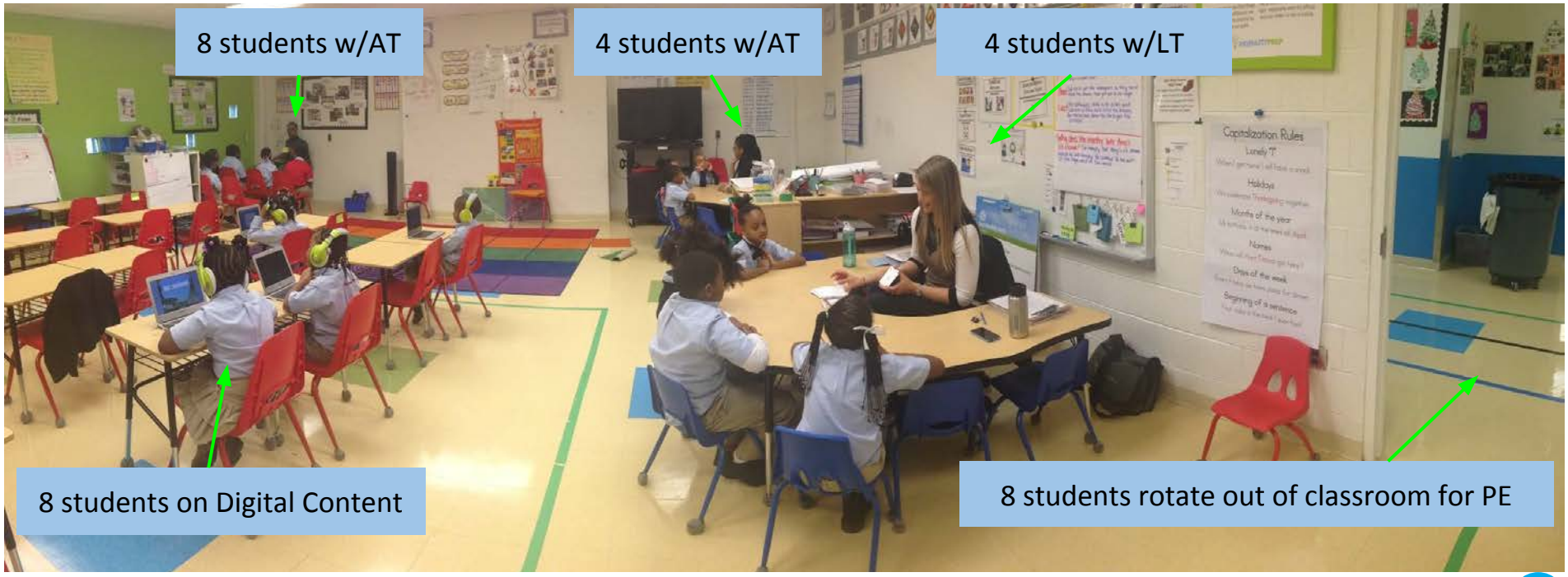
To best serve their students, Ingenuity's approach to education has been defined by a desire to personalize and differentiate instruction via low student-to-teacher ratios (typically 4:1 or 8:1) within small group settings. Their approach also includes an extended day and extended year, with particular emphasis being placed on social-emotional literacy and developing civic leadership skills.

To achieve these goals, Ingenuity has developed a station rotation blended learning model. Within this model, classes of up to 32 students work in rotation with a lead teacher and two associate teachers. Students rotate between four in-class stations and a fifth physical education station during the course of the day.

The photo on the opposite page illustrates this rotational model in action in one of Ingenuity's existing classrooms. As these classrooms were created prior to Ingenuity moving into the building, the following design guidelines and prototype learn from their use and propose refinements to evolve Ingenuity's classrooms to best suit their station rotation model. Construction of the prototype is planned for the Summer 2015.



Our Model in Action



INGENUITYPREP

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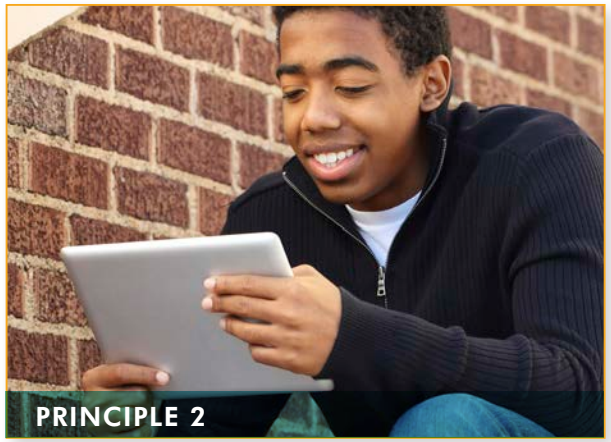
DESIGN PRINCIPLES

DESIGN PRINCIPLES

Creating an effective environment for station rotation for Ingenuity Prep, and other schools looking to emulate this model, begins by understanding several key design principles that distinguish this environment from a setting for more traditional modes of instruction. These principles are:



THERE IS NO "FRONT" TO THE CLASSROOM:

All class lecture-style instruction is minimized to perhaps 5% of the school day in favor of individual, small group, direct engagement. This creates an environment that is focused on each of the stations rather than any single point.

TECHNOLOGY IS MOBILE:

From iPads and Chromebooks used by individuals to the Apple TV-enabled monitors used for display, all of the technology in the classroom is wireless and mobile. This enables flexible use of digital media resources, easy modification/upgrade to the equipment, and the easy reconfiguration of the room to suit the needs of the group, the activity, and the content.

WALLS ARE FOR PERSONALIZATION AND DISPLAY:

Wrap around, magnetic white boards enable station-based personalization and display. Magnetic whiteboards allow for display of 2D materials (art, printed graphics, etc.) and/or the use of the board as a writable surface at the individual stations.

TRANSPARENCY ENHANCES SHARING OF PRACTICE:

Even with multiple groups working within the classroom, easy visual and verbal communication between the lead and associate teachers is important to reinforce the quality of the content being delivered and to provide mentoring opportunities between the teachers.

COMMUNITY IS FOSTERED:

Even within a differentiated instruction model, building community is important to foster social/emotional development and other "soft" skills. Accordingly, the environment facilitates one-to-one, small group, entire class, and grade-level engagement and activity.

EVOLUTION IS ENABLED:

As children grow and develop into more independent learners and Ingenuity expands to PreK3 – 8th grade, the environment supporting the rotational model should be able to adapt without significant expense to more of a flex model.

DESIGN PRINCIPLES

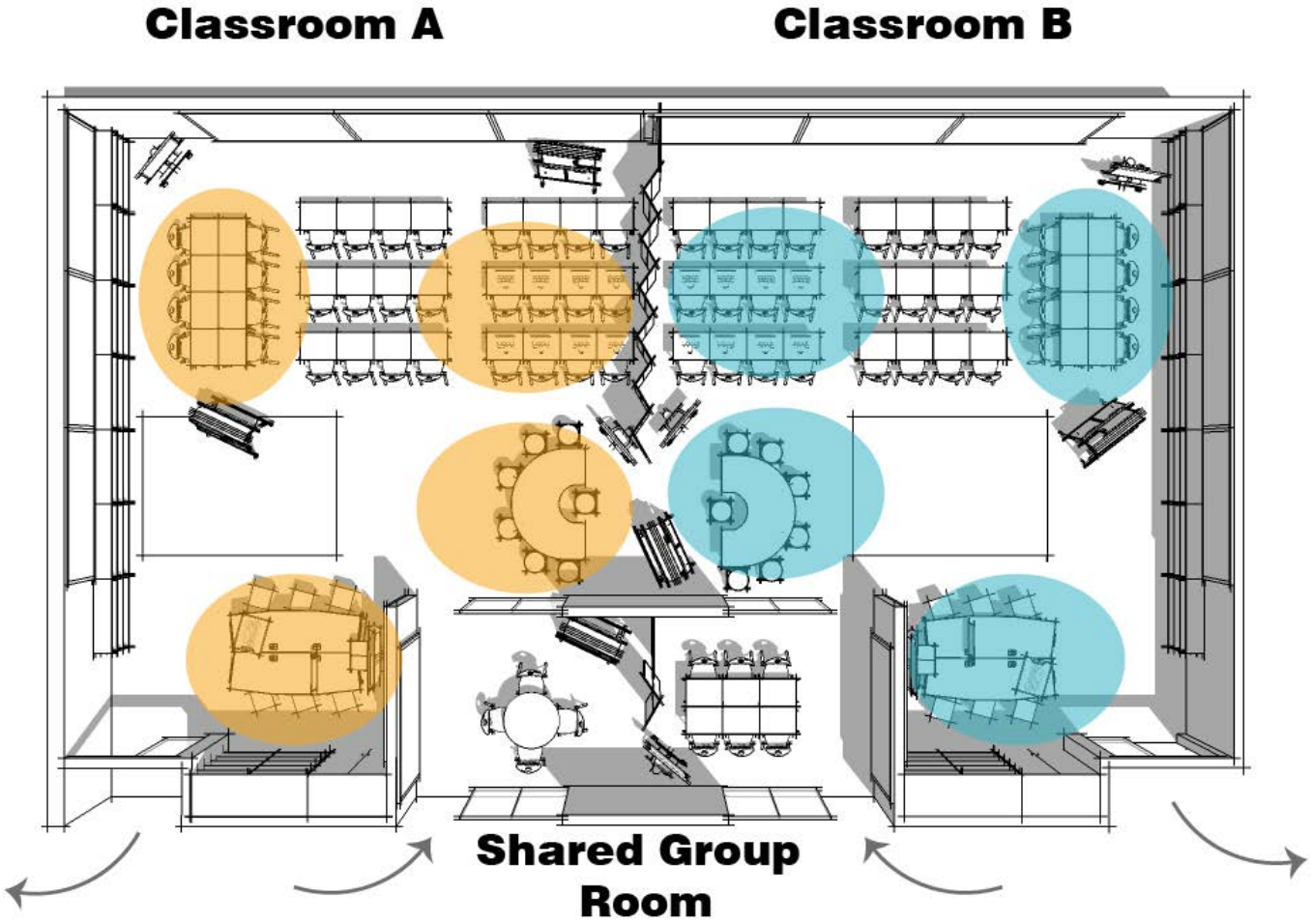
FURNITURE IS FLEXIBLE:

As Ingenuity's program has evolved, changes in the numbers of students using technology at certain times, for example, has expanded. Flexible individual tables and chairs have accommodated this change more readily than did single tables seating a group of four.

DESIGN GUIDELINES

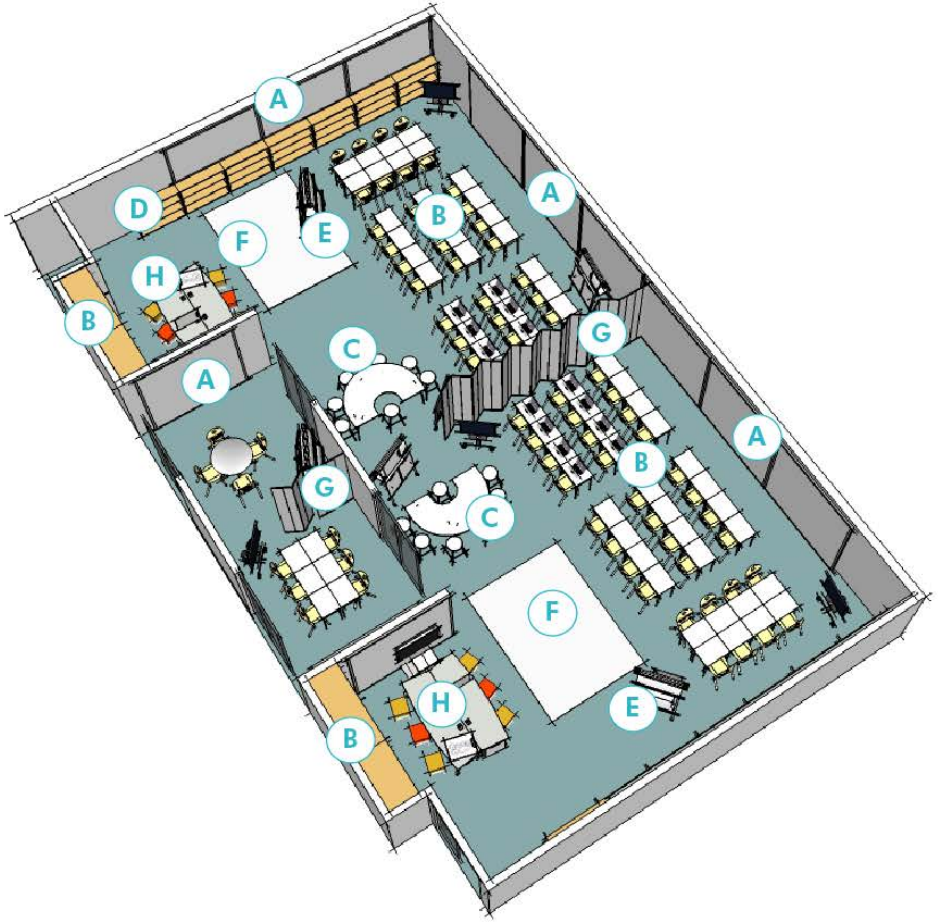
STATION ROTATION:
OVERALL PLAN

Ingenuity's new prototype for station rotation builds upon their experience in their current classrooms. Each 900 sf classroom accommodates four stations including an online station. Pairing two classrooms allows for even greater communication between teachers and greater diversity of group sizes that can be accommodated.



STATION ROTATION: DESIGN GUIDELINES

Building upon the Design Principles, Ingenuity's prototypical classroom is fit out for flexibility. Very little is fixed in place to enable continuous evolution of the space and learning modes.



A Display Wall
Magnetic whiteboard to be used for lessons & communicating project information

B Student Desk
Individual desk to accommodate 32 students & provide flexibility within the blended learning model

C Activity Table
Horse-shoe activity table

D Storage
Provide book shelves and storage cabinets for storage supplies and technology device storage and docking

E Portable Whiteboard Easel
Portable whiteboard and storage/easel cart

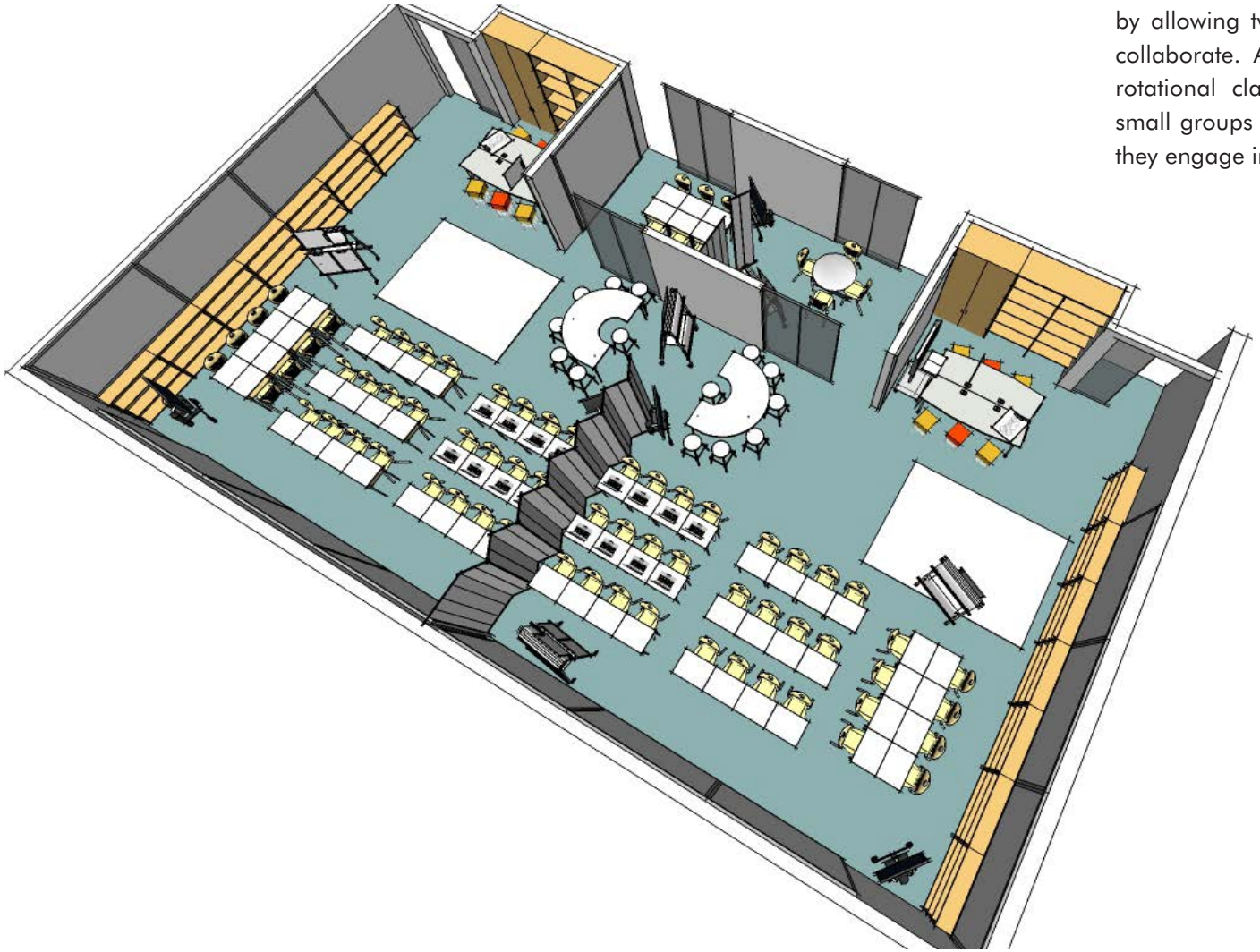
F Activity Carpet
For informal reading time

G Operable Wall Partition
Operable wall partition allows for whole grade gatherings and interdisciplinary learning.

H Media Zone
Small group table with designated TV

J Portable TV Screens
TV screens mounted on an easel with casters and storage for Apple tTV technology

STATION ROTATION:
DESIGN GUIDELINES

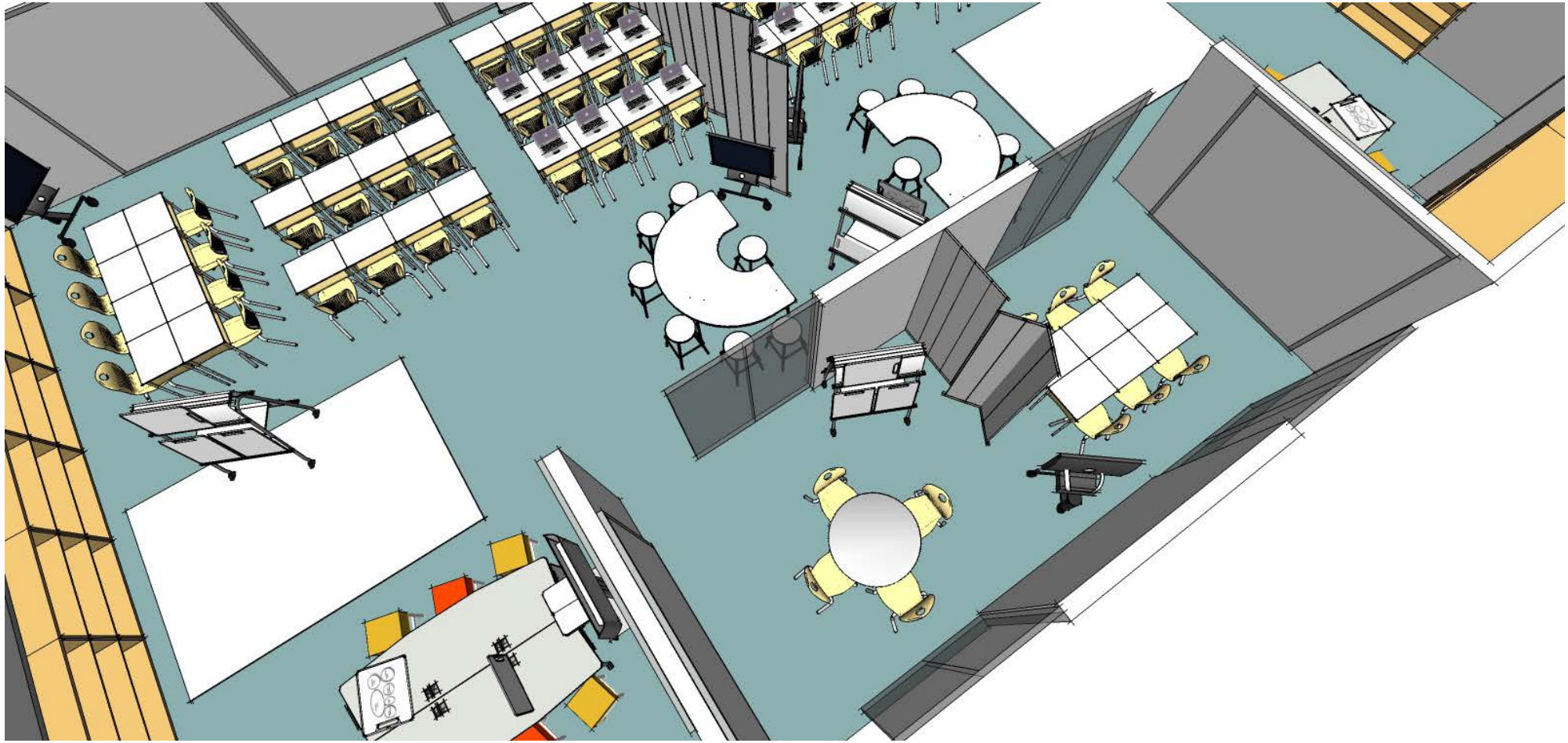


THE SHARED CLASSROOM

The prototype helps foster a strong learning community by allowing two classrooms to open into each other and collaborate. A writable, operable partition enables these rotational classrooms to accommodate individual work, small groups of 4 or 8, or larger groups of 32 and 64 as they engage in learning.

THE GROUP ROOM

A 260 sf small group room allows for station work requiring more privacy or acoustical separation. Push-in activities can also occur in this space. An operable partition allows for small groups of 4 or 8 to flexibly use this room.



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