

PROPOSAL FOR A STEM SMARTLAB™ LEARNING ENVIRONMENT FOR

Beaty-Warren Middle School
Warren, Pennsylvania

MARCH 18, 2019



*"SMARTLABS HAVE BEEN THE CATALYST FOR INCREASED ENGAGEMENT AND ENTHUSIASM
IN STEM IN OUR DISTRICT." DR. CAROLYN ROSS, SUPERINTENDENT CHURCHILL COUNTY
SCHOOL DISTRICT -FALLON, NEVADA*



Version 5 - Room C-107

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Introduction

Engage every learner, every day

We live in a world where science, technology, engineering and mathematics play critical roles in every job, every home and every academic career. Accordingly, *every* learner needs a strong foundation in STEM, not just those students who are naturally proficient in math and science.

The goal of every SmartLab program is to engage all learners in STEM. We accomplish this through a hands-on, project-based learning system in which STEM disciplines, along with art, communications and social sciences are seamlessly integrated. It's a highly personalized approach that empowers students to shape their learning to meet their individual interests, abilities and learning styles.

College and career success also demands a robust set of 21st century skills such as problem-solving, critical thinking, communication, collaboration, creativity and the effective application of technology. SmartLabs are powerful programs for developing these critical workplace skills.

A turnkey solution designed to support your school's unique academic mission

Every learning community is unique. And so is every SmartLab.

The SmartLab described in this proposal has been designed specifically for your school – its unique learning objectives, scheduling and classroom requirements and, of course, budget. Your SmartLab is a complete turnkey solution that includes hardware, software, furniture, kits and manipulatives, online curriculum, assessment systems, professional development and ongoing support.

Every element we have proposed for your SmartLab has been thoroughly tested and evaluated by Creative Learning Systems. Our development team has spent countless hours ensuring that everything in your SmartLab is reliable, configured for classroom use and represents best-of-breed technology. The many hundreds of components that comprise a SmartLab have been carefully selected for technological and pedagogical compatibility. And we stand behind everything we provide with a comprehensive warranty and ongoing support.

More than just a collection of resources

This proposal provides a detailed description of the various components specified for your SmartLab. But that's just a starting point. Construction sets and technology resources have been supplemented with everything you'll need for classroom application. Online curriculum guides your students through engaging, hands-on projects. Our ePortfolio system provides a proven method for authentic assessment of project-based work. This proposal includes comprehensive onsite professional development by certified SmartLab professionals. And our Facilitator Support Specialists are only a phone call away when your school needs technical or pedagogical support.

At Creative Learning Systems, we are dedicated to providing you with a complete program that is fully integrated, proven effective, backed with comprehensive support and sustainable through the inevitable changes in technology and school staffing. We take the guesswork out of STEM programs and minimize your implementation time. We do all this so you can focus on your core mission – educating students.

We are proud to present this proposal for a Creative Learning Systems SmartLab program to **Beaty-Warren Middle School**. At Creative Learning Systems, we are fully committed to the long-term success of your school, your staff, and your students. That's our promise.

Summary of Deliverables

This section provides the details about the purchase price and lists the deliverables. More information about the deliverables can be found in the following sections.

Deliverables

The purchase price includes:

Design and Implementation

- System design, consulting, and planning services; including specific facility requirements.
- Network consultative services and coordination with selected wiring contractor
- Setup, installation, testing and configuration of all furniture, hardware, equipment, computers, software, and printers to be used within the SmartLab.
- Coordination and installation of all school owned software within the SmartLab environment.
- Imaging of all SmartLab client workstations and servers for easy recovery.

Deliverables

- **Three Island, Two Peninsula SmartLab™ for 30 learners**
- All furniture work/learn stations.
- Specifications for Windows based personal computers and Microsoft Office 365.
Note – All Dell Windows 10 Client Computers must be initially shipped to Creative Learning Systems Home Office in Longmont, Colorado. The preconfigured will them be shipped to the client's site with the SmartLab shipment.
- Creative Learning Systems Learning Launcher Curriculum with supportive kits and resources for a 30 student course offering.
- Creative Learning Systems ePortfolio Assessment System.
- All equipment, furnishings, kits, apparatus, libraries, and software described in the following sections. (See Attachment A for specific list of deliverables)
 - Core SmartLab Environment described by Curricular System of Technology
 - Facilitation Zone
 - Custom configured Dell server
 - SCRST™ (SmartLab Computer Restoration System)
 - Printer Cabinet
 - 3D Printer
 - Construction Set Storage System with Replacement Construction Sets for each class period
 - Presentation/Collaboration Collection a customer supplied Interactive White Board and CLS supplied audio system and custom cabling
 - Computer Control Monitoring System
 - LCD Monitor Arms
 - Optional Advanced Exploration Collection

Curriculum Resources

- Primary Curriculum Cards
- Elementary Liftoff and Express Challenges
- Secondary Learning Launchers
- ePortfolio & Assessment System
- Academic Standards and Standards Tracker

Professional Development and Support

- Professional Development Guide
- Onsite Professional Development and Technical Training
- Advanced Facilitator Development Conference Tuition Slot
- Facilitator Mentorship Program
- Room Readiness/Kick-Off Webinar
- Curriculum and Support Agreement (CSA) – See Attachment G

Description of SmartLab Deliverables

This section describes the physical layout of the Elementary SmartLab, as well as the furniture, hardware, software, equipment and educational resources that Creative Learning Systems will provide under this Proposal.

You will also find information on curriculum, alignment to standards, and core technological competencies directly addressed through Elementary SmartLab learning resources.

Physical Layout – Islands and Peninsulas

The SmartLab is comprised of flexible work-learn stations called “islands”. Each island is a collection of furniture and equipment, consisting of three workstations radiating from a ceiling-high, three-sided Power Pylon™. A typical island can accommodate up to six students at a time.



The Power Pylon distributes network data and electrical utilities to the three workstations through a system of quick-connect fittings. Power Pylons and workstations are arranged so the facilitator retains an

unobstructed view of learner activities throughout the room. Each island workstation is readily detachable from the Power Pylon.



All workstations are constructed of rugged, high-quality metal structural elements, mounted on oversized locking rubber casters.



For Peninsulas, the network data and electrical utilities terminate at the wall. Peninsulas are arranged so the facilitator retains an unobstructed view of learner activities throughout the room.

Peninsulas are designed to connect with electrical and data services installed at the wall. The system which accommodates three groups of two students just like the island also features monitor arms for the computers, surge protected services, a signage feature, and a convenient wire management chase.

Islands and peninsulas offer a selection of four laminate color choices (see Attachment D) and matching sign colors.

The SmartLab described in this Proposal is designed to provide a rich and diverse technology-based learning experience for classes of 30 students.

Creative Learning Elementary SmartLab

The SmartLab is richly-provisioned for advanced technology studies as well as general academics and career exploration.

SmartLab learning resources are organized around eight areas of core technological competency. These are: Circuitry, Computer Graphics, Digital Communications, Mechanics and Structures, Robotics and Control Technology, Scientific Data and Analysis, Software Engineering, and Sustainability

Each of these core competencies is described below, along with the integrated systems of equipment, software, hardware and educational resources to support project-based, student-centered learning in those areas of study.

Circuitry

The study of circuitry is explored through electricity, pneumatics and microelectronics. Students develop an understanding of the scientific and technological principles underlying each of these systems. With this foundation, students design complex systems utilizing each technology.



SmartLab resources for the study of circuitry include:

- Lego Pneumatics Add on Systems
- MaKey Conductivity Exploration Systems with Accessory Collection
- Snap Circuits Electricity Exploration Collection with Multimeter
- Snap Circuits Green Energy Collection
- Curriculum and/or additional learning resources for all above listed items

Computer Graphics

In Computer Graphics, students explore areas such as graphic arts, image capture, photo processing and manipulation, animation and special effects. They learn to distinguish between, and effectively use, bitmap graphics (digital “painting”), and object-oriented graphics (computer-aided “drawing” or “CAD”) applications. As learners progress, they integrate computer graphics with other software applications to create advanced graphic and commercial art, websites and multimedia presentations. Computer graphics also serves as an important portfolio development tool for documenting projects and learning processes.

Examples of computer graphics tools included in the SmartLab are:

- 3D Printing System and TinkerCAD
- Adobe Photoshop Elements Software Packages (class license)
- Digital Still Motion Cameras
- Digitizing Tablets
- Doodle for Google Art Contest
- Google Arts and Culture
- Google SketchUp Software
- Photo Tripod
- Portable Lighting Studio
- Tech-4-Learning Introductory Graphics software packages
- Curriculum and/or additional learning resources for all above listed items



Digital Communications

Engagements in the Digital Communications system provides new experience and reinforces the ability to communicate effectively utilizing single, blended, and advanced media. Digital Communications encompasses the capture and production of content in any single media, such as print, sound or electronic media. It includes word processing, presentations, and graphic representation of data or processes in the form of flowcharts, tables and graphs. It also includes the capture, production and presentation of single-media content such as audio, video and digital still images.



Learners quickly progress from developing core competencies in these areas to the regular application of these tools to document their learning throughout the SmartLab. Also, learners develop advanced communications skills through the integration of two or more media using technology-based tools. Students explore linear and interactive presentations and the applications for each.

Learners progress from basic to more advanced software and production tools, creating dynamic video presentations, animated graphics, websites and interactive e-portfolios. As with all documentation and presentation applications in the SmartLab, the emphasis quickly shifts from developing necessary skills to the application of the technology for portfolio development and presentation of learning.



Digital communications resources include:

- Adobe Premiere Elements Software Packages (class license)
- Tech-4-Learning Claymation Animation Kit
- Frames Stop Motion Software Packages (class license)
- Comic Life Software (class license)
- Digital Cameras
- Digitizing Tablets
- Google Sites Software for ePortfolio Creation
- Microsoft Office Software Suite (class license), customer supplied
- Photo Tripod
- Portable Lighting Studio
- STEM Career Exploration
- USB Microphone and Stand
- Curriculum and/or additional learning resources for all above listed items

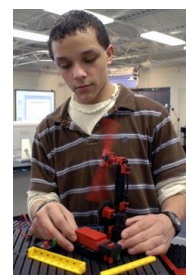


Mechanics and Structures

In Mechanical Systems, learners create and study structures and machines. Hands-on learning engagements foster an understanding of simple and complex machines and structural physics.

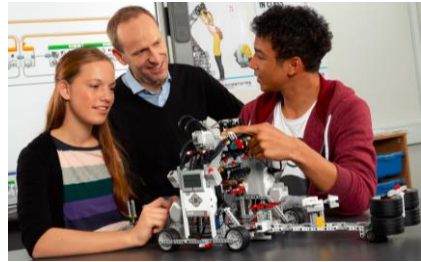
Mechanics and structures construction sets include:

- Engino architecture colossal collection for phenomena
- Engino architecture collections for engineering and testing
- fischertechnik Mechanics and Statics Collections
- IQ-Key Capsule Based Modeling Systems
- Lego Simple Machines Construction Sets
- West Point Bridge Designer
- Zoob Construction System for Rapid Visualization and Prototyping
- Curriculum and/or additional learning resources for all above listed items



Robotics and Control Technology

In this area of study, mechanical processes are managed through automation control interfaces and learners design and program robotic systems to perform task-oriented challenges. Students explore logical programming and explore how sensors, electronic and computer controllers are used to manage complex mechanical processes. The concept of sense, decide, and act is introduced and students develop whole-systems perspectives.



SmartLab robotics and control technology resources include:

- Lego EV3 Control System with Software
- Programmable Drone Aircraft
- Curriculum and/or additional learning resources for all above listed items

Scientific Data and Analysis

In this system of technology, students collect experimental data using testing equipment and probeware, typically linked with a computer-controlled interface. Data is then analyzed to draw conclusions from experiments. Students engineer and test scale models and analyze materials and structure. Using chemical, physical and bioscience probeware, students collect and analyze experimental data to explore principles of science through hands-on, inquiry-based projects.

SmartLab scientific data and analysis tools include:

- Astronomy Experiences with MicroObservatory
- Deep Space Exploration with Stellarium
- Extreme Weather and Monster Storms
- Global Information Systems with ArcGIS
- Global Information Systems with Google Maps, Worldmapper, and the Welikia Project
- Probeware for Measuring Light, Temperature, Movement, Voltage, Acidity of fluids and Human Physiology
- Curriculum and/or additional learning resources for all above listed items

Software Engineering

In this area of study, students learn to create mobile and computer desktop applications. Initially in their experience, students create interactive online greeting cards, and computer animations. They simulate real systems and processes, and even create basic computer games. Later students can create real desktop and mobile app games that they can eventually publish and sell.

Software engineering resources include:

- App Inventor Software
- Digital Sandbox Programmable Microelectronics Collections
- Microsoft Kodu Game Creation Software and X-box Controllers
- MIT Scratch Version 2 Software
- Stencyl Software
- Touch Develop Software
- Curriculum and/or additional learning resources for all above listed items



Sustainability

Now your SmartLab students can explore one of the most exciting areas of emerging technology — ***Sustainability***. Alternative energy and power efficiency projects connect core academic content with 21st century skills through engaging, inquiry-based exploration. Students explore this exciting area technology with hands-on, minds-on activities connecting math, science, social studies and economics. Here are just some of the projects your students will explore:

Hydrogen Fuel Cell Discovery Collection

- Electrolyzing water for hydrogen fuel
- Generating power from hydrogen fuel cells
- Design a hydrogen highway
- Hydrogen fuel cell race cars

Solar Energy Discovery Collection – Part of the Advanced Exploration Collection

- Understanding photovoltaic cells
- Solar Energy and High-Performance Homes
- Solar cooker design and testing
- Solar race car design and testing



The Sustainability System features over fifteen of Creative Learning Systems' **Learning Launchers™** that cover the introduction to alternative and renewable energy, solar energy, hydrogen fuel cells and power efficiency. There are Learning Launchers at three different levels of difficulty to guide your learners through a variety of engaging activities with video tutorials, data collection worksheets, portfolio development suggestions and lots of ideas for extended exploration!

SmartLab Core Elements

Facilitation Zone™

The Facilitation Zone provides a dedicated work area for SmartLab Facilitators. It is designed and provisioned to support SmartLab management, student guidance and assessment, provide critical professional resources and enable ongoing technical support.

The Facilitation Zone includes a custom designed work/learn station with LCD monitor arms, a collection of professional-development resources, learner-facilitation aids, application software packages, and systems for remote-connection to software-support and facilitator-support services provided by Creative Learning Systems.



SmartLab File Server

The server is the heart of the SmartLab network. Creative Learning Systems technicians carefully develop system specifications and then custom configure each Server to assure stability, functionality, and supportability for each SmartLab learning environment.



SCRS™ (SmartLab Computer Restoration System)

The SCRS™ includes a secure lock box containing thumb drives, external hard drives, boot CD's and, in SmartLabs that have Apple computers, Super Drives. The final configuration of every computer in the SmartLab is stored on SCRS memory and the SmartLab file server. If any or all computers become inoperable, the facilitator can utilize these resources with CLS technical support to restore the computers to their originally installed state. The SCRS ensures simple, secure system recovery in the event of serious computer malfunction.



Printer Cabinet

The Printer Cabinet houses and distributes power and data to color laser and 3D printers. Integrated shelves provide convenient storage for consumables. The printers are fully-networked, enabling learners and facilitators to access to any printer from any computer workstation.



3D Printer

With the most innovative technology right in your SmartLab, you can unlock the creativity within your learners. Easy to use straight out of the box, you're ready to start building anything you need, anything you want, or anything the world has been waiting for.



It is easy to build objects with the Dremel on-board software or Tinker CAD, which enables a preview of each model before you build. Additionally, the Dremel 3D Idea Builder comes equipped with a pre-installed extruder (the part where the filament comes out and builds your model), unlike other 3D printers that require you to install it yourself.

Construction Set Storage System with Replacement Construction Sets for Each Class Period

A wire-frame rack system houses construction kits provisioned for each class period. The system allows a designated storage space for each construction set. The construction sets include:

- fischertechnik Profi Mechanics and Structures Collections (6 ea)
- Hydrogen Car Construction Collections (6 ea)
- IQ-Key Capsule based modeling systems (6 ea)
- Lego EV3 Mindstorms control technology collections (6 ea)
- Lego EV3 Mindstorms expansion technology collections (6 ea)
- Lego Pneumatics Add on Sets (6 ea)
- Lego Simple Machines Collections (6 ea)
- Solar Car Construction Kits (6 ea) – *part of the Advanced Exploration Collection*



Presentation/Collaboration Collection with a Customer Supplied Projector and CLS Supplied Audio System and Custom Cabling

This collection includes a customer supplied projector and CLS supplied custom cabling, with stereo speakers. The collection is also provisioned with a turnkey suite of software and learning media.

Here, groups of SmartLab learners can make or view presentations, and engage in focused discussions and creative team brainstorms. SmartLab Facilitators can use the collection for class meetings, and to provide direction and instruction to learners.



Computer Control Monitoring System

Facilitators in technology classrooms today are faced with the challenge and opportunity of using technology to teach. Computers are amazing educational tools, but they can also be a huge distraction to learning. The Internet, instant messaging, email and games are a constant temptation for students.

The computer control monitoring system removes these distractions, so the facilitator can have a powerful tool to help keep students on task. No classroom management solution is easier to use or better suited for teaching in a 21st century classroom.

Facilitators can reduce student distractions by blanking screens, limiting applications and limiting web browsing on student computers. This helps direct student attention from their computer to the teacher and keeps students on task.



Ideal for monitoring student activity within a classroom or lab setting, the thumbnail feature allows you to view all screens as well as see the current application and website that the students are running. Facilitators can send messages to all or individual students.

Students can silently request help from the teacher. A small question mark appears on the thumbnail with the student question, which indicates they need help.

LCD Monitor Arms

Due to the wide range of activity that takes place in the Elementary SmartLab, CLS supplied furniture must be flexible and accommodate any activity or seating configuration that may be necessary. The picture to the right shows a twenty-four-inch VESA compatible LCD monitor/all in one computer attached to a CLS supplied monitor arm. The monitor/all in one computer to the right has attached/built in speakers so the desktop surface is kept completely free from non-essential devices.



Notice the students have plenty of room to spread out curriculum and peripherals because the LCD monitor/all in one computer with attached sound bar/built in speakers does not take up any desk space. Another advantage of this configuration allows students to sit anywhere around the furniture they desire because the LCD monitor/all in one computer will simply move to any angle and height for optimal viewing.

Optional Advanced Exploration Collection for Experienced Learners

The Advanced Exploration Collection features a wide range of learning resources to facilitate the study of core competencies in greater depth. It provides additional challenges for learners with advance capabilities or those who spend multiple semesters in the SmartLab environment. These resources allow learners to tackle increasingly advanced projects and create sophisticated portfolios of their work.

With this collection, learners utilize resources that feature familiar elements, but are also more complex than the systems they previously experienced. Advanced experiences include integration of physical simulations with computer-controlled interfaces and point-and-click programming languages, microelectronics, prototype development, bio-related technology, team-effectiveness training, advanced graphic design, 3D modeling/animation, project development and more.



Major equipment and software in the Advanced Exploration Collection includes:

- Programmable aircraft drones
- Alternative energies accessory collection for the study of solar power
- Alternative energies base collection
- Alternative energies collections for the study of solar power
- fischertechnik Optics systems
- Kerbal space and mission simulation software
- Global sun oven
- Oculus Go VR headsets
- Padcaster system including:
 - Backpack for portability
 - Compatible wide-angle lens
 - Dual mic and headphone cable
 - Green screen
 - iPad
 - iPod Touch – Mini Teleprompter
 - Lavalier microphone
 - LED light system
 - Lens Bracket with 72-58mm step-down rings
 - Padcaster Case
 - Padcaster unidirectional microphone
 - Stick Mic with Clamp System
 - Tripods with caster
- Power Efficiency collection
- Sensors to integrate with Lego EV3 for the study of STEM robotics
- Snap Circuit Rover
- Snap Circuit Snapino
- Curriculum and/or additional learning resources for all above listed items

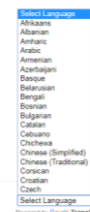


Curriculum Resources

Every aspect of a SmartLab environment is carefully designed and integrated to foster development of higher-order thinking skills, build 21st century competencies, and support transdisciplinary academic connections. Problem solving, self-direction, analysis and synthesis, creativity, project management, collaboration and communication skills are among the critical abilities students gain from their SmartLab experience.

The SmartLab hosted curriculum system provides an engaging, project-based approach to academic content with particular emphasis in STEM, digital art and communications. Each of the curriculum resources described below work in concert with the environment design, equipment and learning resources, and professional development, to motivate, engage and inspire learners of all interests and abilities.

The curriculum system is produced in HTML5, which means all of our engagements integrate with Google Translate. The curriculum can instantly be translated into 104 different languages; as well as read back to students in any one of those languages.



Secondary Learning Launchers™

Learning Launchers™ are the most comprehensive, interactive and student-friendly curriculum system ever developed for the SmartLab! Each Learning Launcher lesson features engaging, project-based activities in STEM, digital communications and other academic topics. All Learning Launcher activities utilize applied technology to reinforce academics and build 21st century skills. Many of the Learning Launchers include video tutorials, project worksheets, hyperlinks to rich internet content and other resources that in total help to support core academic content through hands-on exploration. Autonomy is a key element in all SmartLab curriculums.



As learners progress from foundational engagements (Level 1) to more advanced engagements (Levels 2 & 3), Learning Launchers gradually offer more complex projects and greater opportunities for students to shape their own learning experience. With these multiple challenge levels, open-ended activities, and lots of “Extend Yourself” activities, Learning Launchers provide personalized learning for students of all abilities in grades 3-12.

The SmartLab LaunchPad™ navigation system makes it easy for students to choose the activities and challenge level that’s right for them. There are currently over 300 Learning Launchers in 60 different content areas, organized into eight systems of technology:

- Circuitry
- Computer Graphics
- Digital Communications
- Mechanics and Structures
- Robotics and Control Technology
- Scientific Data and Analysis
- Software Engineering
- Sustainability



The LaunchPad provides learners with an extensive array of choice to utilize applied technologies, explore academic content areas, and select challenge levels that are engaging, ability appropriate and personally relevant.

All of the Learning Launcher curriculum, online interactive resources and facilitator resources (including our electronic Standards Tracker) can be accessed from the online LaunchPad. This allows students, parents and educators to access SmartLab resources from anywhere. In addition, Learning Launcher licenses are school-wide, providing all educators with the opportunity to select and integrate appropriate project-based content into their lesson plans.

Elementary Level Challenges

Creative Learning Systems' elementary level Learning Launchers guide project engagements and provide the core educational resources for elementary SmartLab experiences.

Liftoff Challenges feature project-based engagements for younger learners. Liftoff Challenges guide hands-on and computer-based project engagements with age appropriate projects and reading levels. While Liftoff Challenges are specifically targeted towards 4th and 5th grade learners, the content is not specifically identified as elementary curriculum. As a result, these learning engagements are also appropriate for many secondary school special education students. Liftoff Challenges are typically explored as project engagements of 5-7 class periods. Typically, students will rotate through a sequence of technology engagements with several teams of students working on the same Liftoff Challenge simultaneously.

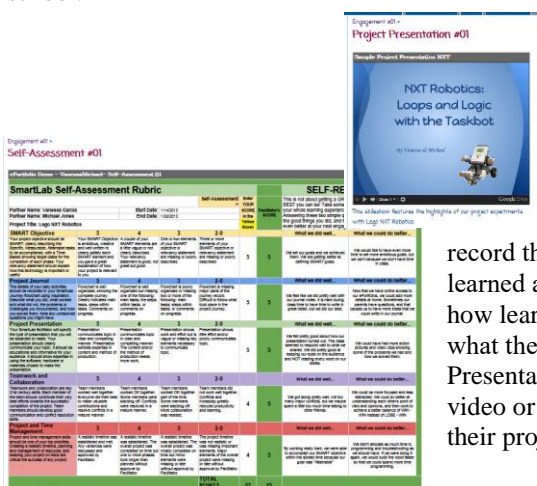


Express Challenges feature shorter project engagements for the full spectrum of elementary grades. Express Challenges can be conducted as whole-class activities and are appropriate for lower grades or when school schedules make longer project engagements difficult.

Liftoff Challenges and Express Challenges provide engaging, hand-on, minds on learning opportunities for elementary age learners and offer schools flexible scheduling options. They provide foundational experiences in STEM/STEAM and give learners early experiences in project-planning, communication and collaboration. All elementary school challenges are designed to support and articulate with secondary level SmartLab curriculum.

ePortfolio

Creative Learning Systems provides every SmartLab with easily customizable ePortfolio templates and resources. Student ePortfolios may be hosted on Google Drive or other online educational hosting services enabling student and teacher access from any computer or mobile device. Alternatively, the ePortfolio system may be hosted on a local server within the SmartLab or school.



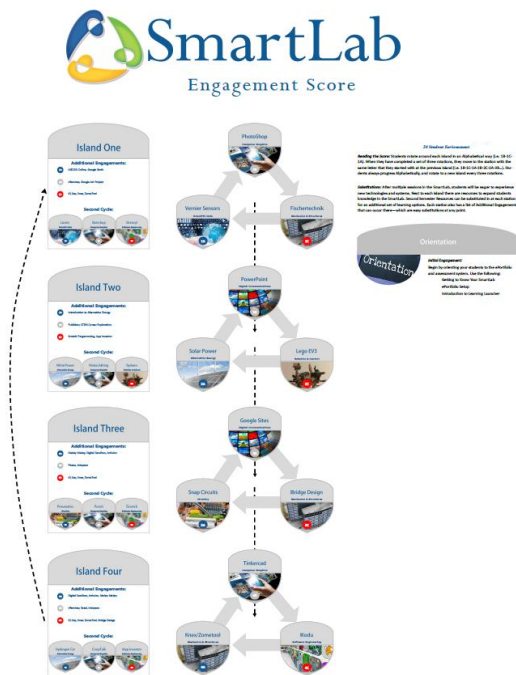
The ePortfolio system is comprised of three main elements. The **Project Journal** allows students to document their daily project process. The Project Journal is where learners record their objectives and write daily reflections about what they've learned and problems they've solved. The **Project Presentation** is how learners document results of their project work and communicate what they've learned through each project engagement. Project Presentations may be created using PowerPoint, Google Presentation, video or graphic software, or any other digital media appropriate to their project.

The **Self-Assessment** provides an opportunity for learners to reflect and assess the quality of their objective, project work, presentation and collaboration skills, and identify specific areas for future improvement. Self-assessments also provide a foundation for SmartLab Facilitators to have meaningful discussions with students about areas where perceptions of performance differ. This innovative assessment system allows for authentic assessment of project-based, student centered learning.

The SmartLab ePortfolio system provides a platform for learners to document, share and assess their work while building critical writing, presentation and digital communications skills. And the online hosting systems allow anytime, anywhere access to project work by both students and teachers.

The Learning Score™

Facilitator-support resources include a wall-sized flow chart called the Learning Score. The Score provides a map to guide teams of learners through an initiatory SmartLab program. The Score is made up of a number of “nodes,” each of which describes location in the SmartLab and the resources the team will need (such as Lift Off Challenge, software, construction kits, and so on) for a particular learning engagement.



Following the Score, each team of learners will take a different path through the SmartLab, while gaining exposure to each of the eight systems of technology, or core competencies, represented in the environment. In this manner, each team of students gains from a unique learning experience, while assuring a necessary level of predictability in individual learning and proficiency.

The Score is custom designed for each SmartLab based on class size, program length, academic focus, and the equipment and learning apparatus provided. It is developed in collaboration with each school and Facilitator professional development includes training on how the Score may be modified as the needs and resources of the SmartLab evolve.

Academic Standards

Creative Learning Systems curriculum is aligned to a wide range of national subject area standards, including the national common core standards, as well as a select group of state standards. Standards are accessed through a fully-interactive online database, allowing searches by standard, grade level, academic subject, Learning Launcher title and more.

These standards include:

- **Common Core Standards** for Mathematics
- **Common Core Standards** for English Language Arts
- **Next Generation Science Standards (NGSS)**
- **Social Studies** - *Curriculum Standards for Social Studies*, National Council for the Social Studies
- **Technology** - *National Education Technology Standards for Students (NETS•S)*, International Society for Technology in Education (**ISTE**). *Standards for Technological Literacy: Content for the Study of Technology*, International Technology and Engineering Educators Association (**ITEEA**).
- **State Standards** – Correlation to all 50 states

Standards Tracker Database

Creative Learning Systems **Standards Tracker™** is an interactive database that provides correlations between the SmartLab Learning Launcher curriculum and a wide array of national and state standards. Using our online Standards Tracker, SmartLab schools can easily align student project activities with academic standards.




The Standards Tracker provides correlations to Common Core, national and state standards in math, science, social studies, English language arts, and technology. The interactive features allow the standards database to be searched and sorted based on a variety of criteria including standard, subject, grade level, topic and Learning Launcher title.

STANDARDS TRACKER DATABASE

STANDARDS TRACKER DATABASE SEARCH

[Search](#) » [View Standards](#)

Standards Correlated to Arduino

Refine/Change Standards:

State: Grade:

Common Core State Standards

Grade 10

Science

CCSS.ELA-Literacy.RST.9-10	Reading Standards for Literacy in Science and Technical Subjects
	Key Ideas and Details
CCSS.ELA-Literacy.RST.9-10.2	Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. Correlations: ▶ Level 1 - Introduction to Arduino ▶ Level 2 - Advanced Programmable Circuits ▶ Level 3 - Inventing with Arduino
CCSS.ELA-Literacy.RST.9-10.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions defined in the text. Correlations: ▶ Level 1 - Introduction to Arduino ▶ Level 2 - Advanced Programmable Circuits ▶ Level 3 - Inventing with Arduino
	Craft and Structure
CCSS.ELA-Literacy.RST.9-10.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.

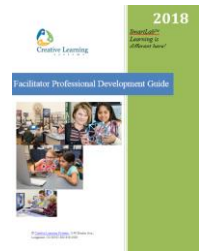
“The Learning Launchers make STEM understandable by breaking it down to the ‘root’. Our SmartLab students have grasped engineering concepts that I never imagined possible.”

*Derek Seifried
SmartLab Facilitator, Brighton School District CO*

Professional Development and Support

Professional Development Guide

Creative Learning Systems has established a comprehensive agenda for the professional development for each installed SmartLab. We have learned over the last 25 + years in business that making the facilitator(s) aware of the upcoming schedule and detail behind the schedule is advantageous to the ultimate success of the professional development. The guide also captures the majority of information delivered during the professional development; facilitators are able to refer back to the guide if they forget something down the road.



Onsite Professional Development

Facilitator training and professional development is a critical element in the success of the SmartLab environment. As such, it is included as an integral element of this Proposal. Creative Learning Systems provides a total of four (4) days of on-site facilitator training and professional development services for the SmartLab.

Technical concepts as well as good facilitation techniques will be discussed and practiced.



Advanced Facilitator Development Conference



In addition to the initial professional development sessions, a tuition slot to the Creative Learning Systems annual facilitator conference, AFDC (Advanced Facilitator Development Conference), is included in this Proposal. Subsequent and additional registrations may be purchased at a discount rate under our curriculum & support agreement.



"Creative Learning Systems has really been essential to my success as a facilitator and my student's success in the program."
Tom Collins, STEM Program Facilitator
Rogers Middle School

Facilitator Mentorship Program

Facilitator's in the SmartLab need guidance at the beginning of their experience. The Facilitator Mentorship Program offers just that. The original trainer who delivered the onsite professional development will in collaboration with the facilitator develop a schedule of monthly proactive phone calls. This will give the facilitator the ability to ask questions that will reinforce the original professional development, address new situations, and evolve in many different areas. Many different areas of facilitation best practices will be addressed in twelve unique phone calls.



Room Readiness Kickoff Webinar

Shortly after we receive the purchase order for the SmartLab, we will schedule a webinar to include your technology department, facilities, administration, and if possible the primary designated facilitator. During this meeting we will establish a timeline for the implementation process of the SmartLab. The timeline will organize the following steps to create a smooth and comprehensive implementation for your new SmartLab.



- We will explain the scope of the project so everyone on your team understands their responsibilities and our scope of service.
- We will collect information from the technology department so we can register software to you properly. This also allows for a final check to determine that we have not replicated district owned resources. We will collaborate on customized technical IT integration, and discuss a long-term collaborative support strategy. Finally, this step ensures that we are in compliance with your district or organizations technology plan, and that we are integrating with your plan transparently.
- We will collect information from the facilities department to explain our needs for a smooth implementation. This will include access to the building(s) for our installation team, room renovation expectations (electrical, paint, carpet, and final space vision), large equipment needs (ladders, hand trucks, etc.), and expectations for work hours.
- We will provide a room readiness checklist that will reference the electrical and data layers of the CLS provided plan view drawing. This check list will be required to be completed by your project manager so when our installation team arrives there are no surprises.
- We will confirm the professional development schedule and agenda. Understanding of our complete professional development scope and sequence offering will be communicated.
- We will insure that everyone on your team understands all of the customer and CLS responsibilities, the complete scope of work, and access to our consultation/support if there is a problem.



Curriculum and Support Agreement

The SmartLab Curriculum and Support Agreement (CSA) is the most affordable way to protect your investment in STEM education for your school. The SmartLab CSA includes access to all the latest curriculum and classroom resources from Creative Learning Systems. It also provides essential ongoing support and professional development. The benefits of the Curriculum and Support Agreement include the following (**also see Attachment G**):

Project Timeline

In the initial design and planning process of a SmartLab, we will create a **proposed timeline** of target dates and projected milestones so potential customers can clearly see the steps involved in implementing the program for your school and/or district wide. We work backwards from the first day you would like classes to take place in your environment to our very first onsite meeting with you to collect information and set expectations.

Delivery, installation, and training dates are reserved based on the order in which we receive purchase orders. We generally need to allow 8-12 weeks from the time your order is placed to the first day of installation. Installation is anticipated to occur over a consecutive three - four-day period.

Our **installers will be onsite to receive all of the furniture and equipment** when it arrives. Installation also includes loading, configuration, and testing of all software programs on the computer hard drives. A brief orientation concerning any installation procedures and the location of the original software media, manuals, and registration documents will be provided.

Following installation, Creative Learning Systems provides **four days of on-site technical and instructional training** by a CLS Facilitator Support Specialist. Our training sessions are always onsite and at a mutually agreed upon time, based on availability. Training days will be consecutive unless otherwise requested. Training will include instruction in the proper use of the SmartLab, operation and maintenance of equipment, management of resources, and effective utilization of the learning materials.

Pre-Proposal steps:

- SmartLab first contact presentation for school and district staff.
- Subsequent presentations for additional staff, board members and other educational partners.
- Site visits are highly recommended & scheduled for anyone interested in a firsthand experience.
- Your CLS representative will then schedule a design meeting and onsite tour of your school(s).
- Two to five days later a Proposal is prepared, delivered and presented.
- We encourage a lot of discussion, review and revision of the proposed configuration.
- Subsequent versions are presented, until your Proposal is converted into a final Proposal.

From receipt of your purchase order:

Week 1:	The SmartLab Proposal is accepted and a purchase order sent to CLS.
Week 2:	The proposed timeline is reviewed and finalized / materials are ordered.
Week 12:	Three to four-day installation by trained CLS professionals.
Week 13:	Four days of onsite training by SmartLab Learning Environment Specialist.
Week 14-52:	A CLS Support Specialist maintains monthly contact with the SmartLab Lead Facilitator.
Ongoing:	A Curriculum & Support Agreement is in place to provide ongoing assistance.

Purchase Price, CLS Secure Payment Plan, and Exclusions

Purchase Price

The total purchase price for the Creative Learning Systems SmartLab described herein is valid for sixty (60) calendar days and is subject to change thereafter. Please note that computer price quotes are valid for thirty (30) days.

NOTE: Due to current uncertainty regarding tariffs and price volatility on imported goods, Creative Learning Systems cannot guarantee prices beyond these dates. If you anticipate submitting a Purchase Order after this date, please consult with your Regional Sales Manager to discuss how tariffs may impact the price of your SmartLab.

SmartLab Learning Environment for Eisenhower

SmartLab Core Learning Environment (Grades 3-8) for 30 Students	\$151,750
Middle School Advanced Exploration Collection	\$ 22,400
10% Discount - Advanced Exploration Collection	(\$ 2,240)
Five Year Prepaid Curriculum and Support Agreement (Plus Plan)	\$ 24,375
Five Year Prepay Discount	<u>(\$ 4,875)</u>

Total **\$191,410**

Sustainability/Curriculum and Support Agreement:

Options ranging from \$3,275 – 7,875 per year

Included

- Design of SmartLab environment with coordination of contracted/organizational entities
- Plan view drawing and scope and sequence of environment
- Team workstations, fixtures, and provisioning of entire lab contents (Attachment A)
- Campus-wide access to LaunchPad Curriculum
- Room readiness conference call/webinar to include project director, network/computer director, and facilities director
- Professional installation and setup of SmartLab including software and network installation/integration
- Onsite personalized professional development of facilitators, academic leaders, and administration
- 1st year support & warranty (5 years support included with Curriculum and Support Agreement)

Not Included/Purchased Separately by Customer

31 Chairs Estimated Pricing (Recommendations, Attachment C)	\$ 5,331
Dell All in One Windows Computers - See Attachment B:	\$ 23,511
Room Readiness Preparation Consideration (Electrical, Data, Carpeting, Paint)	TBD

Optional Payment Plan

Creative Learning Systems Secure Payment Plan

Creative Learning Systems offers a payment plan that allows you to spread payments over multiple budget years. A sample five-year plan including the Plus plan 5-year Curriculum and Support Agreement is shown below. Seating can be included in the payment plan.

Beatty-Warren SmartLab Learning Environment	\$151,750.00
Optional Advanced Exploration Collection with 10% Discount	\$20,160.00
5 Year Prepaid Curriculum and Support Agreement - 5th Year Free	\$19,500.00
Purchase Price:	\$191,410.00
<i>CLS Five Year Secure Payment Plan Option (annual payments):</i>	\$42,983.03

Exclusions

The Beaty-Warren Middle School SmartLab, as proposed, is a complete full-featured learning environment. The only exclusions are seating, facility improvements, removal of trash and debris, specified client computer hardware and software, and **network virus protection**. The customer must provide these items.

Detailed Exclusions:

- Seating – Student and Teacher Chairs should be supplied for the SmartLab by the customer. Student chairs should be adjustable in height and have casters. Creative Learning Systems recommends the Virco SGTASK18 Mobile for student chairs and can make additional recommendations if necessary. Creative Learning Systems recommends the Virco SGTASK18AL series task chair with arms for the facilitator. Thirty (30) student chairs and one (1) facilitator chair should be supplied.
- Facility Improvements – Facility modifications should be modified based on the final revision of the proposal. Electrical and data network services should be installed as per the electrical and data layers of the plan view drawing. Optional facility improvements include anti-static carpeting, dropped acoustical ceiling, marker and tack boards, paint, etc. Creative Learning Systems prides itself on working with district/school administrators and school district architects on final room preparation and provisioning.
- Removal of Trash and Debris – The SmartLab environment creates a large amount of trash and debris during the installation process. It is recommended that the district/school provide a 20 yard open top dumpster or equivalent for disposal of all packing materials associated with the SmartLab. Creative Learning Systems is committed to participating in your LEED (Leadership in Energy and Environmental Design) project/certification, and will follow each customer's instruction during the implementation process.
- Specified Client Computers and Microsoft Office 365 software specifications are part of Attachment B.
- Interactive whiteboard and projector

Attachments

Attachment A:

Detailed List of SmartLab Deliverables

Attachment B:

Computer Information

Attachment C:

Seating Recommendation

Attachment D:

Workstation Laminate Color Options

Attachment E:

Warranty Information

Attachment F:

Network and Computer Information

Attachment G:

Curriculum and Support Agreement Options

Attachment H:

Plan View Drawing with Electrical and Data Layers

Beaty-Warren Middle School SmartLab

Core Learning Environment Peripherals, Software, Kits and Apparatus

The learning environment represented by this Proposal includes without limitation the elements listed in this section.

Market forces dictate the availability of most of the items listed below. As a consequence, brand names and specifications will not be finalized until just before shipment. A detailed inventory list is generated at that time in the form of a receiving document. Customer's representative and a member of the installation team will complete the receiving document once installation is complete.

Equipment

- 3D printer and accessories collection
- All cables to connect everything
- Business capacity networked color laser printer and start-up supplies
- Customer supplied projector and interactive white board with CLS supplied custom cabling and audio system
- Digital interactive drawing/painting tablet (2 ea)
- Digital multimeter
- Digital still camera collection (5 ea)
- DVDRW optical drive
- Flexible video arm and clamping system
- Label maker collection
- Microsoft Xbox controller
- Photo tripod
- Pre-configured Windows 2016 file server with keyboard, mouse and monitor
- Portable lighting studio for small objects and claymation
- Power adapters to eliminate the need for batteries
- SmartLab Computer Restoration System
- Uninterruptible power supply for file server
- USB charging system
- USB jump drive (32 GB) for portable file storage
- USB microphone
- Wireless keyboard and mouse

Furnishings

- Ceiling Power Panel Assembly with network and electrical services (3 ea)
- Compact Peninsula work station to accommodate 6 students with three monitor arms, surge protected power services, and truss system for signage (2 ea)
- Facilitator workstation with LCD monitor arms and integrated cabinet
- Power Pylon with electrical services and category 6 networking (3 ea)
- Printer cabinet with surge protected power services
- Team station computer workstations with surge protected power services and LCD monitor arm (9 ea)
- Wire frame construction set storage rack (2 ea)
- Wire frame general lab storage system

Kits and Apparatus

- Alternative energies accessory collection for the study of hydrogen power
- Alternative energies collection for the study of hydrogen power (6 ea)
- Claymation animation kit
- Claymation refill collection (5 ea)
- Engino architecture colossal collection for phenomenara
- Engino architecture collections for engineering and testing (6 ea)
- Facilitator's aid collection

Beaty-Warren Middle School SmartLab
Core Learning Environment Peripherals,
Software, Kits and Apparatus

Kits and Apparatus - continued

- fischertechnik accessory collection
- fischertechnik mechanics and statics (6 ea)
- IQ Key accessory collection
- IQ Key construction set (6 ea)
- Lego EV3 expansion set (6 ea)
- Lego EV3 robotics collection (6 ea)
- Lego pneumatics add on set (6 ea)
- Lego simple and motorized machines base set (6 ea)
- MaKey MaKey accessory collection
- MaKey MaKey circuitry kit (2 ea)
- Sensing science probeware interface and software with probes for electric circuits, motion, light intensity, acidity of fluids, and temperature of fluids and solids
- Snap Circuits alternative energy collection
- Snap Circuits electrical circuitry exploration collection
- Spark Fun Digital Sandbox (2 ea)
- Zoob modeling system (2 ea)

Libraries and Curriculum

- Basic electricity supplementary curriculum
- Facilitator pedagogical library
- Initiatory Score to aid in the management of the SmartLab scope and sequence of activity for each student
- Lego EV3 Introduction to Programming
- Lego Pneumatics supplementary curriculum
- Lego Simple Machines supplementary curriculum
- Learning Launcher curriculum, including three levels of Learning Launchers for every learning engagement that students encounter
- K'nex supplementary curriculum
- Learning Launcher curriculum, including three levels of Learning Launchers for every learning engagement that students encounter
- Sensing science probeware supplementary curriculum
- Teacher orientation collection

Software

- Adobe Photoshop\Premiere Elements image editing software (16 ea)
- Bridge Constructor software – free download (16 ea)
- Code Combat – free access
- Comic creation software (16 ea)
- Customizable ePortfolio templates
- Faronics Deep Freeze computer workstation restoration/security software (16 ea)
- Google Maps – free access
- Impero computer control monitoring software (16 ea)
- Logger Pro Software (site license)
- Microobservatory – free download (16 ea)
- Microsoft Kodu Game Development Software – free download (16 ea)
- Microsoft Client Access Licenses (16 ea)
- Microsoft Office application Suite (16 ea) – *customer supplied*

Beaty-Warren Middle School SmartLab
Core Learning Environment Peripherals,
Software, Kits and Apparatus

Software - continued

- Scratch 2 – free access
- Stellarium – free download (16 ea)
- Symantec Ghost computer workstation imaging software (16 ea)
- Tech-4-Learning Frames stop motion animation software package (16 ea)
- TinkerCAD – free access
- Access to entire Smart Lab LaunchPad which includes secondary curriculum accessing following free use websites and downloads:
 - App Inventor 2
 - ArcGIS Online
 - Doodle for Google design contest
 - Extreme Weather and Monster Storms
 - Google Arts and Culture
 - Google Earth
 - Google Sites
 - Sketchup 3D design software
 - STEM Career Exploration
 - Stencyl
 - Touch Develop
 - West Point Bridge Designer
 - WordPress

Optional Advanced Exploration Collection

- Advanced computer based probeware for studies in STEM – physical sciences to integrate with Lego EV3
- Alternative energies accessory collection for the study of solar power
- Alternative energies base collection
- Alternative energies collection for the study of solar power (6 ea)
- fischertechnik Optics collections (2 ea)
- Global sun oven
- Kerbal space/mission simulation system
- Oculus Go virtual reality headsets (2 ea)
- Padcaster collection including:
 - Backpack for portability
 - Compatible wide-angle lens
 - Dual mic and headphone cable
 - Green screen
 - iPad
 - iPod Touch – Mini Teleprompter
 - Lavalier microphone
 - LED light system
 - Lens Bracket with 72-58mm step-down rings
 - Padcaster Case
 - Padcaster unidirectional microphone
 - Stick Mic with Clamp System
 - Tripod with casters



Creative Learning
systems

Attachment A

Beaty-Warren Middle School SmartLab
Core Learning Environment Peripherals,
Software, Kits and Apparatus

Optional Advanced Exploration Collection - continued

- Power efficiency collection
- Programmable drone aircraft (3 ea)
- Snap Circuit rover
- Snap Circuits Snapino collection

Beaty-Warren Middle School Computer Equipment Specifications & Guidelines

The attached pages specify the computer equipment necessary to operate your specific Creative Learning Environment configuration. Please follow these specifications when ordering your computer equipment. *

CLS requires that you purchase the specified computer systems only from a CLS-approved computer manufacturer, and specifications must be followed explicitly. This requirement is an express condition of the sale, and is made in the interest of the long-term performance of the system being purchased. As well, CLS must receive a copy of your computer purchase order with detailed equipment specifications for review prior to both your purchasing said equipment and scheduling the installation of your environment.

The following major manufacturers have been **pre-approved** by Creative Learning Systems as acceptable sources for the specified computer equipment:

CLS-Approved Computer Equipment Manufacturers

Dell (CLS Preferred Vendor)

Apple

If it is not possible to purchase from one of the pre-approved manufacturers listed above, you must contact Creative Learning Systems immediately. Special arrangements must be made to ensure that non-approved computers do not interfere with the installation, training, and support of your environment.

Creative Learning Systems will only consider **Hewlett Packard** and **Lenovo** as possible alternate vendors. If the customer chooses one of these alternate vendors, there will be a \$4,500 additional service fee that will be incorporated into the cost of your SmartLab.

The computer equipment purchased must be covered by a vendor/manufacture's warranty providing timely onsite support for not less than 3 (three) years. Creative Learning Systems does not offer any warranty, express or implied, for any customer-supplied equipment.

Each specified PC Client Computer should be pre-loaded with Windows 10 Professional 64bit. Each specified Macintosh client computer should be pre-loaded with Apple OSX operating system.

NOTE: The attached specifications should be viewed as *minimums*; you are welcome to buy more powerful computer equipment. Please contact Creative Learning Systems at 800-458-2880 to discuss potential enhancements.

Due to the constant evolution of computer hardware/software products, the attached specifications list will quickly become out-of-date. Buyers are therefore STRONGLY advised to contact Creative Learning Systems at (800-458-2880) to obtain the latest specifications list BEFORE PLACING YOUR COMPUTER EQUIPMENT ORDER.

** Failure to follow the Computer Equipment Specifications List can cause last-minute delays in your installation and training, financial penalties, and may jeopardize CLS's provision of after-sale technical support.*

General Requirements

- ❑ All PC computers must include Windows 10 Professional pre-installed, with CD media on site.
- ❑ All PC computers must include media for any manufacturer specific hardware drivers.
- ❑ All PC computers must share a consistent manufacturer and model number for all components, differing only by the performance specifications listed below.

Detailed Hardware Requirements

All-in-One - PC

Qty: 16

- | | |
|---------------------|--|
| ❑ Chassis: | Desktop All-in-One case |
| ❑ Ports: | 5x USB 3.1, 1x USB Type-C port |
| ❑ User Input: | USB optical wheel Mouse & Multimedia Keyboard with USB Hub |
| ❑ CPU: | Intel Core™ i7-8700 (6 Cores/12MB/12T/up to 4.6GHz/65W) |
| ❑ Memory: | 8.0 GB 2666MHz DDR4 (installed in sets of 2, i.e. two 4GB modules) |
| ❑ Hard Drive: | 256 GB Solid State (M.2 Class 40 preferred) |
| ❑ Removable Drives: | Media Card Reader |
| ❑ Video Card: | NVIDIA GeForce GTX 1050, 4GB (Dell part# 490-BDIJ) |
| ❑ Network: | 10/100/1000 Ethernet Card or On-Board |
| ❑ Wireless: | 802.11ac with Bluetooth integration (Intel 9560) |
| ❑ Sound Card: | Integrated Audio |
| ❑ Monitor: | Integrated 23.8" Full-HD LED-backlit display (non touch) |
| ❑ Speakers: | Integrated Audio |
| ❑ Camera | Integrated Camera |
| ❑ Warranty: | 3 year parts and onsite labor |
| ❑ Operating System: | Windows 10 Professional 64bit |

Recommended Make/Model: **Dell Optiplex 7460 – All-in-One Case**

*** In order to maintain the functional and ergonomic qualities of the computer/furniture integration in a Creative Learning Environment, these computer chassis dimensions cannot be exceeded. Like the minimum performance related requirements, this is an express condition of the Learning Environment sale and failure to comply can add substantial extra time and cost to your installation.*

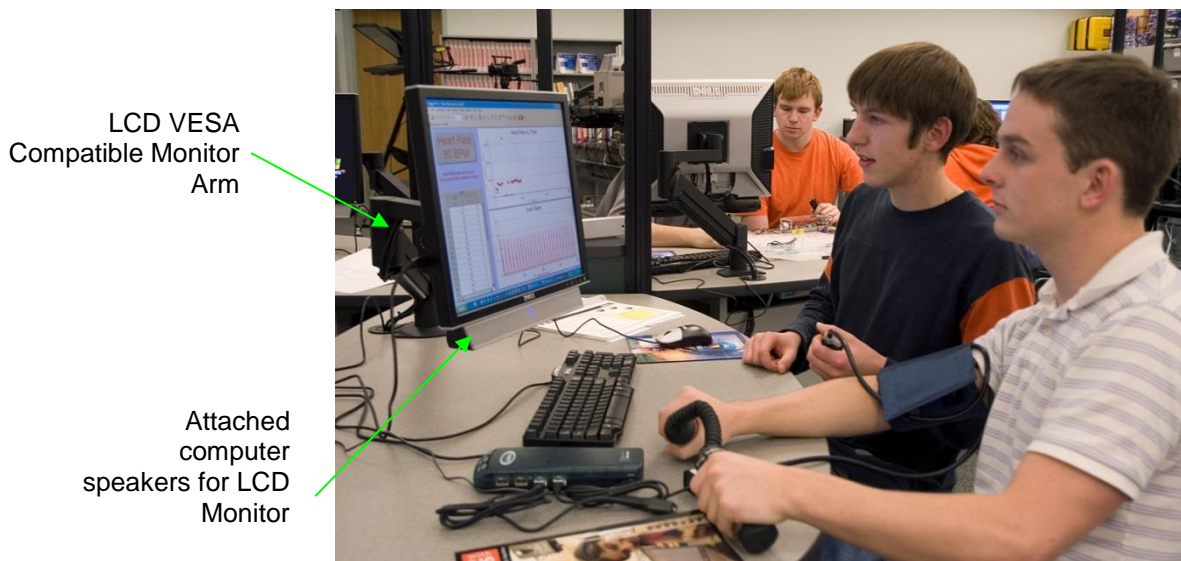
**** In order to maintain the functional and ergonomic qualities of the computer/furniture integration in a Creative Learning Environment, the flat panel all in one computer with **built-in or attached** speakers is required. See diagram on next page.*

Note – All Dell Windows 10 Client Computers must be initially shipped to Creative Learning Systems Home Office in Longmont, Colorado. The preconfigured computers will then be shipped to the client's site with the SmartLab shipment.

Beaty-Warren Middle School
Computer Specifications & Guidelines – PC

CLS furniture has been carefully designed to support a wide range of activities and models of usage while minimizing required space. The picture below shows our standard configuration - a compatible LCD monitor/all in one computer attached to a CLS supplied monitor arm. In addition, the monitors/all in one computers are equipped with an integrated speaker bar or built in speakers keeping the desktop surface free for other project and learning resources. Schools purchasing their own computer equipment must also provide flat panel monitors/all in one computers with built in speakers, or an attached sound bar. Please advise your Creative Learning Systems support team of any preferred vendors and we will be happy to provide specific equipment recommendations.

Since the LCD monitor/all in one computer with attached sound bar/built in speakers does not take up any desk space, the students in the picture below have plenty of room for equipment and learning resources. Another significant advantage of this configuration is that students may work anywhere around the desktop, and in whatever team size is appropriate for their project. The arm-mounted LCD monitor/all in one computer and integrated speakers are easily repositioned at any angle and height for optimal viewing by the full work group.



Technical details concerning monitor arms:

- The monitor arm permits optimal wire management with hidden, organized cables. The desktop is free of cables improving both user functionality and appearance.
- The CLS provided monitor arms are equipped with multiple VESA standardized mounting plates. If monitors are replaced or upgraded in the future, the arms can accommodate all standard monitor mounting configurations.
- The monitor arm is bolted to the work surface improving security and functionality.
- CLS monitor arms feature adjustable tension settings for a range of LCD monitor/all in one computers and speaker weights. The monitor/computer/speaker remain stable at any height and position desired by the user.



Creative Learning
s y s t e m s

Beaty-Warren Middle School
Computer Specifications - Software

Title	Version	Platform	Manufacturer	Qty.
Office Professional	365	Windows	Microsoft	16

SmartLab Seating Options

Student and Teacher Chairs should be supplied for the SmartLab by the customer. All seating selections that we recommend are manufactured by Virco. More information can be found at www.virco.com

Sage™ Mobile Task Chair— Student Chair

Virco's Sage™ Series combines a large, comfortably sculpted shell with a supportive backrest to provide outstanding furniture solutions for adult education venues and high school settings. This Sage task chair gives you the comfort and convenience of pneumatic seat-height adjustment.

See available colors at <http://virco.com/sage-series-mobile-task-chair>

Model Number

SGTASK15 1st—4th Grade

14" - 17" Height Adjustment

SGTASK18 5th Grade - Adult

16" - 20" Height Adjustment

For schools that prefer chairs without casters, Virco chairs are also available with Nylon-base, Felt-base, Steel-Base or Rubber-Base Glides. An additional charge may apply.



Sage™ Mobile Task Chair—Facilitator Chair

Virco's Sage™ Series combines a large, comfortably sculpted shell with a supportive backrest to provide outstanding furniture solutions for adult education venues and high school settings. This Sage task chair gives you the comfort and convenience of pneumatic seat-height adjustment.



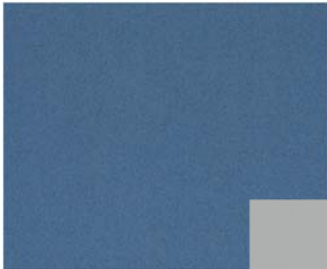

Available in Graphite only

Model Number

SGTASK18A







Choose One Workstation Laminate:

<input type="checkbox"/>	Laminate	<input type="checkbox"/>	Laminate	<input type="checkbox"/>	Laminate	<input type="checkbox"/>	Laminate
Pionite Negotiating in Geneva	Pionite White Elm	Pionite Cradle of Liberty	Nevamar Café Allusion*				
							
Melamine - Storm	Melamine: Silver Grey	Melamine: Silver Grey	Melamine: Silver Grey				

Laminate refers to table top surfaces and melamine refers to all other surfaces.

Choose One Sign Color Theme:

<input type="checkbox"/> Islands - Classic Sign Color Theme  In a SmartLab with both Peninsulas and Islands, all Peninsula signs match the blue sign shown above.	<input type="checkbox"/> Islands - Bright Sign Color Theme  In a SmartLab with both Peninsulas and Islands, all Peninsula signs match the blue sign shown above.
<input type="checkbox"/> Islands - Contemporary Sign Color Theme  <input type="checkbox"/> <input type="checkbox"/> In a SmartLab with both Peninsulas and Islands, all signs will be the same color. Pick only one sign choice.	<input type="checkbox"/> Peninsulas  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> In a SmartLab with all Peninsulas, all signs will be the same color. Select one color above.

Please choose one workstation laminate/melamine combination and island sign theme by checking the appropriate box above. Sign and return this document with your purchase order. A delay in returning this form back to us may result in a change to your requested installation dates.

Approved Customer Representative:

School Name: _____

Name: _____

Title: _____

Signature: _____

Date: _____

Warranty

This section provides detailed information about the CLS warranty.

What's Covered?

CLS warrants the materials included with the SmartLab will be free from defects in material or workmanship for a period of one (1) year from the date of installation

During the warranty period CLS will replace, repair, or facilitate replacement, at its option, any defective equipment components or software.

During installation, our installers shall take all reasonable precautions to avoid injury and damage to property.

What's Not Covered?

CLS shall not be liable for acts of God, or of damages resulting from the use and/or service of the equipment including;

- Operation of the SmartLab outside of its environmental, electrical, or performance specifications, conditions, capabilities, or standards
- **Network/client viruses**
- Power fluctuation or failure
- Vandalism or any other damage or alteration of the SmartLab by persons other than CLS employees
- Combining incompatible products
- Damage, neglect, alteration, or any impairment of the SmartLab resulting from causes or conditions not associated with ordinary and intended storage, handling, installation, maintenance, service, or use

Warranty Conditions

We warranty *only those subsystems and components certified by CLS and delivered by CLS as a part of the SmartLab, or purchased by Customer as per CLS specifications*. We assume no responsibility or liability for equipment, software, subsystems, or components that you, the customer, modify, add, or substitute.

This warranty remains valid only if you, the customer, maintain the configuration of the SmartLab as it is originally designed, manufactured, and installed by CLS.

All warranties associated with the SmartLab shall become null and void in the event of any modification, addition, or substitution made without the prior written consent from Creative Learning Systems.

Post-warranty and extra-warranty support

Following the warranty period and for items outside of warranty coverage, CLS will provide, upon request of Customer and at CLS's pricing terms, maintenance service and maintenance parts for the SmartLab including on-site configuration. Whenever possible, CLS will facilitate third party low-cost service, repair, or replacement of items after the warranty period has passed.

Network and Computer Information

At Creative Learning Systems, we are committed to using network and computer equipment from only the most reputable manufacturers and integrating only those technologies that have proven themselves reliable in today's IT Industry. The diagram below shows the primary networking/computer components of a typical Creative Learning Environment installation. The following pages describe each component.



The Island distributes Ethernet and Power Connections from the Ceiling Power Panel to outlets that computers plug into.

Patch Panel (Customer Supplied)

The patch panel is the central location to which the entire network wiring in the environment is connected. These are fixed connections, which mean that each wire in each cable (eight per cable) is “punched down” into terminal blocks. They are permanent.

Premise Wiring (Customer Supplied)

Premise wiring refers to all wiring and hardware components required to connect the network, from patch panel to pylon panel or wall jack.

Rack (Customer Supplied)

The rack is where the patch panel and switch are mounted.

Switch (Customer Supplied)

The Ethernet switch connects all of the individual network wires, allowing computer devices in the environment to communicate with each other. The switch is mounted next to the patch panel in the rack. Small patch cables connect individual network cables in the patch panel to ports on the switch. The switch contains an uplink port that allows customers to link the Learning Environment to their existing school network.

Wireless Access Point (Customer Supplied)

The wireless access point should be physically located in the room. Access point must be 802.11n, 802.11ac, or 802.11ad.

Pylon (CLS Supplied)

Each island has a central three-sided pylon, in which all services (network and power) are distributed to each station in the island, as needed. Network patch cables connect the bottom side of the ceiling drop to a panel next to the computer. The network jacks reside the panel; that’s where computers are plugged in.

Lab Server (CLS supplied)

The server is the heart of the Learning Environment network. The stability, functionality, and supportability of the server is achieved with specific hardware components selected for those characteristics by CLS technicians. For that reason, it is the one computer in the lab that Creative Learning Systems always supplies.

The server’s features are described below.

Network Operating System

The server in a standard Creative Learning Environment uses the Windows 2016 Professional Server operating system, which has proven itself as function-rich, reliable, easy to maintain, and very conducive to cross-platform (Macs and PCs) networking.

File Storage and Security

All documents created by learners and facilitators are saved to and stored on the lab server in specially designated folders. Facilitators and administrators can secure these folders in any way they see fit.

System Administration and Recovery

Creative Learning Systems provisions the server with everything it needs to survive crashes with data intact.

- **Drive Redundancy:** Drive redundancy allows the server to continue running even if one of the hard drives crashes.

- **Drive Backup:** The server has a complete drive backup and restoration system that is effective and easy to maintain. It includes a 1 TB hard drive, and a pre-defined backup schedule.
- **Recovery Image:** After we install and customize the server for the Learning Environment (with specific printers, folder structure, and security model), our installers create an image of the server that can be used in the event of a crash to restore the server back to its known-working, post-installation state.
- **Web Serving:** Easy-to-maintain Web server software is built in to the server. It can be used with any of the Web-based content learners and facilitators create. In addition, Facilitators can create an Intranet for learner support materials and individual home pages, where learners can post portfolios and other content.
- **Remote Administration and Support:** Software and hardware components allow CLS support staff to access the server remotely over the Internet for customer initiated remote desktop sessions. For further details on how this works, contact the CLS support team.
- **Content:** The server is pre-configured with a rich supply of technical, facilitation, curricular, and environment-management support resources.

Client Computers (Customer supplied)

Client computers are the machines at each learning station. The client computers are powered and networked through jacks from the wall or ceiling as specified on the electrical and data layers part of the plan view drawing. Each station's software configuration provides specific functionality, which in turn provides the foundation for rich learning experiences.

- **Attachment B: Customer Purchased Computer Specifications** - provides detailed specifications to follow when purchasing client computers. Specifications for all Windows based PC's can be found in this document. about the client computers. Microsoft Office 365 specifications can also be found in Attachment B.

Padcaster iPad (CLS supplied)

An iPad tablet is designated to the Padcaster live broadcast system. The client tablet is battery powered and networked from a wireless access point as specified on the electrical and data layers part of the plan view drawing. The station's software configuration provides specific functionality, which in turn provides the foundation for rich learning experiences.

Printers (CLS supplied)

This lab configuration includes a workgroup high capacity color laser printer and a 3D printer. The printers are "network ready," meaning that the network line plugs into them directly so they don't have to be connected to the back of a computer.

Existing School Network and the Internet

CLS does not provide Internet connectivity. Most customers choose to connect the lab network through uplink ports to their existing school network to allow lab access to such network resources as Internet access. In a typical lab installation, the customer will provide a designated network port inside the lab that is directly connected to the school's primary network backbone.

All client computers are configured to access the Internet, unless customers specifically request otherwise.

Network and computer configuration details, like naming conventions, IP addressing schemes, DNS server addresses, gateway/proxy server Addresses, etc., are coordinated between our installation team and the customer's on-site technology department representative.



Important Security Information!

It is very important to note that CLS does not provide hardware, software, or protection strategies with regard to Internet security. It is the responsibility of the customer to ensure the computer systems in the lab are properly protected against all Internet threats, including virus infection and malicious compromise. CLS recommends that the school's technology department implement the same virus and firewall protection strategies in the lab as it uses campus-wide.

Curriculum and Support Agreement

The Curriculum and Support Agreement (CSA) provides services to ensure the sustainability of your SmartLab. CSA's are five-year agreements billed annually or prepaid at the time of the SmartLab purchase. *Access to online curriculum and technical and pedagogical support are included with your SmartLab for the academic year in which your SmartLab is installed.* Choose either a Basic, Plus or Premium CSA plan for academic years beginning July 1 of the academic year following the year in which your SmartLab was installed. Your Regional Sales Manager can help you decide which plan is best for your school.

	Basic	Plus	Premium
Price	\$3,275/year	\$4,875/year	\$7,875/Year
Online Curriculum Access	➤ Online access to all SmartLab curriculum	➤ Online access to all SmartLab curriculum	➤ Online access to all SmartLab curriculum
Support	<ul style="list-style-type: none"> ➤ Unlimited remote technical & pedagogical support ➤ Includes support for Student Broadcast Studio (if applicable) 	<ul style="list-style-type: none"> ➤ Unlimited remote technical & pedagogical support ➤ Includes support for Student Broadcast Studio (if applicable) 	<ul style="list-style-type: none"> ➤ Unlimited remote technical & pedagogical support ➤ Includes support for Student Broadcast Studio (if applicable)
Catalog Credit		➤ \$1,000 annual catalog credit	<ul style="list-style-type: none"> ➤ \$2,000 annual catalog credit ➤ FREE shipping ➤ Catalog credit roll-over*
Professional Development		➤ Standard professional development in the event of facilitator turnover**	➤ Upgraded professional development in the event of facilitator turnover***
AFDC Conference		➤ 50% discount on AFDC tuition for facilitator	<ul style="list-style-type: none"> ➤ FREE annual AFDC tuition for facilitator ➤ 50% discount on AFDC tuition for other attendees
Onsite Professional Services Discount		➤ 10% discount on onsite IT or additional professional development or academic services	➤ 15% discount on onsite IT or additional professional development or academic services
Upgrade Consultation Discount			➤ \$2,500 discount on upgrade consultations
PREPAYMENT OPTION	➤ Prepay 4 years get 5 th year FREE	➤ Prepay 4 years get 5 th year FREE	➤ Prepay 4 years get 5 th year FREE

* Unused catalog credits may be rolled-over into the next academic year and expire after the end of the that period.

** Standard Professional development includes two-days of live one-on-one video instruction and one-day of asynchronous training.

*** Upgraded Professional development includes choice of two days of on-site instruction (available October-May) or Creative Learning Systems Facilitator Certification Program™ (two-days of live one-on-one video instruction, one-day of asynchronous training, monthly instructional coaching sessions throughout the academic year, two video observation assessments and a summative review).

Important to remember:

- The plans above support one SmartLab. If you have more than one SmartLab in your school you will require a combination of plans.
- CSA payments are non-refundable. CSA contracts may be terminated by school with written notice to CLS before any annual renewal period.
- Customers must designate a primary facilitator for each SmartLab at the beginning of each contract term or after each new professional development.
- Districts with six or more CSA's paying through a single invoice are eligible for a 10% discount on Plus or Premium CSA plans.
- Discounts cannot be combined.
- Price and terms subject to change with written notice (does not apply to prepaid plans).



SmartLab™ Plan View
Beaty Warren Middle School - Room C-107

Features:
Approx. 800 Square Feet
30 Learners
Facilitator Management Resources
Dell PowerEdge T330 / Windows 2016 Server
Windows 10 Client Computers

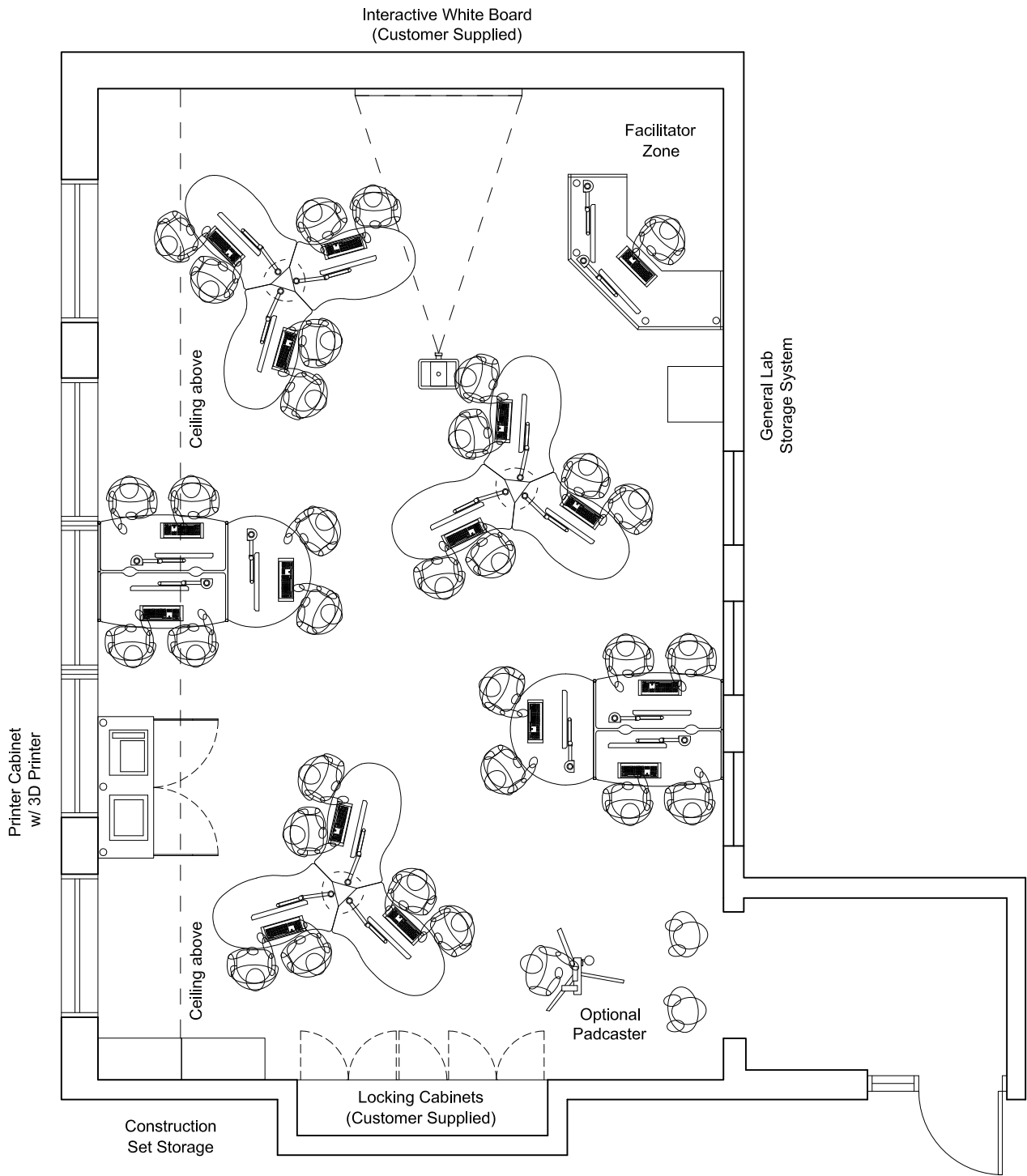
Island 1
Science Probeware Exploration
Graphic Design - Bit Mapped Graphics
Advanced Modeling/Physical Simulation
Power Efficiency
Computer Control
3D Printing
Extreme Weather Exploration

Island 2
Desktop Publishing
Robotics
Padcaster Live Video Production
Web Site Design
Software Engineering
Solar Cooking
Deep Space Exploration
Teleprompting

Island 3
Lego Pneumatic Circuits Exploration
Graphic Design - Vector Based Graphics
Civil Engineering
Business and Entrepreneurship
Hydrogen Fuel Cells
Global Information Systems
Video Game Design

Peninsula 4
Electric Circuitry
Colossal Structuring
Mathematical Modeling
Programmable Microelectronics
3D Modeling/Animation
Optics and Light Exploration
Virtual Reality Exploration

Peninsula 5
Solar Energy
Live Edit Video Production
Stop Motion Animation
Video Post Production
Space Mission Simulation
Spreadsheets and Databases
Claymation



Room Readiness Items for Consideration
Overhead and Perimeter Electrical (Required)
Overhead and Perimeter Data (Required)
Anti-static Carpet (Strongly Recommended)
Drop Acoustical Ceiling at 10 feet AFF (Recommended)
8 to 10 foot White Marker Board (Recommended)
Sink and Counter Cabinets (Optional)

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REVISION NOTES

FLOORPLAN AND SERVICES

PAGE:

Furnishings

SCALE:

Not to scale

JOB NO: 19-0107

DATE: 03/14/2019

DRAWN: KC

REVISION: R2




REVISED: KC

SmartLab™

Beaty Warren
Middle School
Room C-107

SmartLab™ Plan View
Beaty Warren Middle School - Room C-107

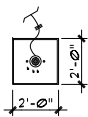
Electrical Services
(Customer Installed)

-  CONVENIENCE OUTLET DUPLEX
POWER OUTLET @ 20A, 120V
UNLESS OTHERWISE NOTED ON DRAWING
-  CONVENIENCE OUTLET 4 QUAD
POWER OUTLET @ 20A, 120V
-  OVERHEAD JUNCTION BOX
DEDICATED POWER @ 20A, 120V
HARDWIRED TO CEILING POWER
PANELS PROVIDED BY CLS

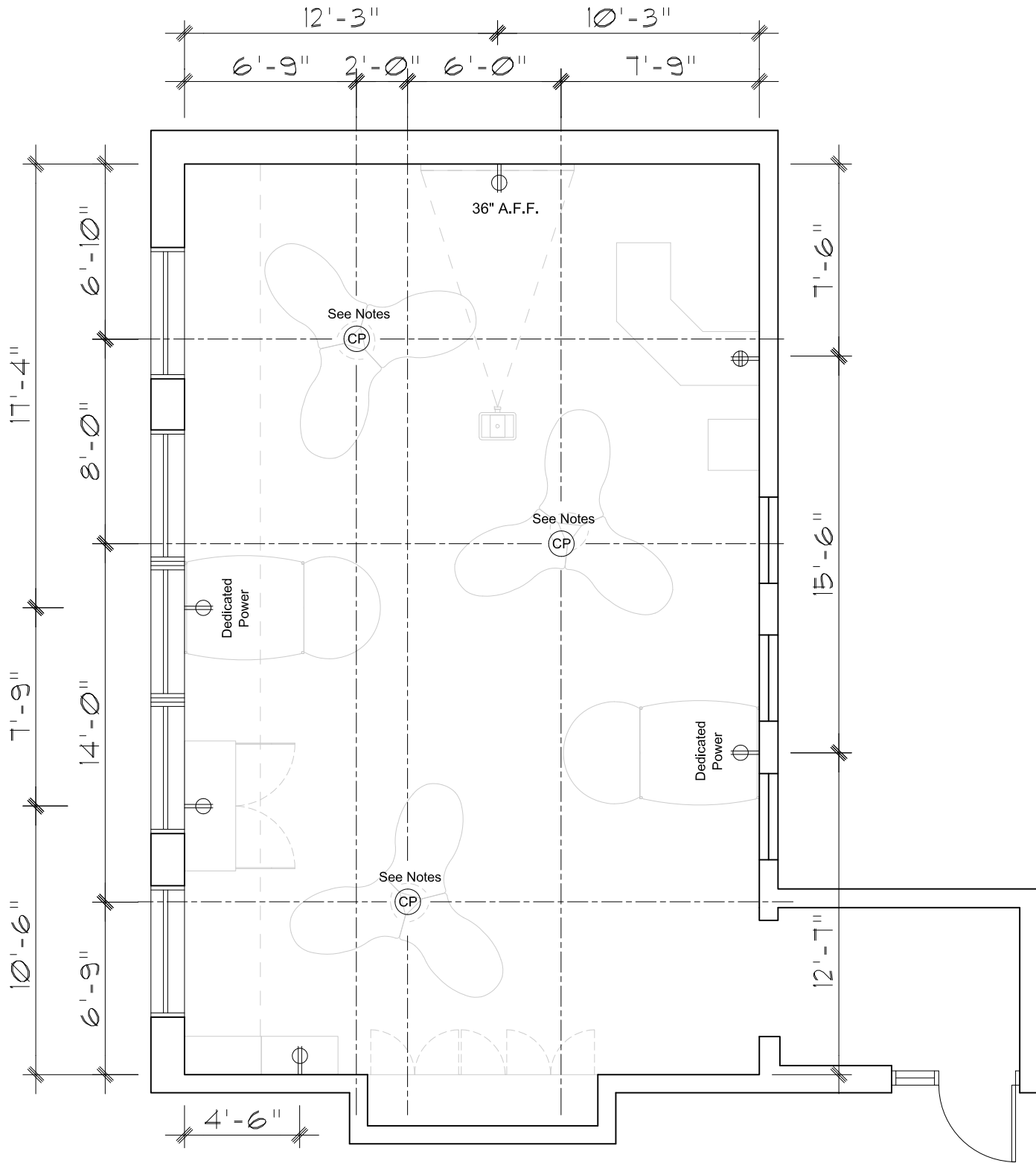
NOTES:

- Existing outlets are to remain.
Only **minimum requirements** are shown. Local
building codes should govern the actual number of
data and electrical outlets .
- Ceiling Power Panel placement determined
by actual location of Technology Islands.
- Ceiling Power Panels ship early from CLS
for installation by electrician.
- Electrician or contractor to provide pull
strings in all data conduit.

Ceiling Power Panel Placement
(CLS Supplied/Customer Installed)



- CLS supplied overhead Ceiling Power Panel
hardwired to the structural mounted
electrical junction box w/ 6 to 10 feet
of excess 12/3 SO cable or flex conduit.
- Ceiling Panels install within typical,
[2 X 2] or [2 X 4], drop ceiling grid.
Refer to the CLS supplied Ceiling Power Panel detail sheet
for further details. If necessary, contact CLS for a copy.
- Final Ceiling Panel placement to be determined
by the actual ceiling tile grid and location of
Technology Islands. Panels install directly above
Power Pylons as shown on plan view.
- Ceiling Power Panels ship early from CLS for
installation by the electrician or contractor.



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PAGE:

Electrical

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REVISION: R2

REVISED: KC

ENVIRONMENT: SmartLab™

Beaty Warren
Middle School
Room C-107





SmartLab™ Plan View
Beaty Warren Middle School - Room C-107

Data/Communication Services
(Customer Installed)

- 3/Ceiling Panel

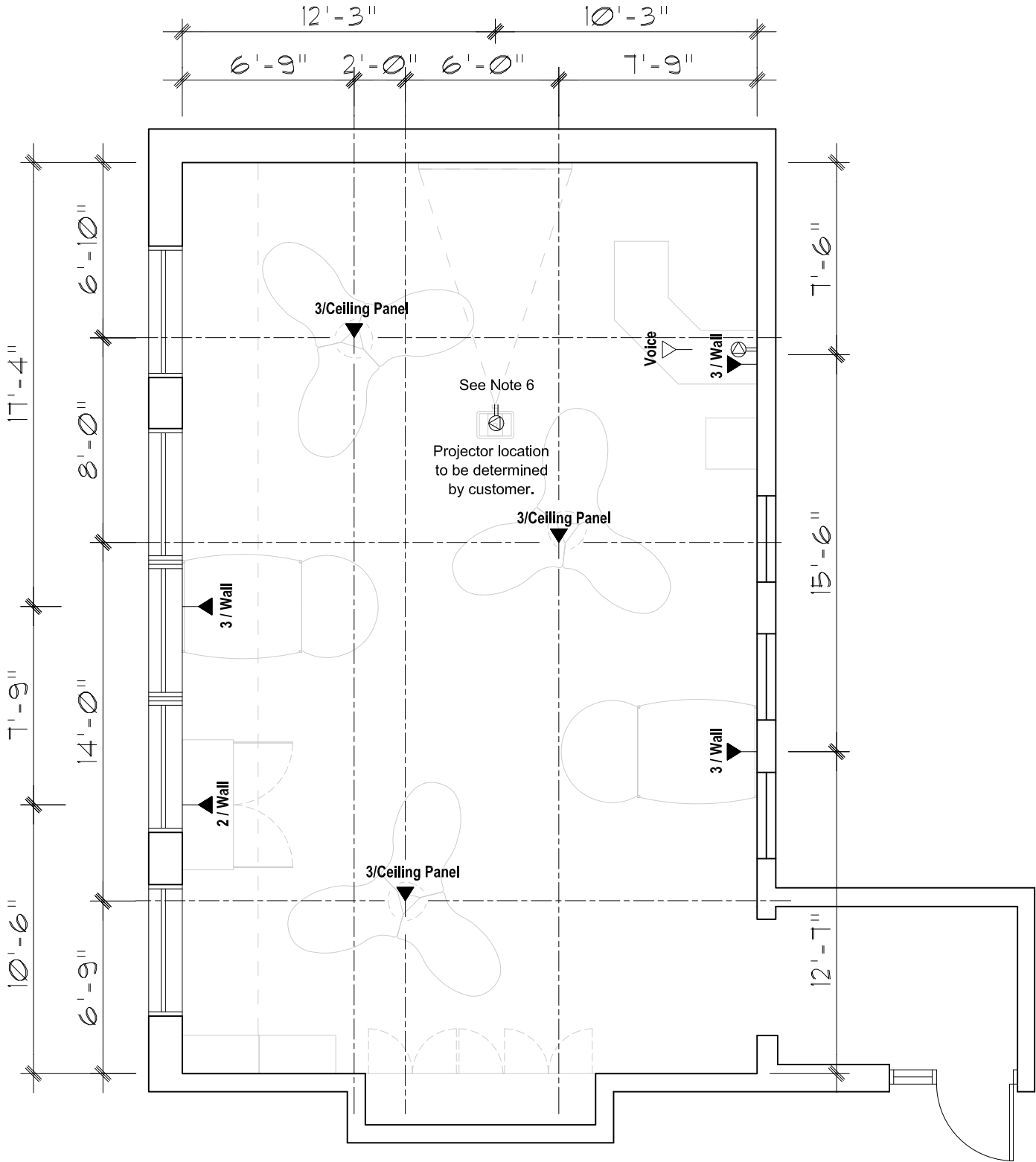
▼
- Cat. 6 Ethernet data runs. Number indicates runs needed at specified location. All Cat. 6 cable and connectors only, as prescribed by EIA/TIA standards. All Ethernet data runs shall terminate at building's IDF or MDF.
- # / Wall

▼
- Wall mounted flush Cat. 6 Ethernet data runs. Number indicates runs needed at specified location. All Ethernet data runs shall terminate at building's IDF or MDF.
- Voice

▼
- Telephone outlet. Type of termination will be determined by local contractor.
- ⦿
- Wall mounted low voltage convenience box with pull string. Height noted on plan, otherwise typical height above finished floor.

NOTES:

1. A wireless access point must be physically located inside the room. Access Points must be 802.11n, 802.11ac or 802.11ad
2. All Local Area Network will be CAT. 6 cabling and terminated as EIA/TIA 568B wiring scheme.
3. All cabling will be done by Contractor including termination, dressing, and cable management. A scope of all cabling including LAN and telecommunications will be provided by Contractor for this project. Scope will be sent to Creative Learning Systems prior to commencement of any work for verification. Scope will include any changes necessary to complete this project.
- Connections to client computers and Servers will be done by Creative Learning Systems. Else; all cabling to be completed by Customer.
4. Overhead cable runs to islands and overhead grids should be secured and strain relieved 6" from any electrical junction box, light fixture, or Electromagnetic interfering device. With an excess of 6+ feet to any drop ceiling (4 feet above the finished floor if no drop ceiling).
5. Overhead LAN drops will be terminated to a RJ45 punchdown plug provided with the CLS Ceiling Power Panel, in a drop ceiling situation. If no drop ceiling, all overhead LAN drops to be terminated with an RJ45 jack.
6. Customer to provide low voltage convenience boxes and pull string from facilitator location to customer supplied projector. Creative Learning Systems to provide face plates.
7. Only minimum connections are shown.



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FLOORPLAN AND SERVICES

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PAGE:

Data-Comm

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REVISION: R2

REVISED: KC

ENVIRONMENT: SmartLab™

Beaty Warren
Middle School
Room C-107



SmartLab™

Learning's different here...



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