2017

*SmartLab™ Learning is different here!*

Creative Learning systems

# Facilitator Professional Development Guide

## Welcome to the SmartLab Family!

You are about to embark on a learning adventure of a lifetime.

In a SmartLab, we say, "Learning's different here…"

There are a number of reasons learning is different in a SmartLab. Your unique role as a facilitator of learning is chief among them. This new role may be different from the classroom practices to which you've been accustomed. It may be different from the teaching model that takes place throughout most of your school. It will certainly be a new way of learning for many of your students.

There's a lot to learn, but feel confident that there is a reason your administrator selected you for this important role. Rest assured that Creative Learning Systems has been helping new facilitators like you succeed in this dynamic learning environment for over 25 years. We are there for you with training, curriculum and learning resources, and ongoing support to help you launch your program successfully. And we will be there to help you adapt and grow your program in the years to come.

This Facilitator Professional Development Guide is the first step in that process. This guide will give you an overview of the SmartLab and the many tools and resources that are provided for you and your students. While we will cover all of the topics in the Facilitator Professional Development Guide during your onsite professional development, reviewing it before your training will help you prepare for your new role. It will also enable you to develop a list of questions so we can make your training as efficient as possible and tailor it to your specific needs.

Without question, the role of SmartLab Facilitator is challenging. In presenting the program to your school administration, we stressed the critical importance of putting the SmartLab in the hands of one of their best teaching professionals. While we know that it is a challenging role, we also know that it is equally rewarding. We often hear comments from SmartLab Facilitators like "This is the way I've always dreamed of teaching", "I learn as much as the kids", "This is the most fun I've ever had in my career", and "I can't imagine ever going back to a regular classroom".

We are proud to welcome you to the SmartLab family and know that you and your students will find this learning adventure to be both thoroughly enjoyable and immensely rewarding.

Best regards,

Matt Dickstein, CEO
Creative Learning Systems
1140 Boston Ave. Unit A
Longmont, CO 80501

# SECTION ONE: Introduction to Creative Learning Systems SmartLab

# Pre-Training Checklist

In order to make your on-site professional development as productive as possible please complete the following in advance of our arrival:

### Read this Professional Development Guide

We thoroughly cover the information in this guide during your on-site professional development program. Therefore it is not necessary that you fully understand every element – indeed, some of the information will be very difficult to learn without SmartLab access. However, having a general understanding of the concepts presented in this guide prepares you to make the most out of the on-site training.

### Review Express and Liftoff Challenges (Elementary)

After reading the curriculum section of the *Professional Development Guide* we recommend that you experience Express and Liftoff Challenges from the student perspective. Log into the Launchpad using the account information provided by email. Please review the following:

- Select and review two each of our Liftoff Challenges and Express Challenges. Take the time to explore them in detail.
- Review the SmartLab Orientation tutorial. It appears at the top of the list of Liftoff Challenges
- Select and browse any additional Liftoff Challenges at your leisure.

### Review Learning Launchers (Secondary)

After reading the curriculum section of the Professional Development Guide we recommend that you experience Learning Launchers from the student perspective. Log into the Launchpad using the account information provided. Please review the following Learning Launchers:

- Orientation Collection: Getting to Know Your SmartLab and Introduction to Learning Launchers. These two resources will help guide your student SmartLab orientation.
- Review two each of the Level 1, Level 2, and Level 3 Learning Launchers in full. Select any topic and Learning Launcher title that interests you. Browse other Learning Launcher titles at your discretion.
- Select one each of our Liftoff Challenges, Express Challenges, and Online Interactive Resources to review in full. Browse other titles at your discretion.

### ePortfolio Review

Review the ePortfolio section later in this guide and answer the following questions before training:

- Does your school use Google Apps for Education?
- Do your students have Gmail accounts? If not, do school/district policies permit them?
- Does your school/district Internet system allow student access to Google Drive?

### List Your Questions

Create a list of questions for your professional development trainer to review and answer. We will do our best to personalize your on-site professional development and focus on areas that are most useful for you.

## Post-Training Checklist

You learned a lot in the several days of training. To help you solidify your learning and to ready your program for students we recommend the following:

**Immediately Following Training:**

- Confirm and consolidate SmartLab program scheduling with your Principal and colleagues.
- Create accounts for student pairs using the !Learner template. Record account login names and passwords as needed.
- Create a generic !Learner account to test the student experience of the network and to help with troubleshooting.
- Create additional facilitator accounts if you share the role of facilitator with a colleague. Use the !Facilitator template.
- Log into the LaunchPad as an administrator and using your privileges to edit the Learning Launcher, Express or Liftoff topics and title display to reflect your SmartLab program.
- Plan your student orientation to the SmartLab. Review the student and facilitator Orientation resources available on the LaunchPad and in the Professional Development Guide.
- Plan your assessment plans and objectives. Download and review the ePortfolio templates or Google Drive ePortfolio templates; edit them to meet local assessment expectations. Place the templates in the Media Library for student access. Review the assessment resources on the LaunchPad.
- Review the Score and practice setting up the room as if students were actively engaged in their first project rotation.
- Confirm that all software, hardware, and electronic equipment works as intended.
- Create a charging station for batteries.
- Devise an equipment check-in/check-out system for cameras and similar equipment.
- Practice using LanSchool for effective communication.
- Hold a faculty meeting/orientation in the SmartLab. Use the opportunity to engage colleagues in SmartLab projects from the student perspective and to discuss opportunities for collaboration. Show them the on-line resource collection and emphasize that everyone has LaunchPad access.
- Review the Professional Development Guide.
- Complete our post-professional development survey.
- Take several photographs of your SmartLab equipment and workstations for future reference.
- Label power supplies, computers, and cameras.
- Contact Support as needed: support@clsonline.com or 800-458-2880 option #2.

**Within a Month of Training:**

- Check the CLS Facebook and Twitter sites for recent notices and updates. Our Twitter handle is @SmartLab_tweets.
- Install updates on a regular basis. Using DeepFreeze, reboot all computers thawed. Do not allow any individuals to work on thawed computers. Install updates. Reboot thawed

at least twice to ensure updates are completed. Ensure computers are frozen before allowing student access. Consider doing one computer at a time to gain experience with the process.

- Review resources on the Facilitator Resource side of the LaunchPad and check for updates.
- Review the Standards Tracker to identify the standards associated with each Learning Launcher, Express or Liftoff Challenge.
- Review the Environment Map stored in the Facilitator Support folder.

**Before the End of the Semester:**

- Plan and provide an annual community SmartLab Open-house to highlight student work and the success of your program.
- Plan to attend the next AFDC conference to work with veteran facilitators, CLS staff, and product venders providing specific workshops. Arrange funding as needed for hotels, flights, and conference registration.
- Use your catalog credit before **April 30th** to update your SmartLab with new and exciting products or to replace broken parts.

**Summer Vacation Planning:**

- Join us at AFDC annually to build your repertoire of skills and knowledge.
- Record the layout of your SmartLab visually just in case someone moves all the equipment and furniture to new positions.
- Consider numbering your islands and stations discretely.
- Discuss plans with the maintenance and janitorial staff regarding cleaning or maintenance for the room.
- Charge all batteries to full and then remove them from chargers. Do not leave batteries on charge 24 hours a day all summer.
- Computer Network: Turn off the server for the summer. Turn off all monitors and all computers.

1. Lock the room and the cabinets to ensure limited access during summer months.

# Introduction: Purpose of the Professional Development Guide

This guide prepares you to facilitate your SmartLab and for our multi-day Professional Development program. Over time you will develop expertize in the wide variety of resources and opportunities afforded by the SmartLab. Until then it is important to understand the philosophy behind and resources in your SmartLab. Once your SmartLab program runs smoothly, you will find time to evolve it to meet the needs of your unique learning community. For this reason, no two SmartLabs are exactly alike.

While everything in this document will be addressed in detail during professional development, we recommend that you review it prior to your training. After training, this guide will serve as a reminder of concepts and skills covered. Feel free to take notes in this document.

## What to Expect During your Professional Development

Initial professional development training takes place over several days in your new SmartLab. Below is a list of topics covered during professional development:

- SmartLab Environment
  - Review of the classroom furniture and arrangement as applied to student learning
  - Review of computer system and administration
  - Review of learning resources and related equipment
  - Environment management and support
- SmartLab Specific Pedagogy
  - Best practices in teaching and learning in the SmartLab environment
  - Classroom management strategies
  - SmartLab assessment strategies
  - How to schedule and organize classes in the SmartLab
- SmartLab Learning Resources
  - Launchpad, Express, and Liftoff Challenges (our student-centered, project-based learning engagements)
  - ePortfolio and assessment resources
  - LaunchPad Facilitator Resource collection
  - LaunchPad customization and administration
- Student SmartLab Orientation
  - Planning student orientation to the SmartLab
  - Setting up the learning engagements at each station
- Beyond Training
  - Customer support, additional training, and equipment purchases
  - AFDC – our Advanced Facilitator Development Conference

# SmartLab Overview

At Creative Learning Systems we create environments and curriculum designed to help educators address the following question:

> How do we prepare students to succeed in jobs that don't yet exist…requiring skills and utilizing technologies not yet invented?

Our answer: **SmartLabs!** We continuously strive to provide our Facilitators with the latest technologies and an evolving, student-centered, curriculum in the quest to better prepare students to participate in and contribute to tomorrow's world.

## What is a SmartLab and how is it different from a traditional classroom?

Creative Learning Systems 21st century SmartLabs are fully-integrated classroom programs custom-designed to meet each school's unique academic objectives. In a SmartLab we meet every learner where they are and take them as far as they are able to go by engaging them in hands-on, minds-on projects in STEM, providing access to technology, and encouraging the use of digital media arts. Our student-centered curriculum adapts to learners of different abilities and learning styles. The result - challenged and engaged students learning and applying real-world skills in an academic context supported by an enthusiastic faculty.

## STEM (science, technology, engineering and mathematics) and SmartLabs

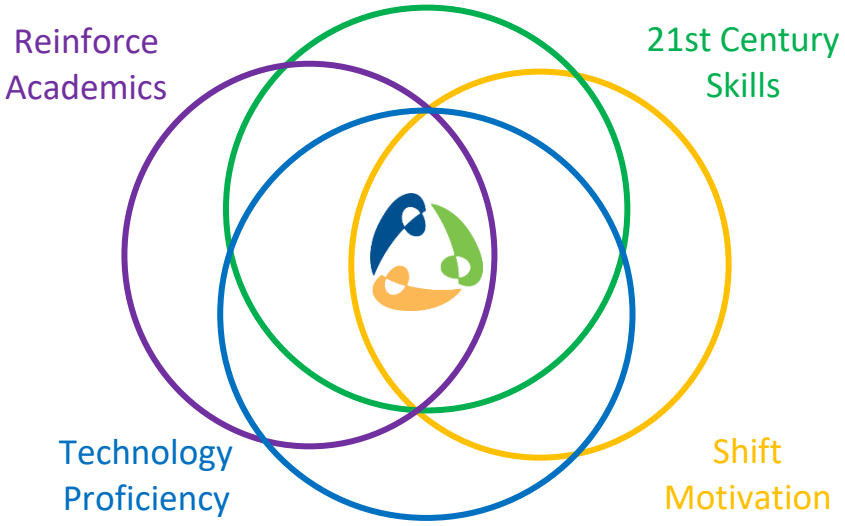
Stakeholders in public education continually emphasize the importance of preparing students to compete in a global economic and professional community. Policy makers, university educators, and industry leaders articulate the need for STEM education to ensure that U.S. students become successful adults. The burden to meet these expectations falls upon K-12 educators. Fortunately, the SmartLab provides the ideal environment to develop and apply the knowledge, skills, and experience that leads to success.

SmartLabs approach STEM from a real-world perspective. Instead of addressing each discipline independently, the "silo" approach, we integrate core academics into meaningful, project-based contexts. We challenge learners to think critically, problem-solve, collaborate, and communicate as they engage in personally relevant learning. In addition to STEM, we emphasize the role of language arts in the effective communication of ideas, the importance of social studies for context, and the relevance of the arts to creative expression. SmartLabs act as the hub of learning in our schools.

## Distinctive SmartLab Characteristics:

- Project-based, problem-solving, student-centered learning
- Personal relevance and intrinsic motivation – recognized as essential for higher-order thinking
- Transdisciplinary approaches that apply technology to the understanding of core subject knowledge
- Portfolios and presentations that encourage communication skills and performance based assessment
- Collaborative environments that encourage teamwork

- Motivated students and exceptional education professionals guided by best practices in learning and teaching
- Emphasis on application of knowledge and skills
- Responsibility, choice, accountability, and reflection




## SmartLab Philosophy

SmartLabs rest upon four principles of best practices in teaching and learning. These areas include student motivation, relevant contexts and skills, reinforcement of academics, and application of knowledge and skills to develop experience.

### Principle 1 – Extrinsic versus Intrinsic Motivation

SmartLabs personalize learning. Learners take responsibility for identifying, planning, documenting, and completing personally relevant projects. Educators, known as "Facilitators" guide the process. Students define appropriate challenges and tailor projects to their own interests and experiences. In this manner, learning is individualized, differentiated, and personally relevant. Additionally, learning is driven by application. Learners develop project objectives which, in turn, drive the desire to acquire knowledge and skills. Content follows application in the SmartLab making learning relevant and meaningful. The SmartLab emphasis on intrinsic motivation to learn, rather than on external factors like grades and test scores, empowers learners and develops higher-order thinking skills.

Later in this section we include a brief interview with Alfie Kohn, author of Punished by Rewards on intrinsic versus extrinsic motivation in schools.

### Principle 2 – 21st century skills

SmartLabs reinforce development of 21st century skills. These skills, highly valued by employers, lead to success in a fast-paced, globalized world. Facilitators model and reinforce these vital skills when working with students. SmartLab skills include:

- Critical thinking and problem solving
- Application of technology to workflow
- Acquisition and application of core subject knowledge

- Time management, organization, project planning, and resource management
- Collaboration and teamwork
- Communication
- Creativity and innovation
- Adaptability
- Information and media literacy
- Self-direction and reflection

### Principle 3 – Core Academic Knowledge

SmartLabs offer an engaging, project-based context for integration of core academic content. SmartLabs represent significant investments. Administrators, parents, and the community expect SmartLabs to support the overall academic mission. Our instructional resources and curriculum include ensure that students acquire and utilize core academic concepts. Student projects connect technology, assessment, career and college readiness, and core academic disciplines. Our Facilitators encourage students to explore these connections as they work in the SmartLab. SmartLab educators use the ePortfolio to reinforce connections to current academic goals and expectations specific to each community.

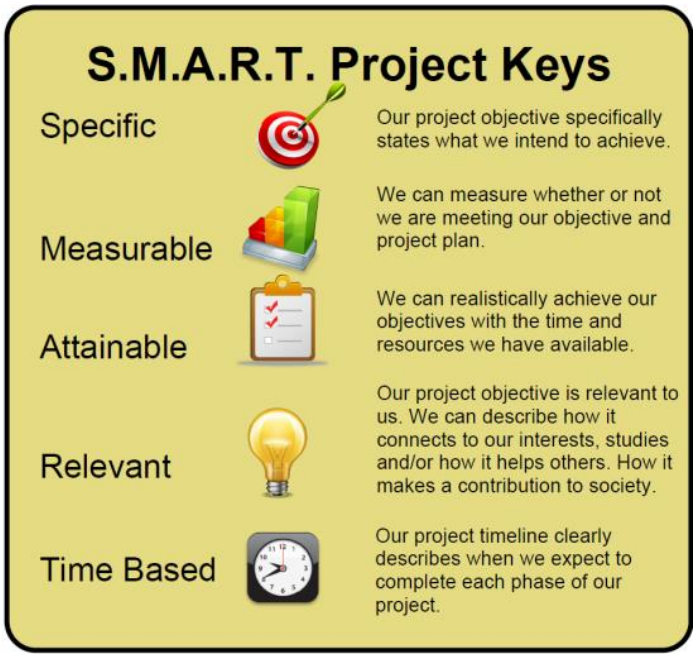
### Principle 4 - Application

SmartLabs demonstrate the productivity and application of technologies. Technology should not overshadow concepts and learning. Rather, encourage the application of technology to meet goals and objectives for learning and communication.

Technology changes rapidly. Almost certainly many SmartLab technologies will become obsolete before students enter the workforce. By focusing on the application and integration of tools to workflow, rather than specific functionalities of a technology, learners acquire competencies necessary for college and career success.

### SMART Objectives

SmartLabs thrive when students develop and follow through on their objectives. We use the term "SMART objective" to describe the nature of objectives in the SmartLab. As you work with students to identify and initiate projects encourage them to create SMART objectives. Model developing and documenting project objectives. Provide examples of each aspect (specific, measureable, attainable, relevant, and time based) of a SMART objective. As students learn to write clear and concise objectives share examples throughout the class.



## Qualities of Successful Facilitators

Learning is different in a SmartLab. Students take responsibility for their own learning. For this reason, teaching professionals in a SmartLab are called "Facilitators". The title reflects their role – to facilitate learning. Most Facilitators take great pride in this role and the title. No two Facilitators are alike but most successful facilitators exhibit a number of common characteristics. Successful facilitators empower students, model lifelong learning, and demonstrate strong time and project management skills.

As a Facilitator you will no longer teach a specific discipline. Rather, you will manage, mentor, and guide student learning and success. A Facilitator encourages, inspires, and empowers learners. The responsibility to learn, work, set and meet objectives falls to the student. If that frightens you, relax! We've been doing this for over 25 years and it works! As one award winning Facilitator suggested – **trust the process**. You will be amazed at what your students accomplish with the SmartLab resources, your support, and their intrinsic interests.

### Personal and Professional Characteristics

Successful SmartLab Facilitators exhibit high energy levels, excitement, creativity, and a genuine interest in the progress of their students. Given the high level of student autonomy in the SmartLab, Facilitators must cede responsibility for learning to their students in order to coach and challenge them at their individual levels. In addition, the Facilitator must manage a large set of classroom resources found in the SmartLab. Therefore excellent organizational skills are a plus.

Facilitators must understand how to manage a classroom where learning is highly-individualized, many different activities take place simultaneously, and the daily experience constantly changes. Most learners find SmartLabs intrinsically interesting and stay on task. However, a successful SmartLab Facilitator remains keenly aware classroom behavior and shows a firm hand when necessary to ensure productive learning.

Facilitators model their love of learning. The ability to say, "I don't know but, I'm willing to learn." helps students to understand that motivation comes from within. Additionally, many students feel empowered when asked to demonstrate an expertise developed in the SmartLab to their peers or adults. Successful Facilitators often remark, "I learn as much as the kids" or "I learn something new every day in the SmartLab!"

Facilitators often energetically advocate for the SmartLab. Ideally, the Facilitator actively collaborates with colleagues to connect SmartLab projects and resources to learning in traditional disciplines. Done effectively, the SmartLab acts as a resource for the school rather than a stand-alone room.

### Teaching Background

Successful SmartLab Facilitators come from a wide range of teaching and professional backgrounds. Prior experience in science, math, English, or social studies helps foster connections between SmartLab learning engagements and core academics. Experience with project-based learning is a plus. Many SmartLab Facilitators successfully coach sport teams or lead after-school programs.

SmartLabs are flexible learning environments that take advantage of the strengths of each teaching professional and the needs of the local community. The extensive professional development and support provided by Creative Learning Systems prepares educators to facilitate the SmartLab.

### Technological Experience and Knowledge

Creative Learning Systems provides extensive technical support for its SmartLab partners. While the SmartLab is typically the most technology-rich classroom in the school, it is not essential that the Facilitator have a strong technological background. That said, successful SmartLab Facilitators demonstrate comfort with computer operation and the ability to locate and understand technical information. They should be technologically savvy enough to confidently say to a learner, "I don't know, but I bet we can figure it out!"

### Expectations and Accountability

Set high expectations for your students. Hold students accountable for their work from concept to completion. Learners are allowed – indeed encouraged – to fail in a SmartLab. We know that some of the best learning takes place when students encounter and learn to overcome unanticipated challenges and problems. Students need to document and communicate their failures as well as their successes.

## Inspiring and Engaging Students

> So, what do you do when a learner is not motivated or interested?
> How do you respond when a learner has difficulty transitioning from a traditional classroom model to the SmartLab?

We realize that students vary in their levels of interest and motivation. We provide many resources to help you manage the transition from schooling to learning. First, our curriculum accommodates different student interests and aptitudes. Second, during training, we review best practices in learning and teaching, especially those appropriate to the SmartLab, to ensure that you are prepared to work with and support many different types of learners. Additionally, we provide some insight to common challenges Facilitators face in the SmartLab. Below are a few examples of challenges you may face and ways successful Facilitators have responded:

### "I'm bored"

Many students feel bored in school. One Gallup survey found that "boredom" was the most commonly cited adjective used to describe students' feelings about school. Boredom is not consistent with critical thinking. While boredom occurs elsewhere, it is not acceptable in the SmartLab. Fortunately, with the SmartLab's emphasis on choice, little opportunity for boredom exists. Successful Facilitators respond to student boredom with: "The SmartLab is about choice and responsibility. Do you want to be bored? If not, it's your **responsibility** to choose to do something interesting. What interests you? How can you apply your interests to your project?"

### "I'm done."

Learning never ends. SmartLabs foster life-long learning. Each Learning Launcher includes the "Extend Yourself" section to encourage increased investigation. Questions and comments for your students:

- Have you completed and documented all the project requirements?
- Can students explain their work, objectives, and ePortfolio products?
- What can you improve with the remaining time?
- Have you reviewed the Extend Yourself section of the Learning Launcher?

If students satisfactorily completed and documented their engagement, they have earned the privilege to help their classmates, explore their topic in more depth, connect it to other areas of interest, or create their own challenge.

### "Mine didn't work"

Awesome! Learning often happens when something does not work as envisioned. What can you do to help them trouble-shoot issues with technology, materials, and their projects/products? Ask them to:

2. Describe the problem
3. Review their attempts to address the challenge
4. Brainstorm additional solutions
5. List several additional resources they might use to resolve the issue
6. Discuss the problem and solution in their ePortfolio.

Recall that you may or may not know the answer to all the questions that arise in the SmartLab. Many SmartLabs have a three-before-me rule. This rule encourages students to take ownership of their own learning. Ask students if:

7. They attempted to solve the problem in other ways
8. Revisited the What You Should Know section of the Express or Liftoff Challenge
9. Used other resources such as the Internet or peers

Some Facilitators hold up three fingers as a reminder of the three-before-me rule. Others will quietly grab the hanging monkey found in most SmartLabs and put it on the student's back. If the learner is truly at an impasse, a common response to this problem is "I don't know, but I bet we can figure it out." It's empowering for students to learn that their teachers don't know all the answers. And, with all the technology in the SmartLab, there's a good chance you really won't know the answer!

### "I don't like my partner"

You will encounter many variations to the partner conflict theme, including "My partner won't let me do [something]", "I'm doing all the work", and "We just can't agree". Like other problems in the SmartLab, use this as an opportunity to learn. Remind the learners that collaboration is an important skill. We can't always choose who we work with, but we are still responsible for working well with others. Probe the reasons for the conflict. See if you can coach students on a constructive approach to the problem and resolution. Encourage the learners to find a win-win resolution. Remind them that effective collaboration depends more on how they solve problems than whether or not they agree on everything. Reward them in their project assessment for constructive conflict resolution.

### "I don't like [Snap Circuits, Google Sites, Scratch, Lego Robotics, etc.]"

The vast scope of the SmartLab ensures that students eventually encounter a topic of little personal interest. Remind students to take responsibility for completing a project and to find a suitable and relevant set of learning objectives. Questions and comments include:

- What have other learners done at this station?
- Can you find interesting ideas online?
- You never know, you may enjoy it more than you thought!

# Punished by Rewards?

A Conversation with Alfie Kohn
EDUCATIONAL LEADERSHIP

In classrooms where students can make choices about learning and have tasks of worth to explore, the need for punishments or rewards declines sharply. - Ron Brandt

Both rewards and punishments, says Punished by Rewards author Alfie Kohn, are ways of manipulating behavior that destroy the potential for real learning. Instead, he advocates providing an engaging curriculum and a caring atmosphere "so kids can act on their natural desire to find out."

The following interview took place at ASCD's Annual Conference on March 27 in San Francisco.

Alfie, we educators use punishment quite a lot, but we've come to understand that it's not a very effective motivation. We've been convinced that it's much better to use rewards instead. But now you come along and say that's wrong, too. Why?

First, let's make sure we agree on your first premise, which is that punishment is destructive. A number of people seem to think if we call it "consequences" or insert the modifier "logical," then it's okay. "Logical consequences" is an example of what I call "punishment lite," a kinder, gentler way of doing things to children instead of working with them. Having said that, I'll move on to rewards. Rewards and punishments are both ways of manipulating behavior. They are two forms of doing things to students. And to that extent, all of the research that says it's counterproductive to say to students, "Do this or here is what I'm going to do to you," also applies to saying, "Do this and you'll get that." Ed Deci and Rich Ryan at the University of Rochester are right when they call rewards "control through seduction."

And you're saying rewards are just as undesirable as punishment.
By virtue of being controlling, they're likely to be experienced as aversive in the long run. The reason is that while students would certainly like to have the goody itself—the pizza or money or gold star—none of us enjoys having the very things we desire used as levers to control our behavior. So it's the contingency of the goody—"Do this and you'll get that"—that accounts for its punitive status over the long haul.

You're saying that's the case even for kids who find a certain task rewarding for its own sake?
Rewards are most damaging to interest when the task is already intrinsically motivating. That may be simply because there is that much more interest to lose when extrinsics are introduced; if you're doing something boring, your interest level may already be at rock bottom.
However, that doesn't give us license to treat kids like pets when the task is uninteresting. Instead, we need to examine the task itself, the content of the curriculum, to see how it can be made more engaging. Regardless of what we do about it, though, one of the most thoroughly researched findings in social psychology is that the more you reward someone for doing something, the less interest that person will tend to have in whatever he or she was rewarded to do.

In Punished by Rewards 1, you cite a lot of research on points like that. You're saying this is not just your opinion.

That's right. There are at least 70 studies showing that extrinsic motivators—including A's, sometimes praise, and other rewards—are not merely ineffective over the long haul but counterproductive with respect to the things that concern us most: desire to learn, commitment to good values, and so on. Another group of studies shows that when people are offered a reward for doing a task that involves some degree of problem solving or creativity—or for doing it well—they will tend to do lower quality work than those offered no reward.

That seems so contrary to our everyday experience. Everybody is used to getting rewards and giving them. As educators we think it's only right to give rewards; kids who do good things deserve rewards.

What kids deserve is an engaging curriculum and a caring atmosphere so they can act on their natural desire to find out about stuff. No kid deserves to be manipulated with extrinsics so as to comply with what others want. It's remarkable how often educators use the word motivation when what they mean is compliance. Indeed, one of the fundamental myths in this area is that it's possible to motivate somebody else. Whenever you see an article or a seminar called "How to Motivate Your Students," I recommend that you ignore it. You can't motivate another person, so framing the issue that way virtually guarantees the use of controlling devices.

Moreover, motivation is something that kids start out with. You don't have to bribe a young child to show you how she can count to a thousand million or decode signs on the highway. But research shows that by the middle—or certainly by the end—of elementary school, this intrinsic motivation starts to tail off sharply—by an extraordinary coincidence, around the time that grades have started to kick in.

Surely it's unrealistic to expect that all kids will find all the curriculum intrinsically motivating. There are some things that kids just have to slog through, aren't there?

Well, a given child is likely to be more interested in some things than others, but we're not talking about putting something on the chalkboard and expecting kids to jump up and down and say, "I can't wait to get at this!" Skillful teaching involves facilitating the process by which kids come to grapple with complex ideas—and those ideas, as John Dewey has told us, have to emerge organically from the real-life interests and concerns of the kids. "Which is bigger, 5/7 or 9/11?" The correct answer is, "Who cares?" But kids care very much about how fast they are growing. Within that context, the skills necessary to figure it out become interesting to most kids. "What's the difference between a simile and a metaphor?" Same answer; few members of our species would find that distinction intrinsically motivating—but kids are highly interested in writing a story about dinosaurs or how a spaceship carries them away. In the context of a task that matters to students, the specific skills we care about can be taught naturally without sugarcoating, without games, and above all without offering kids little doggie biscuits for doing what we tell them.

Let me ask about praise, which is particularly tricky, because it's not a tangible reward. If I tell one of my staff members that he or she did a terrific job on something, am I giving a reward at that point?

That's an interesting question, and I wish more educators would ask it, regardless of what the answer turns out to be. Positive feedback that is perceived as information is not in itself destructive and indeed can be quite constructive, educationally speaking. And encouragement—helping people feel acknowledged so that their interest in a task is redoubled—is not a bad thing. But most praise given to children takes the form of a verbal reward, which can have the same destructive impact as other rewards: it feels controlling, it warps the relationship between the adult and the child—and between the child and his or her peers—and it undermines interest in the task itself. It's not a coincidence that coercive discipline programs rely to a large extent on getting compliance by slathering on praise. A typical example is the elementary school teacher who is taught to say, "I like the way Cecilia is sitting so nice and quiet and ready to work." I have multiple objections to this practice.

Why?
First, the teacher hasn't done Cecilia any favors. You can imagine some of the other kids coming up to her after class: "Miss 'nice and quiet' dork!" Second, the teacher has just turned a learning experience into a quest for triumph. She has introduced competition into the classroom. It's now a contest to see who is the nicest, quietest child—and the rest of you just lost. Third, this is a fundamentally fraudulent interaction. The teacher is pretending to speak to Cecilia, but she's really using Cecilia to manipulate the behavior of the other people in the room—and that's simply not a nice way to deal with human beings.
Fourth, and possibly most important, I ask you to reflect on what is the most important word in that expression. I believe it's I. Even if such a practice "works," it has worked only to get Cecilia and the other people watching to become concerned about what I demand, regardless of what reasons I may or may not have for asking her to do something. Cecilia is not helped one iota to reflect on how her experience affects other people in the room or what kind of person she wants to be. On that point, I like to think about the questions that kids are encouraged to ask in different kinds of classrooms. In one dominated by consequences, kids are led to think, "What do they want me to do, and what will happen to me if I don't do it?" In a reward-oriented classroom including one that is characterized by praise, kids are led to ask, "What do they want me to do, and what will I get for doing it?" Notice how fundamentally similar those two questions are and how radically different either one is from the questions, "What kind of person do I want to be?" or "What kind of classroom do we want to have?"

What about less successful students? A lot of educators feel strongly that they need even more praise than other kids. They need to be praised when they make the slightest bit of progress. No research supports the idea that praising children for inching up the adult-constructed ladder helps them develop a sense of competence. Indeed, praise for success at relatively easy tasks sends a message that this child must not be very bright. Moreover, children are not helped to find the material itself important or interesting if they are praised for doing it. In general, the more kids are induced to do something for a reward, whether tangible or verbal, the more you see a diminution of interest the next time they do it. That can be explained partly by the fact that praise, like other rewards, is ultimately an instrument of control, but also by the fact that if I praise or reward a student for doing something, the message the child infers is, "This must be something I wouldn't want to do; otherwise they wouldn't have to bribe me to do it."

What you're saying is not going to be readily accepted by most people. It seems to go against our everyday experience.
It does and it doesn't. For example, parents come up to me and say things like, "You know, it's funny you say this, because just yesterday I asked my kid to clear the table after dinner, and he said, `What are you going to give me for it?'" What I find remarkable about that is not what the child said, but that the parent is asking me to shake my head and commiserate about These Kids Today. What I want to ask is, "Where do you think the kid learned this?" And if I do ask that, with very little prompting, people understand. There's even some research in Missouri showing that when undergraduates were asked, "Do you think rewards lead to higher or lower interest in a task?" they guessed wrong. But as soon as the research results were explained, everyone said, "Oh yeah, I knew that." A lot of people have had the experience of having done something just because they loved it—until they started to get paid for doing it, after which they wouldn't dream of doing it again without getting paid. The phenomenon whereby extrinsic motivators cause intrinsic motivation to evaporate is not on the tips of our tongues, but it's not that far from consciousness, either.

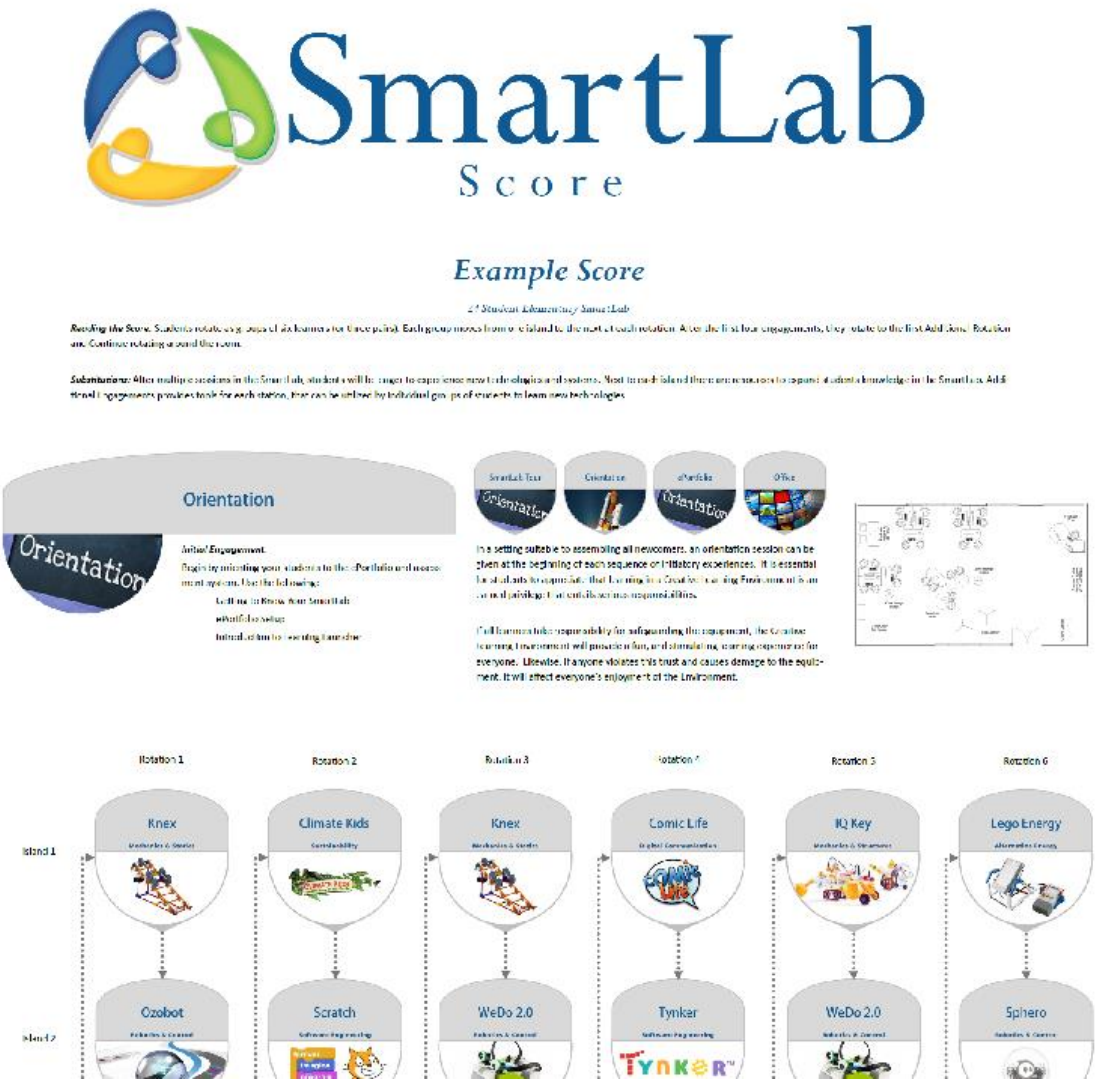
All the same, it's a different way to think about things. For example, I like it when people recognize me for an accomplishment of some kind.
Yes, of course. We all want to be appreciated, encouraged, and loved. The question is whether that need must take the form of what often looks like a patronizing pat on the head and saying "Good boy," to which I believe the most logical response is, "Woof!"
Now, I know a lot of adults who are praise junkies: sadly unable to think about the worth of their own activities and actions and products, and utterly dependent on someone else to tell them they did a good job. That is the logical conclusion of being marinated in praise for years. But maybe there is a more empowering and respectful way of sharing one's opinions than what amounts to a verbal reward. I'm struck by teachers who say over and over to me, "You don't understand the kind of backgrounds and home lives that these kids have; they come from loveless, sometimes brutal places, and you're telling me not to praise them?" My answer is, "Yes." What these kids need is unconditional support and encouragement and love. Praise is not just different from that; it's the opposite of that. Praise is, "Jump through my hoops, and only then will I tell you what a great job you did and how proud I am of you." And that can be problematic. Of course, with positive feedback, it's a matter of nuance and emphasis and implementation. That is not the case with gold stars, candy bars, and A's, which I believe are inherently destructive.One of the central myths we carry around in our heads is that there is this single entity called "motivation" that one can have more or less of. And of course we want kids to have more of it, so we offer them A's, praise, and pizza. The truth is that there are qualitatively different kinds of motivation. We need to stop asking "How motivated are my students?" and start asking "How are my students motivated?" The kind of motivation elicited by extrinsic inducements isn't just less effective than intrinsic motivation; it threatens to erode that intrinsic motivation, that excitement about what one is doing.

So what are you suggesting instead?
I sometimes talk about the three Cs of motivation. The first C is content. Far less interesting to me than whether a student has learned what he was supposed to is the question, "Has the child been given something to do worth learning?" If you ask me what to do about a kid being "off task"—one of our favorite buzzwords—my first response is going to be, "What's the task?" If

you're giving them garbage to do, yes, you may have to bribe them to do it. If the kids have to endlessly fill in the blanks on dittos, you're not going to get rid of rewards or threats anytime soon. The second C is community: not only cooperative learning but helping kids feel part of a safe environment in which they feel free to ask for help, in which they come to care about one another as opposed to having to be manipulated to share or not be mean. Some of the outstanding work on creating caring communities is being done by the Developmental Studies Center in Oakland, California. The third C is choice: making sure that kids are asked to think about what they're doing and how and with whom and why. You know, kids learn to make good choices not by following directions but by making choices. You show me a school that really has those three Cs in place—where students are working with one another in a caring environment to engage with interesting tasks that they have some say in choosing—and I'll show you a place where you don't need to use punishments or rewards.

# SECTION TWO: The SmartLab Environment

# *The Elementary Instructional Score*




## The Instructional Score and Student Rotation Process

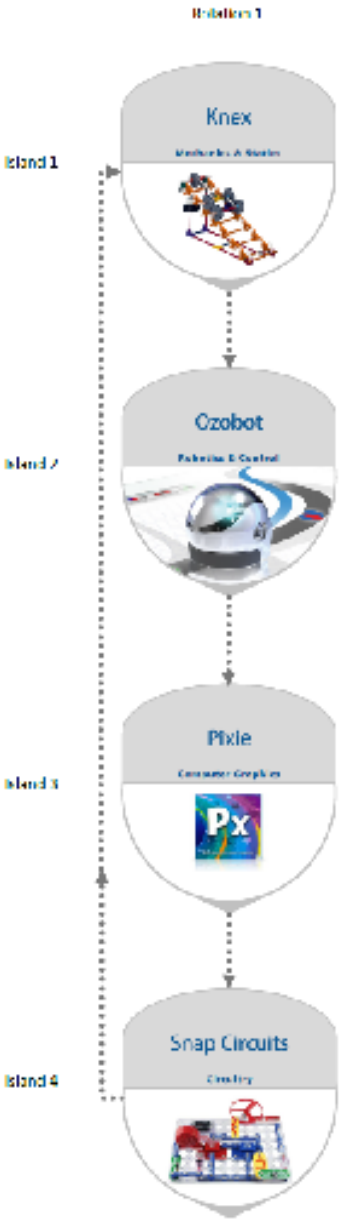
The SmartLab *score* outlines the sequence learning and organizes student rotation in a SmartLab. Creative Learning Systems customizes each SmartLab score to meet the needs of the local education community. The score guides students from peninsula to peninsula and from project to project. Students rotate clockwise from one location to the next.

## Elementary Schedules and SmartLab Rotations

Elementary school use of the SmartLab varies greatly. Some schools offer SmartLab classes to only upper elementary students whereas others ensure the experiences at every grade. Elementary SmartLab classes range from as short as thirty to as long as ninety minutes. Students visit the SmartLab with and without their homeroom teachers daily to weekly for several weeks or a whole semester. Students work in pairs on Liftoff Challenges. Elementary labs are designed that teams of three pairs of students work on similar projects (with the same technology) in each rotation.

Express Challenges are designed for whole-class projects. Students rotate from peninsula to peninsula so that at any one time six students, in pairs, work on the same topic. Despite the common area of exploration, pairs of students' final products and presentations may vary widely.

Our elementary SmartLab Facilitators customize the rotation process to meet different abilities and expectations for lower and upper elementary students as well as unique schedules. Our trainers arrive prepared to discuss your schedule and the duration of a project. Use their expertise to help you address the length of a project, your project outcomes and expectations, and other scheduling challenges.




## Elementary Whole Class Activities

In the design of every elementary SmartLab, there are a number of whole-group engagements. Those engagements are displayed at the bottom of the current score and can be used at any time in the engagement cycle to provide whole-group instruction. Elementary SmartLab Facilitators tend to start their orientations with ePortfolio building activities that focus on introducing students to concepts and methods required for the remainder of the course.

## Engagement Cycle

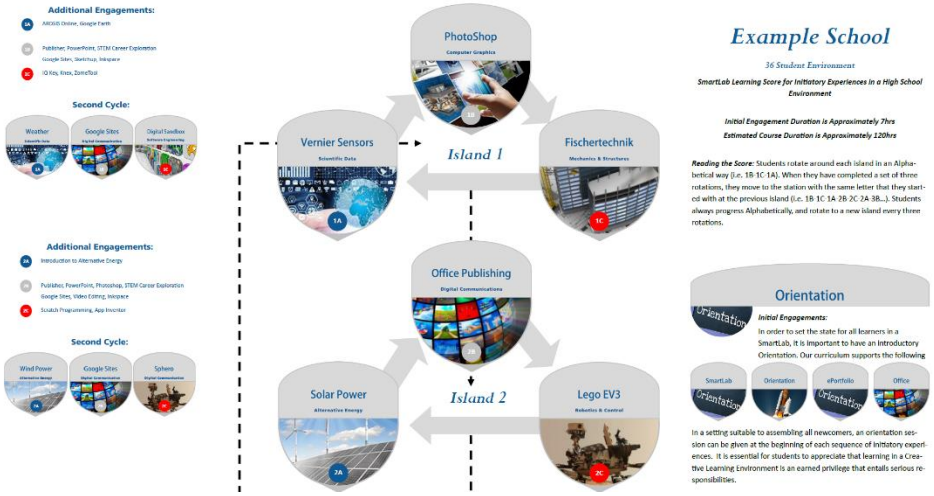
We designed Express and Liftoff Challenges to provide a structure that fosters project-based learning and leverages the natural curiosity of young learners. Open-ended exploration allows students to acclimatize to the equipment and develop questions of personal relevance. Use of Express and Liftoff Challenges provides the content, concepts, and resources for gaining skills and knowledge for projects from concept to completion. Completing the ePortfolio brings closure to the project and provides the opportunity for students to reflect on their efforts. Our new Facilitators rely heavily on the Express and Liftoff Challenges in their first years to ensure that students complete projects for each of the many systems of technology in the SmartLab. Below we pair stages in the project cycle with days in the classroom for a seven day rotation.

### *Sample Elementary Cycle*

| Day | Project Activity |
|---|---|
| 1 | Discovery/ Exploration – Open-ended exploration of the technology and initial review of the Express or Liftoff Challenge. |
| 2 | Project Objective – Develop and document an objective, identify relevancy, take a deeper look at the available materials and resources for project success. |
| 3-5 | Project Activity – Actively address objectives. Document their challenges, solutions, and successes. |
| 6-7 | Present – Students share the results of their work with peers and/or other audiences. Presentation expectations vary with SmartLabs. Students may use the sample Project Presentation template or communicate their efforts and results in any other acceptable form. |

# *The Secondary Instructional Score*

SmartLab
Score




## The Instructional Score and Student Rotation Process

The SmartLab score outlines the sequence of student rotation in a SmartLab and the scope of their learning engagements. Creative Learning Systems customizes each SmartLab score to meet the needs of the local education community. The score guides students from station to station and from project to project. Students rotate clockwise around the islands or peninsulas.

## How to Read a Node


Each node on a score has four identifying characteristics we will use this example to illustrate those.

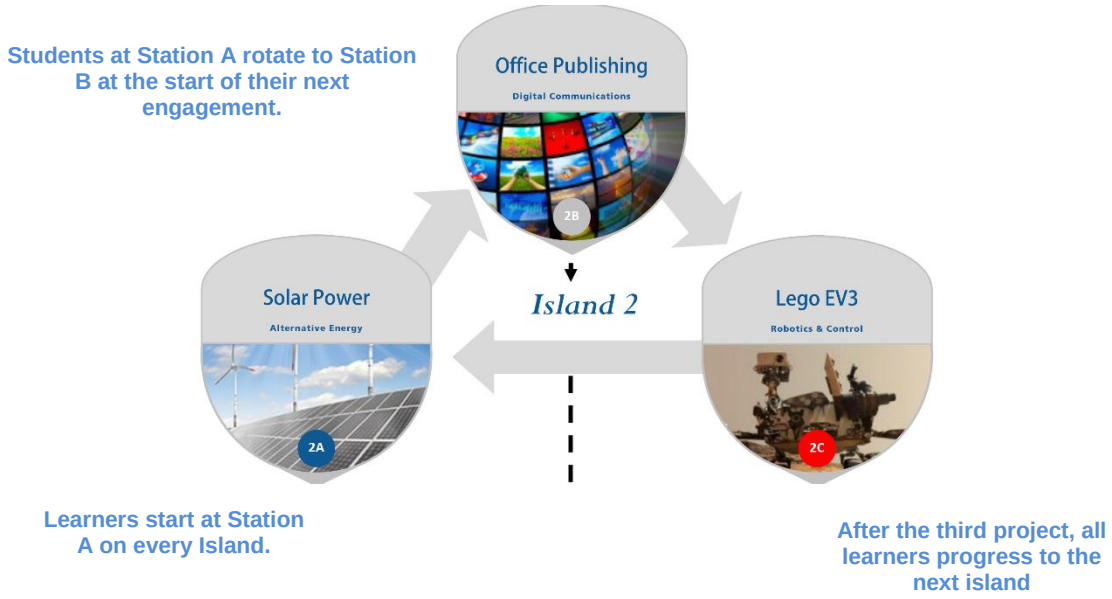
Wind Power: The Engagements and Learning Launcher Titles students should be working on at this station.

Alternative Energy: The System of Technology those Engagements fall under.

2A: Indicates position blue on Island 2 or Island 2 Station A.

## Nodes on a Score

Each box on the Score is called a **node.** Nodes direct teams to the island or peninsula where they work, the technology used, and the system of technology, topics, and titles for that location.




## Secondary SmartLab Rotations

Each team rotates from station to station within an island completing three projects before moving on to the next island. Most secondary SmartLabs operate on either a seven or ten day schedule. Students work for either seven or ten days to complete a single project before rotating to the next station on the island. One leg of the power pylon has an emergency shut-off breaker that will kill the power to the whole island when pressed. Our SmartLab Facilitators customize the rotation process to meet different abilities and expectations students as well as unique schedules. Our trainers arrive prepared to discuss your schedule and the duration of a project. Use their expertise to help you address the length of a project, your project outcomes and expectations, and other scheduling challenges.

## The Second Cycle

The SmartLab score as a section next to each island that indicates a "Second Cycle." These resources focus on more advanced learning for each station, and can be used for a full at a later date.

## Additional Engagements

This section of the score details additional software and engagements that can be utilized at a particular station. These resources can be substituted to meet student and facilitator needs at any time in the rotation cycle.

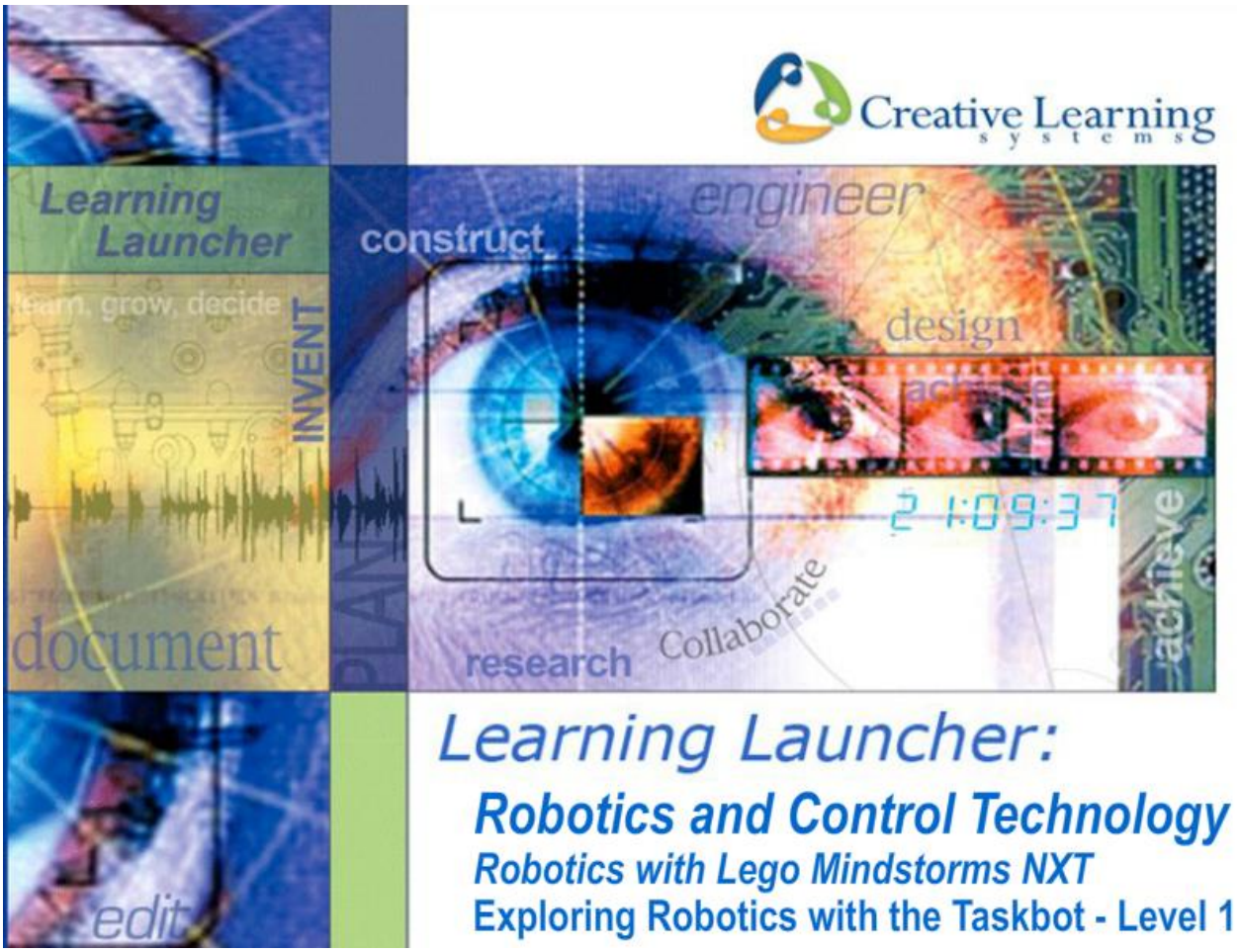
## Engagement Cycle

We designed Learning Launchers to provide a structure that fosters project-based learning and leverages the natural curiosity of all learners. Open-ended exploration allows students to acclimatize to the equipment and develop questions of personal relevance. Use of Learning Launchers provides the content, concepts, and resources for gaining skills and knowledge for projects from concept to completion. Completing the ePortfolio brings closure to the project and provides the opportunity for students to reflect on their efforts. Our new Facilitators rely heavily on Learning Launchers in their first years to ensure that students complete projects for each of the many systems of technology in the SmartLab. Below we pair stages in the project cycle with days in the classroom for a seven day rotation.

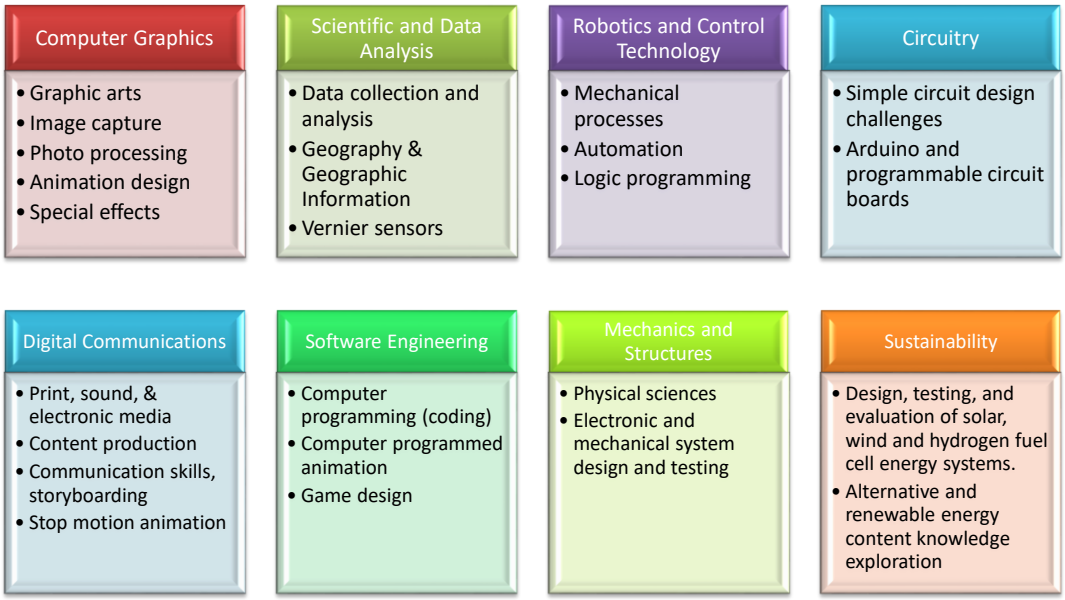
### *Sample Secondary Cycle*

| Day | Project Activity |
|---|---|
| 1 | Discovery/ Exploration – Open-ended exploration of the technology and initial review of the Express or Liftoff Challenge. |
| 2 | Project Objective – Develop and document a SMART objective, identify relevancy, take a deeper look at the available materials and resources for project success. Students document their work in their ePortfolio journal. |
| 3-5 | Project Activity – Actively address objectives. Document work with the ePortfolio journal, including challenges, solutions, and successes. |
| 6 | Project Presentation – Students use journal entries and images captured while working to create a final presentation. Presentation expectations vary with SmartLabs. Students may use the sample Project Presentation template or communicate their efforts and results in any other acceptable form. |
| 7 | Self-assessment & Reflection – Use the ePortfolio Self-Assessment template to reflect on and assess work and contributions to the project. |

# SECTION THREE: SmartLab Curriculum



# Systems of Technology
# Topics 2017




## SmartLab Curriculum

Creative Learning System provides students with access to a unique collection of learning engagements via our Learning Launchers. The SmartLab LaunchPad serves as the gateway to our resources. The Learning Launchers address and combine eight Systems of Technology. Each year we create and make available new Learning Launchers via the LaunchPad. Below are the systems of technology with examples of the topics students might explore as they complete a project.

### Systems of Technology

SmartLab resources are classified according to systems of technology. Although we group tools and materials according to eight systems of technology, as students gain experience, the boundaries between systems become more fluid.

At the elementary level we encourage depth of exploration within a system of technology. Young learners succeed in acquiring skills and developing knowledge when focused on concrete experiences undistracted by challenges that arise when combining multiple products or resources. Our elementary school SmartLabs help students master the challenges of one system of technology at a time to create the solid foundation for success as life-long learners.

At the secondary level, at its most basic, students learn to apply communication skills, presentation software, and experience gained during one project throughout all their SmartLab engagements. Another example is circuitry. Understanding circuits applies to a variety of topics

including, but not limited to designing, building and testing alternative energy systems, robotics, and pneumatics. The integration of technology and experience makes the SmartLab a powerful learning platform to understand how and when to apply knowledge and experience to solve problems and demonstrates the transdisciplinary nature of learning and work.

### Sustainability

Alternative and renewable energy introduces and explores the science, engineering, policies, and challenges of providing a rapidly growing population with energy to remain productive and competitive globally. Students design, build, and test scale model alternative energy systems including solar electric (PV), solar thermal, wind, and hydrogen fuel cells.

### Circuitry

Students explore a variety of circuits important in industrial processes and human constructed environments. Students develop an understanding of the scientific and technological principles underlying electric, pneumatic, and other circuits. Experience with circuits leverages problem-solving and systems thinking skills which apply throughout the SmartLab.

### Computer Graphics

Our computer graphics collection provides students the tools and experience to develop and express their creativity in the visual arts using modern technologies and tools. Students work with current and emerging software to design, produce, and communicate visually. Examples of the areas addressed by this system of technology range from the application of simple and advanced bitmap and vector graphics programs to art exploration and creation through virtual tours of the world's greatest museums.

### Digital Communications

The virtual and digital world engages students and provides an outlet for their natural need to socialize and communicate. Digital communications provides students with opportunities to learn and demonstrate the principals involve and the methods needed to effectively communicate in a digital environment. This system emphasizes the application of tools and technology through the development of slideshows, audio/visual presentations, websites and other digital environments.

### Mechanics and Structures

Despite the increased presence of the Internet and computer technology, students always enjoy and learn from activities that require the manipulation of physical materials. At the end of the day they create a tangible product. Learning becomes especially valuable when natural phenomena such as gravity, wind, and structural soundness (or lack of) challenge students expectations and goals. By engaging in hands-on work students learn fundamentals of physics, mechanics, and employ science and mathematics to solve relevant challenges. In this system of technology students design, build, and test constructed objects such as bridges, simple machines, and their own incredible creations.

### Robotics and Control Technology

Robots fascinate humans of all ages and gender. Moreover, robots perform important work too dangerous or too repetitive for humans. Understanding how to design, build, program, and test robots helps students recognize their sophisticated systems and the intersection of computer science and engineering. Our Robotics and Control Technology challenges support the learning

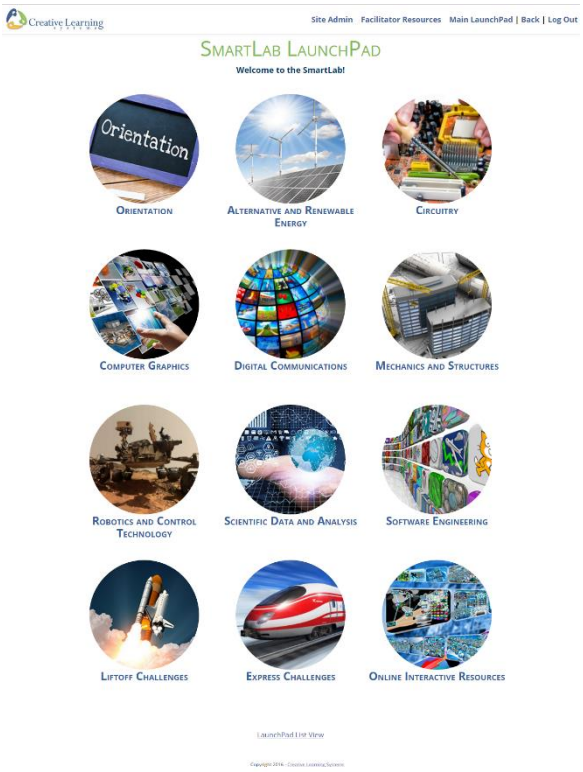
for all ages and abilities. Young learners begin with simple design and programming challenges using structured and supported resources. Older students combine multiple resources and materials to extend and enhance their learning as they tackle complex construction and programming challenges of their own design.

### Scientific Data and Analysis

Data collection and analysis underlies this suite of topics. Students use a variety of sensors, instruments, simulations, and software to collect, organize, and interpret data. The resources provided allow students to ask and answer questions of personal and societal importance. This collection lets students explore the cosmos using online telescopes, perform scientific experiments with electronic sensors, or use GIS to combine information and location to investigate geographic or demographic questions.

### Software Engineering

Computer programming once was dull and hard to learn. Not any longer! In this system of technology learners explore the fundamentals of computer programming using engaging, easy-to-use programming tools. Students create games, animations and simulations by snapping together blocks of code. Once created, they program the behavior of characters or objects. Called visual or object oriented programing, these resources were designed specifically for to help students them learn problem-solving, computational thinking, and basic math and science concepts.




## LaunchPad

All SmartLabs include the LaunchPad, a homepage for student and Facilitator access to CLS Internet resources. Students use the LaunchPad to access Express and Liftoff Challenges for

each project. From the LaunchPad Facilitators access all student resources as well as additional Facilitator materials. In addition, Facilitators use the LaunchPad to perform various administrative tasks. LaunchPad access is available from anywhere via the Internet. We encourage Facilitators to share the LaunchPad resources with all members of the school community. Access the Creative Learning Systems LaunchPad using this address: http://ll.creativelearningsystems.com/ and enter your username and password.

### Student versus Facilitator LaunchPad

Facilitators receive access to everything students experience plus additional resources. When a Facilitator signs in as the administrator of the LaunchPad she/he may control which Learning Launchers students' access, add or edit displays, identify standards associated with various topics and titles, and use our growing collection of Facilitator Resources for support and professional development. Remember to always login as the site administrator or you will only experience student access.

## Learning Launchers

Learning Launchers guide students through project-based learning engagements. CLS provides over 300 Learning Launchers in more than 60 topic areas. While most learners and SmartLab programs only utilize a small cross-section of these, the scope and variety of Learning Launchers enable personalized learning, providing students with a wide variety of topic areas, challenge levels, and project ideas. Learning Launchers encompass far too much information and such a wide array of technology that few will master all. Most topics provide enough resources to supply any motivated student with years of learning opportunities.

In addition, CLS provides Liftoff Challenges designed to meet the unique needs of elementary learners and Express Challenges, short whole-class activities, targeted towards Facilitators and schools where the students access the SmartLab for very brief periods. The collection of resources, Learning Launchers, Liftoff and Express Challenges continue to grow as we design and develop new resources annually.


### Learning Launcher Organization

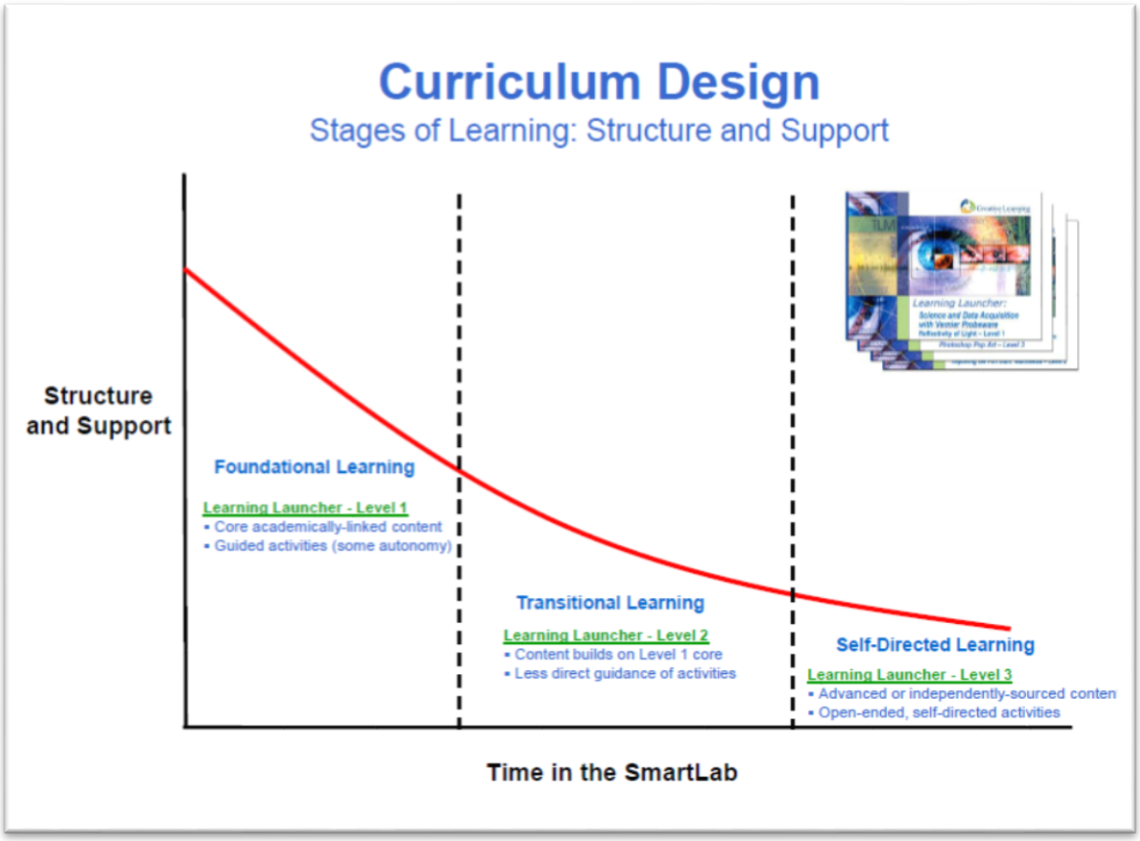
Each Learning Launcher follows a simple and recognizable sequence to guide student exploration and learning. Sections include:

- What You'll Learn: a list of learning outcomes
- Stuff You'll Need: materials required for project completion
- What You Should Know…: a brief explanation of key concepts or an introduction to physical or online tools
- Do It!: challenge outcomes, guidelines, and ideas
- Extend Yourself: additional content and/or recommendations for additional exploration

Learning Launchers differ from curriculum used elsewhere in the school in several important respects. Learning Launchers guide learning they do not define it. The name "Learning Launcher" describes their role as a resource to inspire, engage, and educate. They provide a place for learners to begin their exploration and the resources to support their progress. The SmartLab fosters and nurtures the potential of a motivated learner guided by an experienced teaching professional. The resources in the SmartLab enable this powerful dynamic. Students'

natural curiosity generates the most powerful learning and impressive projects. Learning Launchers provide the fertile ground needed for the flowering of student ideas.

Learning Launchers feature transdisciplinary learning engagements. A core competency in the SmartLab is the effective integration of information and applied technologies. Rather than focus on a single skill or concept, Learning Launchers connect ideas, skills, and academic concepts. While the subject of a Learning Launcher addresses a specific technology, learners often utilize multiple technologies to complete projects and ePortfolios. Likewise, Learning Launchers encourage a wide range of academic connections in science, math, language arts, social studies, and the arts. As project engagements become more complex, students typically integrate a broad range of resources, knowledge, skills, and experience.




L1-

## Level 1

L1 Learning Launchers introduce basic concepts and content within systems of technologies and related topics. Generally, L1 Learning Launchers include the principles underlying the technology, tutorials and how-to's, academic connections, and links to related resources. Project guidelines support student demonstration of skills, knowledge, and experience gained while engaged in the topic.

## Level 2

These intermediate challenges build on skills developed through Level 1 activities. Both L2 and L3 Learning Launchers include a summary of recommended prior skills and knowledge. Learners may utilize this summary to assess their readiness for these more advanced challenges

or to plan for the acquisition of these skills (for example, by reviewing tutorials in other Learning Launchers). Level 2 Learning Launchers provide transitional learning opportunities between foundational and self-directed learning. Therefore, project challenges are more complex and open-ended and contain less direct support and instruction than found in L1 Learning Launchers.

### Level 3

L3 Learning Launchers require self-directed learning. Projects contain open-ended design challenges requiring application of advanced knowledge and skills. Students engaged in L3 products often undertake research and experimentation on their own to gain the experience needed to complete their chosen project. Schedule permitting, Level 3 projects may develop into long-term work integrating multiple technologies, teams, and complex collaboration.

### Liftoff Challenges

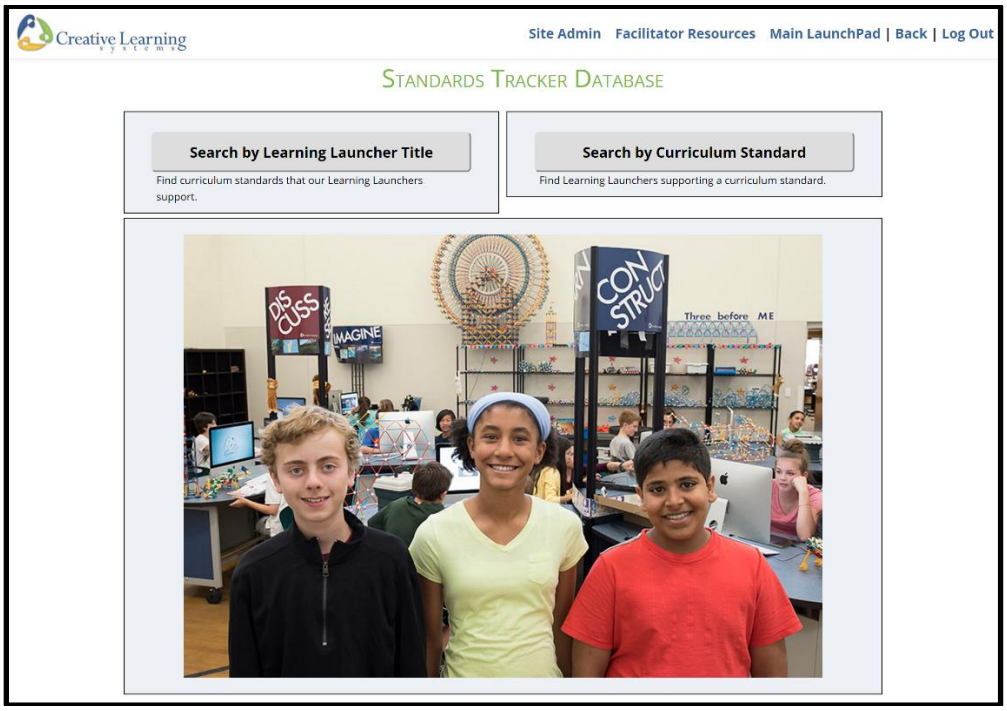
Liftoff Challenges provide a SmartLab solution for elementary learners, special education students, and learners who require more structure. They feature closely-guided activities with explicit project objectives and extensive direct support. Written for many reading levels, ages, and animated to introduce concepts sequentially, Facilitators find these challenges appropriate for many abilities. Most Liftoff Challenges may be completed in about five class periods.

### Express Challenges

Express Challenges are brief one to three class period activities for the whole class. Intended for younger learners Facilitators use them to provide targeted learning for all grades, to teach core knowledge and skills, and to orient students to the SmartLab environment.

### Online Interactive Resource Guides

The Internet teams with educational resources. We reviewed and selected exceptional resources you and your students will find useful when completing Learning Launcher projects. In addition, you may refer colleagues to these guides for discipline specific needs. These guides provide links to and descriptions of useful online resources in a range of academic subject areas. Use these resources to supplement the content and materials in your SmartLab and refer students to them for project research and exploration.




## Standards Tracker

Creative Learning Systems Learning Launcher Curriculum correlates to national academic standards. Access the Standards Tracker from the Site Admin page. Use filters to sort the standards and Learning Launchers. Correlations include:

- Common Core State Standards: Mathematics and English language arts/literacy (ELA)
- Science - National Science Education Standards, The National Academy of Sciences
- Mathematics - Principles and Standards for School Mathematics, National Council of Teachers of Mathematics.
- Language Arts - Standards for the English Language Arts, International Reading Association and the National Council of Teachers of English.
- 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).

## Evolve Your Program

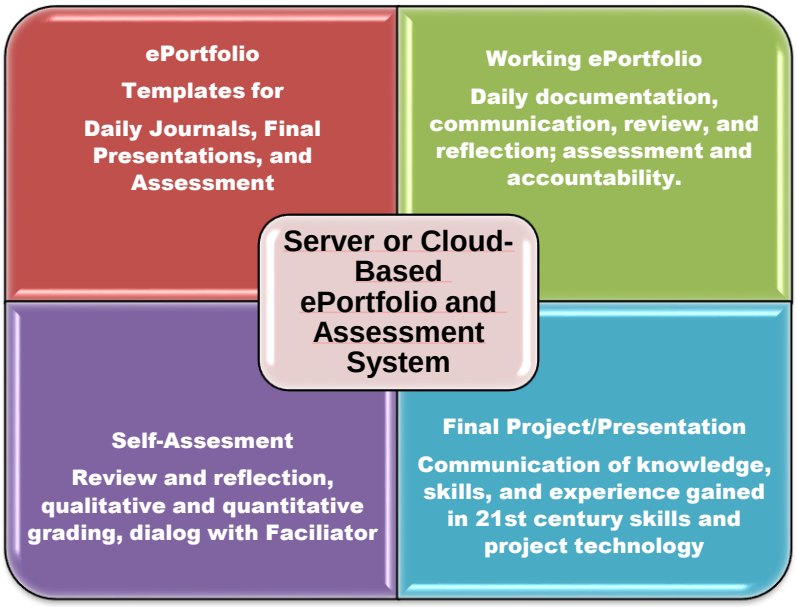
We encourage you to adapt and modify your SmartLab to fit your style, your objectives, and the needs of your learning community. Every successful SmartLab evolves along these lines.

We provide every SmartLab with tools and resources to create and grow engaging and effective learning environments. During your programs' first years both you and your students will rely heavily on our resources and the facilitation and classroom management methods you learn during your professional development.

As you and your students become more comfortable and experienced with the SmartLab, your program will grow. If offered, many students will return to the SmartLab annually. With experience students develop autonomy and the ability to conceive and complete complex projects on their own.

Few more powerful learning dynamics exist than a motivated learner and an excellent teaching professional supported by SmartLab resources. Many of our SmartLab Facilitators have been recognized with district, state, and national awards. Students have won Telly awards, placed in international robotics competitions, and been featured on local news programs for their impressive accomplishments.

# SECTION FOUR: The CLS ePortfolio and Assessment System




## ePortfolio and Assessment System Overview

The SmartLab ePortfolio System™ provides a framework for documentation and assessment of project-based learning and 21st century skills. Our resources provide a powerful toolset to help learners manage project activities, document learning, and develop effective presentations. The same resources allow Facilitators to follow, interact, and assess student progress from project start to finish. Integrated rubrics provide performance-based, authentic assessment. A variety of templates help students to set objectives, plan and complete projects, reflect on their learning, and communicate learning outcomes using written, verbal, and multimedia outlets. For schools with unrestricted access our cloud-based ePortfolio option allows learners to access their ePortfolios from any computer or mobile device with an Internet connection. Anywhere, anytime access allows individuals to work together or independently, from school, home, the library or anywhere.

The typical SmartLab ePortfolio system contains four components at the secondary level and a single document template for elementary SmartLabs. CLS provides simple, generic templates to our educators with the understanding that they may eventually customize documents to meet local needs.

### Key ePortfolio components

- **ePortfolio Homepage**: a central document to organize and access work completed for each project
- **Project Journal**: the central element of the working portfolio for each project. The Project Journal includes SMART objectives and daily reflections on what students did and learned and/or problems encountered and solved.
- **Presentation**: using a CLS template students show the results of project from concept to completion. Students may incorporate a variety of media and resources to demonstrate learning.

- **Self-Assessment**: CLS provides students a rubric developed specifically to help self-assess project-based, student-centered learning. This rubric provides an authentic assessment of learning as well as process skills such as collaboration and communication. In addition, learners reflect on ways to improve performance in future projects. This self-assessment is reviewed by the Facilitator and any differences are discussed.

## ePortfolio System Options

There are two primary ways to deliver and monitor student ePortfolios – a server-based system and an Internet or cloud-based system. During professional development, you will identify and prepare to use the approach that works best for your environment. Your trainer will help you decide based upon answers to these questions:

- Does your school already require a specific assessment approach?
- Do you want students to access their work from home?
- Are you comfortable managing cloud-based resources?
- Does your district use Google Apps for Education or Google Classroom?
- Can your students use Google Drive?

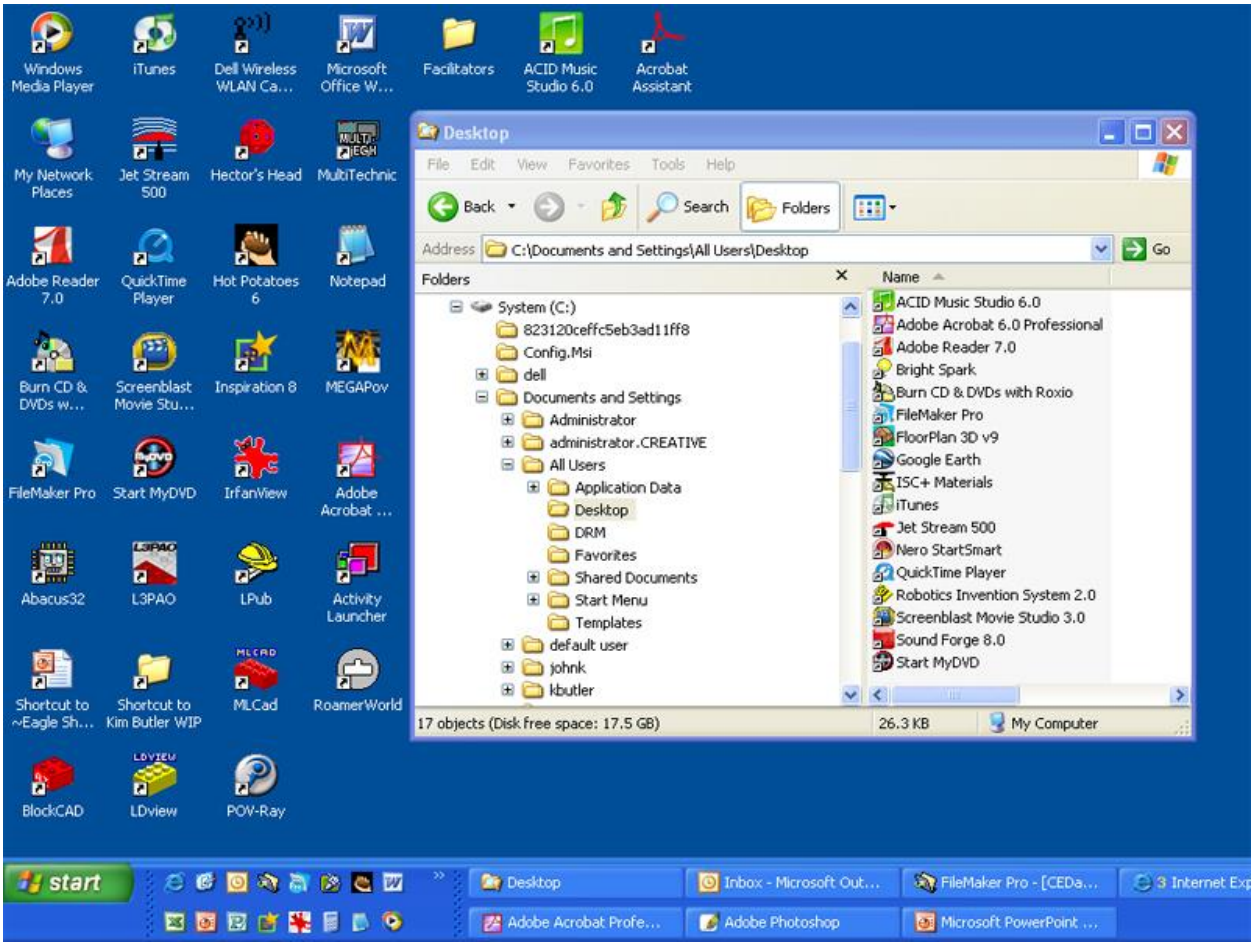
### Cloud versus Server-Based ePortfolio

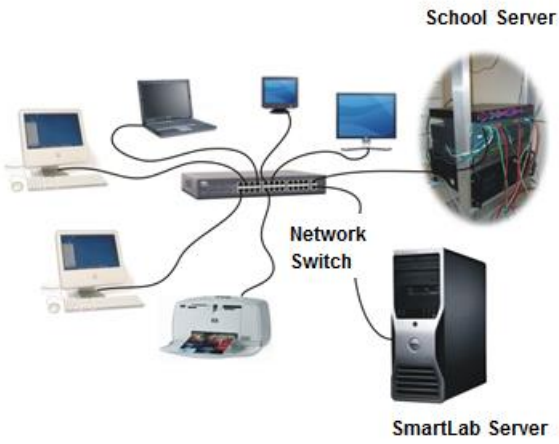
The cloud and server based ePortfolios contain the same resources designed to produce identical results. CLS provides templates used to create and organize project journals, presentations, and self-assessments. The difference between them lies in the setup process and access features. Guides written by CLS for setting up your cloud-based ePortfolios are located in the Facilitator Resource collection on the LaunchPad. Server-based templates may be downloaded from the LaunchPad for immediate use. Server-based ePortfolios may only be accessed while at school. Cloud-based ePortfolios exist on the Internet. The cloud-based approach allows students and Facilitators access via any Internet connected device.

### Characteristics of Server and Cloud-based ePortfolios

| Server based ePortfolio | Cloud-based ePortfolio |
|---|---|
| Authentic assessment via ePortfolios<br>Fully customizable templates<br>Accessible only from within the SmartLab<br><br>(PPT, DOC, and PUB Files) | Authentic assessment via ePortfolios<br>Fully customizable templates<br>Accessible from any Internet connected device<br>Increased collaboration and sharing via the Internet<br>Engagement – cloud-based resources are relevant to today's learners<br>Ability to include work from other classes<br>Adaptable to other cloud-based ePortfolio systems (e.g. Weebly, Mahara, etc.)<br><br>(Based upon G-Suite for Education) |

# SECTION FIVE: Technology and Customization






# Basic Computer System Navigation and Management

Understanding SmartLab computer technology improves your ability to manage and support student productivity. Facilitator training includes an extensive orientation to the SmartLab computer system, equipment, and organization. In addition, CLS provides detailed tutorials on many topics covered in this guide and during training via our online Facilitator Resource collection.

## SmartLab File Server System

Each SmartLab includes a server. A server is a computer (software and hardware) dedicated to managing all computer related aspects of the SmartLab. CLS in cooperation with district IT staff configures the SmartLab server. Your server may be located in the SmartLab or may be part of a common server system in your school/district. The server system provides:

- Media Library Resources
- Drive Redundancy
- Drive Backup
- Recovery Images
- Web Serving
- Remote Admin and Support

## Network Drives

SmartLab computers provide access to several drives. Drives are separate areas within a computer system designated to manage unique tasks, resources, and data:

F: Facilitators
L: Learners
M: Media Library
T: Transfer
S: Support
U: User – student data

## Access and Permissions

SmartLabs have two types of **user accounts** that access these drives - **Learners and Facilitators.** These folders have two levels of access – read only and read and write. The chart below details which of the drives above your students will have access to and which ones you can access as Facilitator.

| Students | Facilitators |
|---|---|
| Learners…….Read Only | Facilitators…….Read & Write |
| Media Library……Read Only | Learners…….Read & Write |
| Transfer…….Read & Write | Media Library……Read & Write |
| User……Read & Write | Transfer……..Read & Write |
| | User……Read & Write |

## SmartLab Server Accounts

The SmartLab contains several types of accounts. Accounts provide access to resources and places to save work. There are several important accounts associated with the SmartLab computer system:

- **Student Account**: individual or team accounts created by the Facilitator for students; designed to allow students access to specific resources and a place to store their work.
- **Facilitator Account**: an account for the SmartLab Facilitator
- **Einstein**: an account found in every SmartLab designed to provide access to all the administrative resources required to manage the server, software, hardware, and accounts used on a daily basis in the SmartLab
- **Administrative Account**: a unique account with complete access to all the server and network resources to manage the SmartLab computer system; DO NOT delete this account
- **CLS Account**: an account used by Creative Learning Systems IT department designed to ensure continued support and maintenance of the SmartLab computer network. DO NOT delete this account

## Creating Accounts

Facilitators create accounts to provide individuals with access to SmartLab resources and a location to store work. During professional development you and the trainer will create an active directory * (filing system) and user accounts for your students. This allows you to organize and manage student accounts, where students save their work, and ensures backup of all data. Prior to creating setting up student access, consider the following types of organization issues:

- Do you want accounts assigned to individual students?
- Do you want accounts organized by pairs of students?
- Do you want accounts based upon the periods of the day?

*Active Directory is a centralized and standardized system that automates network management of user data, security, and distributed resources, and enables interoperation with other directories.

Learner folders are created automatically (using the "user name" as the folder name) and housed in the active directory server. **Do not change the folder name**. At the end of each semester you have the option to save examples of student work to your media library. At the end of the

semester, empty all the folders. Select a checkbox that resets all the team passwords back to blank. This requires new students to create a password when they log in the next semester.

### Managing Accounts

As administrator of the SmartLab network you may control the following from Active Directory on the Server:

- Disable accounts
- Reset Passwords
- Delete accounts

### Secured versus Unsecured accounts

Select either the secured or unsecured login approach

- Secured - We each have our own unique login (recommended)
- Unsecured - We all use the same LOGIN, because we trust each other

### About Imaging

SmartLabs include computer imaging software. Computer imaging software duplicates and installs software on numerous machines at the same time. Images of each SmartLab computer hard drive are stored on the server. If a student accidently changes anything on the computer you have an image of computer hard drive and the ability to restore the workstation to its' original configuration.

### Benefits of Imaging Software:

- Ensures workstations remain consistent and compliant with standards
- Minimizes usage and speeds the deployment of new images
- Creates a centralized location for updating, repairing, and managing computers throughout the Lab
- Allows Facilitator to define access and permission throughout the system
- Ensures that confidential data cannot be recovered from recycled, retired or leased PCs

### Deep Freeze Overview

The SmartLab computers use Deep Freeze software. Please read the Deep Freeze technical guide found on the LaunchPad in Facilitator Resources. Deep Freeze preserves each individual computer's configuration preventing unintended changes from becoming embedded in the computer. Every 24 hours Deep Freeze erases any changes accidentally made to computers, restoring them to their initial settings. This process prevents students from intentionally or unintentionally adding, removing, or modifying any aspects of the computer at each workstation. If and when computer software needs to be updated or modified, only the Facilitator (or IT staff) makes changes. The process of making changes requires "thawing" computers temporarily to make the modifications and then refreezing them to their new configuration.

### LanSchool Overview

SmartLabs include LanSchool. Please read the LanSchool technical guide found on the LaunchPad in Facilitator Resources. LanSchool software allows the Facilitator to view the activity taking place on each individual computer in the SmartLab in real-time. With LanSchool software Facilitators can:

- Monitor student computers – view all screens as well as see the current application and website that students are running
- Present content from any computer to the class
- Share Student Screens – share any student monitor with all monitors in the class in real-time
- Send messages to the class or individual students
- Communicate with 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
- Limit student access or off-task activity

LanSchool provides a great video tutorial series on their website. These tutorials will provide you with all the skills you need to manage the most common LanSchool Console applications in the SmartLab: www.lanschool.com/support/tutorials.

# SECTION SIX: Lab Management and Culture

## Lab Management and Culture

Students naturally engage in self-directed learning in SmartLabs. SmartLabs provide students access to intrinsically interesting concepts and resources. As a result, Facilitators encounter few traditional classroom management issues. In a SmartLab student pairs tackle self-selected projects, develop unique learning paths, and complete each engagement based on interests, abilities, and learning styles. Facilitating a successful SmartLab requires balancing guidance and choice to help students transition from schooling to learning. Autonomy is encouraged and accountability is demanded.

While every SmartLab is different, after 25 years we have identified several characteristics for success:

- Engaged, on-task learners
- Clearly expressed SMART objectives for each project
- Daily documentation of learning and accountability

### Lab Management Techniques

Students, even in open-ended project-based learning environments, succeed with structure, routine, and support. We talk to all our Facilitators to learn the approaches and techniques they use to encourage productive, creative, and cooperative student engagement. Here are a few comments we have collected over the years:

- Model best practices in time and project management for your students. Regardless of age and ability students need clarity and detail with respect to your expectations for behavior, productivity, and collaboration.
- SMART objectives guide student progress. Help students articulate and refine their expectations. Encourage them to be specific.
- Accountability matters. Student time whether exploring a new topic or creating a final presentation must be productive and goal oriented. Hold students accountable for each day in the project cycle from exploration to presentation and self-assessment.
- Create a SmartLab showcase: Share examples of exemplary student work from your classes. For examples see: http://www.creativelearningsystems.com/student-project-showcase.aspx
- Three Before Me Rule. Require students to take responsibility for their learning by attempting to solve problems and answer questions using other resources before asking you for help.
- Promote student expertize. Students often learn well from peers with expertise. Additionally student experts reinforce their learning when tasked to teach or support peers.
- Celebrate failure. Often the best learning opportunities arise from mistakes and problems. Encourage students who encounter and solve problems to share their experience with the class
- Real-world connections. Personally relevant contexts increase success. Each project includes a relevancy objective. Students may need help connecting their SmartLab experience to a real-world challenge.
- Routine and Structure. Create and support a daily routine to promote success. Remind learners of the stage of learning for the day and what of work is expected (e.g. “Today is

day two of your project engagement, if you have not already done so, you record your SMART objective in your Project Journal by the end of the period").

- Closure Reinforces Learning. Before ending class ensure students have
  - Shared knowledge gained or a problem encountered/solved
  - Completed a daily journal entry
  - Saved work
  - Logged off the system
  - Managed physical materials

SMARTLAB LAUNCHPAD


ORIENTATION TOPICS

Orientation Collection

# The SmartLab Orientation

Years of experience has taught us that successful SmartLab programs begin with strong orientations. It's unlikely that your students have ever experienced a similar program. Your orientation helps them understand your expectations and why "Learning is different here!" Creating an organized and effective student orientation establishes the learning and facilitating environment from the start. Clear, concise, and well communicated expectations ensure that students engage in and document their learning. Holding students accountable to SmartLab objectives, outcomes, and products ensures the success of your program.

Orientations focus on two overarching goals:

- Helping students understand your SmartLab program
- Getting your students excited about the SmartLab

Just as every SmartLab is different, every orientation is different. Creative Learning Systems provides you with a variety of resources to help you develop your orientation, but how you use these resources is up to you!

The length of your orientation depends upon many factors, including your school schedule, how much you will cover before students begin their projects (some topics can be covered during first projects), which activities you integrate into orientation, other topics you cover, and whether your students will setup cloud-based ePortfolios. Most SmartLab orientations last between three and seven class periods.

The most effective orientations successfully blend engaging hands-on activities with presentation of required skills, knowledge, and practices. Most students are already excited about the SmartLab. They arrive ready to explore and learn. To sustain and build excitement, mix classroom management topics with activities that allow students to discover the engaging SmartLab opportunities. Creative Learning Systems provides several orientation planning resources.

## What Students Need to Know

Orientation should cover several key areas including, but not limited to:

- Project-based learning and the vast opportunities of a SmartLab
- SmartLab Philosophy - why Learning is different here!

- Access, permissions, and login information for student accounts and the LaunchPad
- About partners and collaboration
- Using the Score to find stations and projects
- How to use Learning Launchers to guide learning experiences
- How and where to save work
- How to document work using ePortfolios
- Project assessment and evaluation

## Orientation Resources on the LaunchPad

CLS provides students and the Facilitator resources that include tutorials for introducing the SmartLab. Work some or all of the following resources into your student orientation.

## Getting to Know Your SmartLab


Getting to Know Your SmartLab provides a great program overview for your students. It provides lots of useful information on SmartLab concepts and philosophy, expectations of learners, and necessary skills for SmartLab success. We suggest reviewing this tutorial as a whole-class activity. Much of the information in this orientation topic makes great class discussion to build a deeper understanding of the program. It is up to you how to cover this information, in what order, and how to blend it with activities. We strongly suggest, however, that you plan to cover all of the information in this slideshow sometime during orientation or first projects.

The Getting to Know Your SmartLab addresses:

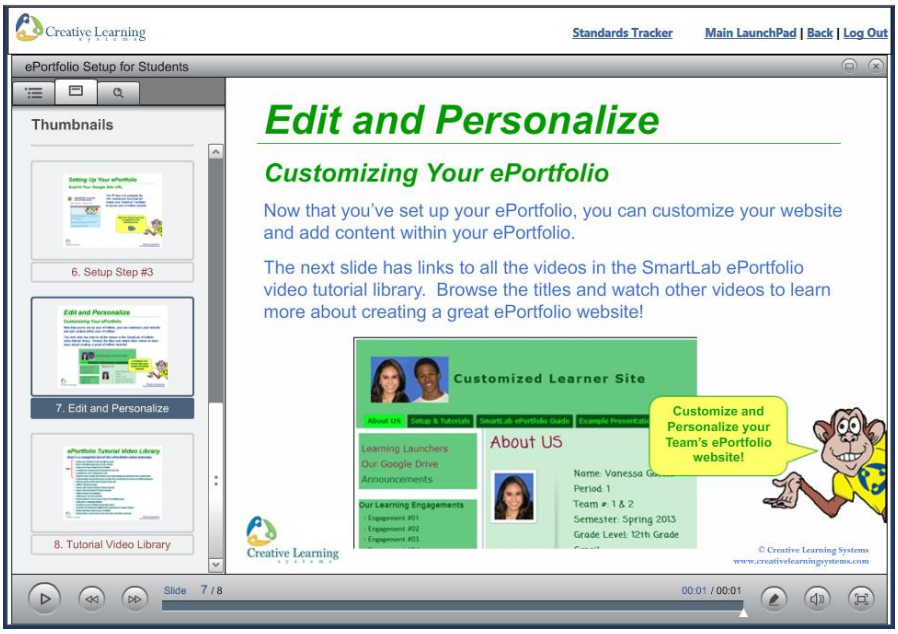
- Examples of SmartLab projects
- Why a SmartLab is different than other classes
- Expectations of SmartLab practices
- Overview of 21st skills
- The difference between facilitators and teachers
- Responsibility and choice in the SmartLab
- The importance of making mistakes
- Portfolios and presentations
- Collaboration skills
- Required skills for SmartLab success (the lists of necessary skills and knowledge on slides 21-23 provide a great framework to ensure that your learners are ready for the SmartLab)

## Introduction to Learning Launchers

Another resource we created will help your students understand the SmartLab is Introduction to Learning Launchers. This resource includes information on:

10. How to access Learning Launchers online
11. How to navigate and customize Learning Launcher player
12. How to select challenge levels
13. Guide to Learning Launcher sections


the




## Setting Up Cloud-Based ePortfolios

If you use cloud-based ePortfolios in your SmartLab, the ePortfolio Student Setup Guide will help your learners create, customize, and maintain their ePortfolios on Google Drive. Click the Online ePortfolio link in the Orientation section of the LaunchPad to access this presentation.

## Orientation Activities

It's important to mix engaging hands-on learning activities into your orientation to sustain excitement about the program. These are just a few ideas for the many possible SmartLab orientation activities. You will probably come up with others as you develop and refine your SmartLab orientation. We'd love to hear your ideas, too!

## SmartLab Tour

Take your class on a tour of the SmartLab! Guided by the Score, visit each station with the class to explain the project activities that take place at each location. Ask students to brainstorm project ideas that utilize the resources at each station. Be sure to also discuss other SmartLab zones such as the replication platform, kit storage, locking cabinet, etc.

### SmartLab Scavenger Hunt

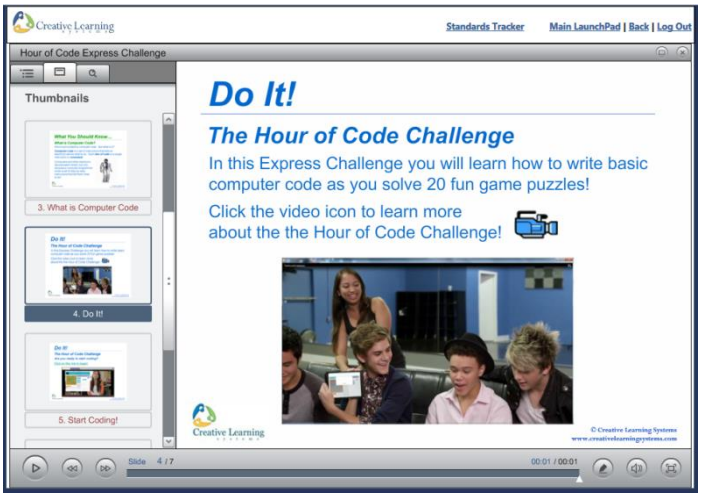
Another great way to introduce the activities at each station is to let your learners conduct the tour! After assigning teams and explaining the Score, have each team explore the potential opportunities at their first peninsula. After a period of exploration, ask each team to report on a cool project activity they might do at that station. If you've also discussed SMART objectives (specific, measurable, attainable, relevant, time-based), have teams present their ideas in the form of a possible project objective.

### Picasa Tutorial

This tutorial (found in the Computer Graphics section of the LaunchPad) is a great way for students to practice using SmartLab cameras, saving images in their student folders, and adding labels and descriptions for their ePortfolio presentations.

### Hour of Code

This Express Challenge features a fun, game-based introduction to the world of computer code. It's a great one-period activity for the whole class and provides a nice, online learning activity to break up all the new skills and knowledge presented during orientation.




### Rube Goldberg Machines with K'nex

This engaging hands-on activity fosters creativity, collaboration, and problem-solving. Rube Goldberg was famous for his wacky cartoon inventions that accomplished simple tasks in absurdly complicated ways. Divide your class into design teams of four. After a brief online introduction to Rube Goldberg (in groups or as a class), teams use SmartLab resources (K'nex is a perfect construction kit for this project) to design the most complicated machine possible to move a ball from one point to another.

### ComicLife or Animation-ish Icebreaker

Use ComicLife or Animation-ish software to break the ice. Have students introduce themselves and/or their partners with this user-friendly, drag and drop software. In addition, take this time to introduce students to the cameras and methods for sharing images.


# Facilitator Support Resources

CLS works with Facilitators and district/school IT staff to support and maintain the physical, computer, and curricular aspects of our SmartLabs. We offer several resources designed to keep your SmartLab operating effectively and efficiently.

## Facilitator Resource Collection

As a SmartLab Facilitator, you have access to our Facilitator Resource collection. From the LaunchPad, login as administrator, select the Facilitator Resource link in the menu bar at the top of the page. These resources cover topics such as:

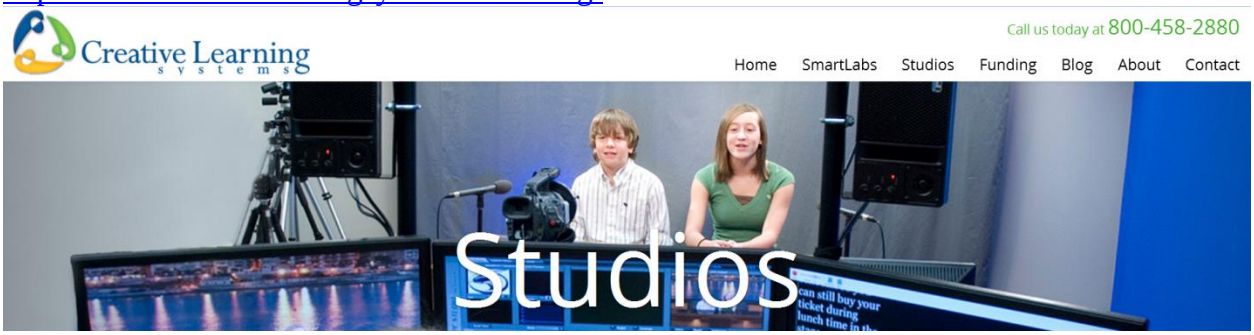
- Orientation/ePortfolio/Assessment
- Professional Development
- Classroom/Resource Management
- Network Management
- Other Resources

## Customer Support Contact Information

Email us anytime at: support@creativelearningsystems.com
Call Support Monday-Friday 8:00 AM to 5:00 PM Mountain Time at 800-458-2880 option 2.

## Follow the CLS Blog

Visit the Creative Learning Systems blog on our website to read stories about your fellow facilitators and students nationally. Don't be shy about sharing the great things you and your students are doing as well; we are always looking for great stories to post.
http://www.creativelearningsystems.com/blog/




## Like Us on Facebook

Find great motivational, informational and inspirational resources by going to our website and clicking on the Facebook link. Or Like us at: https://www.facebook.com/pages/Creative-Learning-Systems/195313493815316

## Curriculum and Support Agreement

It's likely that your school entered into a Curriculum and Support Agreement (CSA) as part of your SmartLab purchase. The SmartLab Curriculum and Support Agreement provides access to the latest curriculum, essential support services and other valuable benefits.

Below are the two tiers of support available, you may want to check with your administrator to find out which one you have so you are aware of the resources that are available to you. **If your school contracted for Tier 1 support, be sure to note of that you can purchase $1,000 of resources annually from our catalog.** This will give you an annual budget for supplies and enhancements for your SmartLab (without going through your purchasing department)!

| Tier 1 Curriculum and Support | Tier 2 Curriculum and Support |
|---|---|
| Access to online curriculum including all available updates and additions—over 300 Learning Launcher™ project engagements plus ePortfolio tools, tutorials, and more<br>Access to hosted Facilitator Resources including all available updates and additions— assessment tools, classroom management resources, Standards Tracker™, and more<br>Unlimited telephone/online pedagogical & technical support<br>**$1,000 annual catalog credit** for SmartLab enhancements and replacement parts<br>Up to 4 days of onsite professional development in the event of facilitator turnover<br>50% tuition discount for annual Advanced Facilitator Development Conference (AFDC)<br>10% discount for onsite technical support and additional professional development | Access to online curriculum including all available updates and additions—over 300 Learning Launcher™ engagements plus ePortfolio tools, tutorials, and more<br>Access to hosted Facilitator Resources including all available updates and additions—assessment tools, classroom management resources, Standards Tracker™, and more<br>Unlimited telephone and online pedagogical and technical support |

## Additional Professional Development

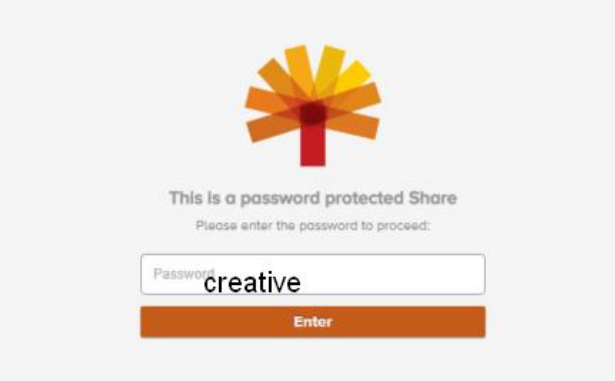
Each summer, Creative Learning Systems hosts week-long seminar for SmartLab facilitators from all around the country called AFDC – the Advanced Facilitator Development Conference. Take advantage of this excellent opportunity to network with your peers, engage in activities presented by master Facilitators, and attend workshops from some of our equipment suppliers. At AFDC you will learn new tips and tricks for making your SmartLab an amazing place for students to shine. Watch for announcements on AFDC locations and dates. Most initial SmartLab purchases and upgrades include prepaid tuition to AFDC. And Tier 1 Curriculum and Support Agreements provide discounted AFDC tuition anytime!

# *Appendix A: Technical Resources*

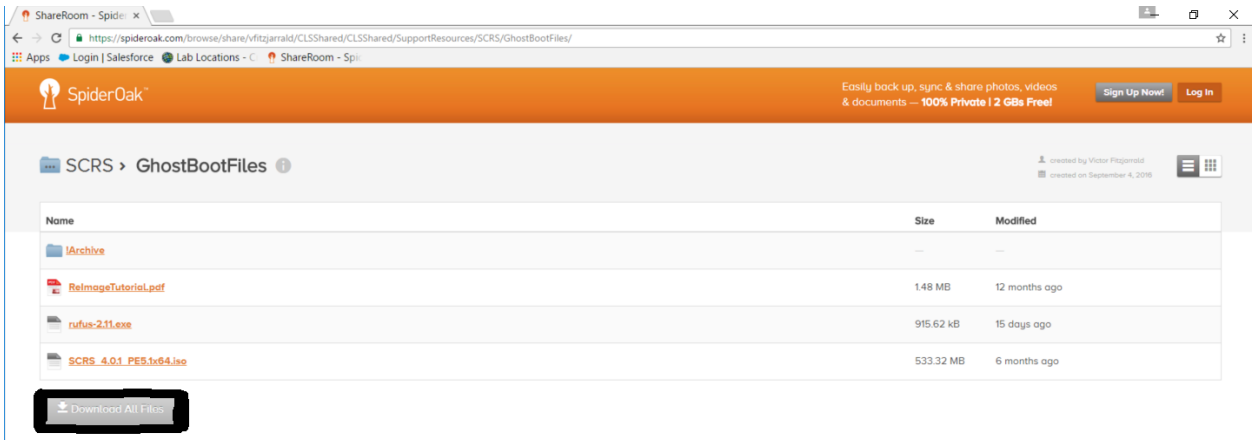
## How To: Reformat a USB Flash Drive to a Bootable Drive

This tutorial will explain the steps required to reformat a USB Flash drive into a Bootable Ghost Drive that can be used in the recovery and reimage process for any computer in your lab. I do recommend that you have at least a 64GB Flash drive to perform this task on. The reason for that is so that you have sufficient space available to not only format Ghost onto it, but to also be able to hold the file image for any computer that you are going to reimage.

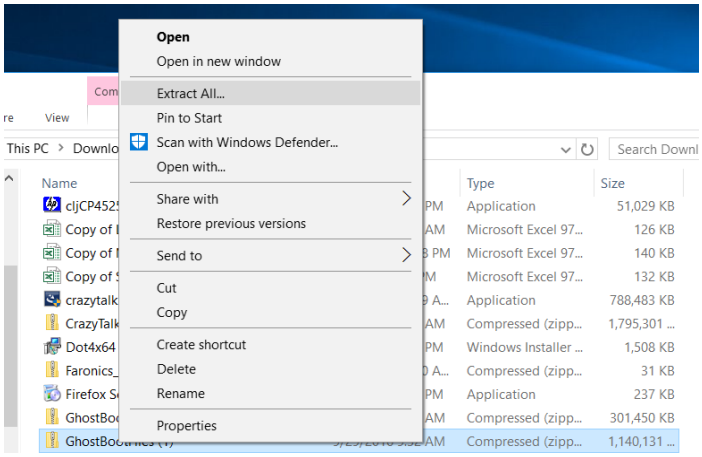
1. Go to https://spideroak.com/browse/share/vfitzjarrald/CLSShared.
    a. Password: creative (lowercase).



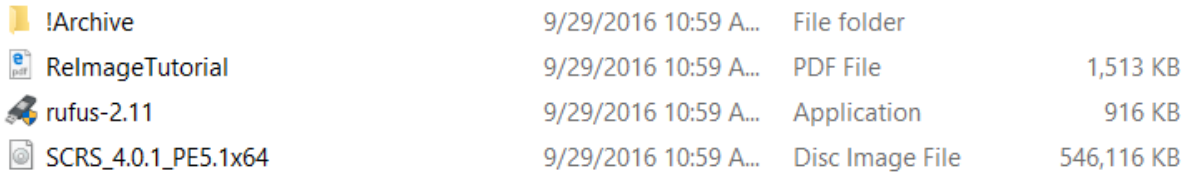

2. Click on CLSShared-SupportResources-SCRS-GhostBootFiles.
    a. When you see the list including: !Archive, ReImageTutorial.pdf, rufus-2.11.exe and SCRS 4.0.1 PE5.1x64.iso click the button below that says “Download all Files”.



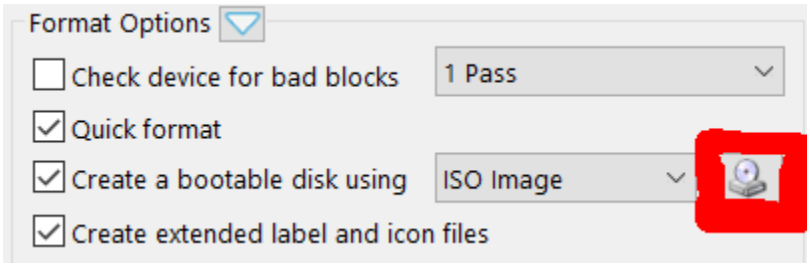

3. After all files were downloaded you can navigate to
    a. Windows 7: Computer-Downloads
    b. Windows 10: This PC-Downloads
4. Once you make it to this point look for a folder that says GhostBootFiles (Compressed zipped folder), Right Click the folder and select “Extract All”.



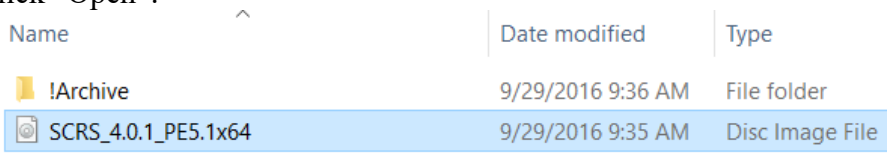

5. On the next window Click “Extract” and it will give you a progress bar of the extraction status.
6. Once it has finished extracting it will open a new window. Double click GhostBootFiles and you will see a list of 4 different files and folders: !Archive, ReImageTutorial.pdf, rufus-2.11.exe and SCRS 4.0.1 PE5.1x64.iso.

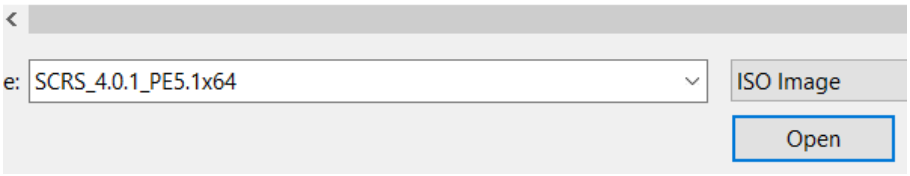



7. Double click on rufus-2.11and click “Yes” to allow it to make changes to the computer. If you are asked to allow Rufus to check for updates select “NO”.
8. You will then see a new window titled Rufus 2.11.995 at the top.
    a. In the Device Field ensure that it has your USB Drive selected.
    b. In the Partition Scheme and target system type field ensure that it says “MBR partition scheme for BIOS or UEFI”.
    c. In the File system field ensure you select NTFS.
    d. Roughly ¾ of the way down on the right side you will see a picture of a Disk with a drive underneath it. You will need to click that picture.

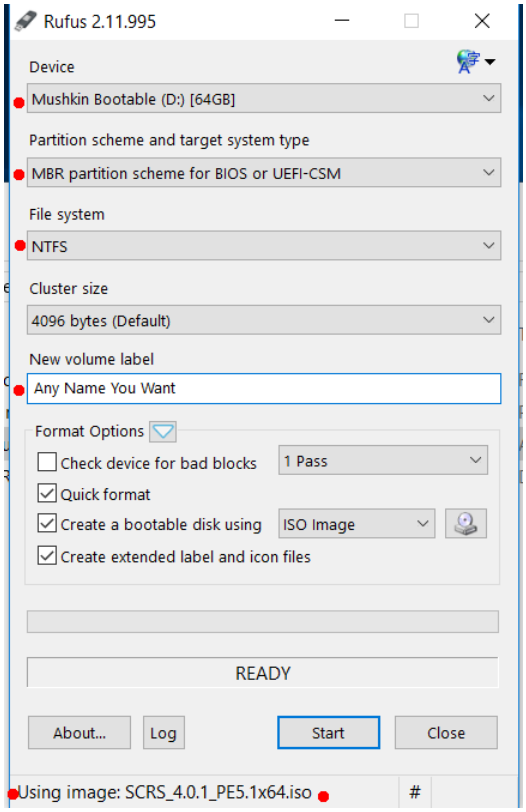


e. When the next window opens up you need to select SCRS 4.0.1 PE5.1x64 and click “Open”.




f. After you have selected that file and you are brought back to the Rufus program then your final image should look something like this with the exception of the Device name and New volume label.



g. In the new volume label field you can type any name you want in there for what the USB drive will be named. Whatever works best for you.

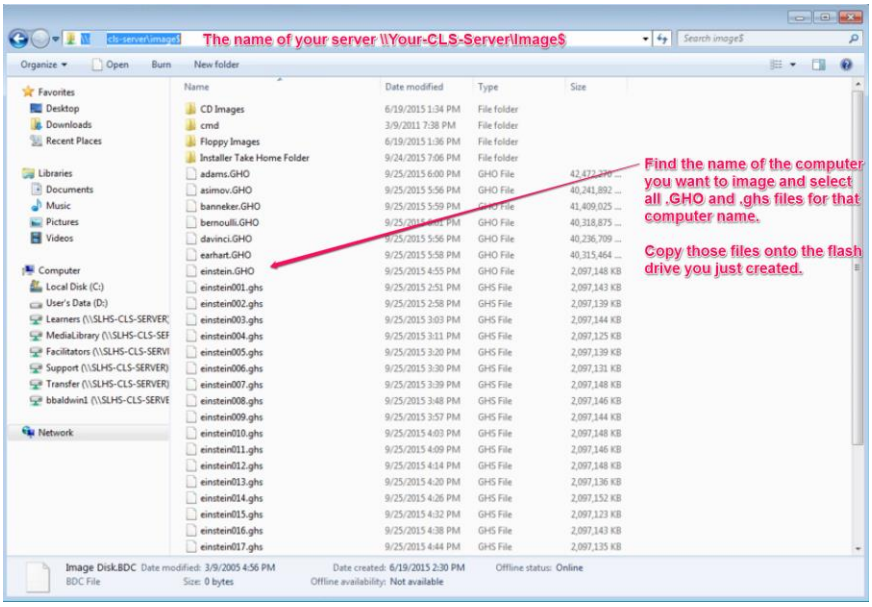
9. Finally, ensuring that all the information matches the above screenshot and on the very bottom of Rufus you see “Using Image: SCRS_4.0.1_PE5.1x64.iso” then go ahead and click “Start”.
10. After that finishes you will have successfully reformatted your USB Drive into a Ghost Bootable Drive that you can use for reimaging the computers in your lab.

## How To: Use Ghost to Re-Image a Computer

NOTE: You should only be following this procedure if your lab does not have a SCRS Box in the cabinet and if you are instructed to by CLS Support staff. Before you begin you will need either a flash drive from the SCRS Kit, or we recommend a 64Gb or bigger drive and a functional, networked, computer.

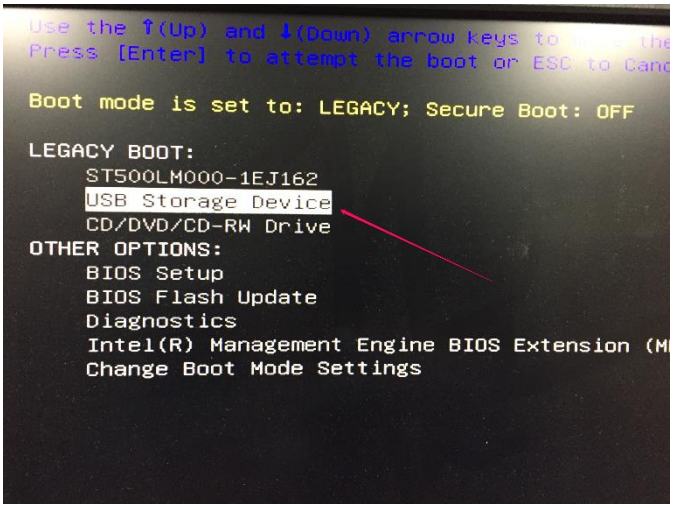
FIRST: Build a Ghost boot Drive using the steps above, or get a bootable drive from the SCRS Kit.

1. Insert your flash drive into the functional computer (we recommend Einstein logged into the network as Einstein).
2. Now that you have a GhostDrive, you will need to get copies of the Backup image for your machine.
    a. IF YOU HAVE A SCRS: plug in the included 1Tb drive to the machine you want to image.
    b. IF YOU DO NOT HAVE A SCRS: On the Einstein machine, navigate to \\Your-CLS-Server\Image$ in windows explorer (i.e. My Computer) and copy all .GHO and .ghs files for your computer name onto the flash drive we just created (see the image below for more information).

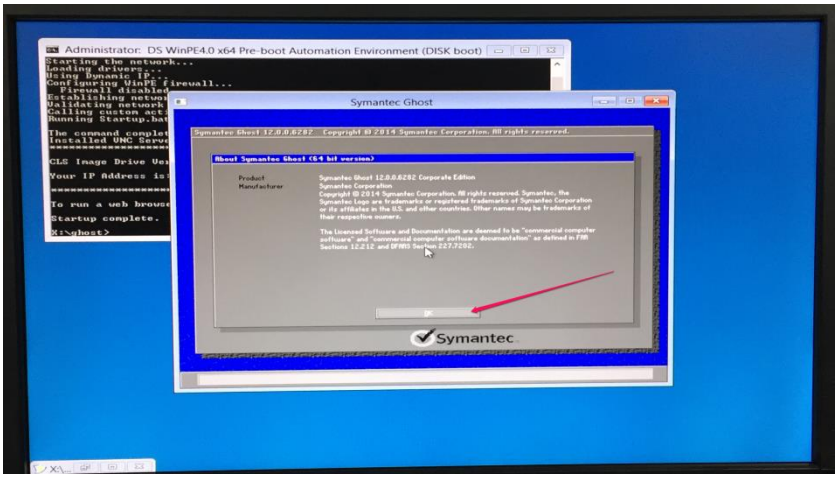



3. Eject the flash drive from Einstein and connect it to the Machine you are imaging.

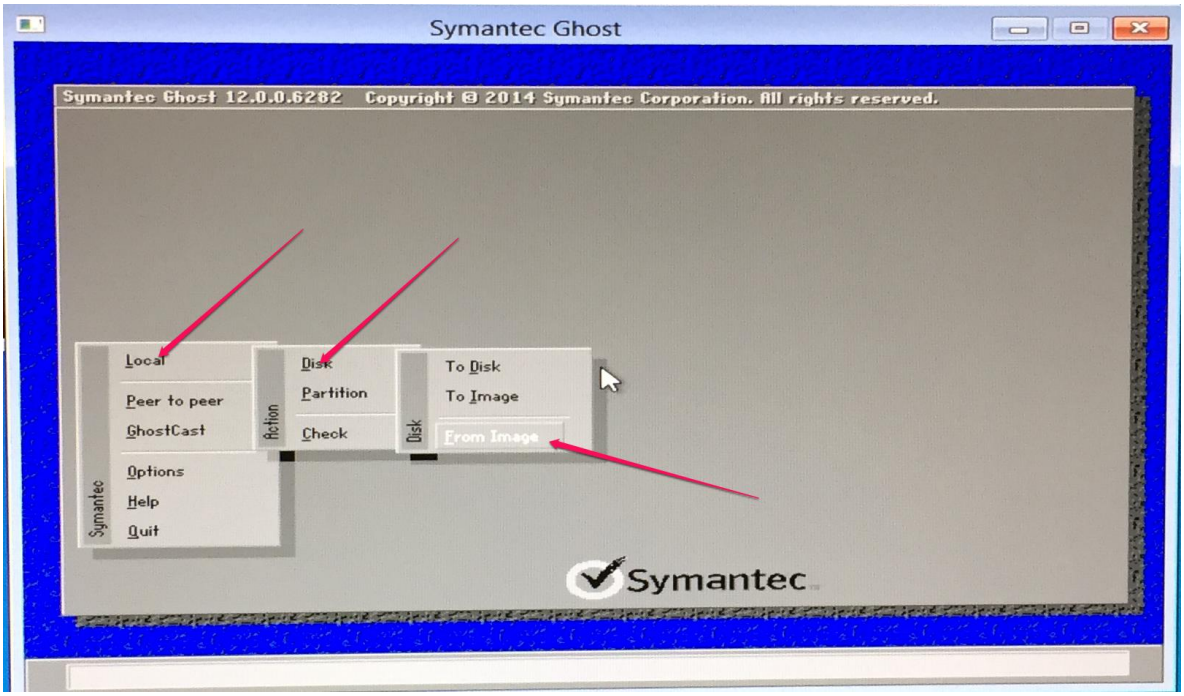
4. Boot up the machine you are imaging and during the bootup phase, hit the key required to open “Boot Options” (this is often F10 or F12 but will display in the upper right hand corner of the screen when the computer boots up)
5. In the boot menu, select “USB Drive”



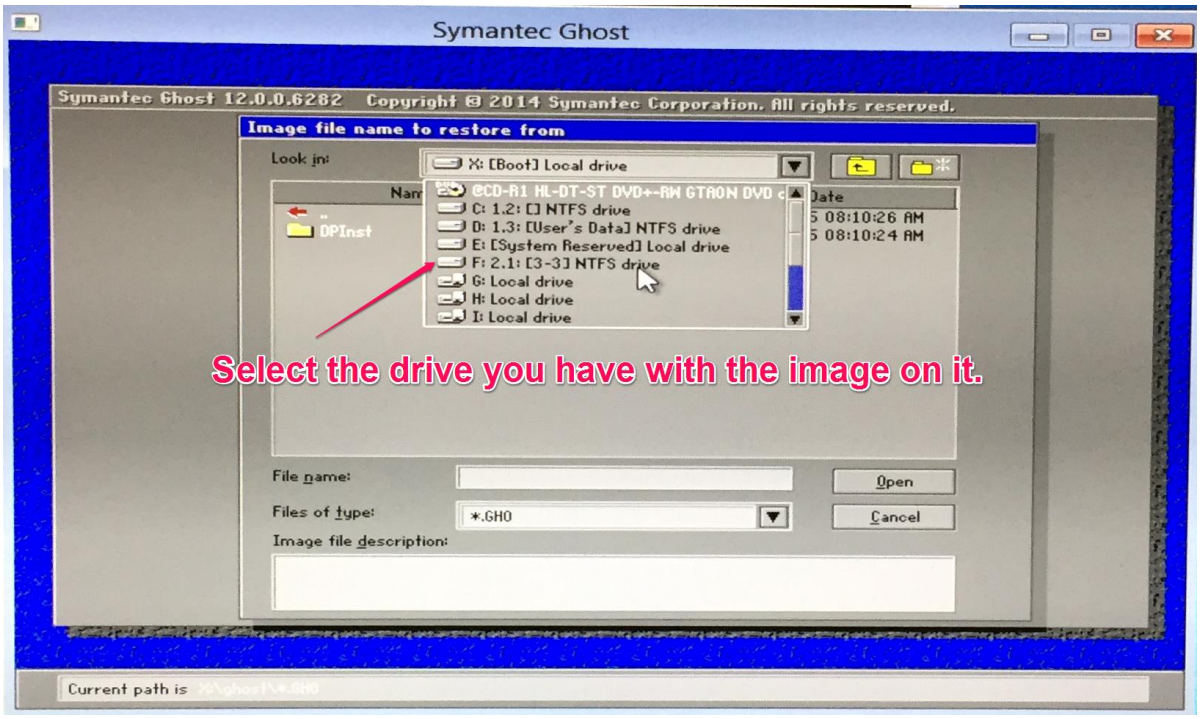

6. Let the machine boot until you see the following screen:



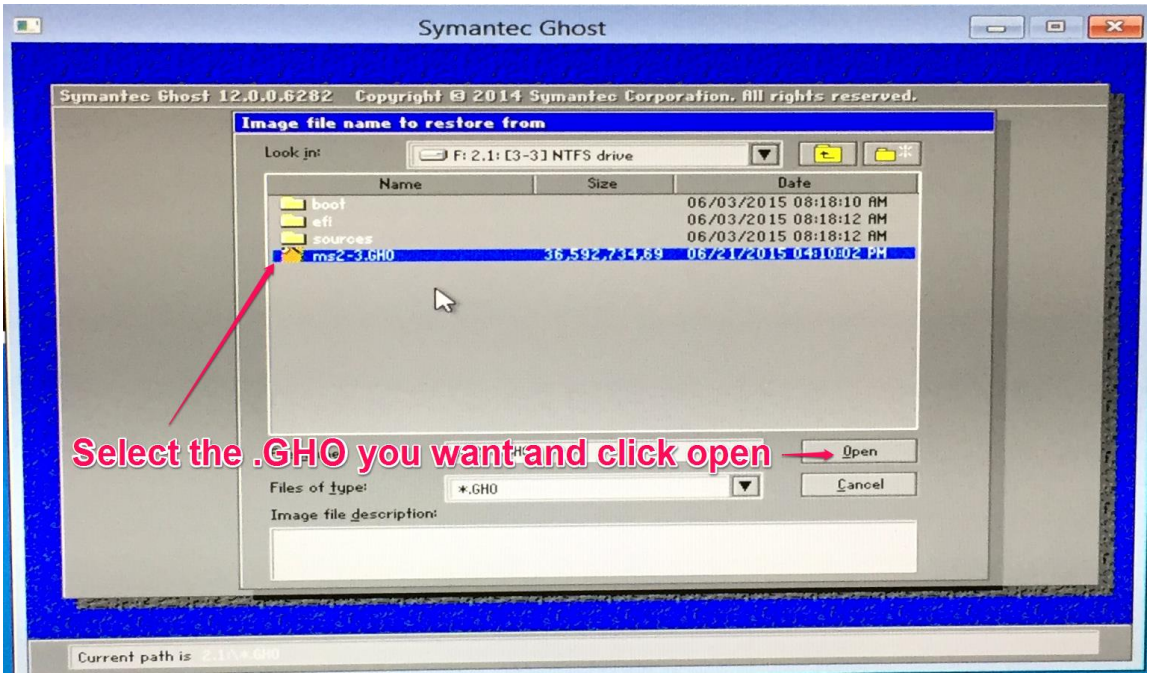

7. Once you are in Ghost, you will need to navigate to Local\Disk\From Image as seen in the following photo:



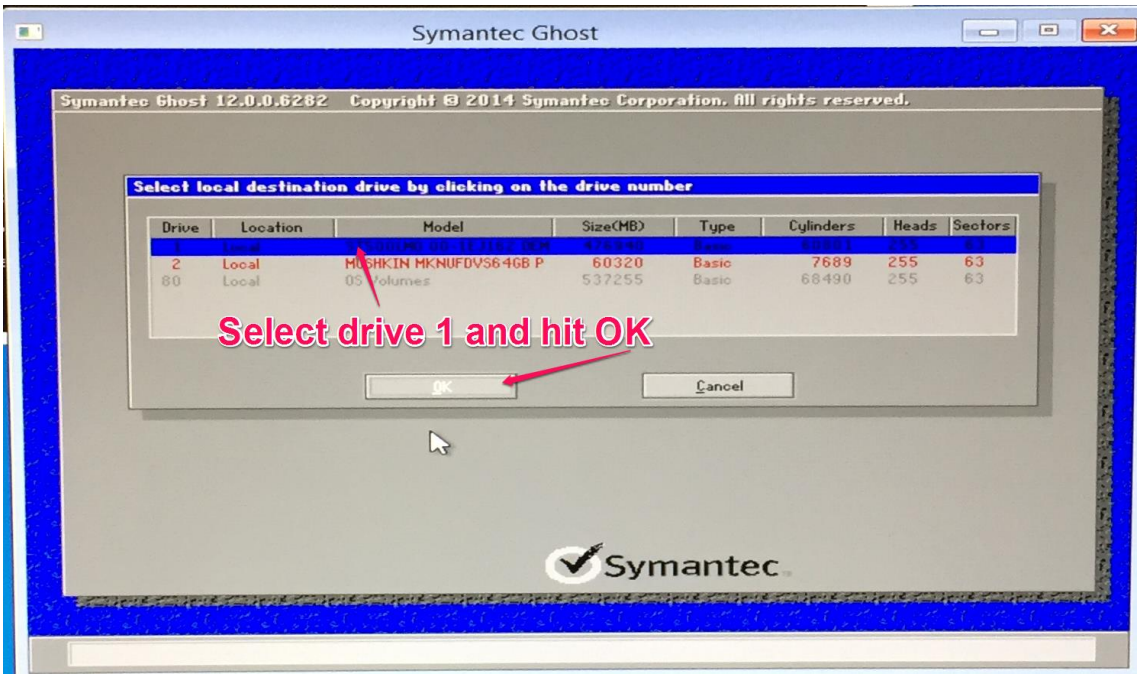

8. When that is selected, you will need to select the correct drive that stores your images (the flash drive or 1Tb External Drive)



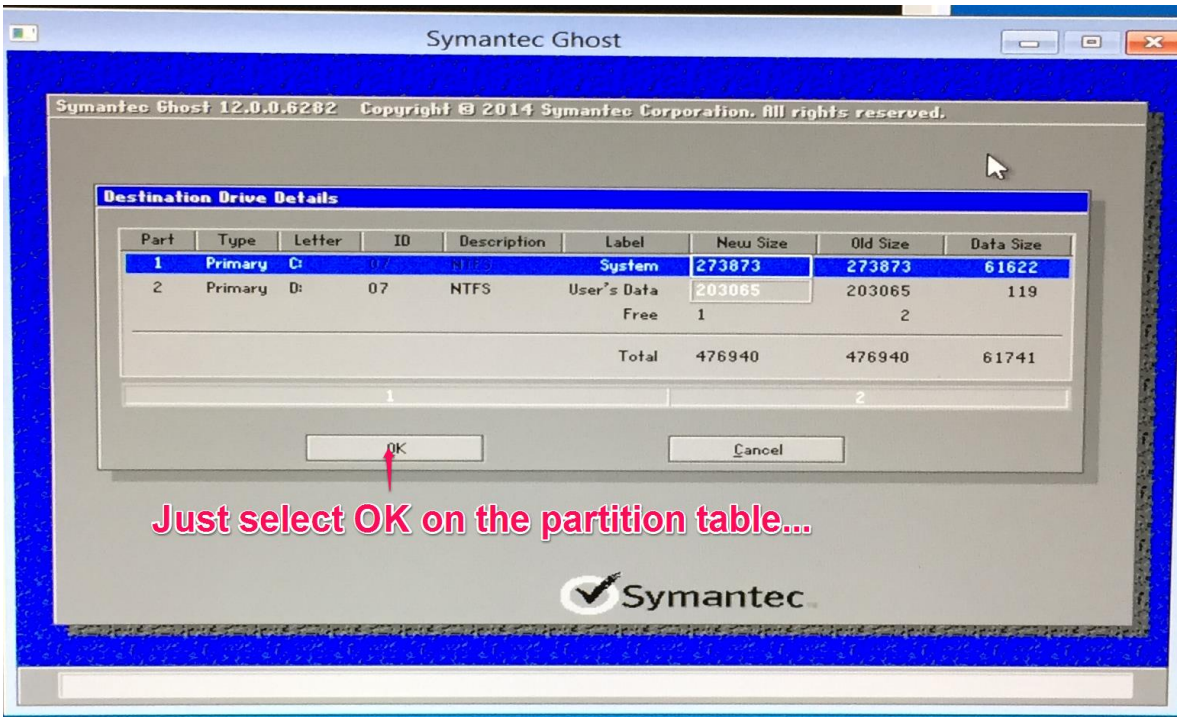

9. When the drive is selected, you will select the .GHO file of the computer you want.



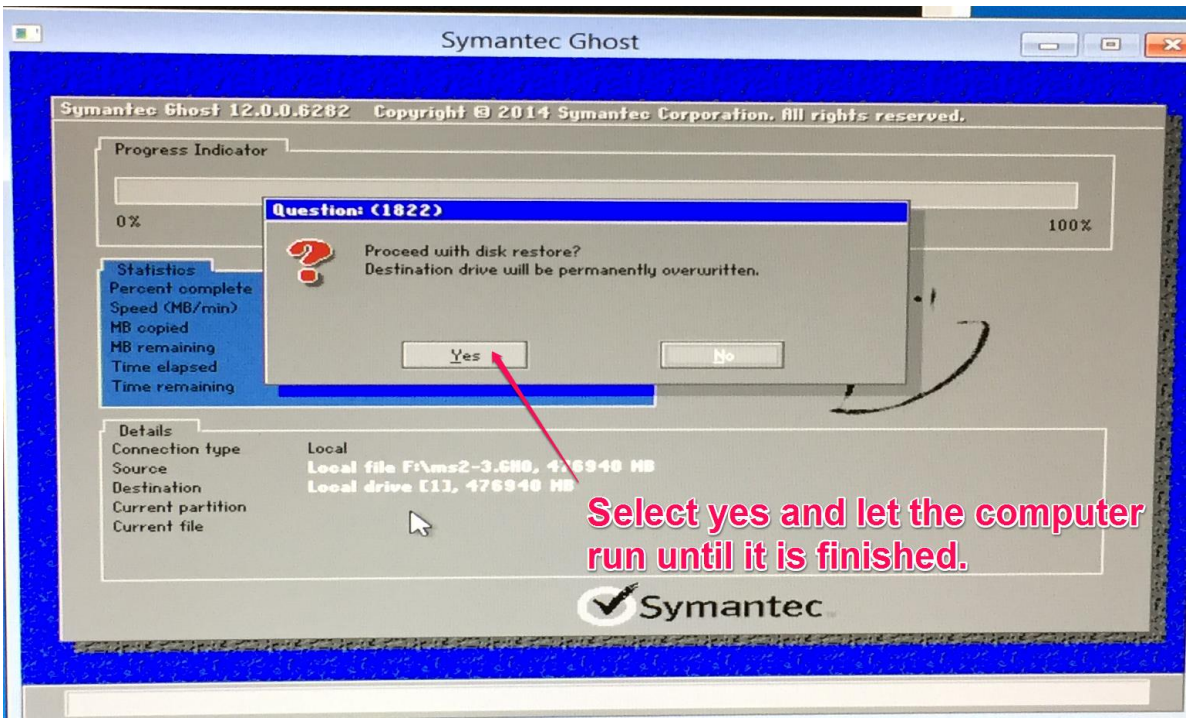

10. On the next screen select the target volume as volume 1 (or your computer).




11. Select OK on the partition table:




12. You will be prompted to make sure that you are willing to make the changes, as the target drive will be erased. Select okay:




13. When the computer restarts, you will want to join it to the domain (after logging in as a local administrator).
14. Once the computer is on the domain, you will need to reinstall the deepfreeze wks at \\Your-CLS-Server\Support\PC\Utilities-Tools\CUSTOM DEEP FREEZE INSTALL\DFWks.exe

15. Call if you need any additional support!

## How To: Install New Programs

In order to install new programs, you must first get the installer that you want, and we recommend saving it to a network location (like M:\ or S:\).

1. Thaw the computers you want to install the software on (either on the console/server, or from the individual computer).
2. Login to the computers as Einstein (which you can do remotely with LanSchool).
3. Open LanSchool Teacher and select the run icon from the top menu (green running man).
4. In the navigation box, browse to the installer you just downloaded and click run.
5. This should start the installer on every machine and you just need to complete the steps on each computer to finish the installation.
6. Freeze the computers when the installation finishes.

TIP: You can finish the installation via LanSchool by selecting all computers and clicking "Remote Control" unfortunately, you cannot use the mouse after that point. Complete the installation with keyboard commands and you will be all set!

## How To: Run Updates

We recommend running Operating system updates periodically. In order to do that, we recommend following these steps:

1. Thaw one computer with DeepFreeze (either on the console/server, or from the individual computer).
2. Run operating system updates on the one computer.
3. After the updates complete, verify that the computer is functional in the SmartLab (test: internet, network saving, a hand full of settings, and that it shows up on LanSchool).
4. If everything functions, freeze the computer.
5. Thaw the remainder of the lab, and start windows updates.
6. Freeze the remaining computers when finished.

## How To: Add Icons to the Desktop

First, create the icon that you want (for example: Google Chrome) by right clicking on the desktop, or copying the icon after installation. With the computer thawed, move that icon to C:\Users\Public\Desktop, which will add it to every users desktop when they login. Freeze the computer when you are finished.