Project Academy

Ist Hour Background: Project Academy Inc.

10-20 minutes	About Us	
10 minutes	What's the concept? Design a problem solving process?	
10 minutes	Flow Diagram of the process	
10 minutes	Team & Culture	
10 minutes	Forming the Team	

Lincoln Team ... Project learning 11/7/2016

- Get to know each other

Who is Bill Wolfson?	Resume
Why is he here?	Project Academy Inc.

About You:

What do you want to get out of this class?
Any specific career or college goals should we have?
Society Goals?

Billw@projectacademy.org

About us?

- Non-profit … MA State
- Applied for 501-c-3 IRS status
- Building an organization …
- Looking for early adaptors
- Looking for community partners/ business
- Talking to stakeholders about needs
- Looking for people who want to be part of helping society

Project Academy

Project Academy...*After-School learning*

Present education leaves many students bored, not engaged in learning and finding it difficult to manage the complexities of life relating to the interface of society, schools and business.

Our after-school or in-school program will provide a fun environment around **project based learning** for charter, public middle & high school, home school and drop outs.

We will demonstrate to the students that learning can be fun by **solving real world problems** and provide the missing skills (LIFE SKILLS) like problem solving, thinking skills, growth mindset, character development, financial literacy and societal values needed to succeed in today's environment.

Project Academy

The World is changing
- Intelligent machines
- Robots

Smart Creatives ...*Googles term for people they want to hire.*

Knowledge workers are becoming obsolete.

Wagner, Tony; Dintersmith, Ted (2015-08-18). Most Likely to Succeed: Preparing Our Kids for the Innovation Era .

Project Academy

Our Mission:

- Get students excited about learning (life-long learners).
- Have the reasoning skills to manage in today's society and begin to build a set of skills to use in multiple careers.
- Understand that problems are opportunities. The bigger the problem, the bigger the opportunity.
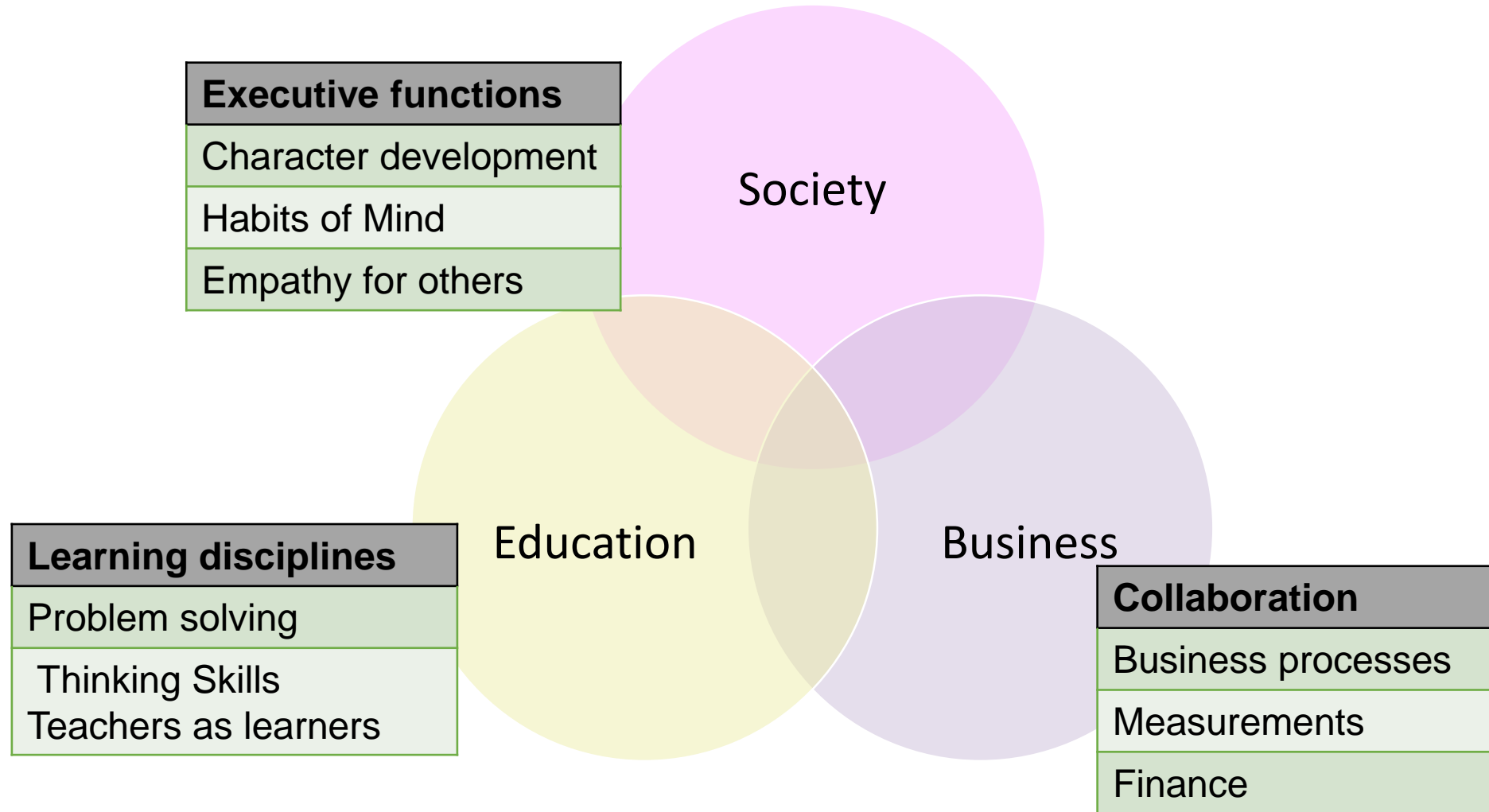- Have students better prepared for college or a career.

Project Academy

Track Assets rather than Deficits

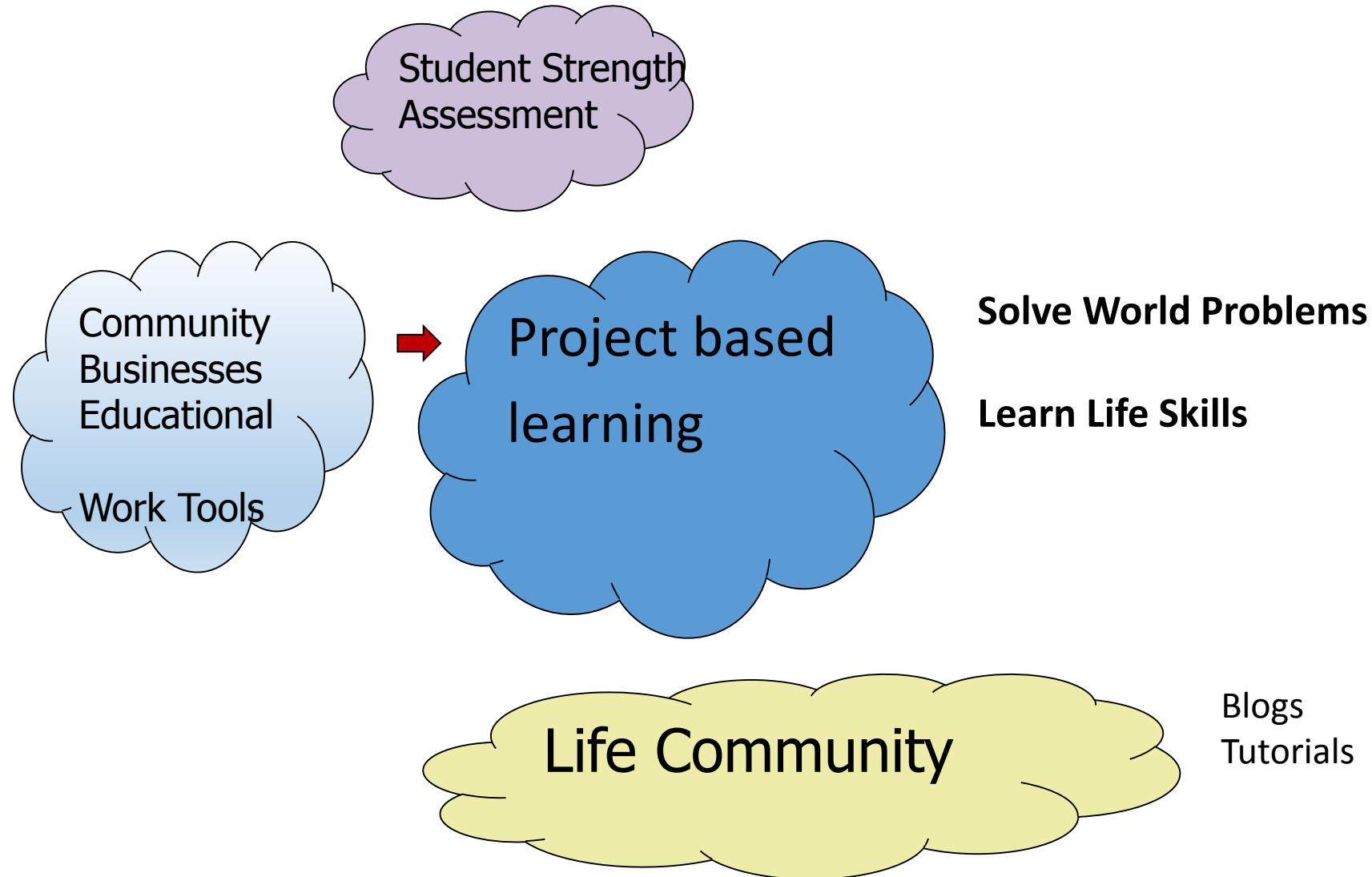A child tracks success and discards failures.

In schools we track failures. As a consequence, we tend to deskill our children, train theme in their incompetence, and interfere with their natural passion to learn.

We teach child to be aware of all the things that are wrong with them.

Life Skills (Holistic Approach)

Executive functions
Character development
Habits of Mind
Empathy for others

Society

Education

Business

Learning disciplines
Problem solving
Thinking Skills Teachers as learners

Collaboration
Business processes
Measurements
Finance

Project Academy

Program Flow…What we would like …Holistic

Student Strength Assessment

Community
Businesses
Educational

Work Tools

Project based learning

Solve World Problems

Learn Life Skills

Life Community

Blogs
Tutorials

Project Academy

Start out with a problem that is both interesting and authentic.

There is no such thing as a problem that is going to be interesting to every kid. This means that a project has to be flexible enough for students to tailor it to their own interests.

Authenticity comes from using real tools to tackle problems that don't have their answers printed at the back of the book. Ideal projects dictate some general parameters and tools, but leave the specific problem definition up to the student.
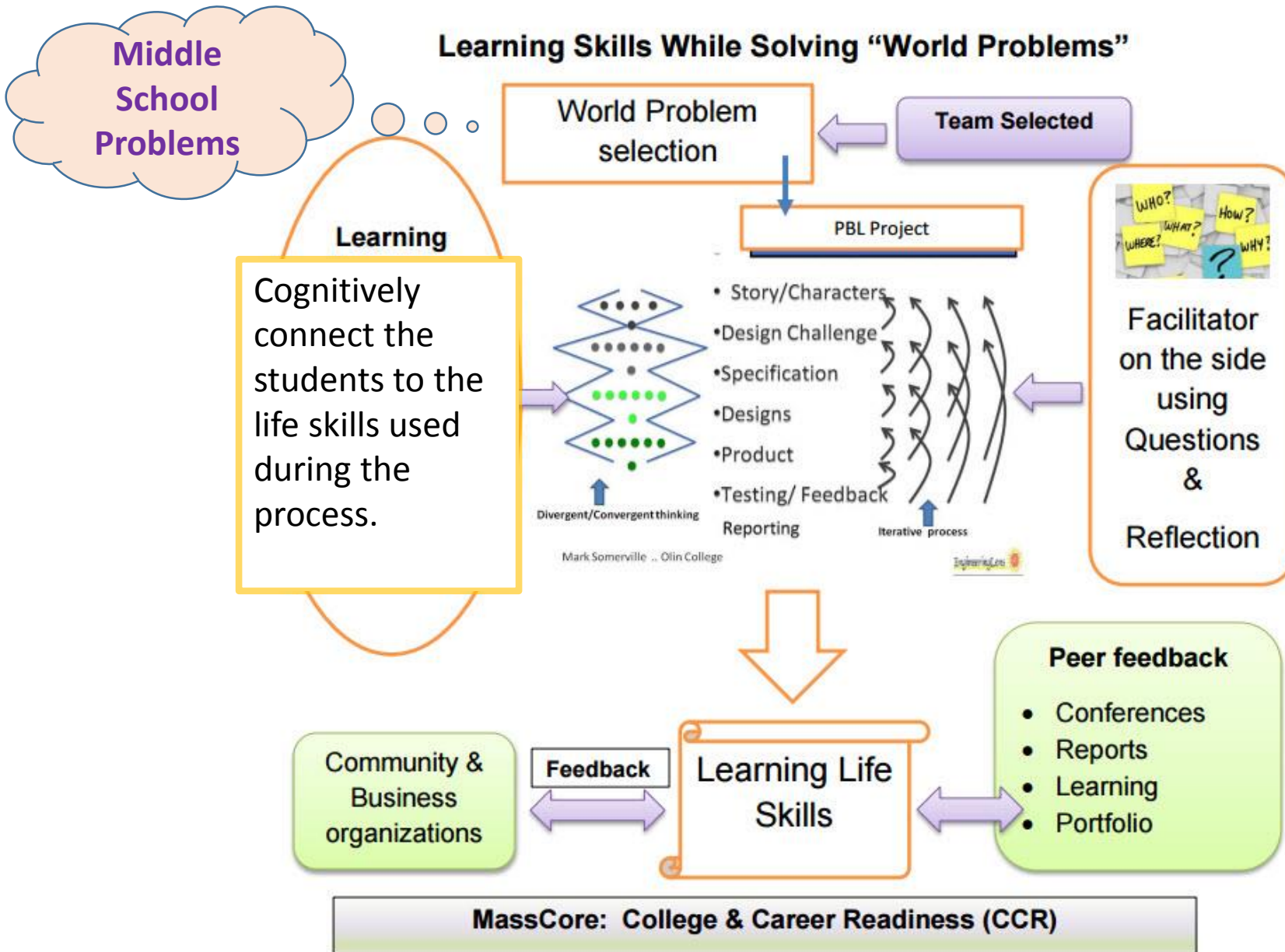
Key learning elements:

- Creating and having a strong organizational culture.
- Using questioning, why, what and how are we doing activities.
- Creating learning targets...How will I be successful. measurements & feedback.
- Developing a team mind-set. Teams build character, culture and community.
- Understanding brain plasticity... growth mindset.
- Internalize the problem solving process.
- The benefits of continuous improvement and excellence.

Design a Problem Solving Process

- What's a process?

# Team creates their version of the design process/ Problem solving

Middle School Problems

Learning Skills While Solving "World Problems"

World Problem selection

Team Selected

Learning

Cognitively connect the students to the life skills used during the process.

PBL Project

WHO? HOW? WHAT? WHERE? WHY?

- Story/Characters
- Design Challenge
- Specification
- Designs
- Product
- Testing/ Feedback Reporting

Divergent/Convergent thinking

Iterative process

Mark Somerville .. Olin College

Facilitator on the side using Questions & Reflection

Peer feedback
- Conferences
- Reports
- Learning
- Portfolio

Community & Business organizations

Feedback

Learning Life Skills

MassCore: College & Career Readiness (CCR)

Flow Diagram

Project Based Learning… PBL

Benefits of Project Based Learning: (bie.org)

- Sustained Inquiry
- Authenticity
- Student voice & choice
- Reflection
- Critique and revision
- Public product

Problem Solving
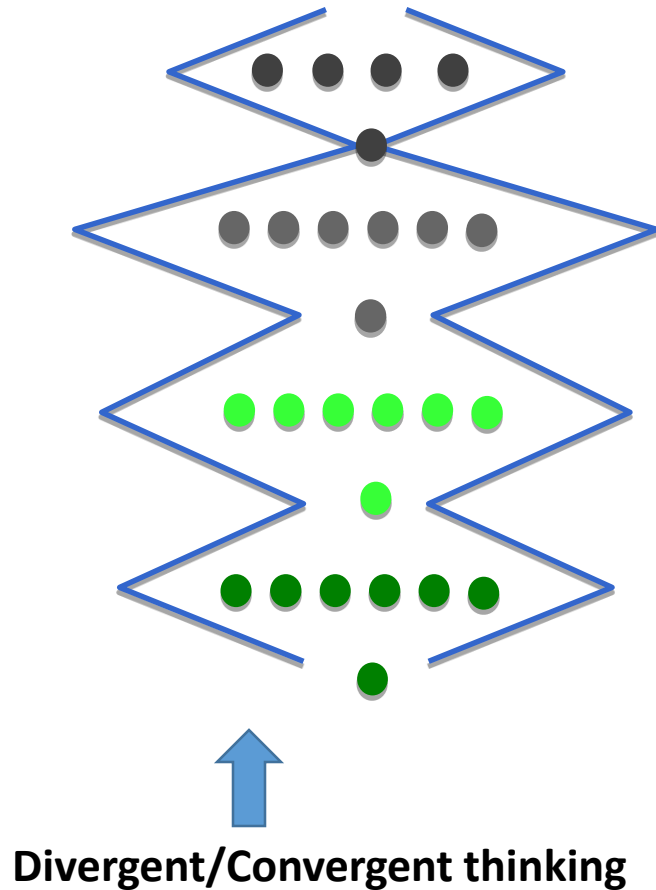
- Problem Framing
- Requirements
- Many Designs
- Pick a few Solutions
- Testing/ Feedback
- Reporting

Divergent/Convergent thinking

Iterative process

Mark Somerville .. Olin College

Project Academy
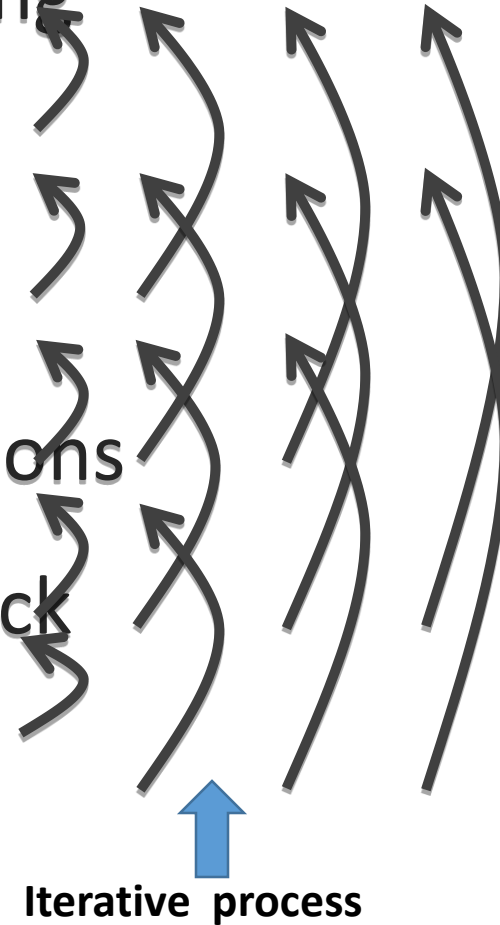
World Problems

We only think when we are confronted with problems. John Dewey

What would you change for mid-school?

Feed the World
Heal the World
Clean the World
Power the World
Respect the World
Connect the World
Entertain the World
Sports of the World
Music of the World
Record the World visual stories
Recycle the World
Dance of the World

Other possible problems that could be worked on are the Grand Challenge for engineering determined by the National Academy of Engineering.

WPI/Engineeringlens

Project Academy

Middle School Problems Faced by Kids

Empowering our student Teams to take control of their lives.

Bullying

- **Self-Esteem:** Even once confident kids may experience a severe drop in self-esteem in the middle school years.
- **Academic Pressure:** They seem so young, but middle schoolers are already feeling the pressure that was in the past reserved for high schoolers. **Drama:** Bullying and other antisocial behaviors tend to peak in the middle school years
- **Temptation:** Middle school may be the first time your child decides to experiment with smoking, drinking, drugs and other dangerous behaviors.
- **Disappointment or Rejection:** Is there a tween who doesn't experience a broken heart at some point during the middle school years?
- Encourage your tween to develop strong friendships and to learn how to relate to students of all kinds.
- **Get Ready for Dating, Dances and More:**
- **Grades Matter:** Your child isn't yet in high school, but grades in middle school do matter to your child and his or her future educational experience.
  - o **Critical thinking skills**
  - o **Personnel Responsibility**
  - o **Independence**
- **Community service projects**
  - o Allows youth to plan their own service projects with group discussions and brainstorming sessions
  - o Service-Learning in Afterschool: Helping Students Grow and Communities Prosper

Personnel Responsibility

Project based Learning

- Student ownership (problem, learning targets)

- Learning occurs along the way
  ...*Life is a series of projects*

Work on the problem/project
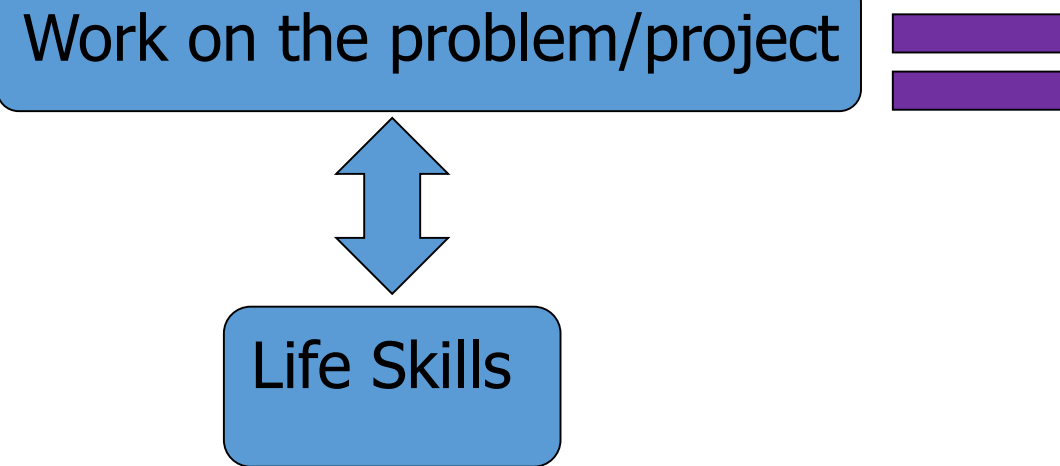
Life Skills

Sucessful Students

Life Skills ... What would you add?

Problem Solving	Financial literacy	Time management
Thinking skills	Character traits	Self-control/ Values
Collaboration	Continuous improvement/ Quality	Process methods
Measurements/ Feedback	Planning	Risk taking/Stretch goals
Learning from failure	Entrepreneurship	Innovation
Study skills	Decision making	Negotiation
Teams	Organization Culture	

Project Academy

Lincoln Team ... Project learning 11/7/2016

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Project
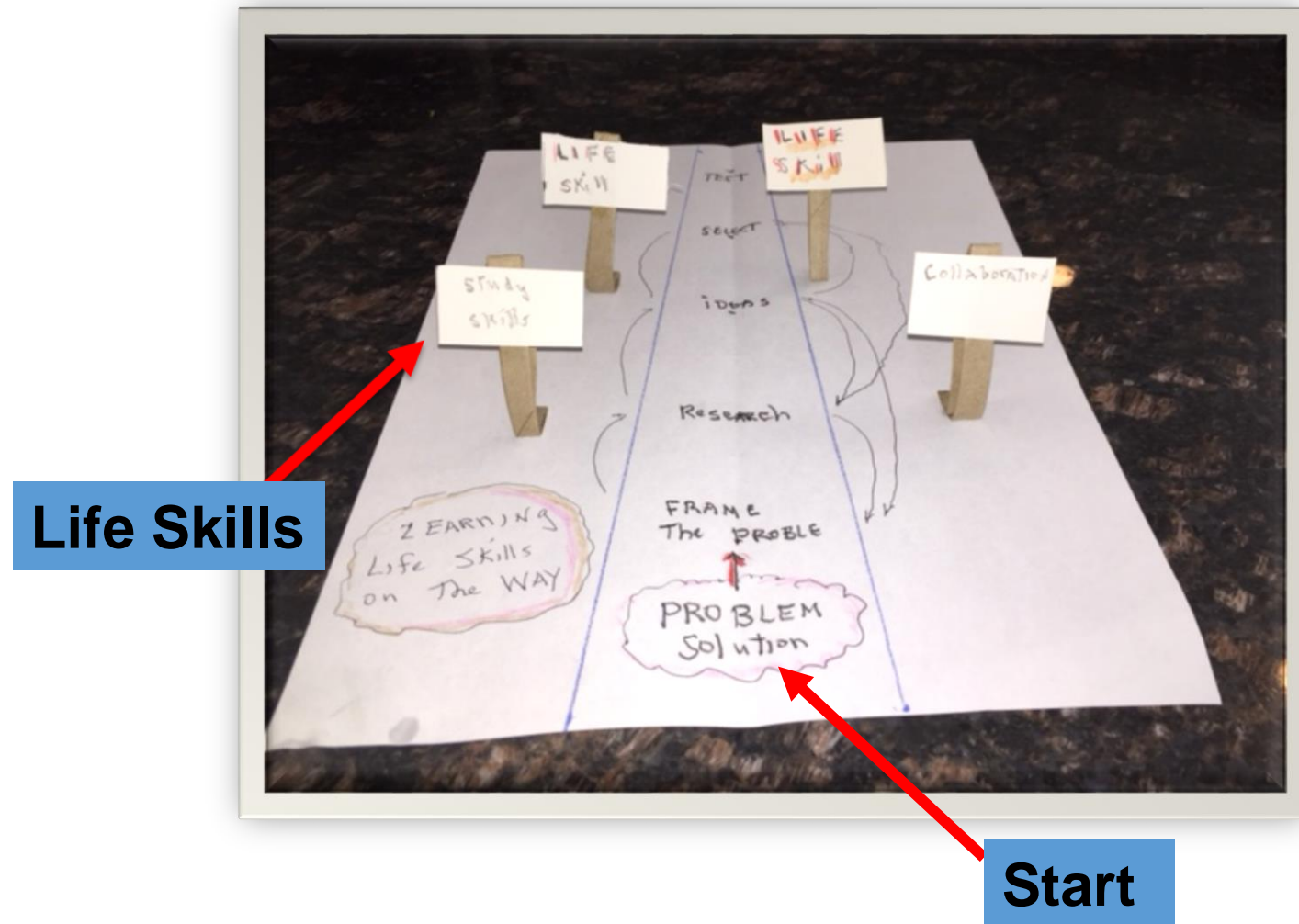
Culture and Team

Do Organizations have a Culture?

- Organizational culture is a set of beliefs shared by the people in an organization. It contains the members' values, norms and assumptions. Organizational culture can be considered a system because it has input and output.

- Every organization's culture is different. The organizational culture at a bank, for example, is very different than that of a nonprofit. Some key indicators of an organization's culture are the dress code, furniture, topics of discussion and demeanor.

WHAT IS OUR CLASSROOM CULTURE? (HOW ARE WE GOING TO OPERATE?)

- **CULTURE?**

- THE SCHOOL WILL FOSTER A **TEAM/COMMUNITY** BASED CULTURE OF A LEARNING ENVIRONMENT, WITH ALL TREATED AS ADULTS AND WITH RESPECT.

- **KEY WORDS ARE:**

- RESPECT, EMPATHY, KINDNESS, CURIOSITY, INNOVATION, PERSISTING, FLEXIBILITY, CONTINUOUS LEARNING, HUMOR AND TAKING RESPONSIBLE RISK.

WHAT'S OURS?

TEAM SET-UP
ACTING LIKE A SPORTS TEAM… WHEN PLAYING… EVERYONE IS COMMITTED!

- FORM TEAMS… COUNT 1,2,3

- TEAM CAPTAIN, TEAM SCRIBE, TEAM SCHEDULER, TEAM TRACKER, TEAM REPORTER, ADVISORY OFFICER

Create a Team Charter

- Overview of the project
- Measurable team goals, roles, Deliverables
- How will we measure success?
- Expectations … How are we going to work together? Handle conflicts?

Culture & Teams

Organizational Culture

What do we want it to be?

- The school will foster a culture of a learning environment, with all treated as adults and with respect.
- **Key words are:** Discussion
- Respect, Empathy, Kindness, Curiosity, Innovation, Persisting, Flexibility, Continuous learning, Humor and Taking responsible risk.

Organizational Team … creating a team charter

- Overview of the project
- Measurable team goals, roles, Deliverables
- How will we measure success?
- Expectations … How are we going to work together? Handle conflicts?
- Form Teams… Count 1,2,3
- Team captain, Team scribe, Team scheduler, Team tracker, Team reporter, Advisory officer

Culture & Team

- Empathy
- Values
- Non-verbal

Culture

- Charter
- Expectations

Team
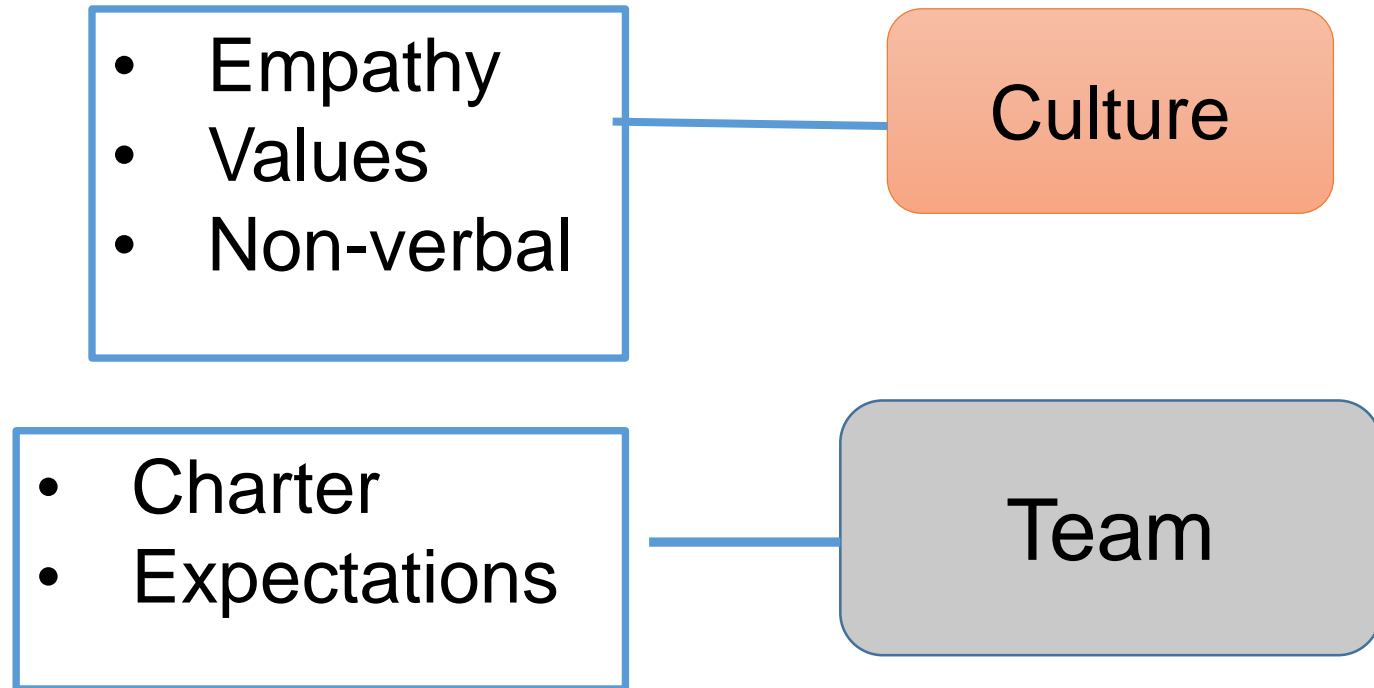
Hour 2

Learning benefits & life skills
- What's life skills
  - College and Career Readiness
  - Society skills
- One-pagers … defining skills
- Learning is Fun … Life Long learners
- Course Rubrics

2nd Hour Learning Benefits & Life Skills

10 minutes	**What's life skills** **College and Career Readiness** **Society skills**
10 minutes	*Students must be cognitively aware of skills they are using… Use OnePagers*
10 minutes	Learning is Fun … Life Long learners
10 minutes	Life skill vs. time allowed
10 minutes	What do we want to measure? **Success** Requirements, Rubrics

MassCore

Domains	Competencies for Success	Examples of Experiences that Build Career Readiness
A. Academic	Knowledge of Core Subject Areas as depicted in CommonCore Standards and MassCore: 1. Four years of English 2. Four years of mathematics 3. Three years of lab-based science 4. Three years of history 5. Two years of the same foreign language 6. One year of an arts program 7. Five additional "core" courses such as business education, health, and technology Graduation Requirements in MA maintain that students must complete courses in American History & Civics and Physical Education as well as pass the grade 10 MCAS tests in the English Language Arts, Mathematics and one of the four high school Science and Technology Engineering tests	Lifelong Learning Skills and Literacies Developed in Core Courses including: ▪ Scientific literacy ▪ Information literacy ▪ Economic literacy ▪ Civic awareness ▪ Mathematical reasoning ▪ Reading skills ▪ Study skills Applied Academics: a chance to observe, try, and demonstrate academic skills in a variety of classroom, community and workplace settings, including: ▪ writing for a school newspaper ▪ participating in an environmental advocacy campaign ▪ writing a business plan ▪ creating exhibits for a local history museum

B. Workplace Readiness	1. Career Exploration and Navigation
	2. Communication:
	    [Listening, Speaking, Writing, and Nonverbal Communication]
	3. Critical Thinking, Problem Solving, and Creativity
	4. Teamwork and Collaboration
	5. Professionalism:
	    [Timeliness, Appropriate Dress, Respect, Adaptability]
	6. Technical skills:
	    [Information Management and Digital Media Applications]
	7. Knowing How to Learn
		▪ Jobs and/or Internships
		▪ Career Development Activities, including workshops, guest speakers, job shadows, and field trips
		▪ Career Vocational Technical Education (CVTE)
		▪ Career Electives
		▪ Career-Themed Schools or Career Academies
		▪ Classroom, Community and Workplace Projects
		▪ STEM After-School Programs, Science Fairs, Robotics programs
		▪ Community Service Learning
		▪ Contextual Learning and Applied Learning Projects

C. Personal/ Social Development	1. Planning, Time Management and Goal-Setting Skills 2. Motivation, Initiative and Persistence 3. Ethical Decision Making 4. Self-Confidence and Self-Efficacy 5. Civic Engagement, Stewardship, and Cultural Competency 6. Healthy Behavior 7. Personal Financial Management	▪ Future Planning and Exploration Activities, including "Your Plan for College" and other structured college and career planning tools ▪ Mass Model for Comprehensive School Counseling ▪ After-School Programs ▪ School Leadership Roles ▪ Student Government ▪ Community Service Learning Experiences ▪ Contextual Learning Projects

Harvest Workplace Readiness & Personal/ Social Development Skills While solving a world problem using P.B.L skills.

Facilitator on the side With Questions

Life Skills ... What would you add?

Problem Solving	Financial literacy	Time management
Thinking skills	Character traits	Self-control/ Values
Collaboration	Continuous improvement/ Quality	Process methods
Measurements/ Feedback	Planning	Risk taking/Stretch goals
Learning from failure	Entrepreneurship	Innovation
Study skills	Decision making	Negotiation
Teams	Organization Culture	

Personnel Responsibility

Project Academy

Skills Harvested

Project Formation:
- Creative and Critical thinking
- Questioning
- Reflection

Planning and Scheduling
- Time management
- Financial literacy
- Measurements/ Feedback
- Quality systems

Dealing/ Collaboration
- Self-control
- Flexibility
- Character traits

Problem Solving / Process
- Innovation
- Risk taking
- Entrepreneurship

Team Formation;
- **Values/ Culture / organization**
- **Negotiation**
- **Decision making**
- **Collaboration**
- **Social skills (listening, self-image, non-verbal)**

Create a Problem to Solve … PBL

- Use the life skills along the way that you use to solve the problem
- Create learning elements around those life skills

- PBL is not enough… *Students must be cognitively aware of the skills they are using*

- Reflection on their action

One Pager Outline   **Example**

Definition:	Definition and use of the word. Use dictionary
Culture of the word	How does it fit into society, business, or education
Reference:	
Source:	
Video:	
Capacity:	How it's used and examples
Additional information	

"The bigger the problem, the bigger the opportunity" (*Vinod Khosla*).

- Play first https://youtu.be/f9LM88h-I-U

INTRODUCTION VIDEO ... PROJECT ACADEMY
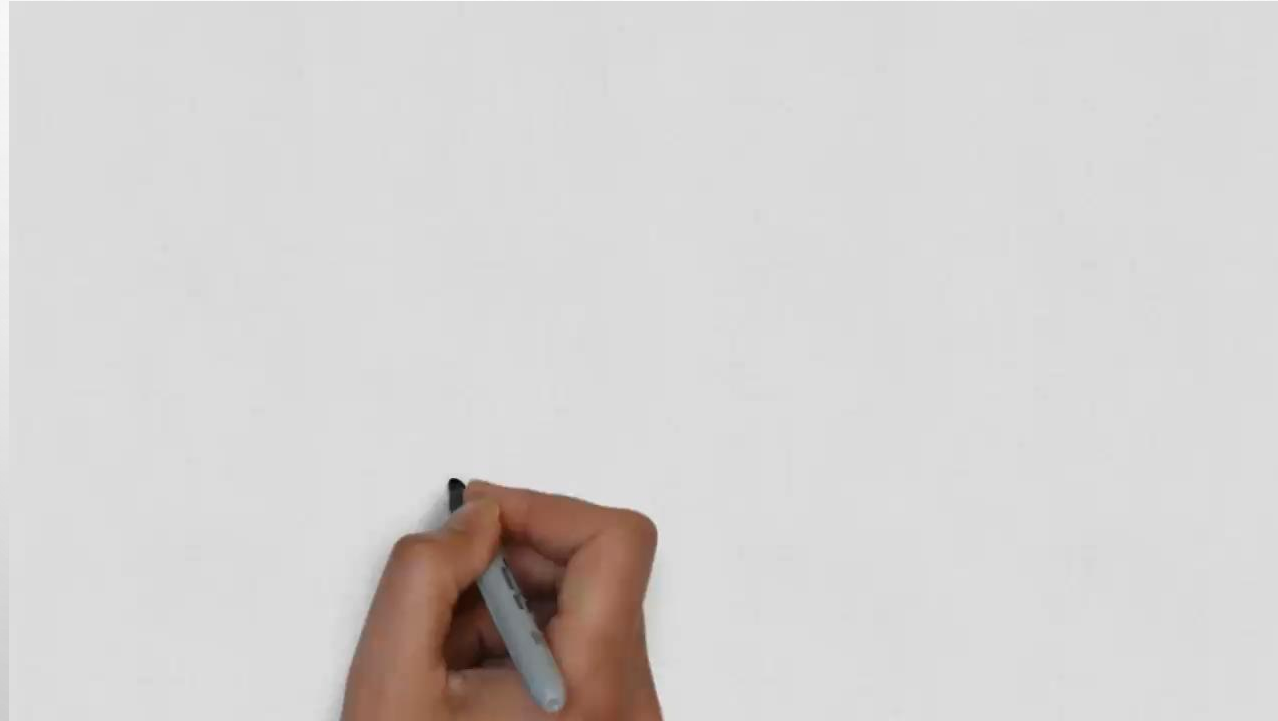
Life Skills Versus the Time allowed?

- How long your class is will determine the # of life skills embedded.
- Might want to focus on certain skills based on Problem

Measure Success

- PBL: Student voice & choice
- Culture: Treat the students as Adult

Do we ask the student: How do we measure Success?

Mapping … Measuring success in solving the problem

My learning

Problem Solving

Life Skills

Success

Learning is Fun

Useful in society?

Effective process?
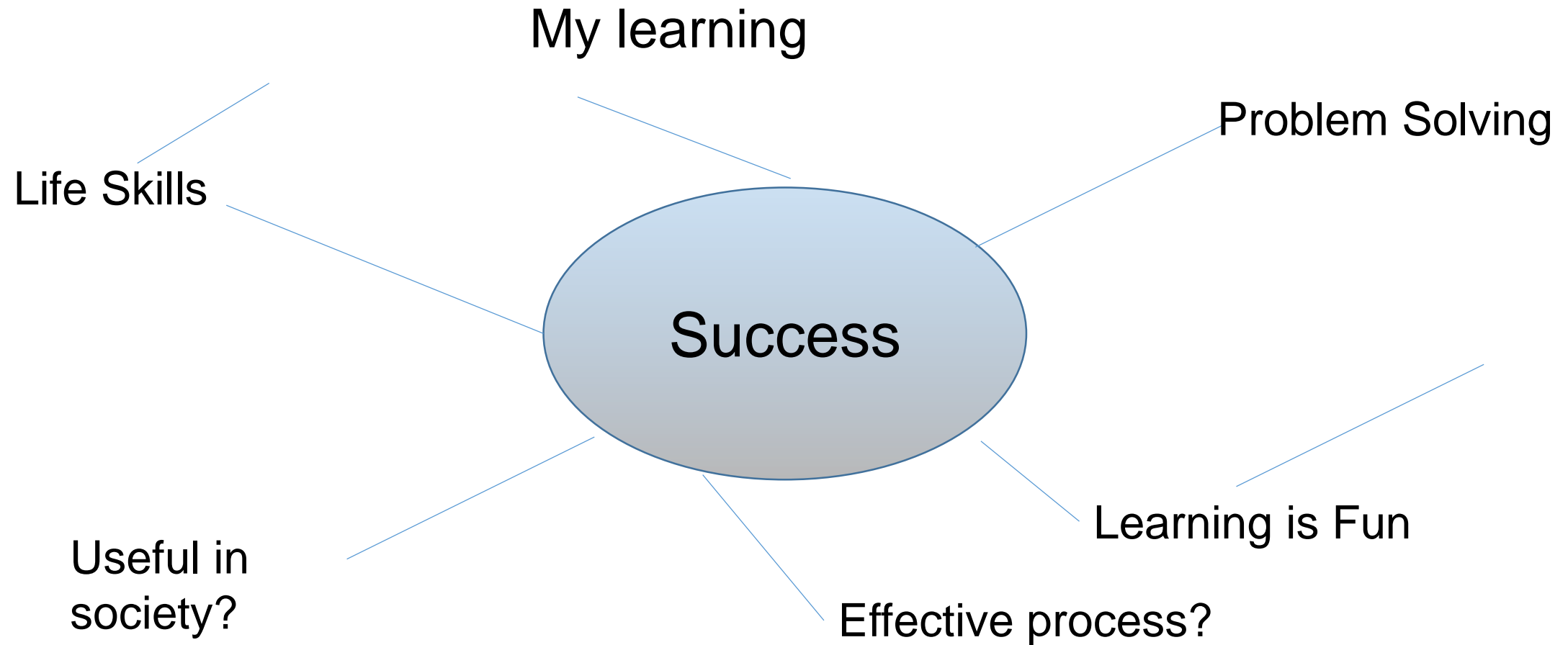
Hour 3

- **Problem solving elements**
- Show Design Process
  - Collaboration
  - Brain-Writing, Shaping
  - Thinking skills
- On-line Tools

Hour 3
PBL Benefits

- Student ownership
- Set their measurement Real world issues
- Reporting results to others
- Developing a well-constructed paper

3rd Hour Problem Solving Elements

10 minutes	Show Design Process
10 minutes	Problem Selection & Framing
10 minutes	Research Developing the Requirements
10 minutes	Brain Storming, Brain Writing
10 minutes	Shaping the ideas
10 minutes	Decisions

Look how rich the process is:

Problem Solving
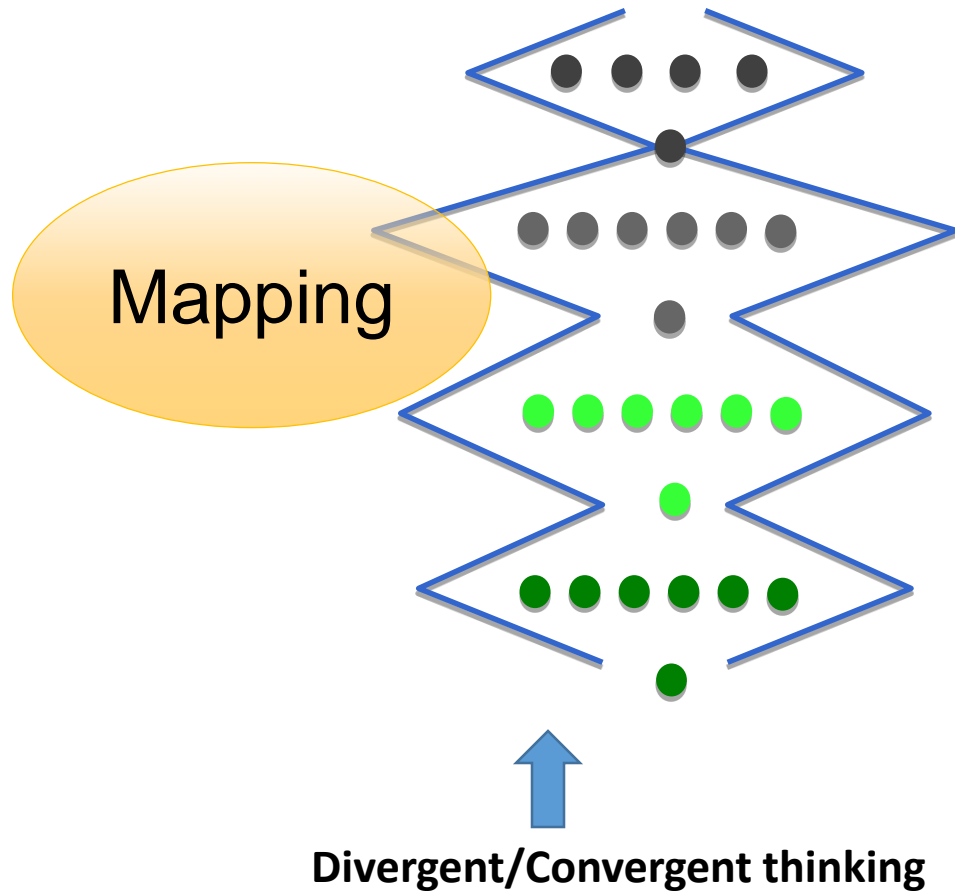
Mapping

- Problem Framing
- Requirements
- Many Designs
- Pick a few Solutions
- Testing/ Feedback
- Reporting

Divergent/Convergent thinking

Questions, Meta-cognitive reflection

Iterative process

Community

Mark Somerville .. Olin College
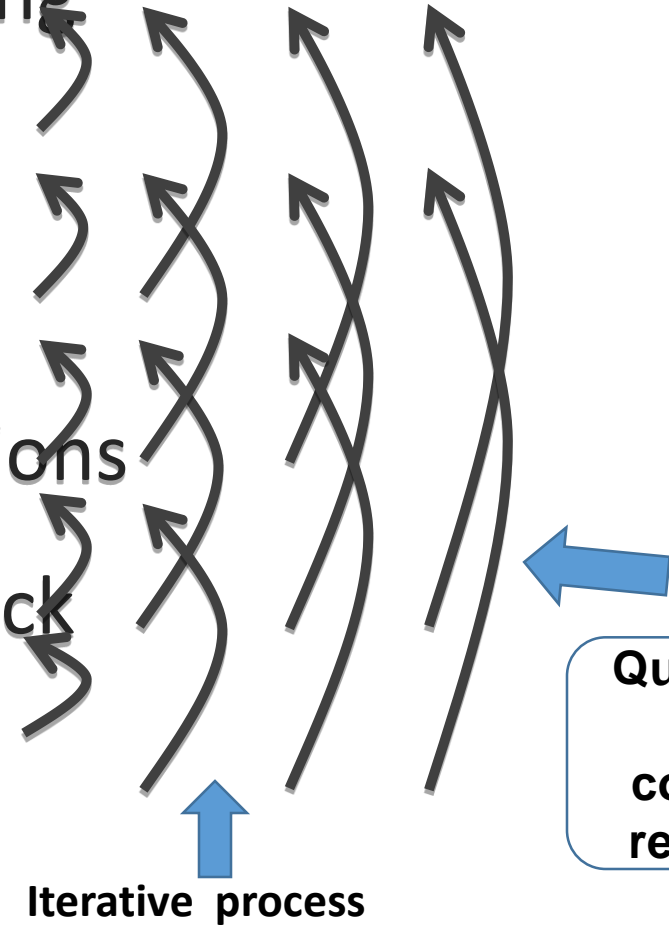
Project Academy

What is Creativity?

Creativity — Bringing into existence an idea that is new to you

The practical application of creative ideas — **Innovation**

Creative Thinking — Set of skills that can be learned, developed, and utilized in daily problem solving

Critical thinking

- Discussion: During the design process or problem solving we need to apply convergent thinking to narrow our options to a selection. When we have many options and are not comparing any to an existing one, the best option is to create a decision matrix where we establish a set of judgment criteria down the Y axis and weight each to its importance to judge our possibilities.

- Developing your own argument
  - Formulate your point of view
  - Organize evidence
  - Examine structure, clarify the logice of argument
  - Consider opposing viewpoints
  - Revise your argument

DEFINE THE ESSENTIAL QUESTION OR PROBLEM FOR THE UNIT

STARTING A BUSINESS; DOING WHAT?

LOGO?, BUSINESS NAME?

WHAT'S THE PROBLEM WE WANT TO SOLVE?

THIS IS THE THEME OR CENTRAL IDEA FOR THE UNIT.

- *QUESTION: HOW DO WE __CENTRAL IDEA__ ?*
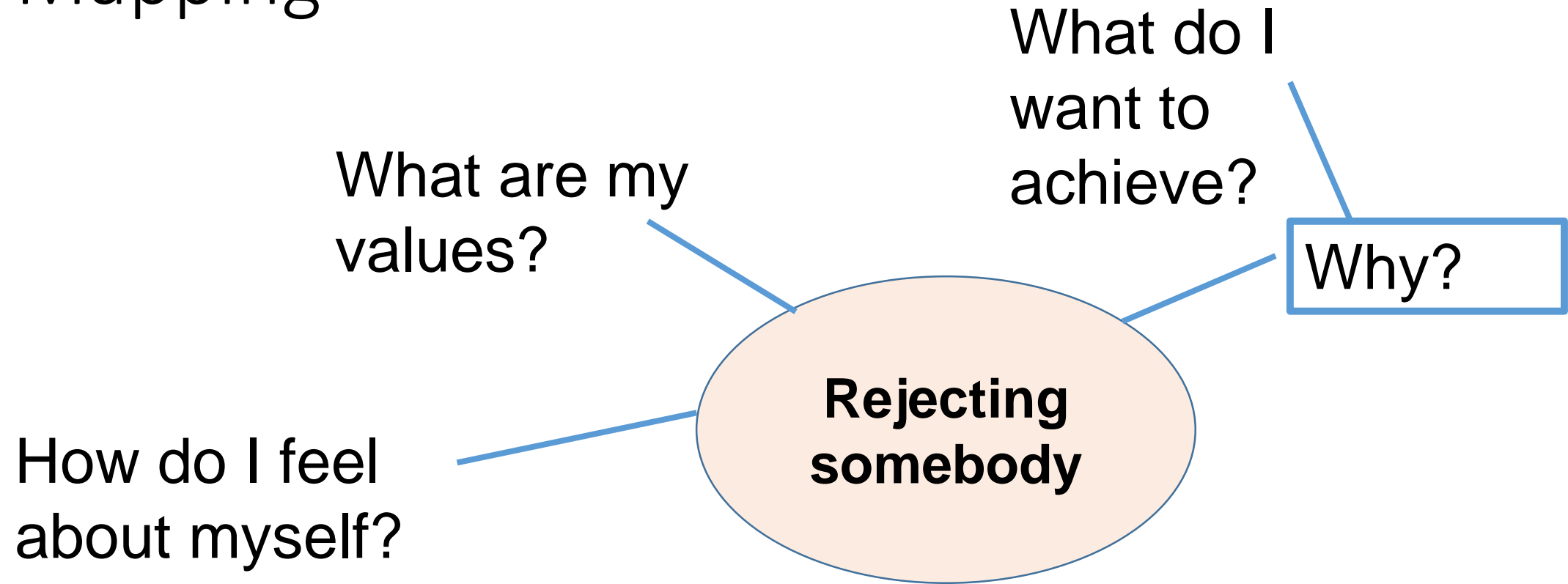- *PROBLEM: DESIGN/SOLVE __CENTRAL IDEA__ .*

I Would Spend 55 Minutes Defining the Problem and then Five Minutes Solving It

Albert Einstein? A Yale Professor? Apocryphal?

What's the Problem … Disappointment/ Rejection

- How can we get students to be more open to other students they don't know very well or don't like?

- What does it mean to be more open?

- What are our values and how doe it apply?

- Who are the other students? Family & Friends?

- How would I feel in this situation?

- What might this feel like? List some feelings

Mapping

What are my values?

What do I want to achieve?

Why?

Rejecting somebody

How do I feel about myself?

Essential Questions

- Is *open-ended;* that is, it typically will not have a single, final, and correct answer.
- Is *thought-provoking* and *intellectually engaging*, often sparking discussion and debate.
- Calls for *higher-order thinking*, such as analysis, inference, evaluation, prediction. It cannot be effectively answered by recall alone.
- Points toward *important, transferable ideas* within (and sometimes across) disciplines.
- Raises *additional questions* and sparks further inquiry.
- Requires *support* and *justification*, not just an answer.
- *Recurs* over time; that is, the question can and should be revisited again and again.

Essential Questions in Science

What makes objects move the way they do?

How are structure and function related in living things?

Essential Question: How strong is the scientific evidence?

Not Essential Question: What is a variable in scientific investigations?

McTighe, Jay; Wiggins, Grant (2013-04-09). Essential Questions: Opening Doors to Student Understanding (Kindle Locations 69-70).

Problem Framing

- Review and pick problem to solved… ***Write it done***:
- **The Problem Is To Know What the Problem Is**
- **The definition of the problem will be the focal point of all your problem-solving efforts.**

As such, it makes sense to devote as much attention and dedication to problem definition as possible. What usually happens is that as soon as we have a problem to work on we're so eager to get to solutions that we neglect spending any time refining it.

What are the Requirement for?

Developing the Requirements

How are we going to judge success?
- Time to implement
- Quality of the solution
- Change the Culture?

What are the difference between Brainstorming & Brain-writing?

Brainstorming/ Brain-writing

Prepare for the Brainstorming
1. Quantity, not quality.
2. Withhold criticism.
3. Encourage unusual ideas.
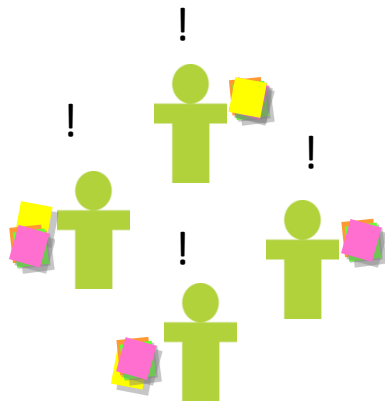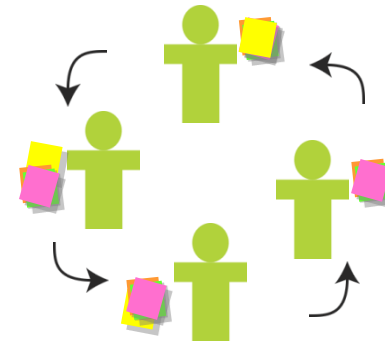4. Build on others' ideas.
5. Think in advance.

Brain-writing

Prompt: "Improve the coffee experience"
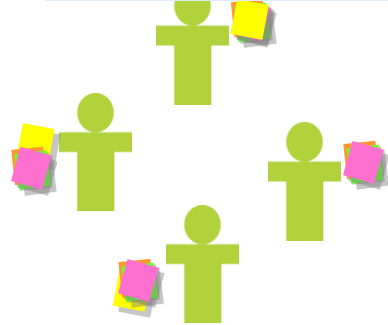
Each team member generates
3-4 ideas on their own.

Pass ONE of your ideas to your right.

Read your neighbor's idea, and generate
an idea that is somehow inspired by it.

Repeat until time is up.

Why is magical OK?

Shaping Ideas

Why generate crazy ideas?

So you can shape them into innovative ideas!

Leaves falling on the lawn...

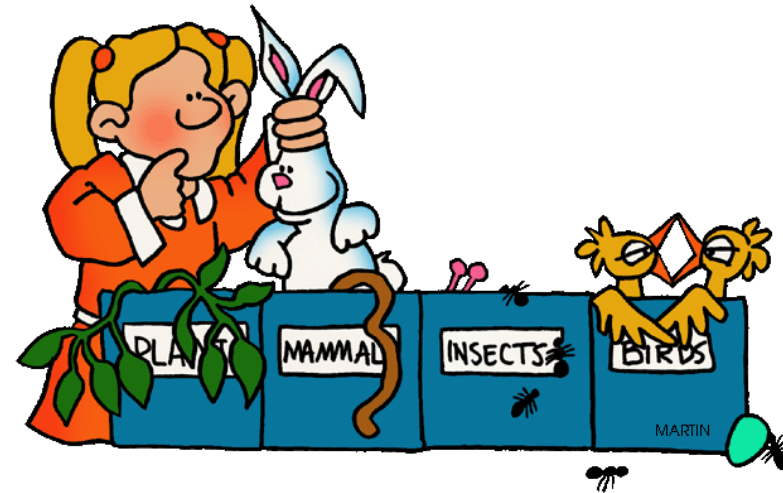Use a leaf blower

Trees that pick up

magic

I

!?

!!!??

Olin College

Shaping: Mundane, Innovative & Magical

- Sorting Ideas
- Looking at each to make it Innovative
- Team based

Now Shape your ideas!

- Map (i.e. mundane, magical) and shape your ideas from brain-writing.

- Remember that you can shape ideas to meet constraints and values

- Choose 2-3 "favorites", taking values and constraints into account. Create stretched ideas

- Be bold!

- Be prepared to share!

Decision Process

Convergent thinking … Narrowing the # of ideas and making a selection

Discussion: During the design process or problem solving we need to apply

convergent thinking to narrow our option to a selection. When we have many options

For the items that we are going to judge one against another, we use a scale of 1-10 to rate them and then we multiple that number by the weight to get the total # for that cell.
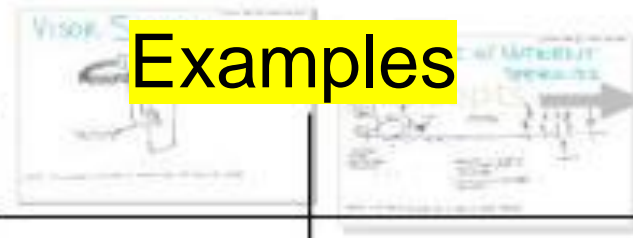
Examples

Requirement	Weight		
environment			
simple			
low cost			
Total=			

<mark>3.5 Hour</mark> Organization and problem

10 minutes	Our culture	
10 minutes	Our Team	
10 minutes	Create a learning method for students how to show Respect for People & Property	
10 minutes		
10 minutes		

What is our classroom culture? (How are we going to operate?)

- **Culture?**
- The school will foster a **Team/community** based culture of a learning environment, with all treated as adults and with respect.
- **Key words are:**
- Respect, Empathy, Kindness, Curiosity, Innovation, Persisting, Flexibility, Continuous learning, Humor and Taking responsible risk.

What's ours?

Modified Culture

The school will foster a **Team/community** based culture of a learning environment, key values and treating all as adults and with respect. The community will operate will the following norms:

• Build bridges and learning from other societies

• Working towards stretch goals

• Measurements are for learning and continuous improvement

• Making the world a better place

• Loving Kindness … from the heart

Key values…

Team Set-up
Acting like a sports team… When playing… everyone is committed!

- Form Teams… Count 1,2,3
- Team captain, Team scribe, Team scheduler, Team tracker, Team reporter, Advisory officer

Create a Team Charter

- Overview of the project
- Measurable team goals, roles, Deliverables
- How will we measure success?
- Expectations … How are we going to work together? Handle conflicts?

Culture & Teams

Organizational Culture

What do we want it to be?

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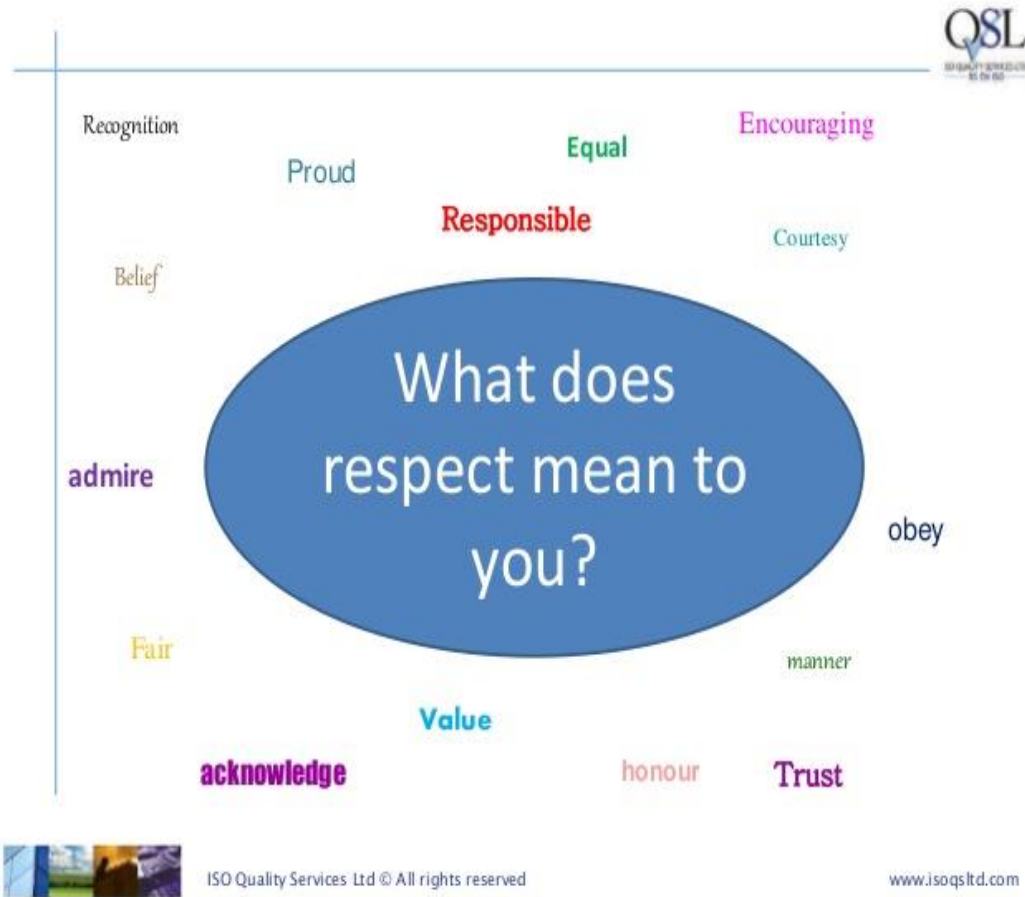
Organizational Team … creating a team charter

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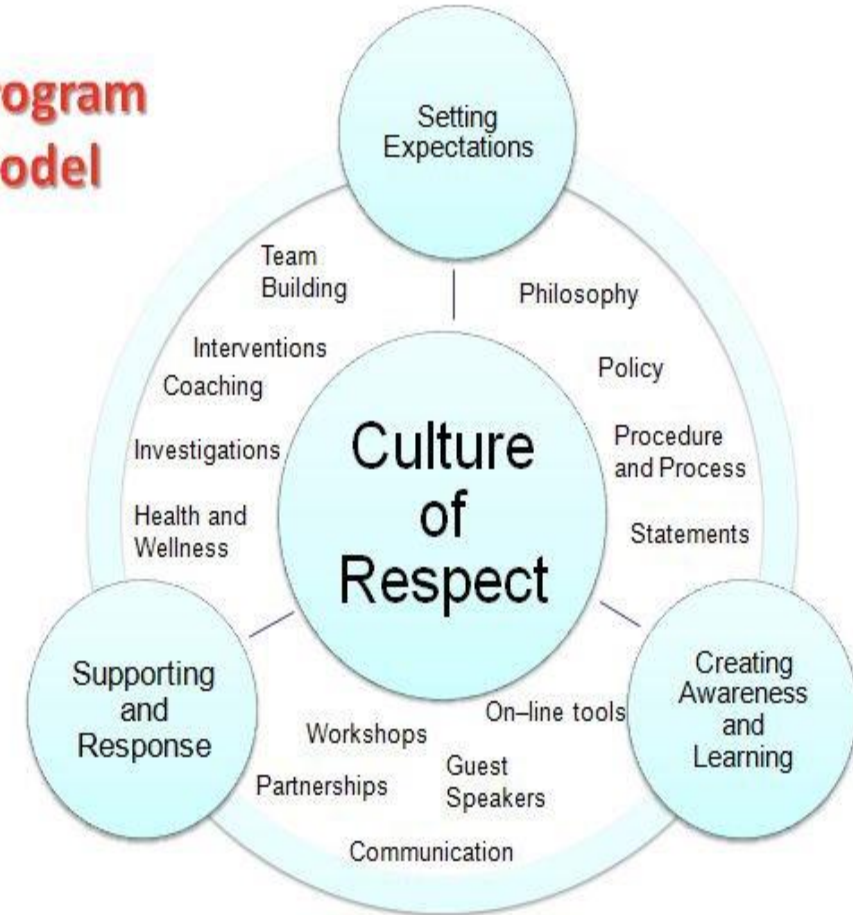
Dictionary

- adjective
- 1.
- full of, characterized by, or showing politeness or deference:
-
- **respectfulness** - Dictionary **definition** and **meaning** for word **respectfulness**. (noun) courteous regard for people's feelings. Synonyms : deference , respect. in deference to your wishes. out of respect for his privacy.
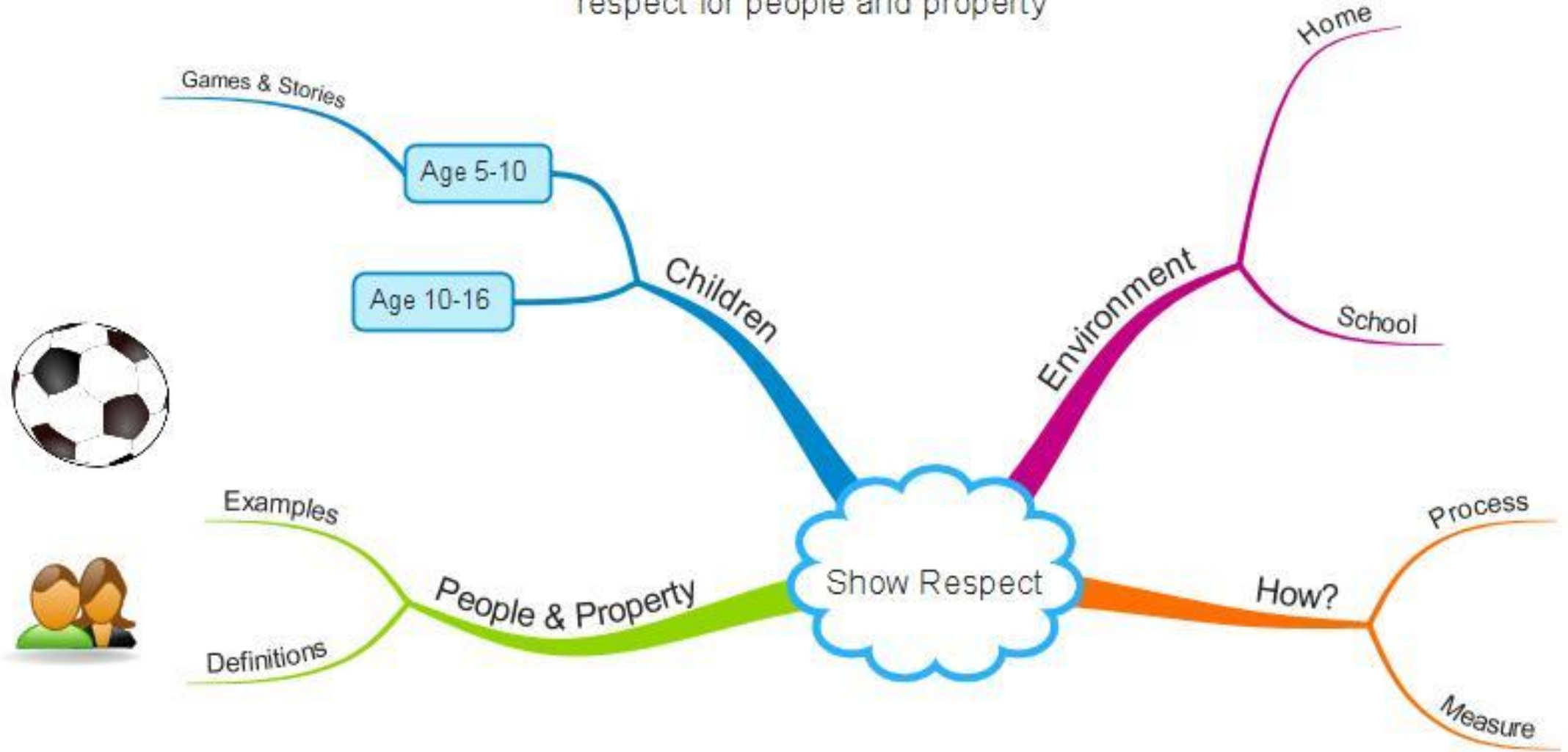- courteous regard for people's feelings

Respect Posters

Create a learning method to teach children how to show respect for people and property

Games & Stories

Age 5-10

Age 10-16

Children

Environment

Home

School

Show Respect

Examples

Definitions

People & Property

How?

Process

Measure

Possible ideas

Create hand-outs for the children that has do's & Don'ts

Make the learning active in each class around respect

Develop a game that the children play that has respect as part of the action

Develop a process that includes the family in a respectful home activity

Have a show &Tell for the kids to demonstrate their use of Respectfulness

Develop a strong link to the team culture address each member by their first name

4th Hour Being a facilitator

10 minutes	What's the benefits of this process	
10 minutes	Type of questions	
10 minutes	What is reflection?	
10 minutes	Brain Plasticity / Mindset	
10 minutes		

The goal for the teacher is to create an environment that supports learning and construction of knowledge by the student.

- Questions
- Reflection
- Tying to the States Standards

What is facilitation?

Facilitation is concerned with encouraging open dialogue among individuals with different perspectives so that diverse assumptions and options may be explored.

Hogan (2002: 10)

Meta-Cognition / Reflection

- We must model the meta-cognition aspects on how we arrived at a learning point. By providing examples & engaging students in role playing, we can demonstrate how we arrived at a particular point.

Questions

- We need to focus on modeling for the students the way to ask questions based on the desired outcomes to demonstrate that learning is achieved by getting the students to understand how they gathered the data & use skillful thinking to make a conclusion.

| How do we operate? |
| --- |
| we will act as a facilitator using ==questions== to get the students to design their process and operating ground rules. |
| What is the definition of the process? How should it operate? How does it compare to a other processes? What are our roles? How am I successful? How do we communicate and collaborate together? |

- The teacher can identify the expected outcome and question the students on how they achieved this outcome. In addition, the students will assess themselves on their compliance with the ground rules that were established in the beginning of the project.

Brain Plasticity … Your Brain is a muscle

Mindset
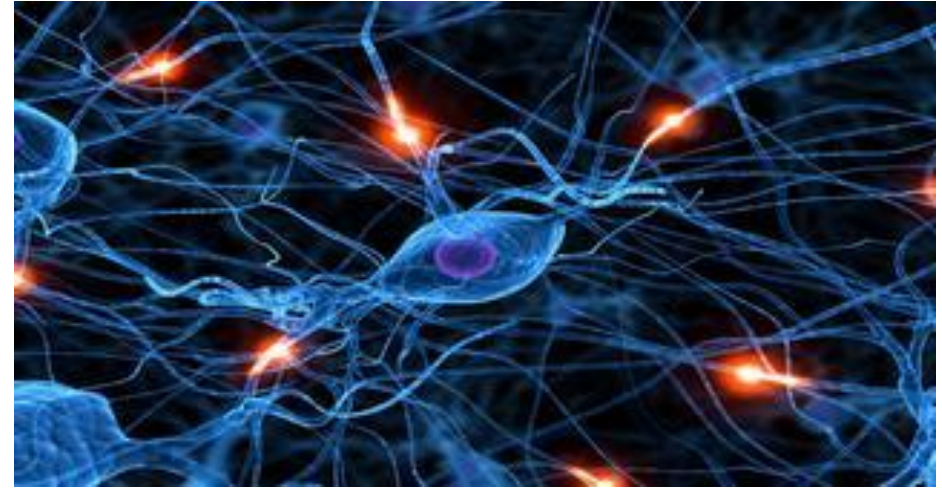
Based on the works of:
- Carol Dweck, Ph.D
- Claude M. Steele Ph.D
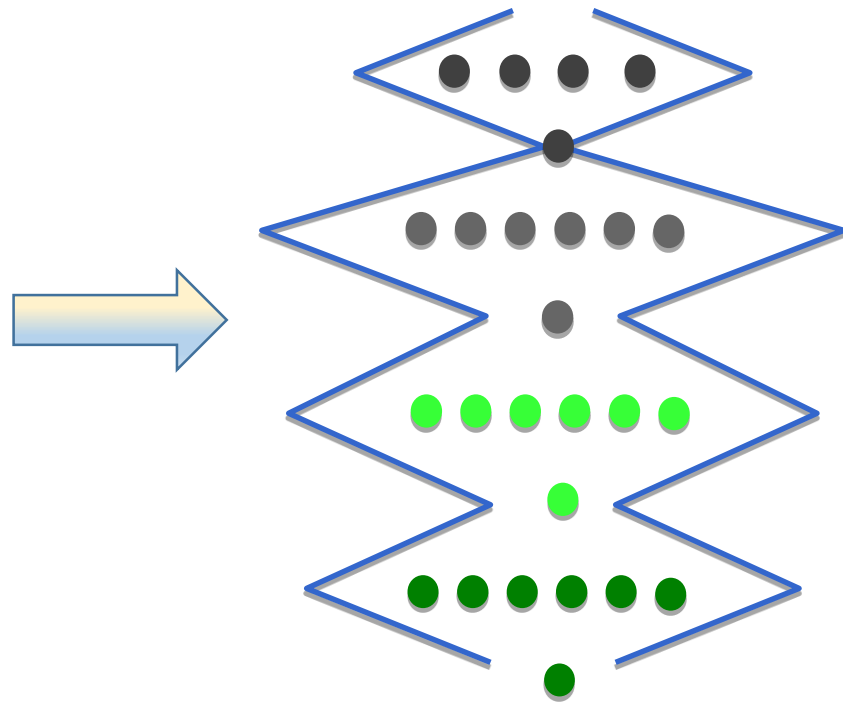- James Anderson, Habits of Mind

Doing a problem

- Essential question
- Picking life skills
- Culture and Team
- PBL process
- Reporting and Presenting to others

5th Hour Doing a Project

10 minutes	Develop the Essential question
10 minutes	What Life Skills to include
30 minutes	Doing the process
10 minutes	Reflection

What is the Essential Question?

Problem Solving

- Problem Framing
- Requirements
- Many Designs
- Pick a few Solutions
- Testing/ Feedback
- Reporting

Divergent/Convergent thinking

Community

Iterative process

Questions, Meta-cognitive reflection

Mark Somerville .. Olin College

Project Academy

6st Hour Reflection *Your thoughts on the program?*

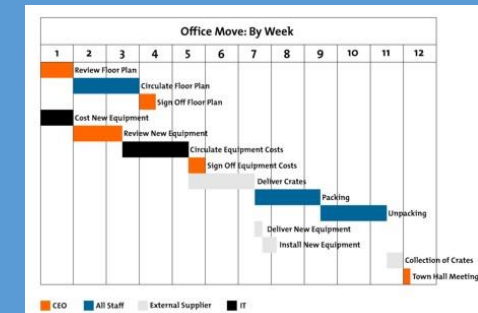| 10 minutes	Importance of the presentation	
10 minutes	What did we leave open?	
10 minutes	What did you need more of?	
10 minutes	What's next?	
10 minutes	How can we make it better?	

Tools to use

- Designing process documents… Milestones, Time line, Quality plan, ?
- How are we going to measure these?

Mind Map	Gantt chart
Questions	**Reflection**

Importance of the Presentation

- Reporting results to others
- Developing a well-constructed paper
- Student gets a chance to revise and modify presentation

Thank you

Additional questions?

Bill Wolfson
billw@projectacademy.org
508-380-3747