



Whole School Sustainability 101: Leading Green Schools for Vibrant Purposeful Learning

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Today's Objectives



- ✓ **DEFINE** whole school sustainability/green schools
- ✓ **DISCERN** the benefits of WSS
- ✓ **ACCESS** assessment tools for identifying WSS practices
- ✓ **DEVELOP** action plan for cultivating WSS



OUR research and teaching is focused on the leadership and learning required for transforming schools into student-centered places that work more like nature and less like factories.

We believe this is good for learning and for our environment!



The major problems in the world are the result of the difference between how nature works and the way people think.

Gregory Bateson

The green, healthy, sustainable schools movement is perhaps the most important educational initiative of our time. *Leadership for Green Schools* does a magnificent job of conveying not just the importance of this movement but the significant role school leaders play in shaping the vision, purpose, shared leadership, and vibrant learning environments for teachers as they prepare young people for an uncertain future.

Jennifer Seydel, Executive Director,
Green Schools National Network

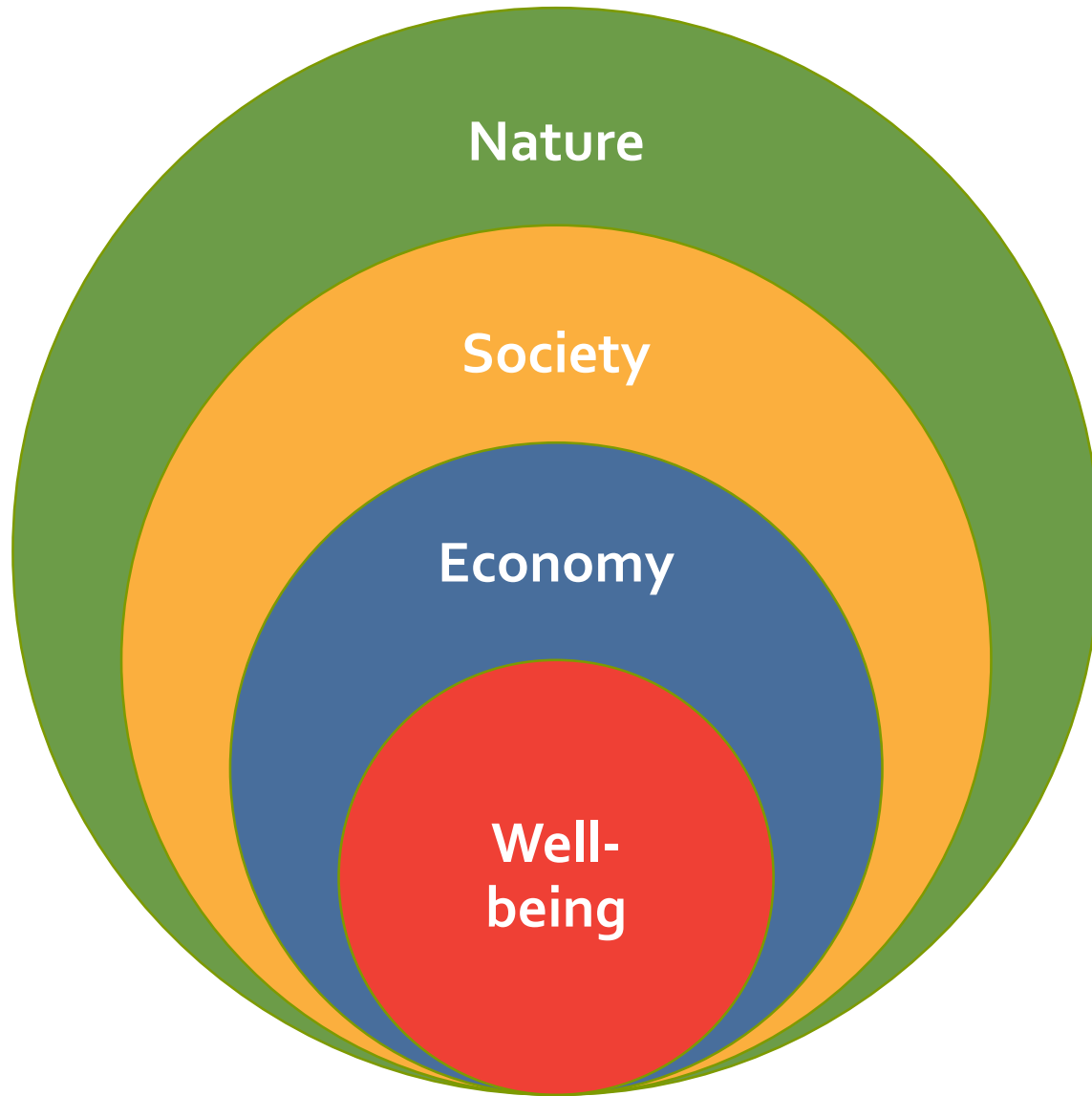
LEADERSHIP FOR GREEN SCHOOLS

Sustainability for Our Children,
Our Communities, and Our Planet



LISA A. W. KENSLE AND CYNTHIA L. ULIN





AtKisson, A. (2012). *Believing Cassandra: How to be an Optimist in a Pessimist's World*. New York: Routledge.

LEADERSHIP FOR GREEN SCHOOLS

Sustainability for Our Children,
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VISION

- Love of learning
- Restorative impact – people & planet

HEALTHY CONTEXT

- Connecting with community
- Healthy, High Performing Buildings

ENGAGED LEARNING

Time in nature improves learning
Place, Problem, Project –based learning

Monument to the Industrial Age



The Factory Model in School

- Assembly line → • Hallways
- Grades → • Grades
- Rigid schedules → • Bells
- Standardization → • Standardization
- Sorting → • Gifted, LD, etc.
- Products → • Students

Senge, P. M., Cambron-McCabe, N., Lucas, T., Smith, B., & Dutton, J. (2012). *Schools that learn* (updated and revised): A fifth discipline fieldbook for educators, parents, and everyone who cares about education. New York: Crown Business.

Factory Model Assumptions

1. Children are deficient and schools fix them.
2. Everyone learns or should learn in the same way.
3. There are smart kids and less smart kids.
4. Learning takes place in the classroom, not in the world beyond.
5. Knowledge is inherently fragmented – contained in categories and separate courses.

Mechanical Systems

- Tend to be rigid
- Tend to be linear
- Tend to have simple cause and effect relationships
- **Do NOT learn, adapt, change**

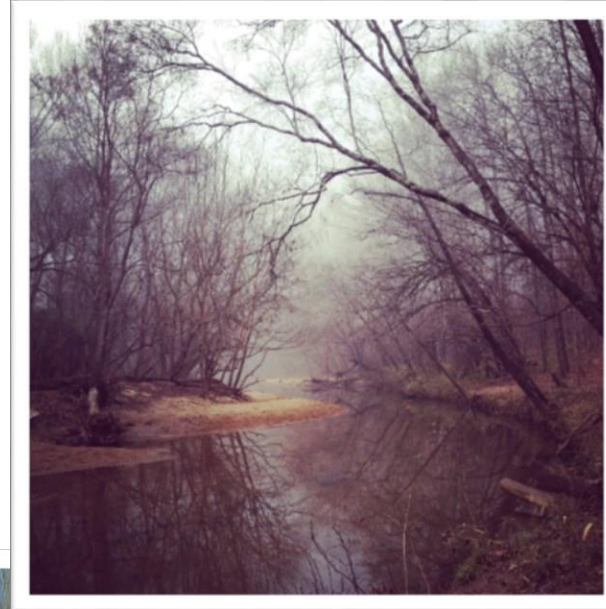


Factory Model Is Failing

- Low teacher & student engagement
- High levels of teacher & student stress
- High numbers of discipline referrals
- High rates of teacher & student absenteeism
- Students leave school early (high dropout rates)
- Teachers leave the profession early

**The factory model does not serve
our innate LOVE of LEARNING**

FROM FACTORY MODEL THINKING TO ECOLOGICAL MODEL THINKING



“The work of our successful principals strongly suggests that they thought of their organizations as living systems, not machines.”

(Leithwood & Day, 2007, p. 200)



**Whole School Sustainability
is about restoring our relationship
with nature and each other in order
to better serve our learning needs,
our communities, and our planet.**

Promises of Whole School Sustainability:

- Maximize conditions for the **love of learning to thrive**
- **Enact nature's leadership lessons**
- Model and cultivate **social, economic and environmental stewardship**

1. Cedarsong Forest Kindergarten (Vashon, Washington)



Kids at Cedarsong head off to another adventure in the forest. Photo by Cedarsong Nature School used with permission

FOREST SCHOOLS



Building a "dam" in the mud. Photo by Cedarsong Nature School, used with permission

<http://www.upworthy.com/see-adorable-photos-of-7-forest-schools-from-around-the-country?c=upw1&u=2447cab6bd96f411051711fb74d2033bb72a4556>

4. Worldmind Nature Immersion School (Denver, Colorado)



A little snow and ice can't keep these kids from having fun. Photo by Worldmind School, used with permission



Tree trunk too high? Not for these kids! Photo by Worldmind School, used with permission

PROVIDE ACCESS TO NATURE

- Positive relationship between access to nature and the well-being of children (Noddings, 2006, 2013; Kuo & Taloor, 2004; Louv, 2005)
- Outdoor activities encourage more creativity than those in classrooms (Lindholm, 1995)
- *Naturalness factors* accounted for approximately 50% of the facility design's impact on learning (Barrett, Davies, Zhang, & Barrett (2015))



Kellam High School, Virginia Beach City Public Schools

LIVING SYSTEMS

INSPIRED BUILDINGS



Architect Takaharu Tezuka, Tokyo, Japan

Each dollar spent today
realized two dollars in
future savings

(Gelfand, 2010)

33% energy reduction,
32% reduction in water
use, reduced M&O costs

healthy, high performing
(CHPS)



THE VISION: GREEN SCHOOLS WITHIN A GENERATION



healthy environment, conducive to
learning while saving energy, resources
& money
(USGBC)



BUILDINGS THAT PROVIDE ABUNDANT CLEAN AIR, NATURAL LIGHT, AND THERMAL COMFORT

- Study of 140 fifth grade classrooms, 3109 students, revealed statistically significant association between ventilation rates and mathematics scores (Haverinen-Shaughnessy & Shaughnessy, 2015)
- Access to natural light associated with achievement (Barrett, Zhang, Moffat, & Zobbacy, 2013; Kuller & Lindsten, 1992; Mayron, Ott, Nations, & Mayron, 1974)
- Robust literature documents the effects of temperature and humidity on occupants' comfort and productivity (Wang, Federspiel, & Arens, 2005; Wyon, 2004)

Chattahoochee Hills Charter School

- Public charter, lottery; open 2 years
- Serves low income families from under performing schools
- Lowest absences due to illness in region
- Reading scores: 17pts above national average and 26pts above regional average
- MOST growth across 100 schools in district

CBS Sunday Morning, April 13, 2016

Eagle Mountain Elementary School, Texas

- Added 4-15 minute recess sessions to school day
- Brain studies show improved learning after physical play
- Reduced fidgeting, increased attention
- Students were ahead of academic schedule halfway through the school year

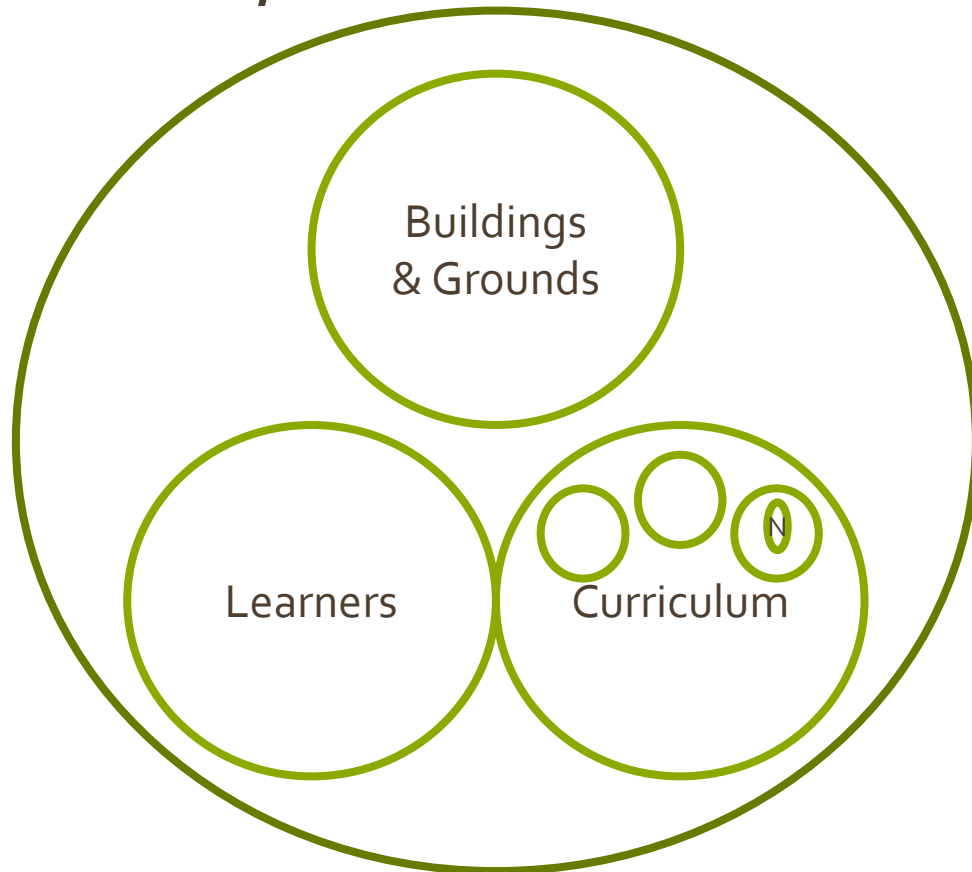
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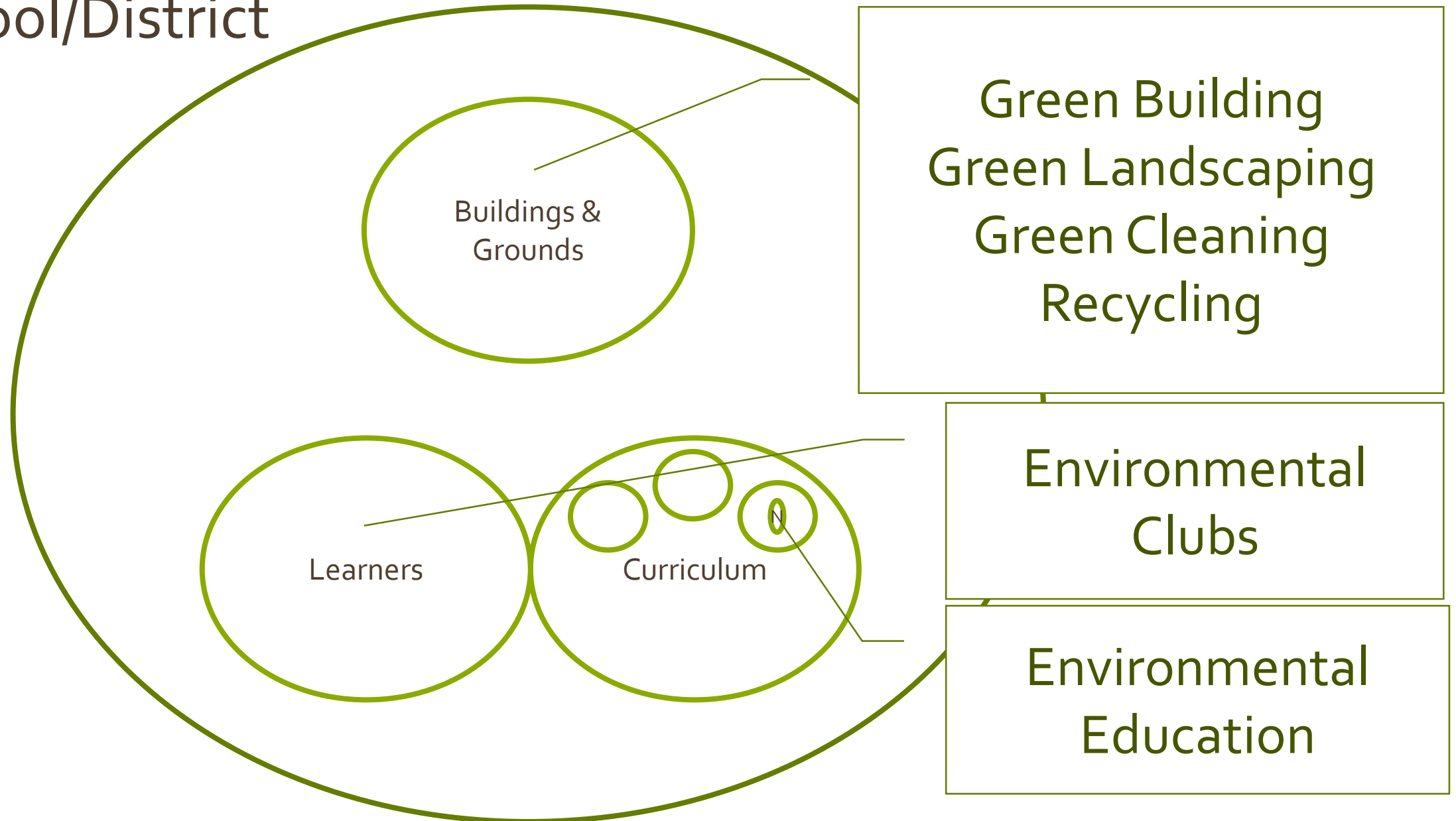


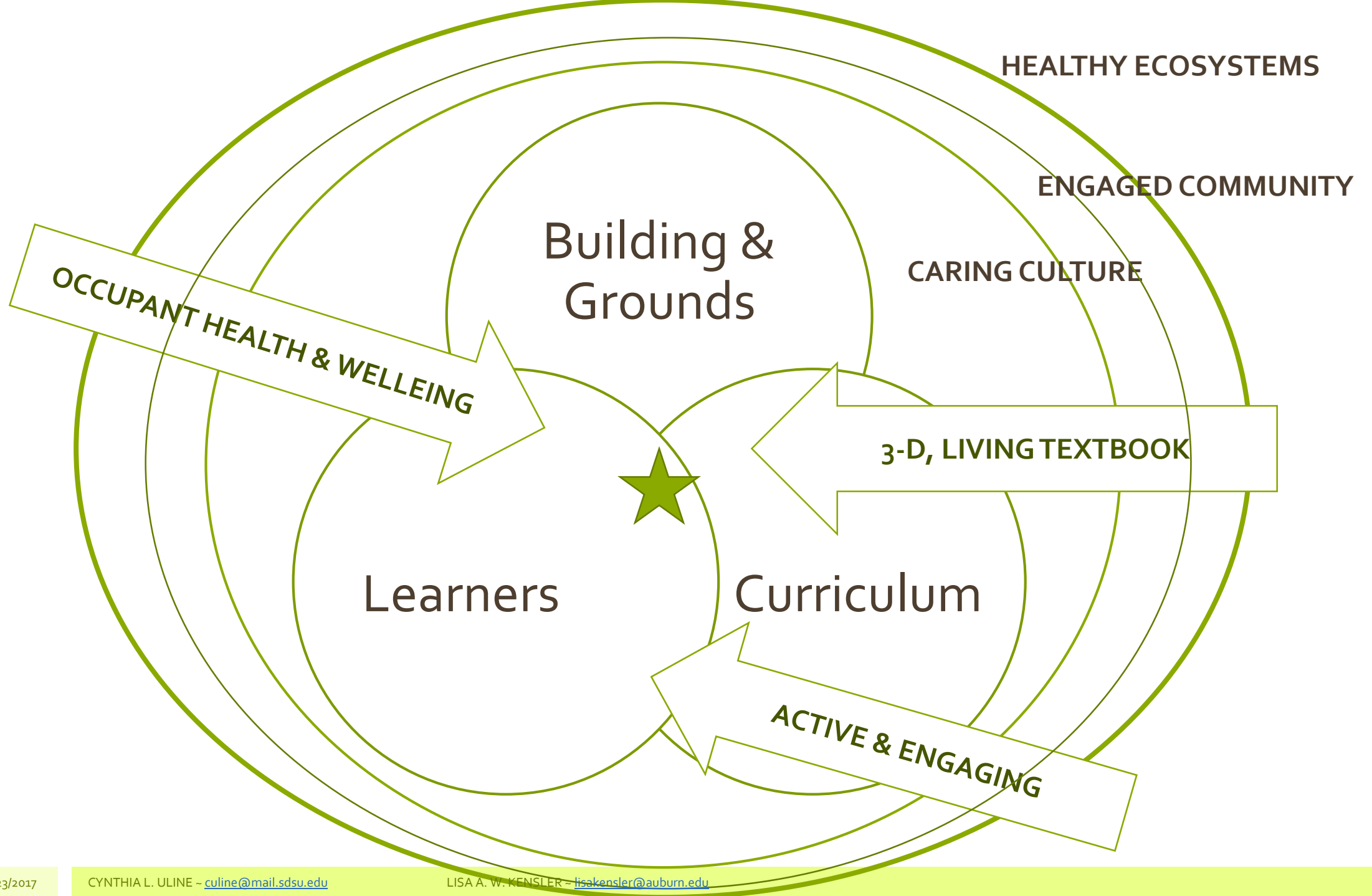
Factory Model → Silos

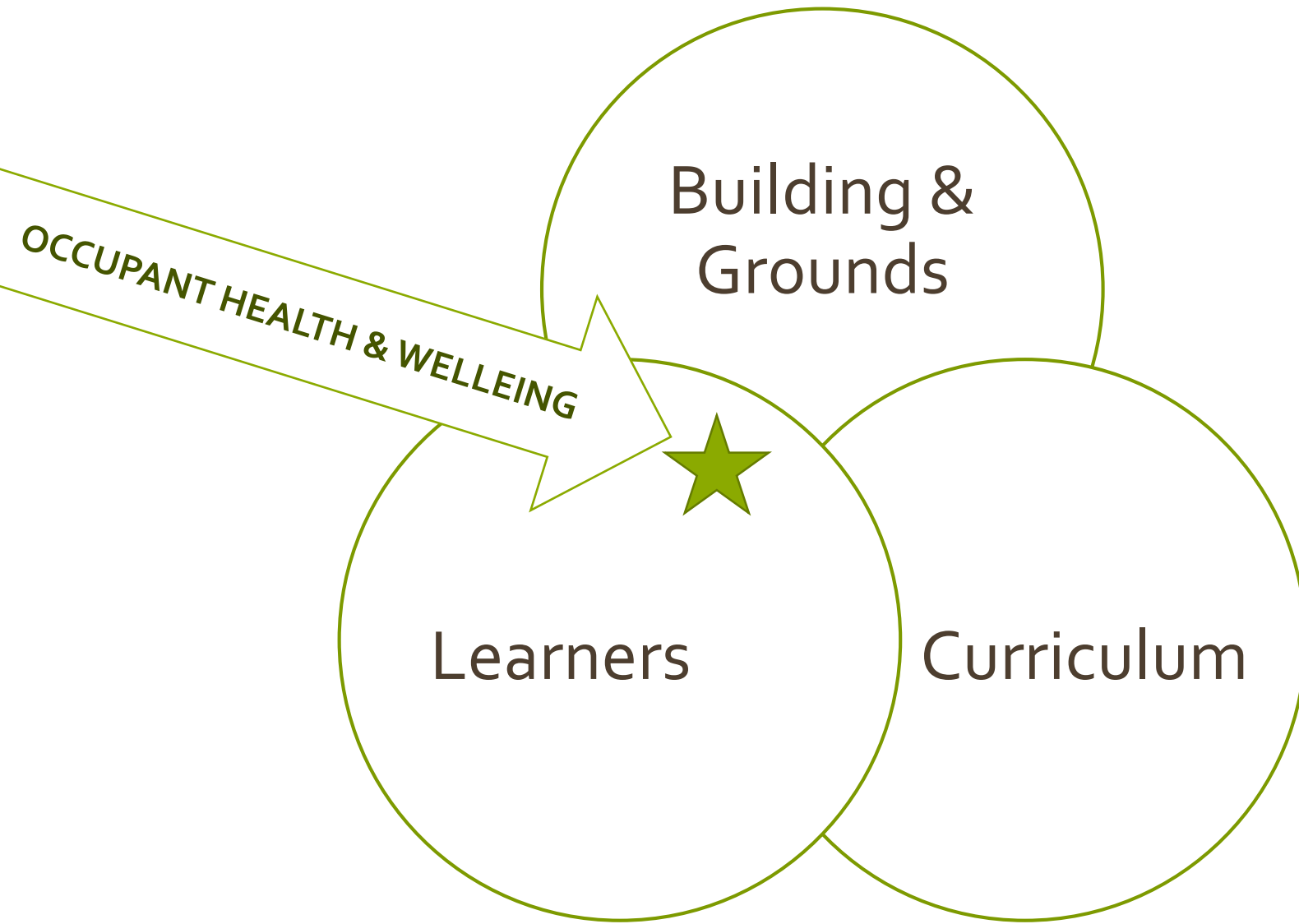
School/District



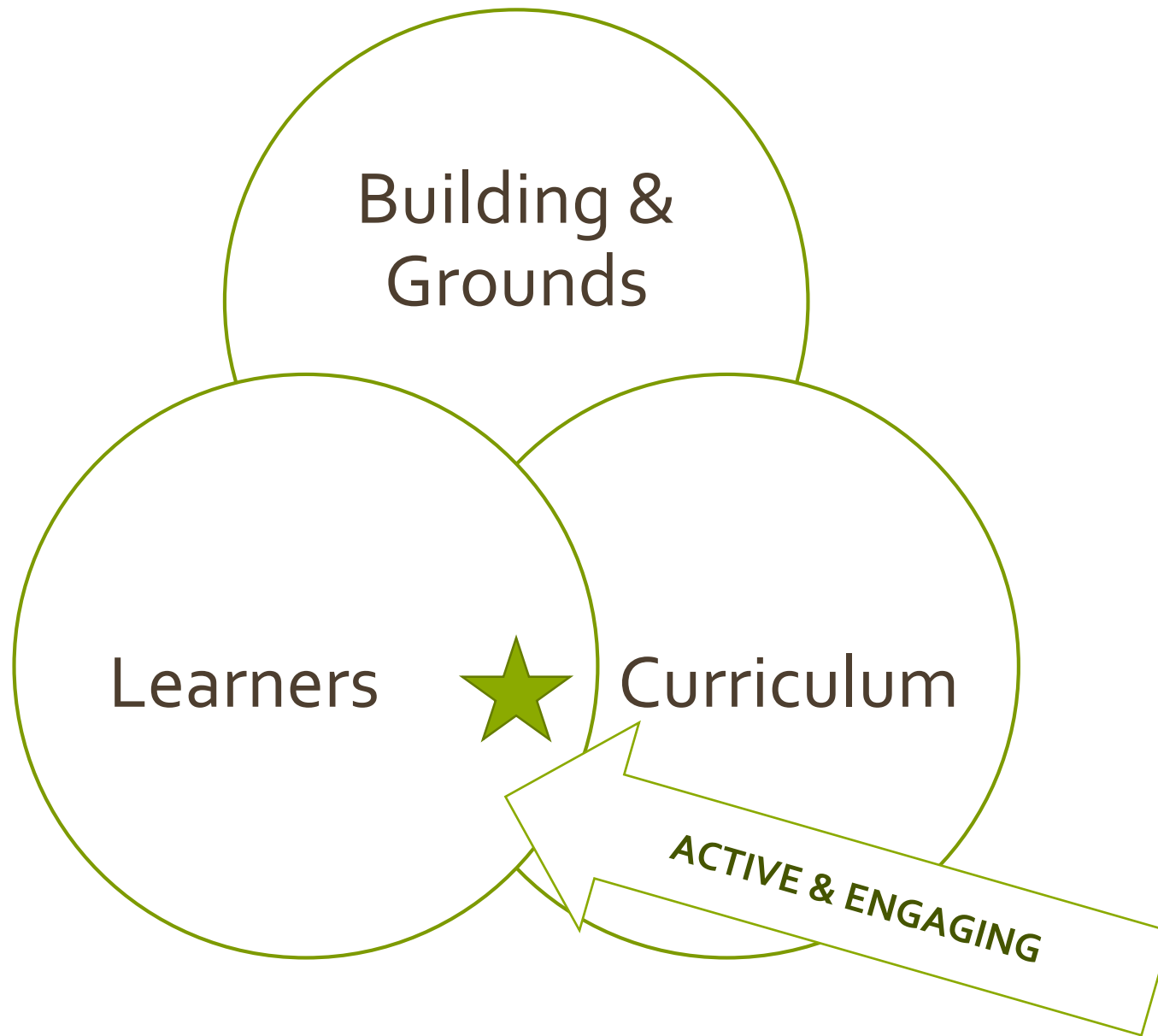
School/District







- IAQ
- THERMAL COMFORT
- WATER QUALITY
- NATURAL LIGHT
- FRESH AIR
- OUTDOOR CLASSROOMS

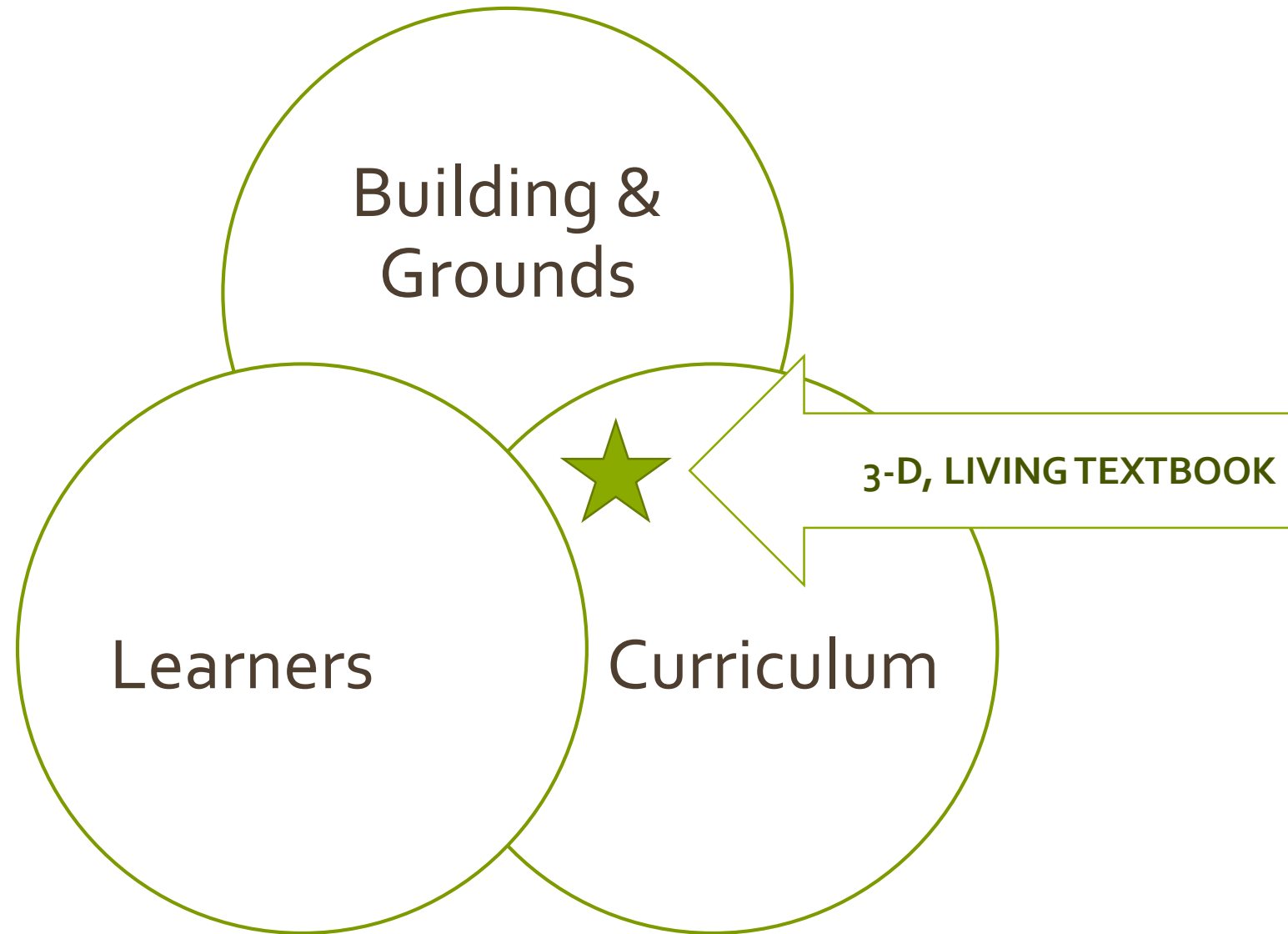


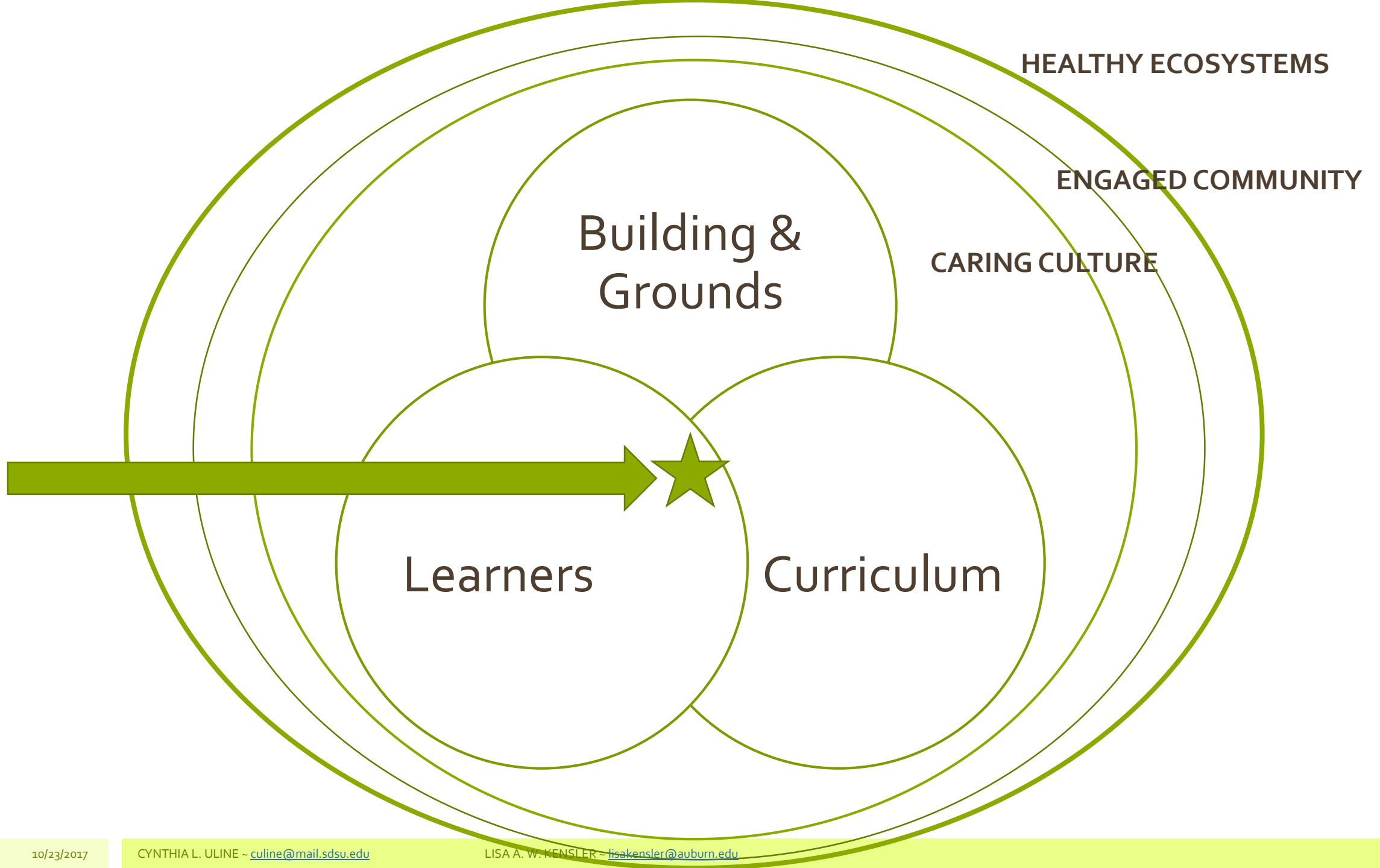
LEARNING THAT IS:

- PLACE-BASED
- PROBLEM-BASED
- PROJECT-BASED

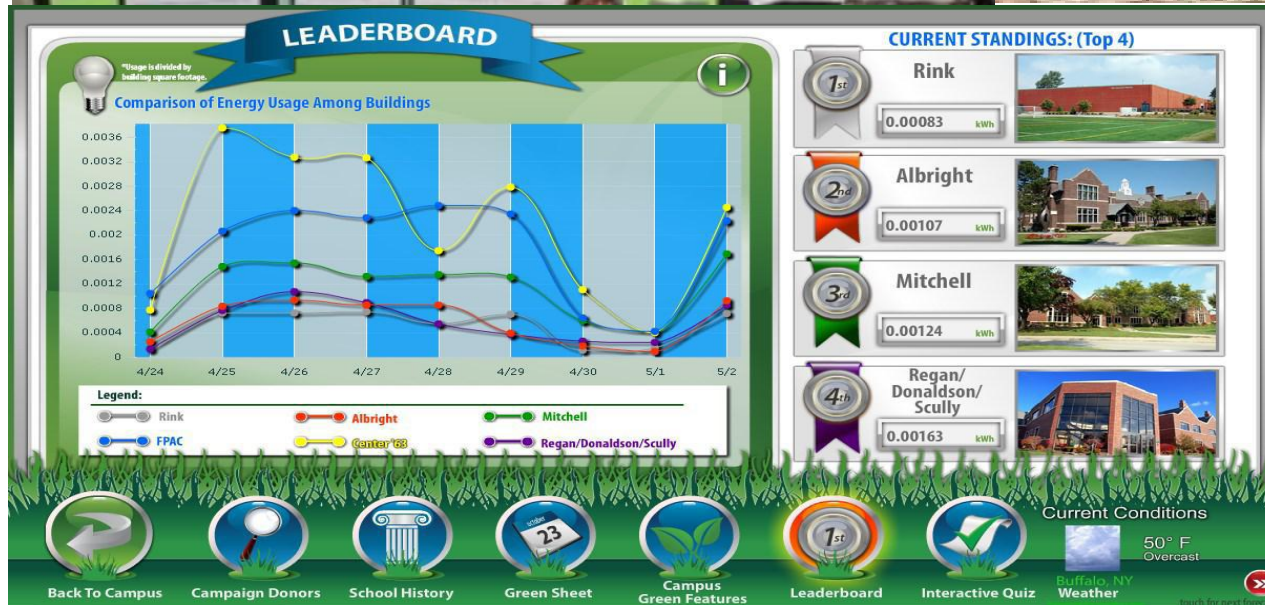
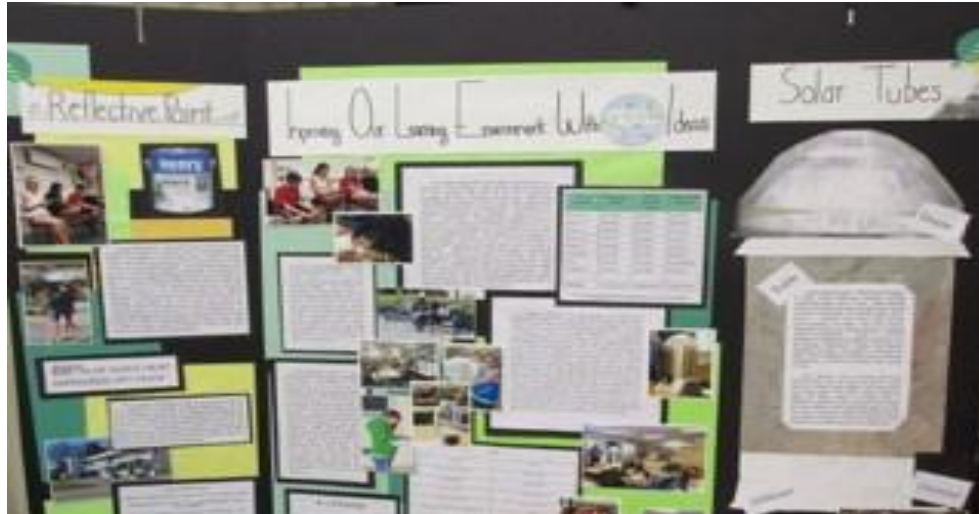
USE THE BUILDING & GROUNDS TO TEACH CONTENT

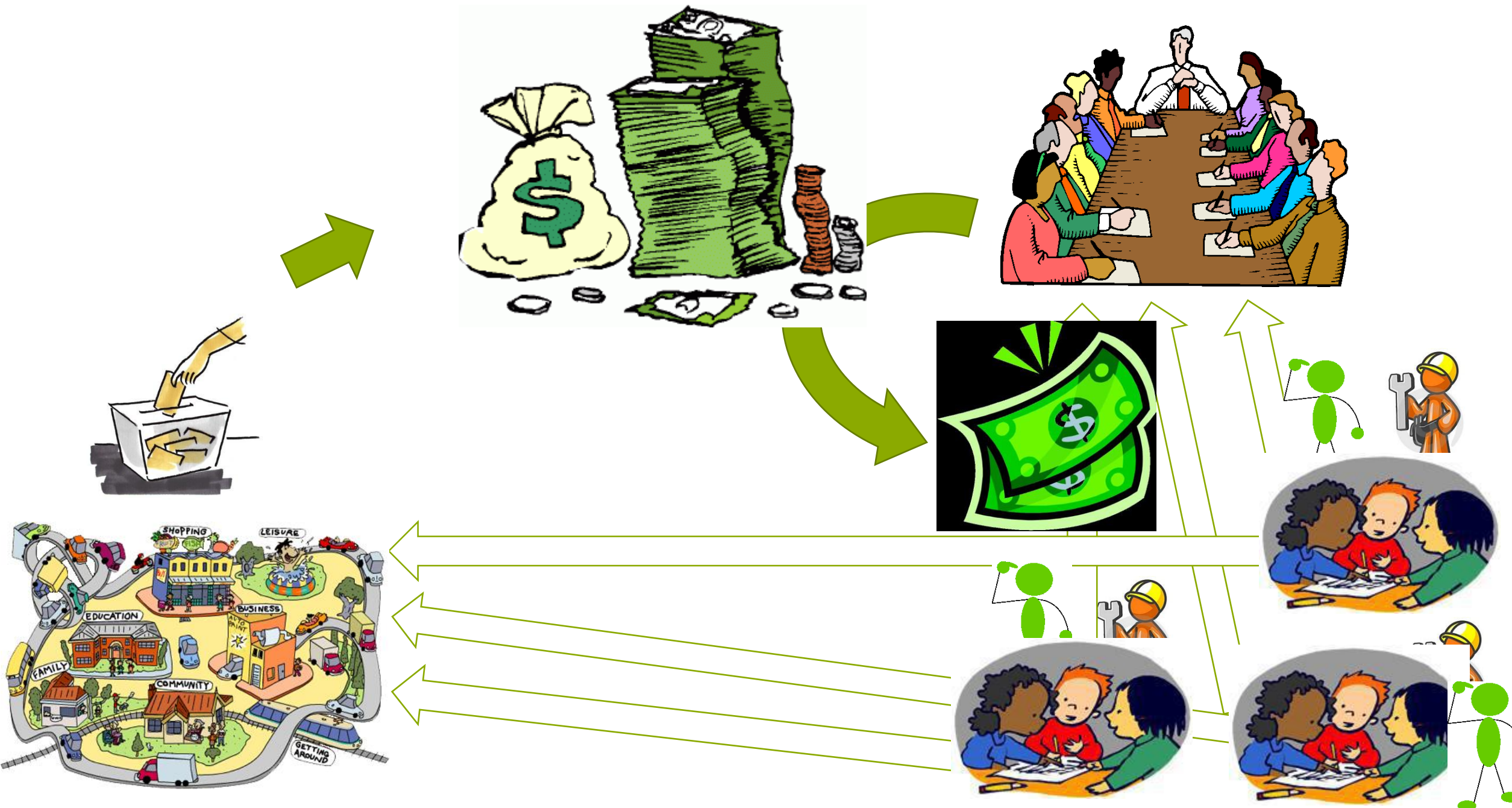
- Energy/Water Conservation
- Gardens
- 21st Century Skills

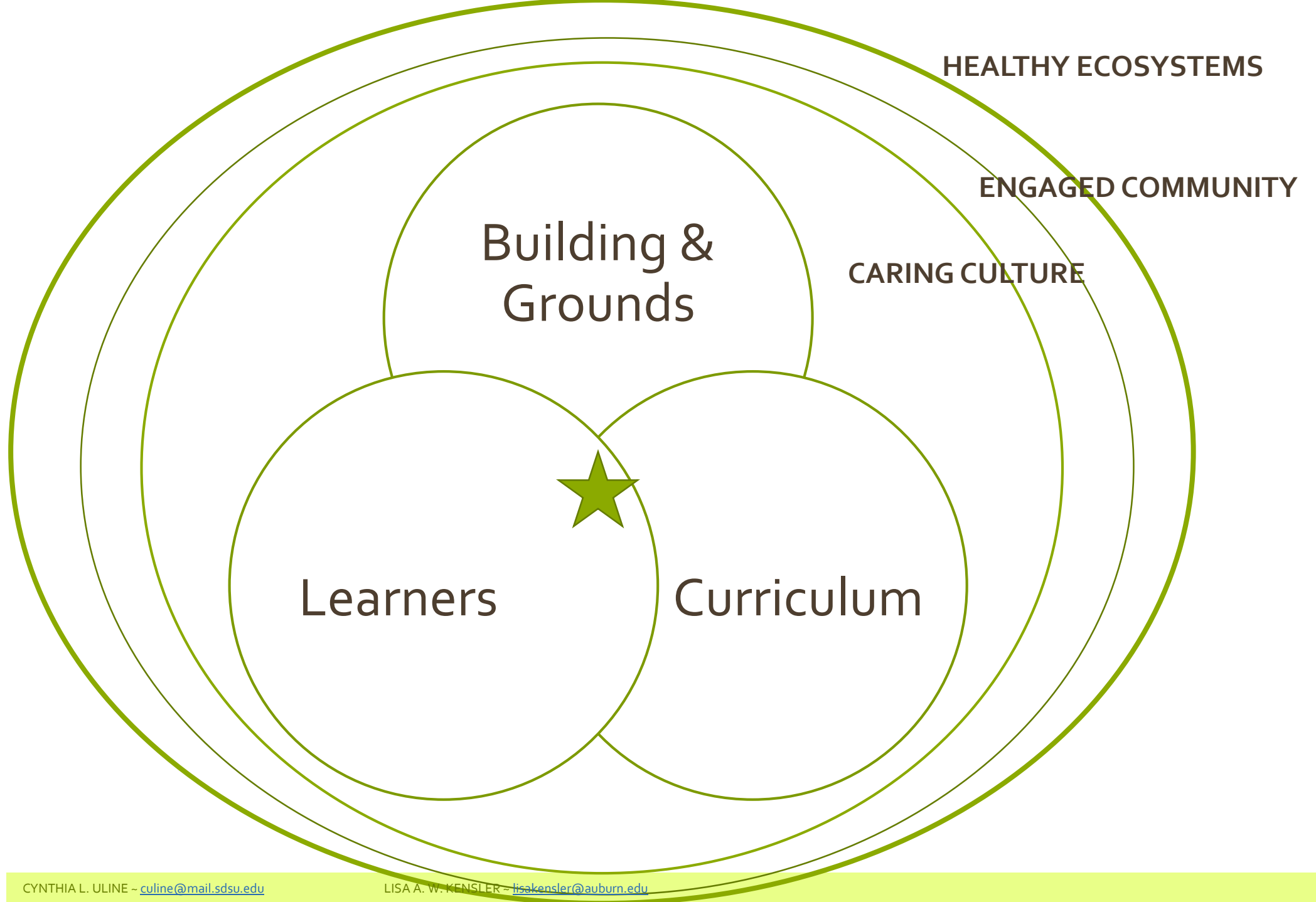




Innovative Teaching

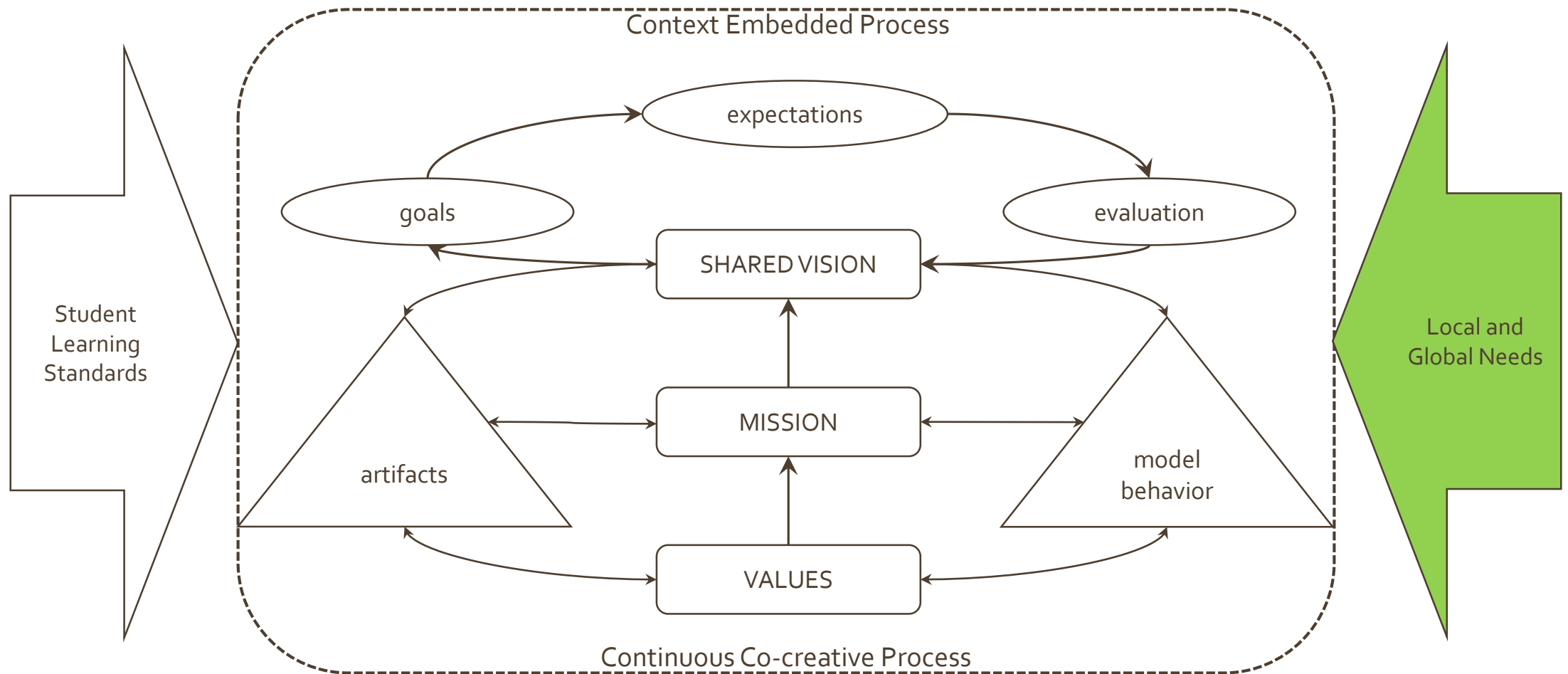






Action Planning for WSS

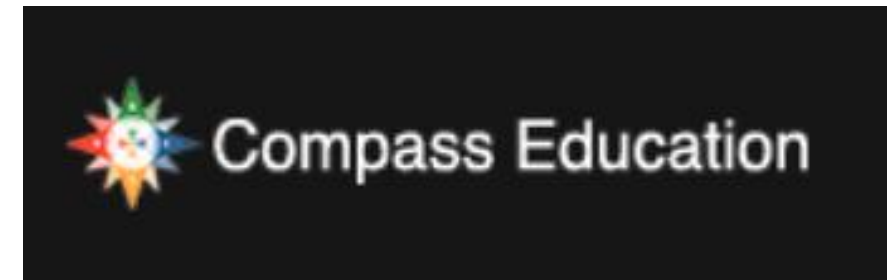
Cultivating Shared Vision



Assessment Tools for Informing Action Planning

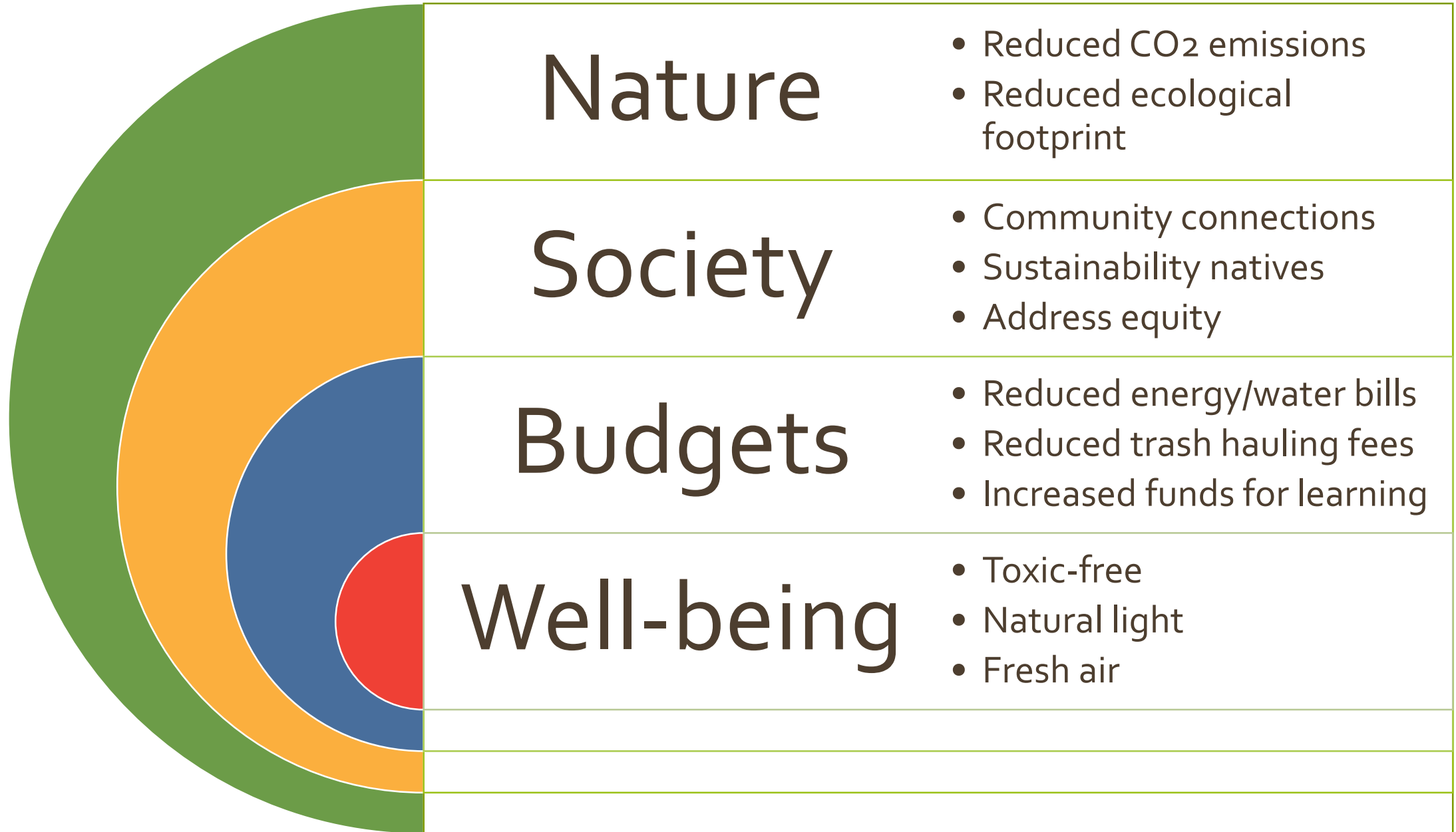


<https://www2.ed.gov/programs/green-ribbon-schools/applicant.html>



School Sustainability Self Assessment

<http://www.compasseducation.org/sustainability-self-assessment-tool/>



Leading Green Schools for Vibrant Purposeful Learning

- Our connection to nature
- Childhood well-being and love of learning in school
- School-community interdependence

AND

- Our natural systems

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WHOLE SCHOOL SUSTAINABILITY
OFFERS A POWERFULLY
ENGAGING VISION FOR A BETTER
WORLD ... AND THE PATHWAY
FOR GETTING THERE

THANK YOU

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ROUTLEDGE