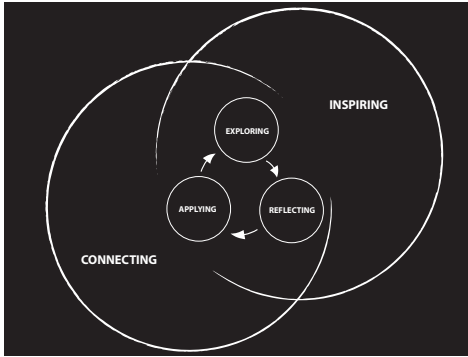
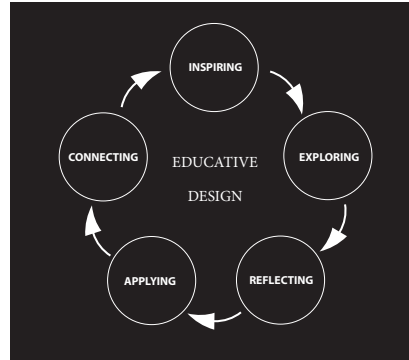


Educative Design:  
Meta Cycles Diagram



Educative Design:  
Functional Diagram



**EDUCATIVE DESIGN**  
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**EDUCATIVE LANDSCAPE FUNCTIONS**

**Inspiring:** Experiencing excitement, interest, and motivation to learn about phenomena in the natural and physical world.

**Exploring:** Manipulating, testing, experimenting, predicting, questioning, observing, measuring with the intent of making sense of the natural world

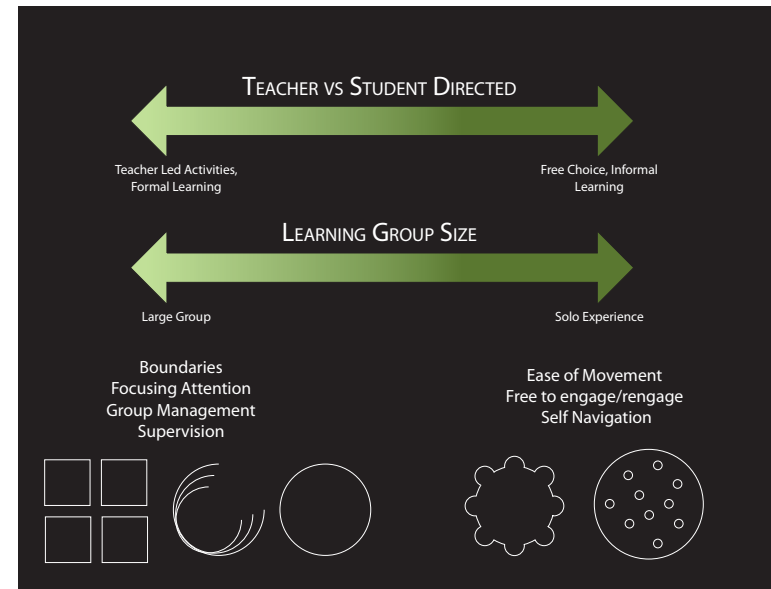
**Reflecting:** Deriving general principles, patterns, relationships from observation; 'making sense of'

**Applying:** Retesting ideas in new situations, trying things out

**Connecting:** Making meaning, linking ideas with identity, culture, prior knowledge

Words and descriptions of these functions come from the Experiential Learning Cycle (Kolb 1984), the Strands of Environmental Learning (Bell et al 2009) and the Essential Experiences of Science (Cavallo and Marek 1997).

PRINCIPLE		DESCRIPTION	EXAMPLES
1	<b>STRIVES TO INSTILL WONDER</b>	<i>Provokes positive emotional connection and drive to investigate. Interest extends beyond immediate reaction.</i>	<i>Natural Beauty: Butterfly wings Power and Awe: Volcanoes Magical Phenomena: Magnetism</i>
2	<b>PROVIDES MANIPULABLE/ INTERACTIVE ELEMENTS</b>	<i>Easily altered by observer to create interesting effect. Allows for prediction/problem solving.</i>	<i>Controlling water flow, Changing shadows and shapes, Building &amp; constructing, Gardening</i>
3	<b>ALLOWS FOR OBSERVABLE CHANGE/COMPARISONS</b>	<i>Distinct differences in variables, possibly revealing cause/effect relationships.</i>	<i>Sun Dial, Windmill, Solar cells w/ volt meter, Rain gauge, Ecological processes</i>
4	<b>BALANCES CLARITY AND MYSTERY, NOVELTY AND THE FAMILIAR</b>	<i>Easily understood educational intent. Easy to navigate, with 'previews' of what's to come.</i>	<i>Repetitive themes, Orientation/Interpretive signage, Winding paths, Peakaboo veivs, Landmarks, New takes on familiar ideas</i>
5	<b>SUPPORTS SELF DIRECTED LEARNING</b>	<i>Visitor can initiate and lead self through discovery. Multiple levels of sophistication.</i>	<i>Skate boards and ramps for physics learning, Using familiar situations to extend understanding</i>
6	<b>SUPPORTS TEACHER FACILITATED LEARNING</b>	<i>Affordances for gathering &amp; presenting. Opportunities for individuals to share. Multiple levels of sophistication.</i>	<i>Seating Walls, Amphitheaters, Connections to more abstract or specialized curriculum</i>
7	<b>CREATES MULTI-LAYERED EXPERIENCES</b>	<i>Diverse, vivid approaches to promote cognitive and embodied learning.</i>	<i>Zoo/Aquaria exhibits that extend beyond the animal enclosure: 'visitor immersion experience'</i>
8	<b>INVITES COLLABORATION</b>	<i>Affordances for two or more people to observe or explore together.</i>	<i>Bird blind with multiple viewing windows.</i>
9	<b>INVITES PLAY</b>	<i>Free choice, few rules, no pressure to perform. Fun.</i>	<i>Playground equipment/atmosphere, Ease of movement/exit/entry between stations or experiences</i>
10	<b>PROVIDES SOCIAL/CULTURAL RELEVANCE</b>	<i>Connected to larger themes. Significant w/in personal, regional, or global context.</i>	<i>Narrative Stories, References to culturally significant or familiar elements, Stewardship opportunities, Family participation</i>



PRINCIPLES OF EDUCATIVE DESIGN	
1	<b>STRIVES TO INSTILL WONDER</b> 8, 9, 11, 16, 17, 19, 26
2	<b>PROVIDES MANIPULABLE/INTERACTIVE ELEMENTS</b> 3, 7, 14, 24, 28
3	<b>ALLOWS FOR OBSERVABLE CHANGE/COMPARISON</b> 3, 7, 17, 19, 22
4	<b>BALANCES CLARITY AND MYSTERY, NOVELTY AND THE FAMILIAR</b> 1, 2, 6, 10, 12, 22, 27
5	<b>SUPPORTS SELF DIRECTED LEARNING</b> 1, 2, 13, 16, 30
6	<b>SUPPORTS TEACHER FACILITATED LEARNING</b> 4, 5, 13, 18, 23, 25, 27, 29
7	<b>CREATES MULTI-LAYERED EXPERIENCES</b> 8, 13, 21, 24, 25, 27, 30
8	<b>INVITES COLLABORATION</b> 4, 5, 13, 14, 15, 30
9	<b>INVITES PLAY</b> 2, 6, 7, 14, 15, 24, 28, 30
10	<b>PROVIDES SOCIAL/CULTURAL RELEVANCE</b> 1, 2, 3, 4, 5, 10, 13, 16, 17, 18, 20, 27, 29

### ***Education Literature***

1. People approach every situation with pre-conceived notions.
2. All new knowledge is built upon frameworks of older knowledge. That which is too unfamiliar is often ignored.
3. Shifts in understanding take time and repeated exposure.
4. We learn better when we share.
5. We learn better when it is socially significant to our friends, family or larger society.
6. Novelty and complexity are fundamental to curiosity, however too much leads to disinterest.
7. Investigation happens at three levels: observation, manipulation and experimentation.
8. We learn via mind, body and emotion.
9. Wonder lies at the heart of all new knowledge while curiosity plays upon that which we already know.

### ***Museum Literature***

10. Build the museum experience before arrival with expectations of what is to come.
11. Strive to create boundless experiences that connect with emotion and beg to be revisited and remembered.
12. Clustering information and exhibits into 'chunks' helps people organize and retain information.
13. Build exhibits with layers of differing complexity and multiple entries and exits.
14. Embrace play and open ended investigation.
15. Create situations where people can observe others or perform themselves.
16. Learning itself might not even occur at the museum, but that doesn't mean the experience won't lead to learning in the future.
17. Museum type learning experiences primarily reinforce relationships and connections.

### ***Landscape Architecture***

#### *Lessons from landscape practice*

18. Narrative and Storytelling create a powerful stage for learning.
19. Natural processes, movement, and change are intriguing and build our relationship with place and nature.
20. Connecting with a cultural aesthetic can help visitors accept and appreciate other messages in a given landscape.
21. Embodied experience: movement, interaction and physical exploration of an environment stimulates emotional and mental connections.
22. People engage most readily with landscapes that balance mystery and legibility.
23. Interpreting landscapes may be most powerful when both teacher guided and self guided experiences are available.

#### *Nature is a Powerful Teacher*

24. Natural settings provide 'Loose Parts' that support creative play and engage multiple senses and intelligences
25. Natural settings have a positive effect on concentration
26. Nature affords us opportunities to contemplate that which is not of us, but larger than the human experience. Nature provides wonder.

#### *School grounds and Curriculum Connections*

27. Cues in the landscape influence the general motivation and investment of students in their education
28. Portions of designs should be left unfinished to provide for creativity and ownership of users. 'Loose Parts' can apply to specific areas of a design (a garden), the entire thing (Adventure Playground) or even a designer led charrette process.
29. Educative Landscapes benefit from support by communities and schools, especially when supporting specific curricular or programmatic needs.
30. Students require a rich tapestry of materials and experiences that provide ranges between risk and safety, solitude and groups, structured and chaotic.