



EXPLANATORY METAPHOR

Wiring Learning Environments

A metaphor for the importance and function of integrating STEM learning environments



The story you're telling

To strengthen children's STEM learning outcomes, we need to make sure all the places children learn STEM are wired together so that the skills and knowledge they gain in one place can flow into the learning they do in other learning environments.



Strategically redirects thinking away from patterns such as:

- Learning Hierarchy
- Technology is a Distraction
- Informal Learning is Supplementary

Wiring Learning Environments



Concepts and ideas included in this frame element:

- **A complicated machine has many components that make it work:** STEM learning happens in many environments—home, daycare, libraries, community gardens, science centers—and all of them contribute to children's development of strong STEM skills.
- **Wiring makes energy flow:** When children's learning environments are integrated, the skills and knowledge they gain in one environment transfer to other parts of their education.
- **Sturdy wiring enhances system performance:** Reliable, ongoing integration of informal and formal STEM education opportunities creates a stable, reinforced learning environment that enriches children's STEM learning.
- **If some components aren't wired properly, the flow of energy can be disrupted:** If informal STEM learning environments are left out or poorly connected to formal learning environments, children's STEM learning opportunities are compromised.
- **The electrical current flows in both directions:** Just as alternating current (AC) wiring makes electricity flow in both directions, the benefits of a well-integrated STEM learning environment extend to both classroom and informal learning sites.



User notes:

- Be sure to emphasize the benefits of “wiring” or interconnectedness to *both* formal and informal STEM environments. The strength of the metaphor is in its ability to help people see the integration of multiple kinds of learning environments as complementary and mutually reinforcing.
- Take time to name the many places—or “component parts”—that play a role in children's STEM learning in order to expand people's understanding of the many environments that provide children with vital STEM learning opportunities.