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# A Partner in Play with STEAM

Ron Mohl  
Lead Educational Presenter  
[www.LakeshoreLearning.com/psg](http://www.LakeshoreLearning.com/psg)

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## Agenda

- Define STEAM
- Use the 4 step engineering design process
- Apply STEAM to learning environment experiences

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## A Partner in Play

**Physical Environment**

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**Bonding**

➤

**Consistent Expectations**

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## A Partner in Play

**Acknowledge being present**



**Ready to Respond**



**Child Focused**



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## A Partner in Play

**Expand/Mirror Talk**



**Challenging questions**



**Encouraged Persistence**



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## STEAM

**Science-** concepts and principles

**Technology-** tools and strategies

**Engineering-** Applied judgment to develop ways to utilize economically the materials and forces of nature for the benefit of mankind

**Arts-** a child's choice of what and how

**Math-** universal way to communicate predictions, adjustments, and findings

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## STEAM Basics

- Integrates 2 or more areas (Science, Technology, Engineering, Art, Math)
- Embedded in Projects
- Hands-on, play based activities
- Creates:
  - Problem Solvers
  - Critical Thinkers
- Open-Ended Questions

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## A Partner in Play

### Questions to ask:

- Before
  - What do you think will happen? Why?
  - Tell me about what are you expect?
- During
  - How does it make you feel?
  - How is it working?
- After
  - How did it make you feel?
  - How does it compare to...?

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## Science

**Set up  
exploration  
through the  
senses**

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## A Partner in Play

### Clear Learning Objective

- Let's use our senses.
- Let's figure out the cause and effect.

### Share the STEAM you see

- I saw the flash and heard the thunder. (Senses)
- It spins when the wind blows. (Cause and Effect)

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## Art

### Opportunities for Child initiated: What and How

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## A Partner in Play

### Clear Learning Objective

- Let's grow a garden.

### Offer Choices (Respectful)

- What do you want to grow?
- How do you want to water the garden?

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# Mathematics

How we use Math to:  
Predict  
Adjust  
Report

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# A Partner in Play

## Clear Learning Objective

➤ Let's predict how many will grow?

## Effort, challenge, scaffold

- You showed me three with your fingers.
- Can you show me a total of three using both hands?
- I have 1 on this hand. How many do I need on this hand?

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# Engineering Design Process

## Plan

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## Create

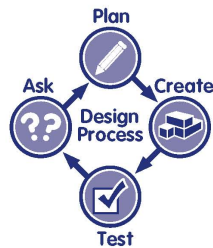
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## Test

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## Ask

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## A Partner in Play

### Clear Learning Objective

➤ Let's build a paper tower.

### Effort, challenge, scaffold

- You have 2 pieces that are standing. Keep at it to get that 3<sup>rd</sup> one.
- Wow, 3 was easy for you. Try 2 more.
- You can change the paper try folding, rolling, or tearing it.

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## Where's the STEAM?

Science  
Technology  
Engineering  
Arts  
Mathematics



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## Where's the STEAM?

S  
T  
E  
A  
M

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## A Partner in Play

### Clear Learning Objective

- The engineering part

### Share the STEAM you see.

- Integrate and connect to real experiences
  - Food in the produce dept. is also grown.
  - Your heart rate goes up when you play outside.

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## Building Your S.T.E.A.M. Team

Presenter  
Ron Mohl  
Lead Educational Presenter  
[LakeshoreLearning.com/psg](http://LakeshoreLearning.com/psg)

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