# Effective, Appropriate and Intentional Use of Technology Tools in Early Childhood Classrooms

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Pacific University College of Education

Pacific University Oregon

# Effective, Appropriate & Intentional Use
## Introductions

Teacher - 35 years

Fellow: Berglund Center for Internet Studies

Director: Child Learning & Development Center

Professor: Pacific University College of Education

Masters in Teaching

Kindergarten Teacher: ELC

Early Childhood Educator - 7 years

Presenter NAEYC Annual Conferences

# Effective, Appropriate & Intentional Use
# Early Learning Community



Exemplary ECE Teaching & Learning Environment
Pacific University College of Education
Forest Grove, Oregon
http://fg.ed.pacificu.edu/elc

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# Effective, Appropriate & Intentional Use
## Presidential Mandate



"Tonight, I propose working with states to make high-quality preschool available to every single child in America."

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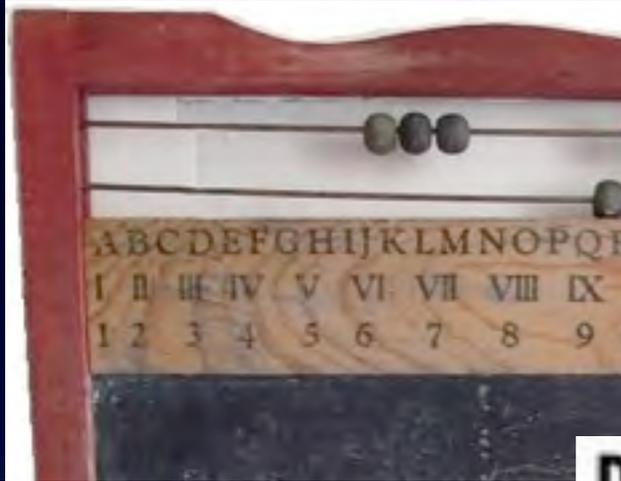# Effective, Appropriate & Intentional Use
## Presidential Mandate



## It is our opportunity to rise to the moment.

# Effective, Appropriate & Intentional Use
# High Quality Early Childhood Ed.

- Learning through exploration & play,
- Developmentally appropriate manipulatives
- Well-prepared and paid, reflective teachers
- Aesthetically embracing classroom
- Where technology may be an option

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# Effective, Appropriate & Intentional Use
## Historical Context

AMERICAN OPTICAL
OPAQUE PROJECTOR

# Effective, Appropriate & Intentional Use
# Technologies and Learning

Educational Technologies have always been:

- Reflective of scientific innovation

- Based on learning theory

- Framed by pedagogy

- Implemented with intentionality by masters

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# Effective, Appropriate & Intentional Use
## NAEYC Position Statement

Supports:
child initiated,
child directed,
teacher supported,
intentional play with digital devices



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# Effective, Appropriate & Intentional Use
## NAEYC Position Statement

**Effective uses of technology and media:**

- Are active & hands-on

- Are engaging & empowering

- Give the child control

- Provide scaffolds for learning

- One of many options

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# Effective, Appropriate & Intentional Use
## NAEYC Position Statement

**When used "appropriately"**

- playful, foster co-engagement
- extend learning
- reveal to children
- support not supplant essential activities
- help children save, document, revisit, & share
- support creativity, exploration, & active play

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# Effective, Appropriate & Intentional Use
# NAEYC Position Statement

**Intentionality is Key:**

- Consider your goals

- will technology extend learning in ways not otherwise possible?

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# Effective, Appropriate & Intentional Use
## Technology Reflection

**In each Learning situation ask:**

- What is my goal or objective
- What learning tools best supports that goal
- How can the tools be used appropriately
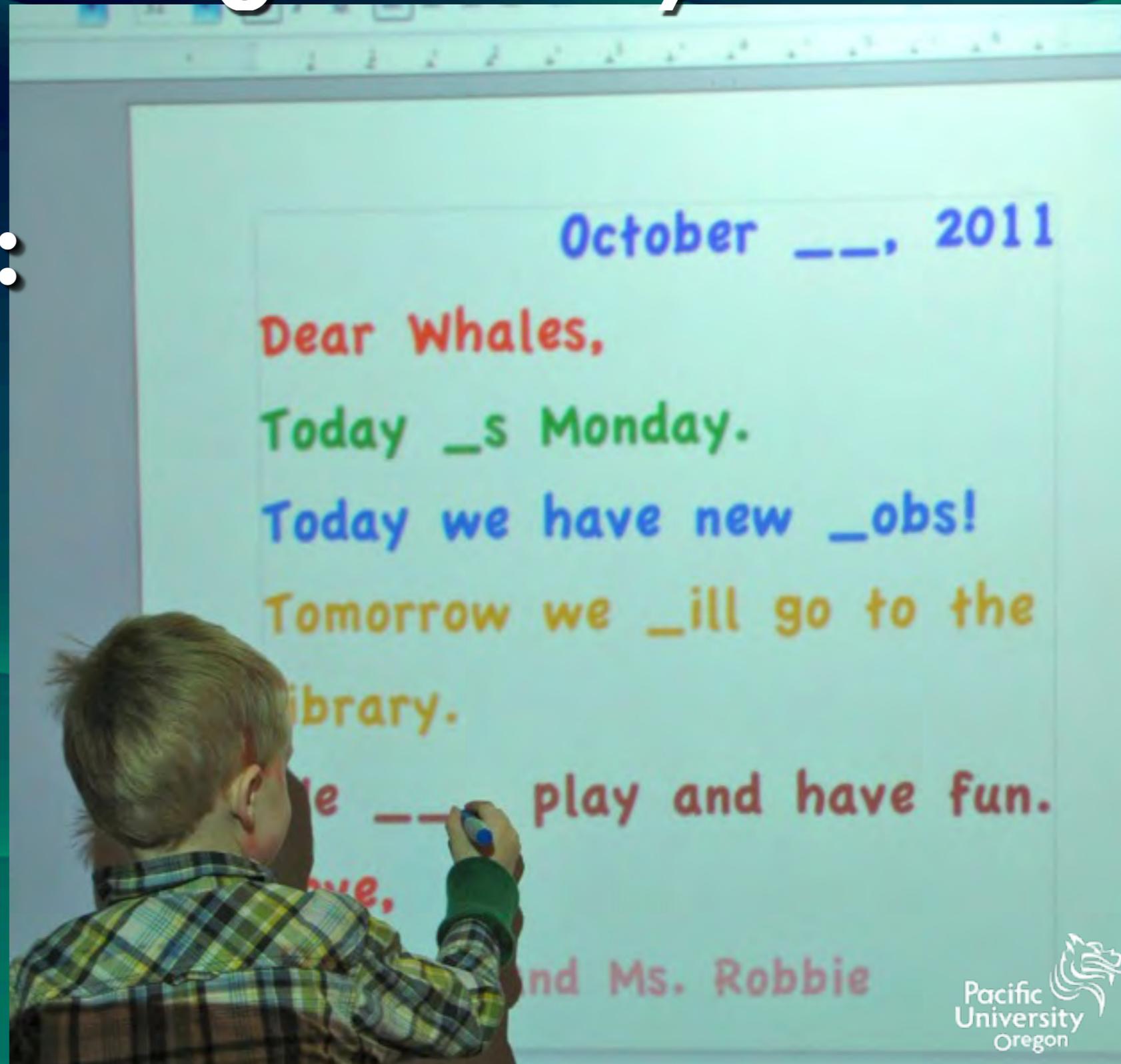- What will tell me they are being effective
- How can we use them intentionally

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# Effective, Appropriate & Intentional Use
# Technological Tools



Intentionality is key



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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**SmartBoard:**

*Fostering Authentic Literacy*

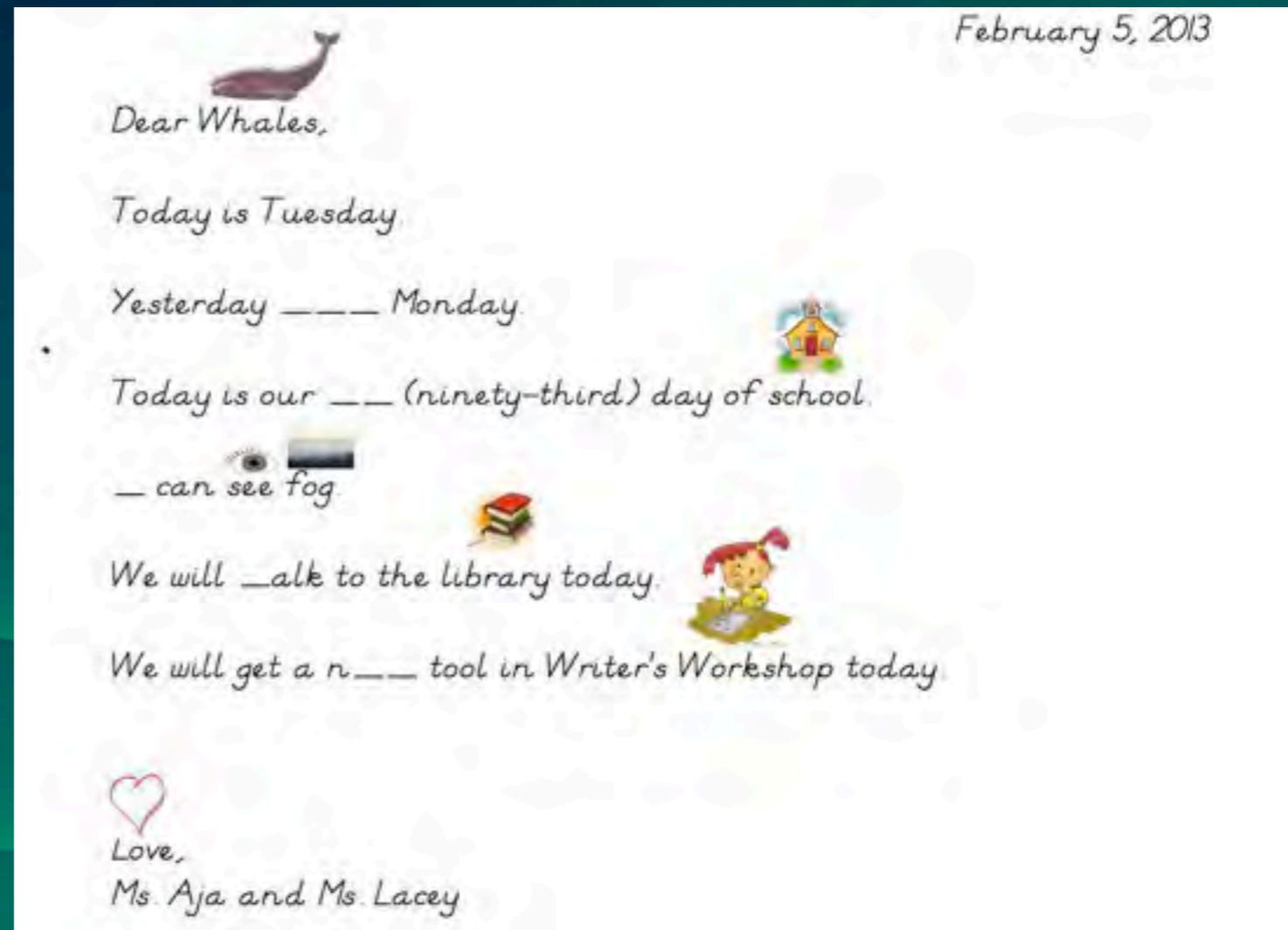# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Requires**

- Interactive Whiteboard
- Computer
- Projector
- Smart Notebook software
- White boards



October ___, 2011

Dear Whales,

Today _s Monday.
Today we _ have new _obs!

Tomorrow we _ill go to the library.

We c_t_ play and have fun.

Love,

Ms. Aja, and Ms. Robbie

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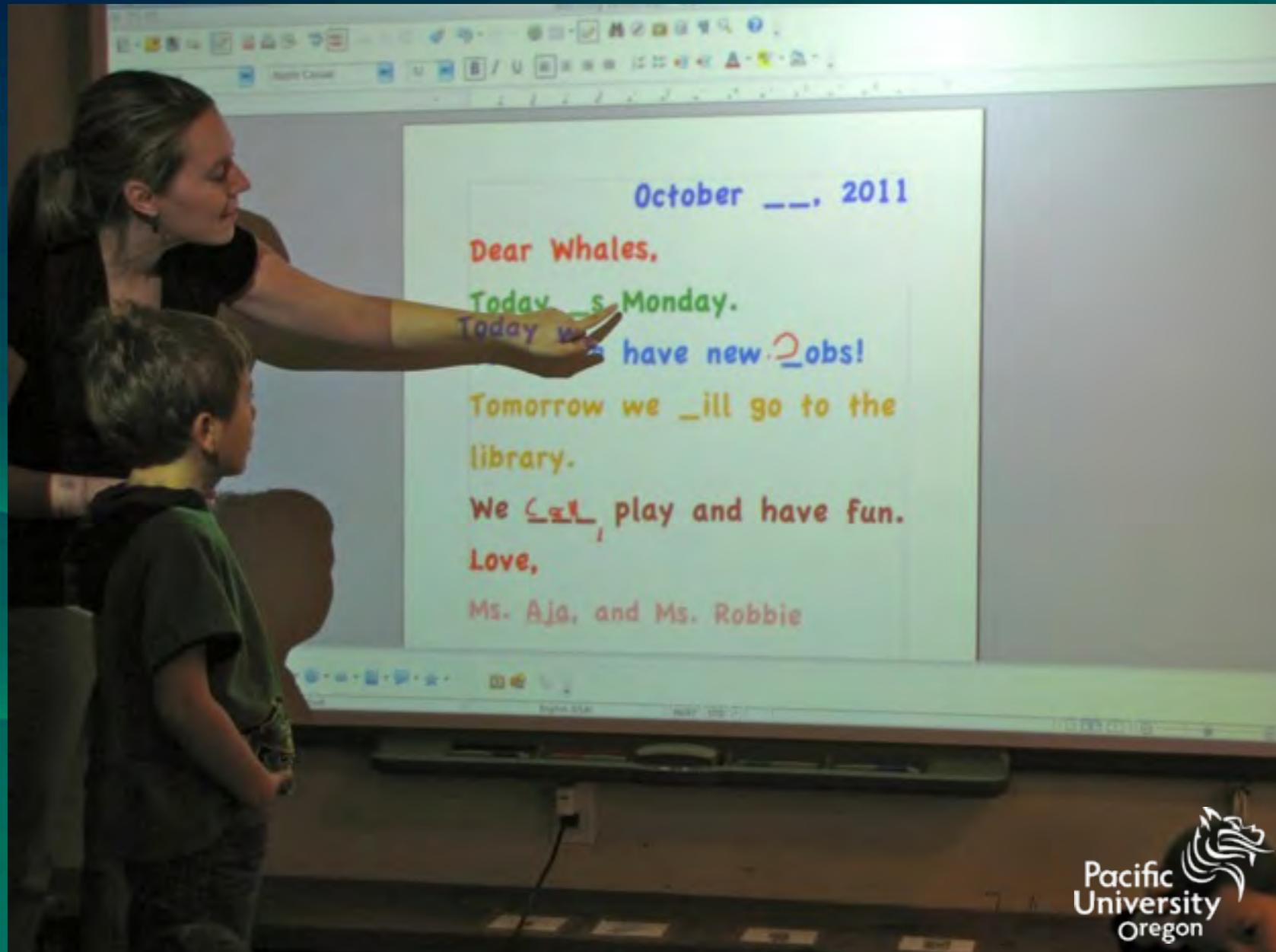
# Effective, Appropriate & Intentional Use
## Supporting Literacy

### Using Interactive Whiteboard

- Authentic letter
- Strategic words
- Enticing graphics
- Student leader
- Active engagement

February 5, 2013

Dear Whales,

Today is Tuesday

Yesterday ___ Monday.

Today is our __ (ninety-third) day of school.

_ can see fog

We will _alk to the library today.

We will get a n___ tool in Writer's Workshop today

Love,
Ms. Aja and Ms. Lacey

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# Effective, Appropriate & Intentional Use
## Supporting Literacy



Save & Revisit Work

# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Evaluating Interactive White Board**

- Increases engagement
- Empowers students
- Fosters discussions
- Provides scaffolds
- Enables saving & revisiting
- Not inexpensive



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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Storykit App:**

*Empowering Students Through Storytelling*

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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Requires**
- iPad, iPhone, or iPod Touch

**Using StoryKit**
- Create story
- Illustrate or capture photo
- Type or write captions
- Record Audio
- Share



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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**School and Sister and Me**

Audio Recording:
"A long time ago my sister and me went to the ELC and it's the one we're in right now and when she came out a lot of times she would pick me up and we would talk together. "

http://iphone.childrenslibrary.org/cgi-bin/view.py?b=pzgwdyl2khn7nt7rz2im

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# Effective, Appropriate & Intentional Use
## Supporting Literacy




rocketships fly

its a rocketship and it flies up the air.

http://iphone.childrenslibrary.org/cgi-bin/view.py?b=2goppxf6ov7cqutftnix
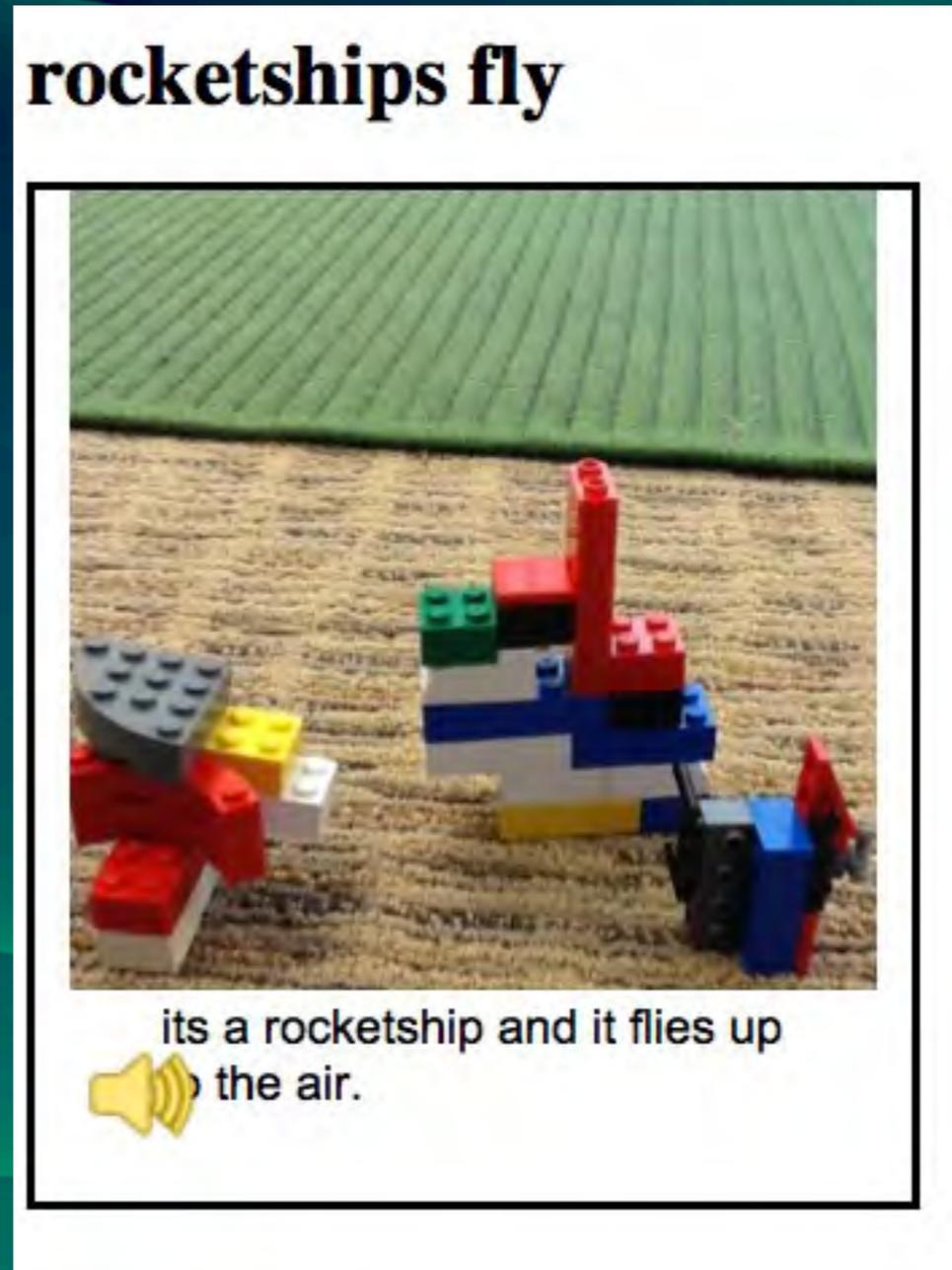
# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Evaluating StoryKit**
- Inspires creativity
- Empowers stories
- Extends learning
- Supports sharing
- Creates connections

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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**KidPix:**

*Encouraging Creativity & Collaboration*
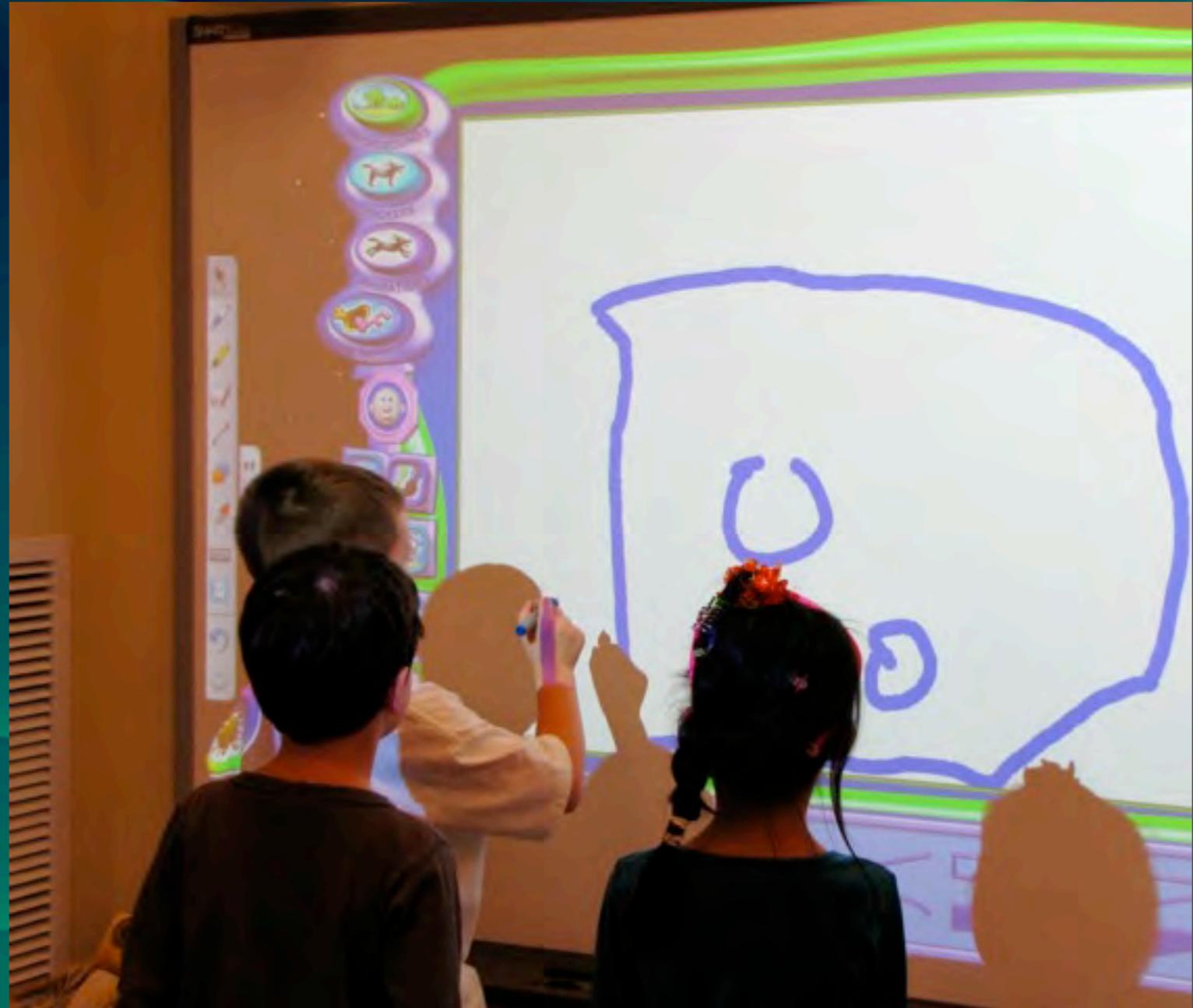
# Effective, Appropriate & Intentional Use
## Supporting Literacy



## Supports & Extends

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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Requires**
- Computer
- Kidpix Software
- Interactive White Board (optional)
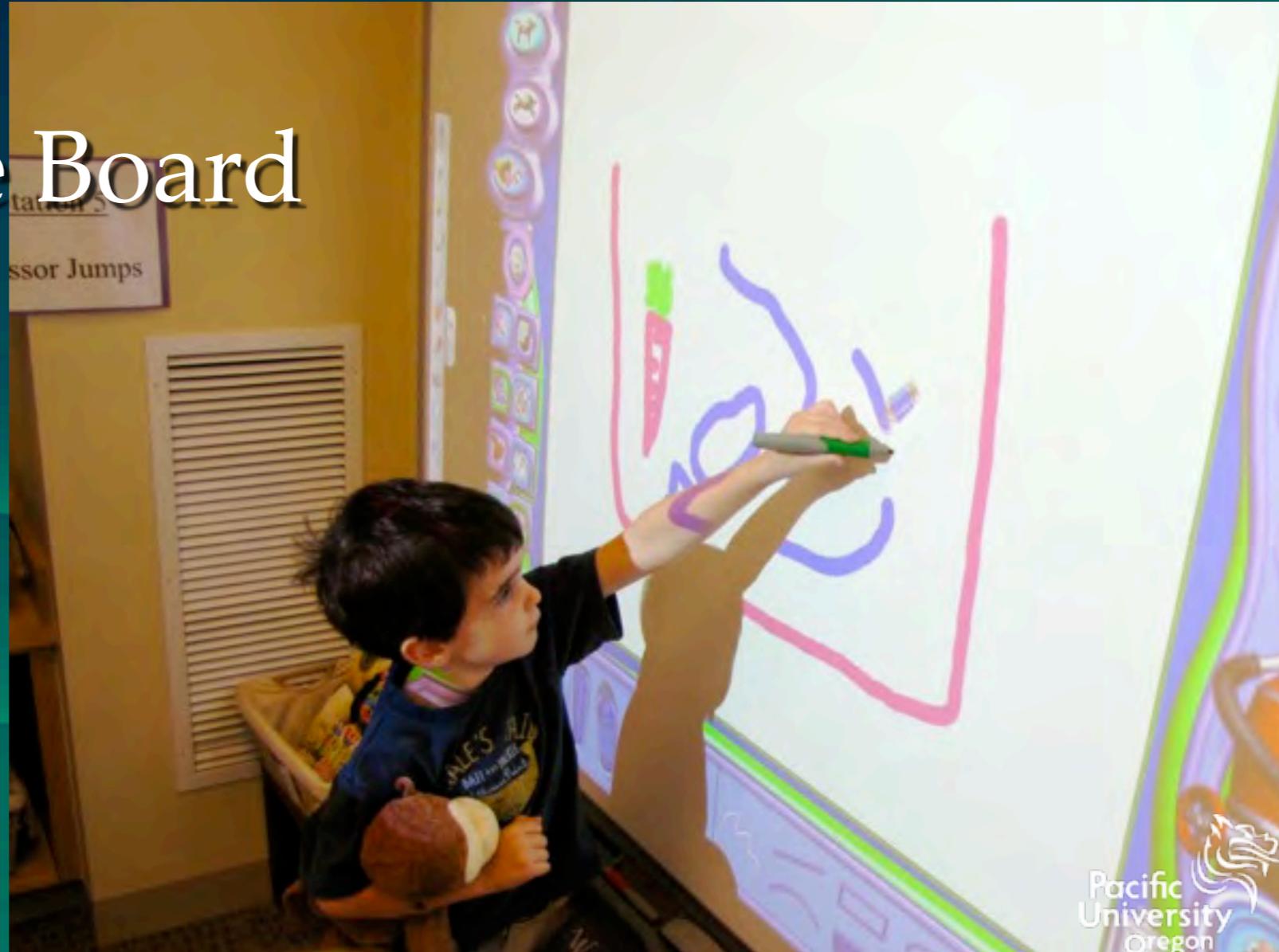
# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Using Kidpix**
- Small groups
- Large canvas
- Create & play
- Modify & revisit
- Share

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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Evaluating Kidpix**

- Inspires hands-on learning
- Encourages creativity
- Invites self-expression
- Extends literacy
- Encourages dwelling
- Allows gross-motor movement

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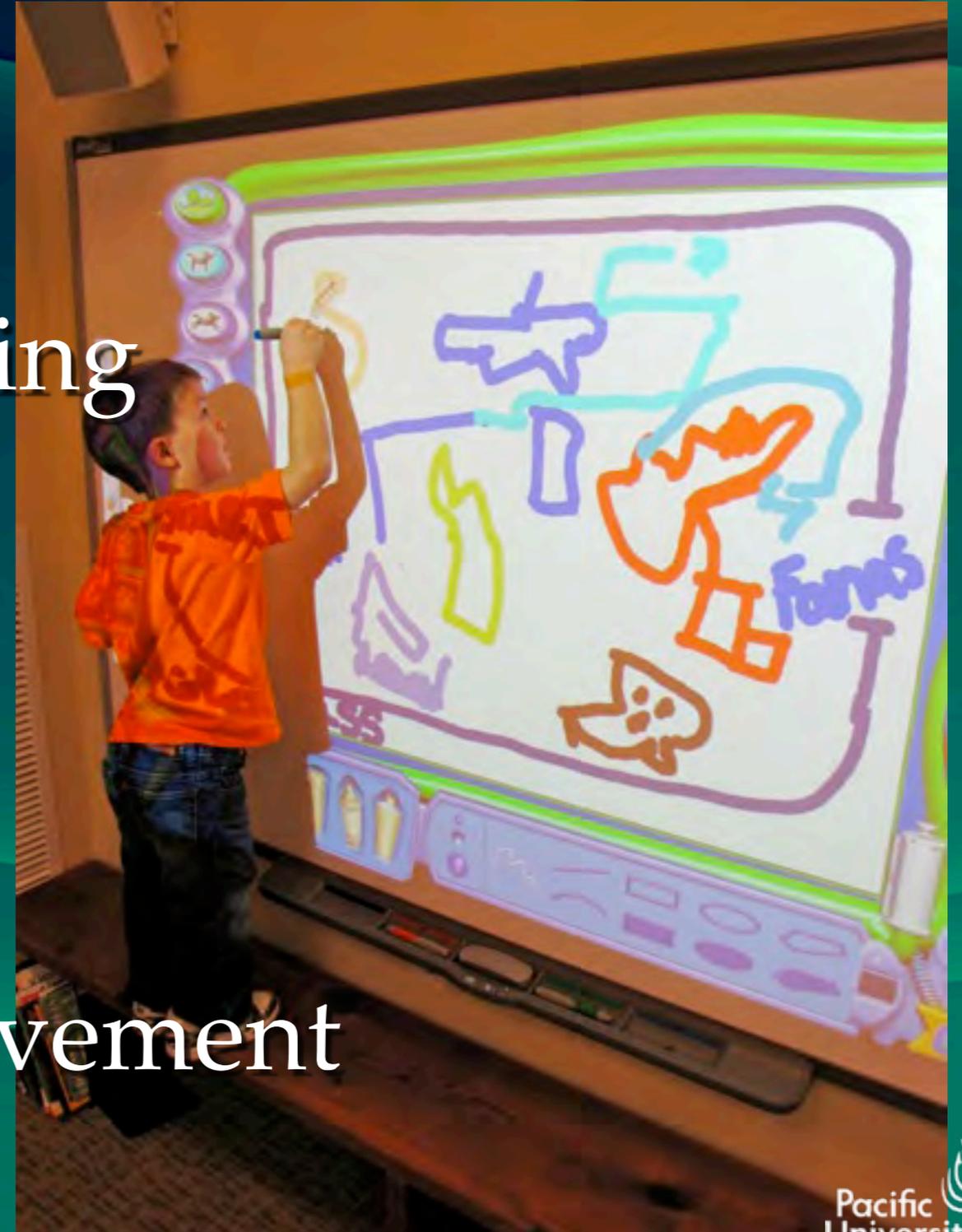
# Effective, Appropriate & Intentional Use
## Supporting Literacy

## Storyography:
*Empowering Children's Voices through multimedia storymaking*

# Effective, Appropriate & Intentional Use

## Supporting Literacy

**Storyography**

- Storymaking emerges from imaginative play
- Student directed & documented narrative
- Supported by intentional teacher

Requires

- Close teacher scaffolding
- Bookbinding materials
- Digital camera, computer, printer



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# Effective, Appropriate & Intentional Use
## Supporting Literacy

**Process:**

- Student creates

- Teacher transcribes

- Student photographs

- Teacher prints

- Book constructed

- Digitized?

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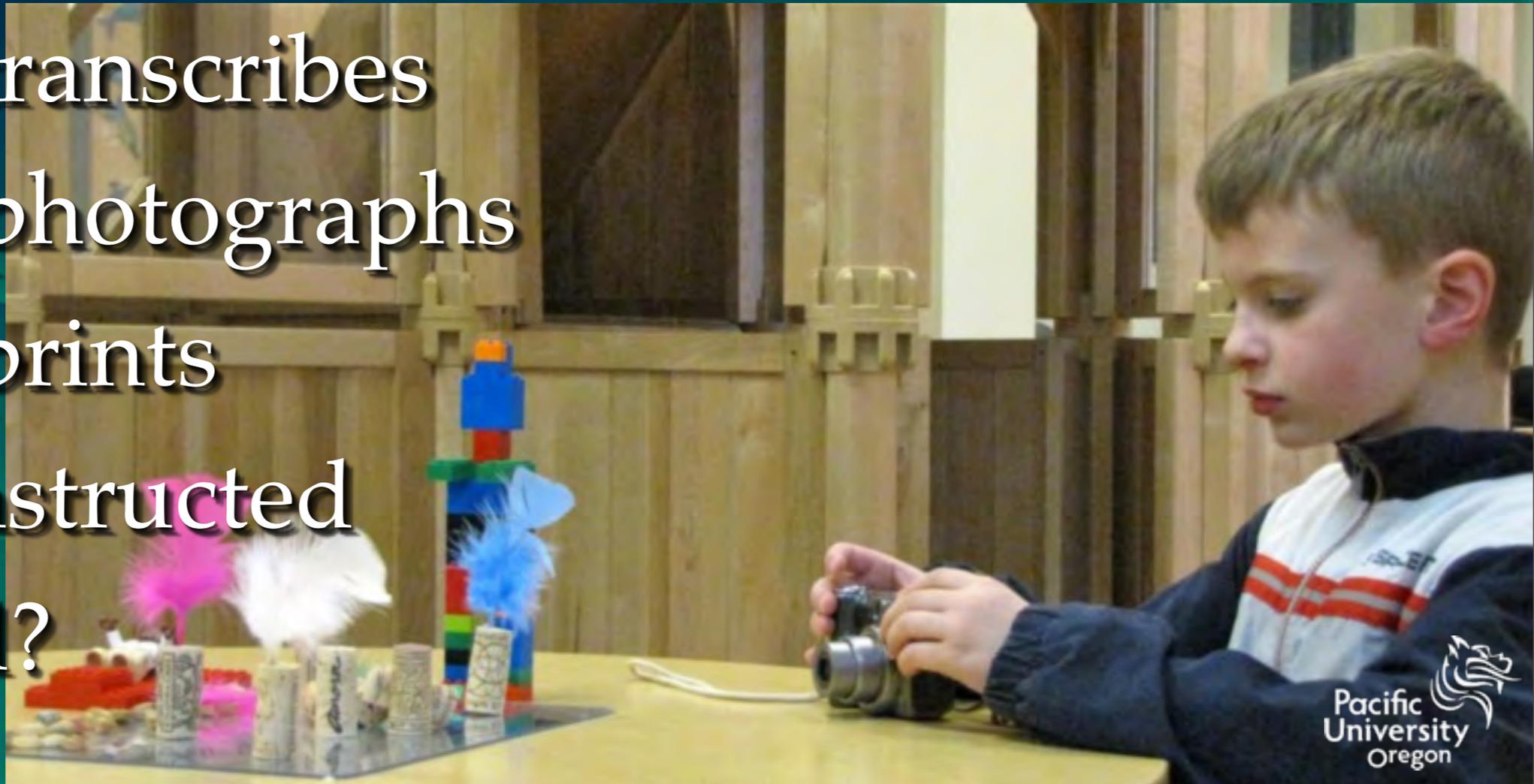
# Effective, Appropriate & Intentional Use
## Supporting Literacy



## Student Creates

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# Effective, Appropriate & Intentional Use
## Supporting Literacy



Story Transcribed

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# Effective, Appropriate & Intentional Use
## Supporting Literacy



Teacher Scaffolding

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# Effective, Appropriate & Intentional Use
## Supporting Literacy Video

## Photographing Each Image

# Effective, Appropriate & Intentional Use
## Supporting Literacy



Completed Story
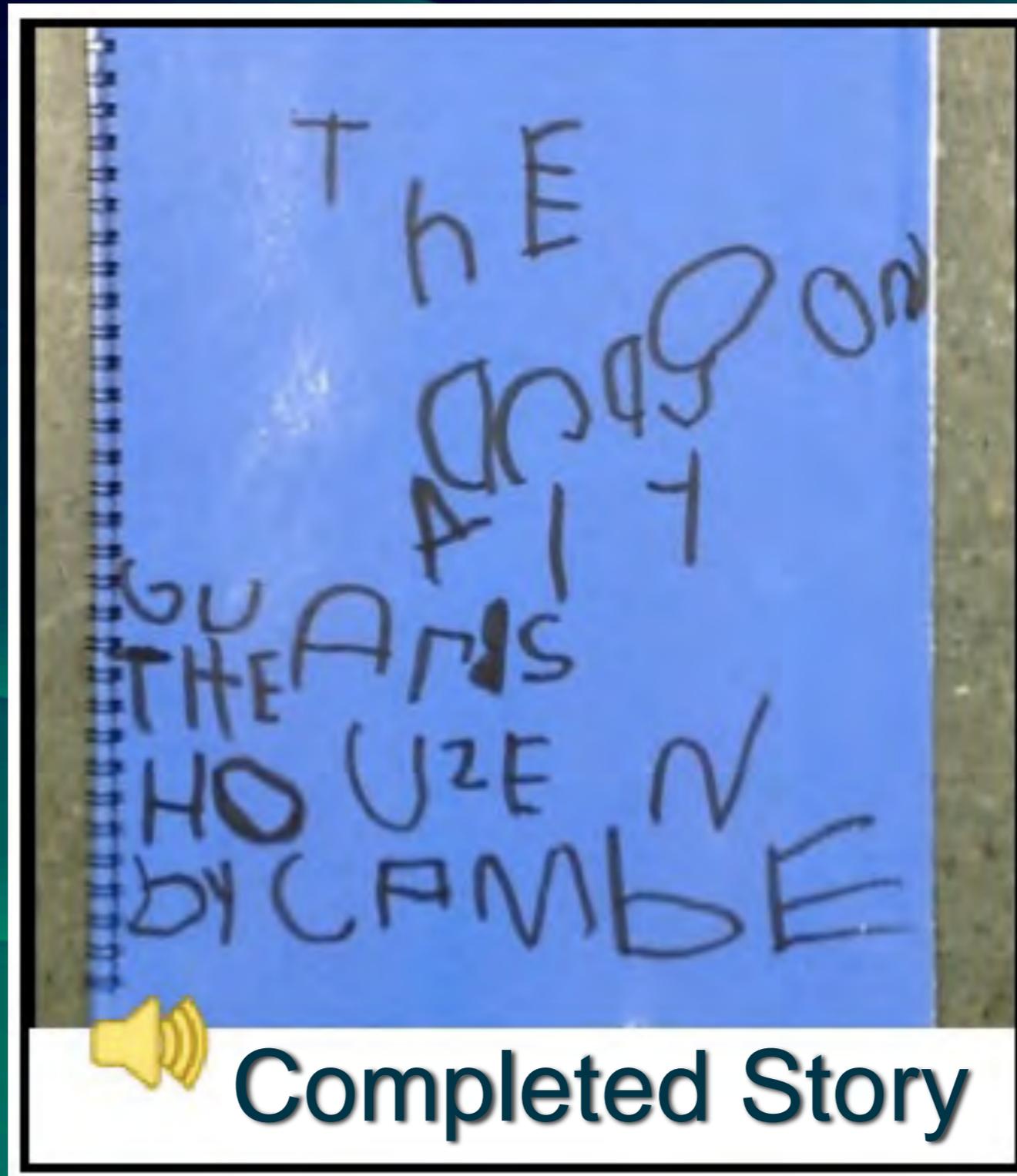
# Effective, Appropriate & Intentional Use
## Supporting Literacy



The dragonfly is guarding the house.

He doesn't want anybody to come because the baby horse is eating his food.

# Effective, Appropriate & Intentional Use
# Supporting Literacy

**Evaluating Storyography**

- UDL with adaptive scaffolds
- Effectively inspires literacy
- Extends experiences
- Intentionality & creativity
- Sharing & revisiting



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# Effective, Appropriate & Intentional Use

## Supporting Science

# Microscopes: Empowering New Perspectives

# Effective, Appropriate & Intentional Use
## Supporting Science

**Requires**

- Microscope: Wired or Wireless
- Computer Screen
- Free Software

# Effective, Appropriate & Intentional Use
## Supporting Science

**Using Digital Microscope**

- Indoors and out
- Science center
- Answer specific questions

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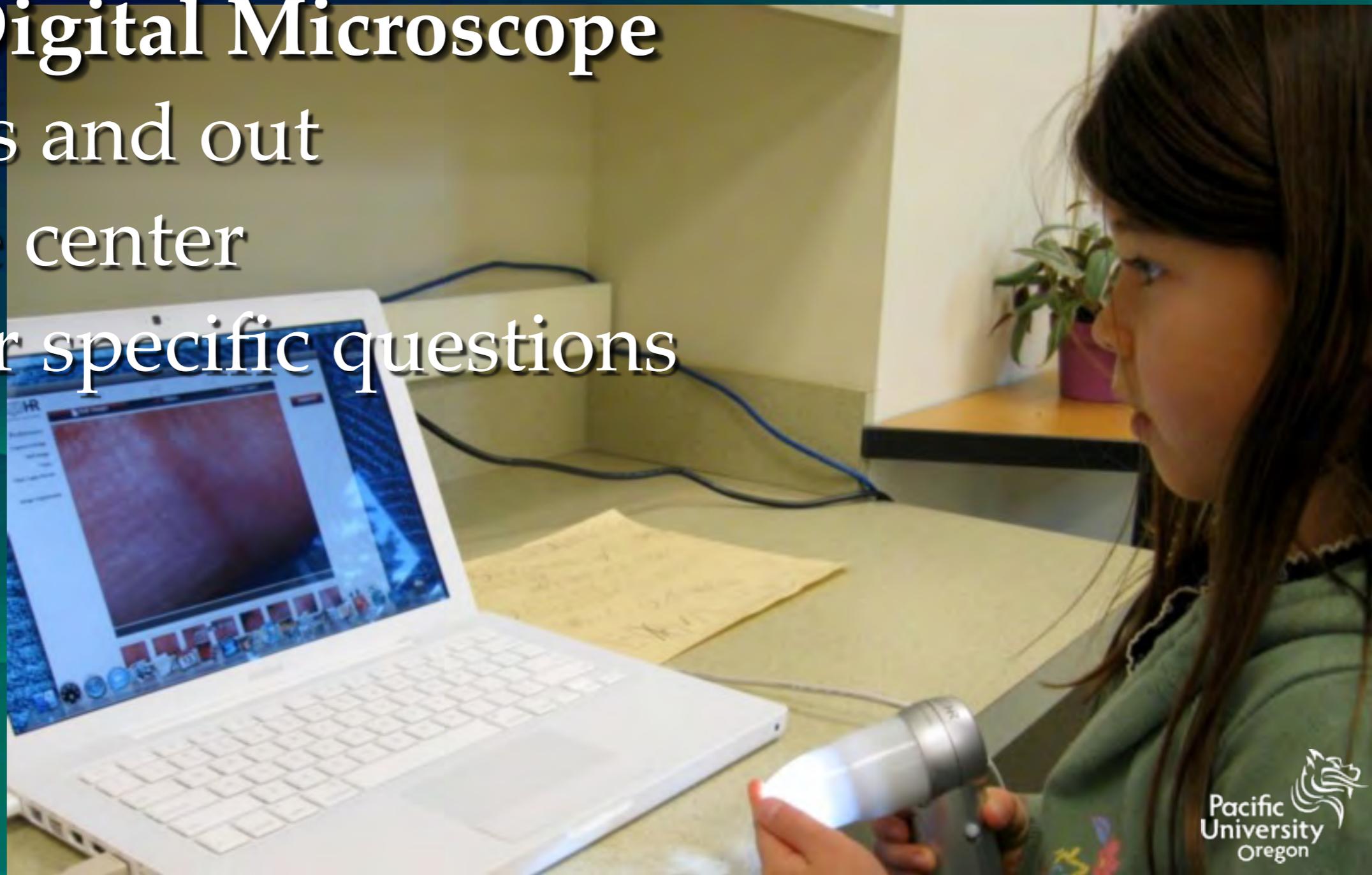
# Effective, Appropriate & Intentional Use

## Supporting Science
## Video

# Effective, Appropriate & Intentional Use

## Supporting Science

**Microscopes in the Classroom**

- Effective in sparking wonder
- Extends authentic learning
- Empowers exploration
- Fosters thinking
- Inherently motivating
- Not Inexpensive

# Effective, Appropriate & Intentional Use
## Supporting Numeracy

## Virtual Manipulatives:

*Investigating Mathematical Concepts*

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# Effective, Appropriate & Intentional Use

## Supporting Numeracy

### Using Virtual Manipulatives

- Java-based math tools

- Voting capabilities



### Requires

- Computer with internet

 (http://nlvm.usu.edu/en/nav/vlibrary.html)
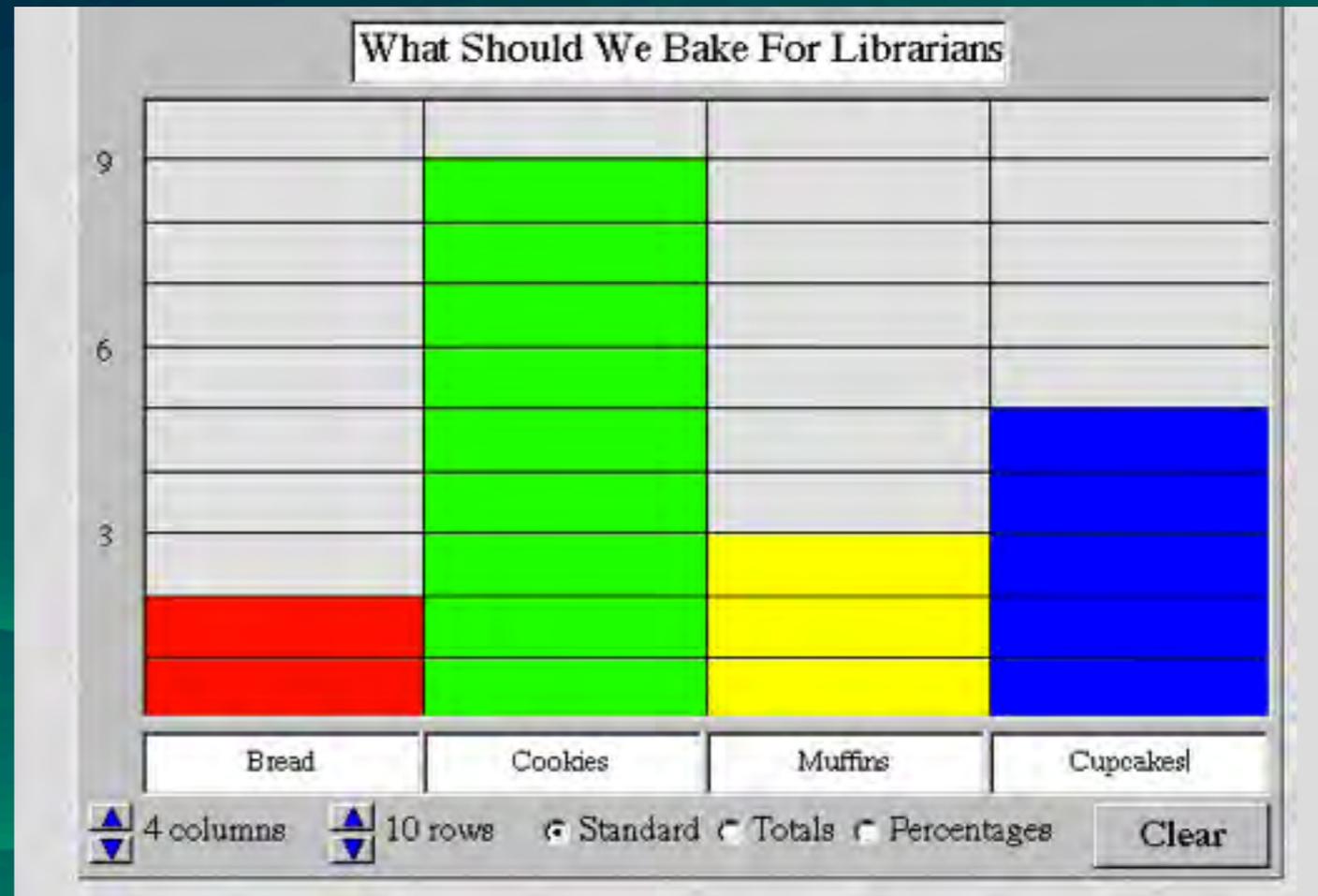
# Effective, Appropriate & Intentional Use
## Supporting Numeracy

**Evaluating Virtual Manipulatives**

- Playful, collaborative learning
- Encourages problem-solving
- Extends discussions
- Empowers students
- Sometimes top-down



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# Effective, Appropriate & Intentional Use
## Supporting Numeracy

**Foldify:**

*Exploring Dimensionality*

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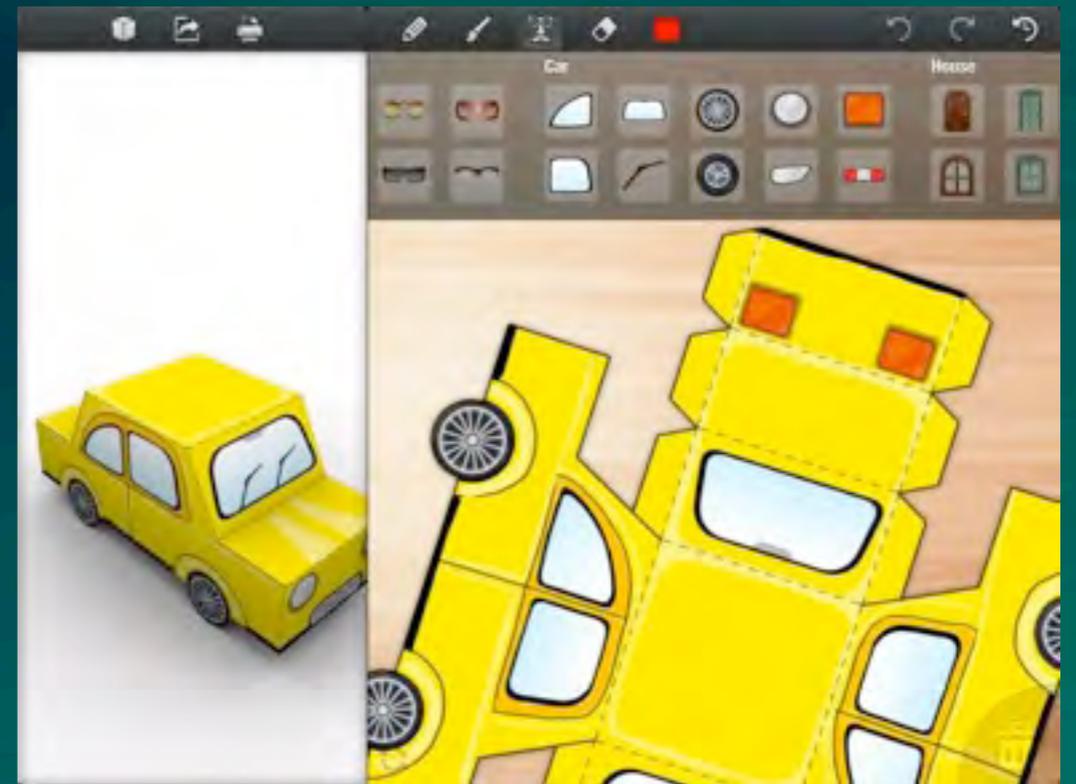
# Effective, Appropriate & Intentional Use

## Supporting Numeracy

### Using Foldify

- Design a structure
- Print
- Cut and fold
- Play

### Requires

- iPad
- Foldify App

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# Effective, Appropriate & Intentional Use
## Supporting Numeracy

**Evaluating Foldify**

- Promotes creativity
- Fosters collaboration
- Extends numeracy
- Inspires play
- Encourages problem-solving

# Effective, Appropriate & Intentional Use
## Supporting Social Studies

**Google Earth:**
*Exploring Our World*

Komodo, Indonesia   Komodo, Indonesia

Pulau Komodo

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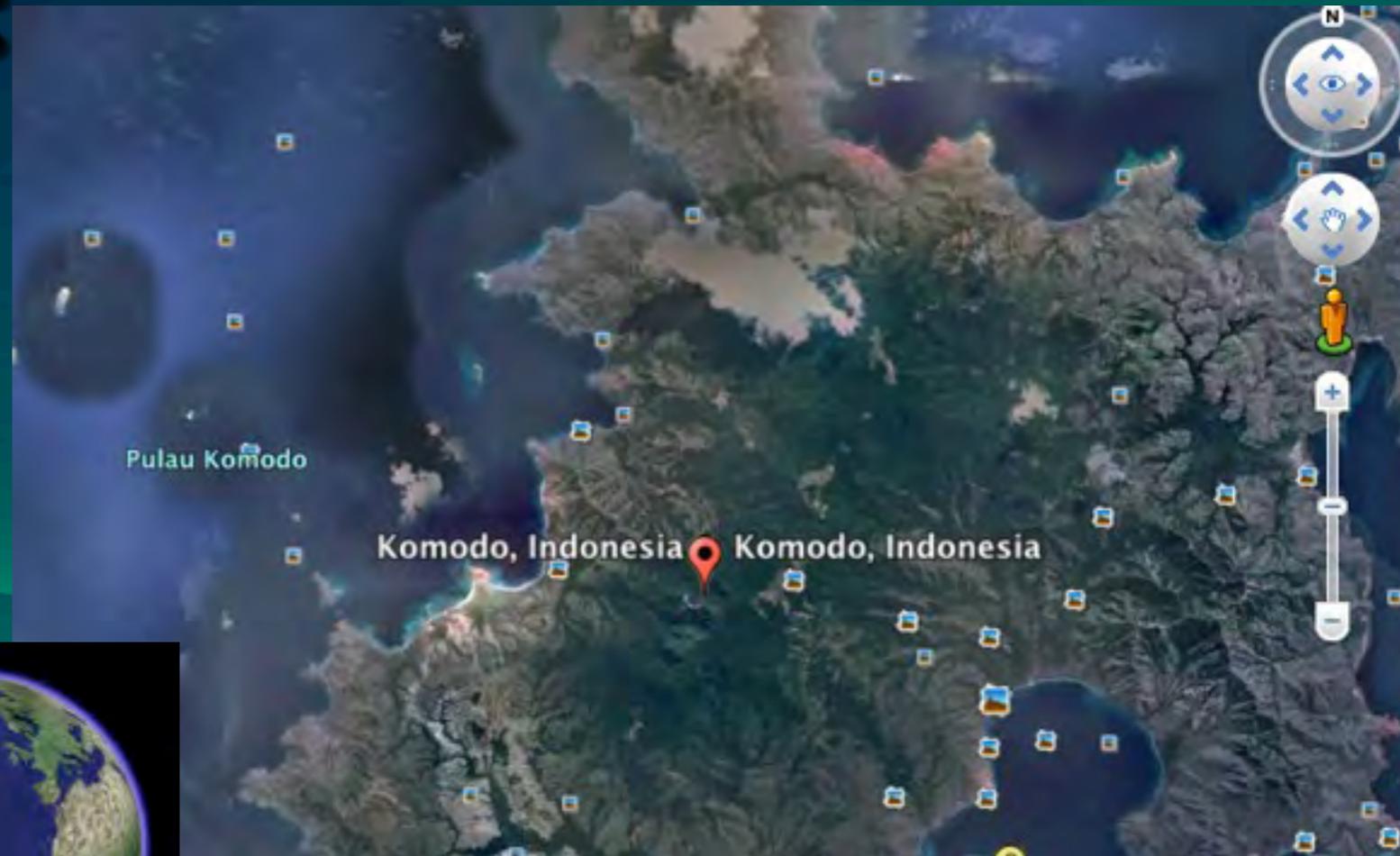
# Effective, Appropriate & Intentional Use

## Supporting Social Studies

**Requires**

- Google Earth Software
- Computer with Internet

**Using Google Earth**

- Virtual travel
- Photos, videos
- Zoom-in feature

Komodo, Indonesia 🔴 Komodo,

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# Effective, Appropriate & Intentional Use
## Supporting Social Studies

**Evaluating Google Earth**
- Provides hands-on experiences
- Enables unique, 3D perspective
- Encourages exploration
- Inspires research

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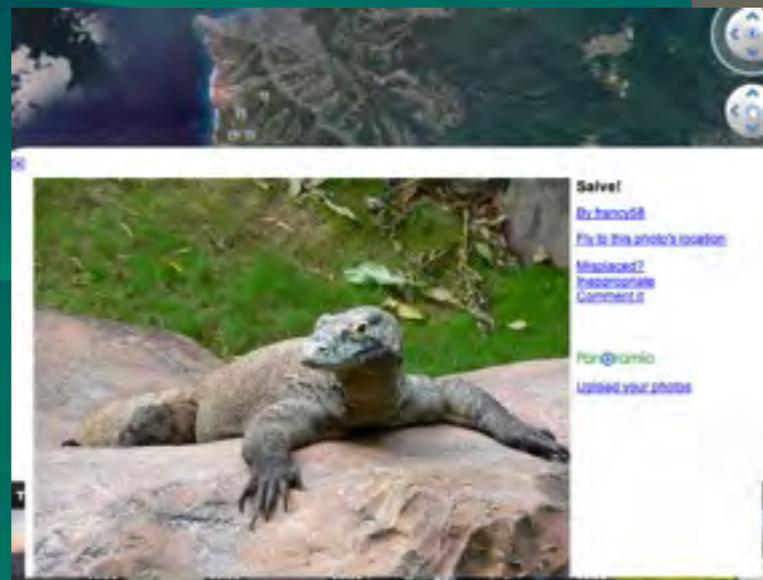
# Effective, Appropriate & Intentional Use
## Supporting Social Studies

## MapSkip:
### *Sharing Our Adventures*

# Effective, Appropriate & Intentional Use
## Supporting Social Studies

**Using MapSkip**
- Explore new places
- Upload photos & stories
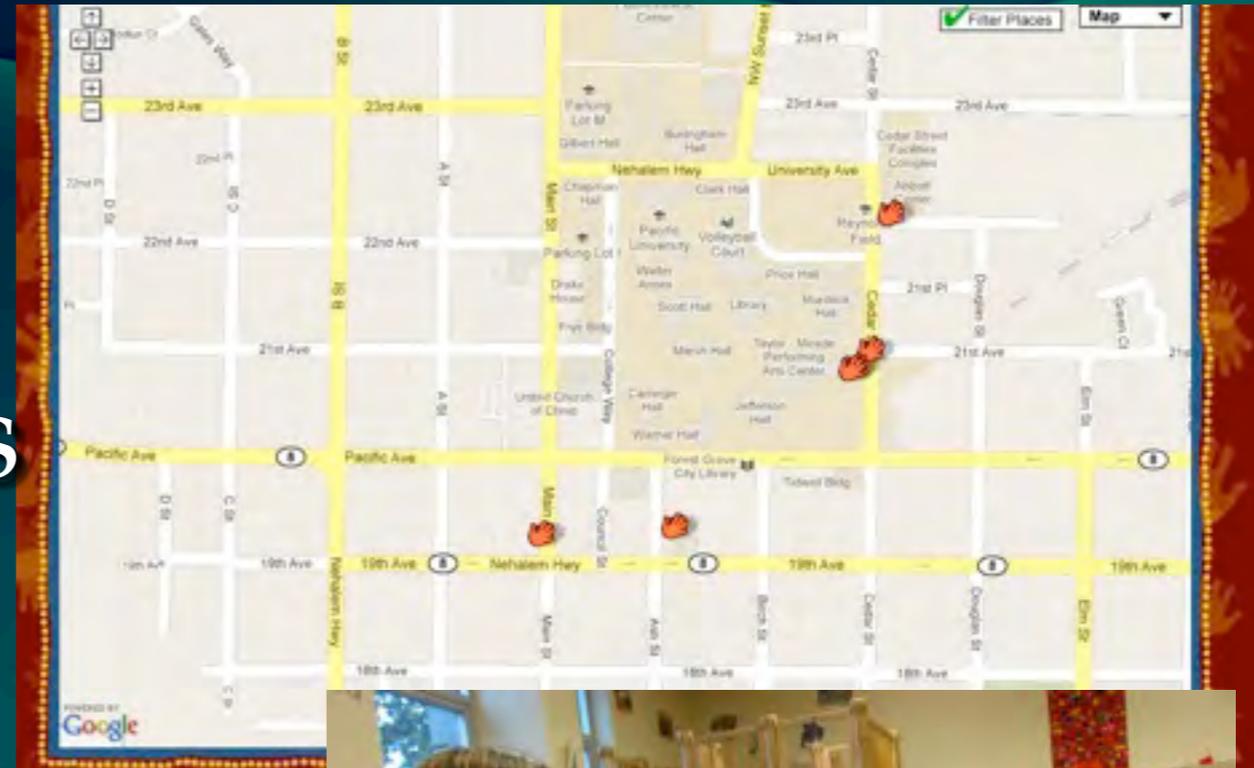


**Requires**
- Computer with Internet (www.mapskip.com)
- Digital camera (optional)



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# Effective, Appropriate & Intentional Use
## Supporting Social Studies

**Flat Stanley:**
*Cultivating Connections*



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# Effective, Appropriate & Intentional Use

## Supporting Social Studies

**Flat Stanley Process**
- Create flat people
- Penpal exchange
- Maps, photos, letters

**Requires**
- Digital Cameras
- Internet Connection (www.flatstanley.com)



Evans

1615

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# Effective, Appropriate & Intentional Use
# Supporting Social Studies

**Evaluating Flat Stanley & MapSkip**

- Empowers exploration
- Invites story sharing
- Creates connections
- Encourages creativity
- Sparks interest

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# Effective, Appropriate & Intentional Use

## Intentional Use of iPads

**Tips for Introducing iPads**

- Introduce an app at a time
- Allow ample time to explore
- Support collaborate work
- Encourage intentional use
- Create "Tech Expert" team





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# Effective, Appropriate & Intentional Use
## Intentional Use of iPads

# Effective, Appropriate & Intentional Use
# Quality Tools

**Things to Look for in an Educational Technology:**

- Embodies Universal Design
- Utilizes Developmentally Appropriate Features
- Extends Classroom Experiences
- Requires Active Engagement
- Scaffolds Adaptive Complexity
- Encourages Revisiting & Sharing
- Models Multiple Diversities
- Empowers Exploration & Creativity
- Fosters Thinking & Problem Solving
- Supports Playful Use



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# Effective, Appropriate & Intentional Use
## Best Practices Database

http://fg.ed.pacificu.edu/cldc/
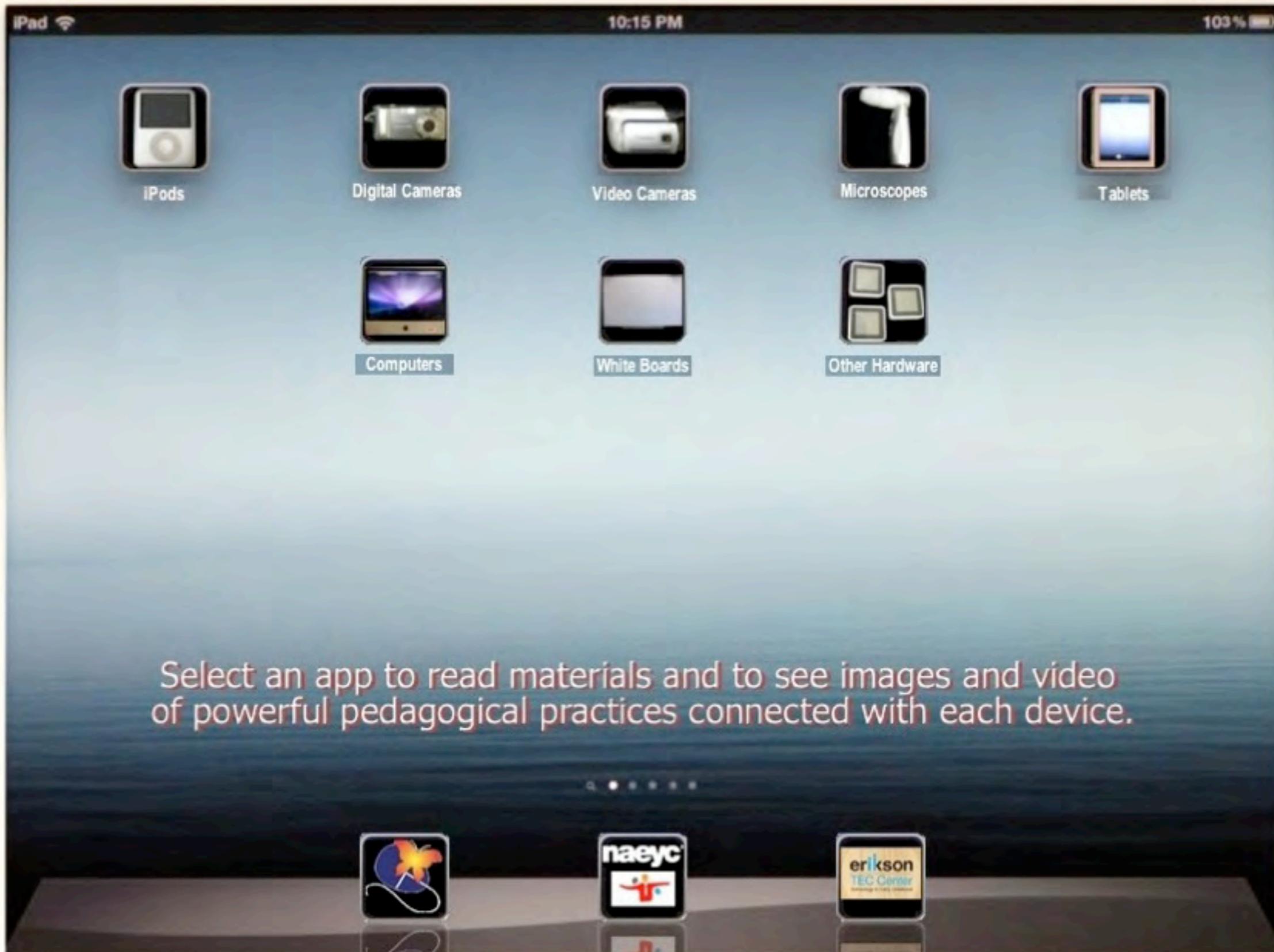
# Digital Microscopes

## Description

One of the great joys of early learning occurs when young children experience seeing the world in new and unexpected ways. Digital Microscopes can provide such a perspective. They empower children's insight when they are used as a manipulative tool that provides them with perspectives that are engaging and unique.

Most digital microscopes must be connected to a screen such as a computer. The best way to begin to use a digital microscope is to simply turn it on and hand it to a child. Almost without exception children (of all ages) will point it at their bodies (ear, eye, tummy...) and be fascinated with what they see. Providing learners with items that contain interesting textures and surfaces will allow them to connect their sense of touch with the image of the surface they are sensing.

Our preferred tool is a ProScope HD microscope. These can be connected to a computer in a classroom, at an exploration station, or outside in the natural environment. This microscope not only displays high definition digital images on the computer screen, but with the push of a button, it can capture photographs of what is being displayed for later discussion, story writing, or posting on a blog.

## Suggestions for use

**Classroom** - Set up a computer (desktop or laptop or tablet) with HD software and microscope. Orient screen so that it is easy for the students to manipulate the scope and view the screen simultaneously. The scope can be particularly powerful when used for explorations of the human body as there is nothing more concrete than one's own body
Scope is also excellent for explorations of all manner of surfaces including
- Natural materials such as rocks and minerals, shells, wood, insects, and plants such as molds.
- Man made materials such as Metals, plastics, fabrics, various types of papers,
- Interesting small details such as dates on coins or bills, watch parts, facets of jewelry.

# Effective, Appropriate & Intentional Use

# Review

**Effective uses of technology are:**

- Give the child control

- Active, hands-on, engaging, & empowering.

- Provide scaffolds to support tasks

- One of many options to support learning

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# Conclusions

**When considering using a tool:**

- Determine student interest & need

- Envision what will be learned

- Recognize what is appropriate

- Be intentional and deliberate

- Support not supplant essential activities

- Have fun

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# Effective, Appropriate & Intentional Use
## Educator Resources

- fg.ed.pacificu.edu/cldc/techtools.html

- http://fg.ed.pacificu.edu/elc/

- http://teccenter.erikson.edu/

- www.techandyoungchildren.org/

- http://childrenstech.com/

- http://bcis.pacificu.edu/home.php

Image Credits: President Obama: www.csmonitor.com, chronicle.augusta.com
Foldify: www.wired.com

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# Effective, Appropriate and Intentional Use of Technology Tools in Early Childhood Classrooms

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