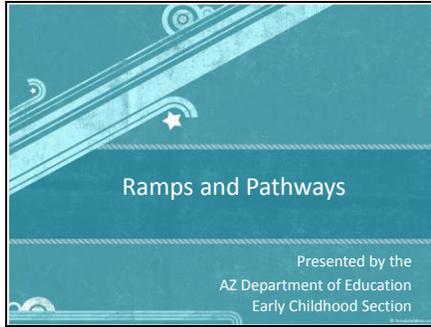
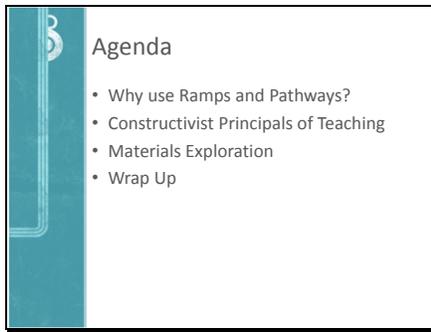


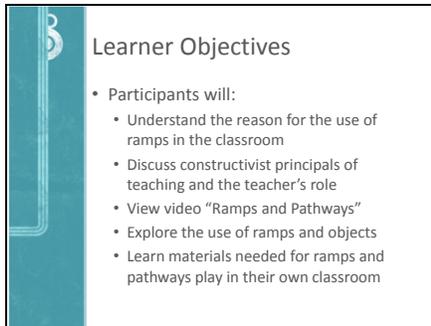
Slide 1



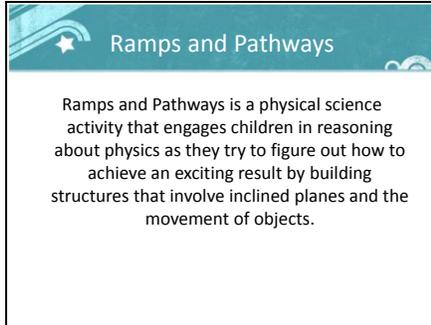
Slide 2



Slide 3



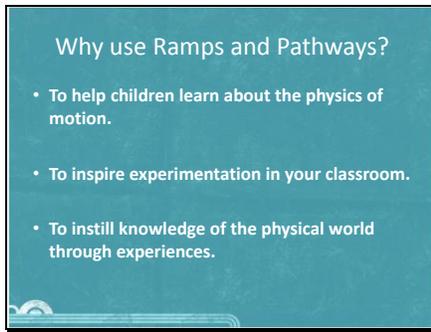
Slide 4



★ Ramps and Pathways

Ramps and Pathways is a physical science activity that engages children in reasoning about physics as they try to figure out how to achieve an exciting result by building structures that involve inclined planes and the movement of objects.

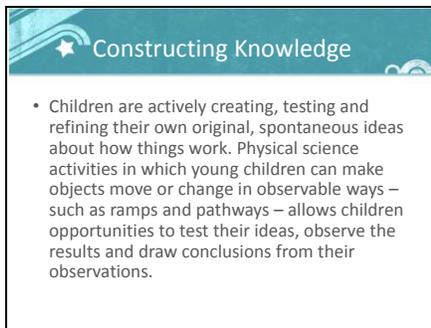
Slide 5



Why use Ramps and Pathways?

- To help children learn about the physics of motion.
- To inspire experimentation in your classroom.
- To instill knowledge of the physical world through experiences.

Slide 6



★ Constructing Knowledge

- Children are actively creating, testing and refining their own original, spontaneous ideas about how things work. Physical science activities in which young children can make objects move or change in observable ways – such as ramps and pathways – allows children opportunities to test their ideas, observe the results and draw conclusions from their observations.

Slide 7

Why use Ramps and Pathways?

- Knowledge of the physical world can only be gained by active experimentation with objects
- When objects react in unexpected ways that feedback offers children the basis for further experimentation

Slide 8

- Children need to experience contradictions between their wrong ideas about objects and the observable results of their experience; emotions such as puzzlement, curiosity, surprise and frustration are part of that experience
- Children learn to overcome obstacles and solve problems by encountering problems they feel compelled to solve

Slide 9

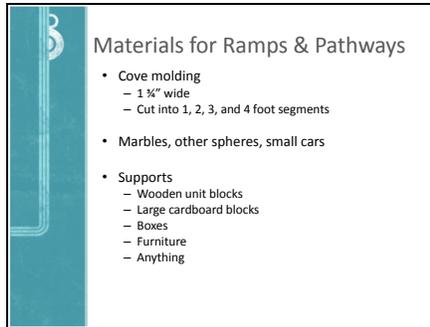
 A Constructivist Approach:
Working with Children in Ramps & Pathways Activities 

Video:
Ramps and Pathways

Presented by the Regents' Center
for Early Developmental
Education at the University of
Northern Iowa



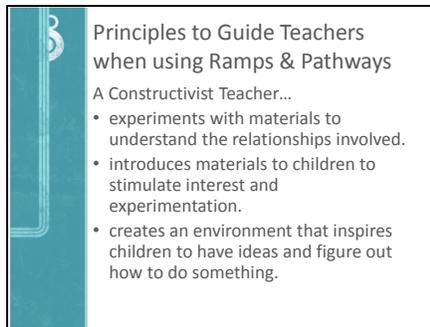
Slide 10



Materials for Ramps & Pathways

- Cove molding
 - 1 3/4" wide
 - Cut into 1, 2, 3, and 4 foot segments
- Marbles, other spheres, small cars
- Supports
 - Wooden unit blocks
 - Large cardboard blocks
 - Boxes
 - Furniture
 - Anything

Slide 11

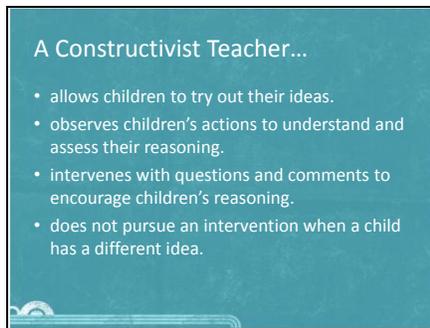


Principles to Guide Teachers when using Ramps & Pathways

A Constructivist Teacher...

- experiments with materials to understand the relationships involved.
- introduces materials to children to stimulate interest and experimentation.
- creates an environment that inspires children to have ideas and figure out how to do something.

Slide 12



A Constructivist Teacher...

- allows children to try out their ideas.
- observes children's actions to understand and assess their reasoning.
- intervenes with questions and comments to encourage children's reasoning.
- does not pursue an intervention when a child has a different idea.

Slide 13

A slide with a teal header containing a star icon and the text "A Constructivist Teacher...". The main content area is white with a black border and contains three bullet points.

- supports children's representations and discussions of their ideas.
- integrates all curriculum areas into ramps activities.
- encourages social interaction among children.

Slide 14

A slide with a teal header containing a large number "3" and the text "Exploring Ramps and Pathways". The main content area is white with a black border and contains two bullet points, the second of which is a challenge list.

- Using the cove molding, blocks, furniture, and any other materials you can find, create various ramps and pathways for your marble, bouncy ball or small car to travel across.
- Challenge:
 - Catch the object in a container.
 - Make the marble turn a corner.
 - Create a jump.
 - Hit a target and knock it over.

Slide 15

A slide with a teal header containing a star icon and the text "Remember...". The main content area is white with a black border and contains two bullet points.

- Value children's thinking and encourage them to test their hypotheses.
- When children's ideas are respected, they feel confident about their ability to think and experiment – establish an environment that allows for this.

Slide 16

How we, as teachers, ask children to think effects how deeply children learn. Common Core standards are asking children to provide evidence and explanations about how they come to a conclusion. We need to, in preschool, ask open ended questions to best understand how children are learning, clarify their learning, and how to best scaffold their learning to the next level."

-

Slide 17

Questions

Closed Questions	Open Questions
<ul style="list-style-type: none">• Did the red car go faster?• Which sphere was first?	<ul style="list-style-type: none">• Yours was slower, why do you think that is?• How do you think we could get the car to jump?



Slide 18

Questions?

- Resources:
 - University of Northern Iowa – Regents' Center for Early Developmental Education
 - National Association for the Education of Young Children (NAEYC)

Arizona Department of Education
Early Childhood Education Section
(602) 364-1530