

Clarendon

Early Education Services, Inc.



Learning
Experiences
And
Resources
Now!

Special Preschool STEM Edition!



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All of us use simple machines in our daily lives to make work easier. Even our four-legged friend here is using an inclined plane (a ramp) to make it easier to get where he's going! Simple machines provide us with unique opportunities to promote children's understanding of STEM concepts, and we hope you enjoy these investigations with them.

There are six simple machines:

- **Pulley**- a wheel and rope used to raise or lower things (window shades, clothesline pulleys)
- **Inclined Plane**-a ramp or any slanting surface that connects a lower level to a higher level (wheelchair ramp, slide)
- **Lever**-a stiff board or bar that rests or pivots on a support called a fulcrum that lifts or moves things (teeter totter, scissors)
- **Wedge**-an object that has one or two slanted sides that come together in a point or sharp edge (door stops, chisels)
- **Wheel and Axle**-a round part and a straight part joined together to move things (riding toys, rolling pins)
- **Screw**-a central core with an inclined plane wrapped around it in the shape of a spring to help hold things together and lift or lower things (screws, screw top lids)

You will probably not use all this vocabulary with the children, but you will be able to provide experiences to help them explore how simple machines make work easier, and to explore force and motion as they play. Please encourage children to ask questions, make predictions, plan and try things, talk about what happens and why, and document the results with photos, drawings, video, dictation or writing and simple graphs. Have fun!

USING OPEN-ENDED QUESTIONS



Open-ended questions provide us with a wonderful way to engage children in STEM-related activities throughout the day while promoting children's growing expressive language skills. Open-ended questions require more than a one-or two-word answer and encourage children to think about and explain their ideas. As they reflect on what they're doing, the children form more ideas about possibilities. This can lead to deeper exploration and greater understanding of concepts.

Here are some examples of open-ended questions you might use while investigating simple machines:

What questions-

What might happen if you make the top of the ramp higher? What could you try to lift the block higher? What happened when you moved the lever? What are ways that people use wheels? What did you notice?

How questions-

How did you get the ball to roll so far? How is that ball different from the last one you tried? How could you get the car to go up the ramp?

Do you think questions-

Do you think the car will roll as fast if you lower the top of the ramp? Do you think it will be as easy to screw into the wood? Do you think the ball will knock the blocks down?

It's also a great idea to ask children *why* to help them think about and explain their ideas!

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LEARNING EXPERIENCES AND INVESTIGATIONS

OUR PHILOSOPHY

Children learn through positive interactions with caring adults who understand how children develop and provide opportunities for meaningful hands-on learning experiences. They learn best through engaging their senses and need individual support as they explore and discover themselves, others and the world around them in the context of their families and cultures.

ART

Painting with Wheels

Materials: Paper, foam rollers, toy cars, paint, paper plates, a ramp, drop cloth or shower curtain

Procedure: Put small amounts of paint on paper plates. Encourage children to try painting with rollers and talk about how the roller uses a wheel. Tape some paper on a ramp and ask children to dip the wheels of the toy vehicles in paint, and roll them down the ramp to create a work of art!

Adaptations: Help younger children to paint with small foam rollers or cars on a table or floor.

Goals: Promote creativity and exploration of the visual arts while exploring wheels.



Objectives for Development and Learning:

7. Demonstrates fine-motor strength and coordination

33. Explores the visual arts

Aligns with:

Visual Arts 18-Explore a variety of age-appropriate materials and media to create two- and three-dimensional artwork.

Technology and Engineering 25-Explore and identify simple machines such as ramps, gears, wheels, pulleys and levers through play experiences.

Cognitive Development 66-The younger toddler explores with sensory art materials and uses them to create visual effects.

Physical Health and Well-Being 10- The older infant demonstrates strength and coordination of small motor muscles.

BLOCKS

Rolling or Not?

Materials: Blocks, ramps (cardboard, large books, wood), small toys with wheels, balls, paper tube, plastic animals, household items

Procedure: Provide blocks, materials to make ramps and a variety of toys and household items. Help the children to create a ramp and ask them to predict which items will roll or slide and which will not. Make a graph of their predictions. Encourage the children to test their predictions and record the results on the graph. *Why do you think that ball rolled faster? Do you think things roll faster on the book or the cardboard? Why do you think the block doesn't roll?*

Adaptations: Help younger children to roll items down small ramps made of books. Try rolling things down slopes outdoors.

Goals: Encourage predicting, problem solving, awareness of ramps and rolling and using simple graphing to document their investigations.

Will it roll?			
Resie	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jayden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mike	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shanna	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crystal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Objectives for Development and Learning:

9a. Uses an expanding expressive vocabulary

12. Remembers and connects experiences.

24. Uses scientific inquiry skills.

Aligns with: Physical Sciences 20-Investigate and describe or demonstrate various ways that objects can move. 21-Explore and describe various actions that can change an object's motion such as pulling, pushing, twisting, rolling and throwing.

Physical Health & Well-Being 23-The older infant grasps a variety of objects for eating and play in his/her environment, with and without handles, such as blocks, spoons, markers, etc.

LEARNING EXPERIENCES AND INVESTIGATIONS

TOYS AND GAMES

Sorting Wheels

Materials: Variety of toys, tools and household objects, some with wheels and some without (rolling pin, toy vehicles, push toys, pizza wheel, door knob, paper towel rack, roller skates, vacuum, bicycle, tape dispenser, etc.), chart paper, markers

Procedure: Ask the children to go on a scavenger hunt to look for items that use wheels. Show children how axles allow wheels to turn. Ask them to compare a number of items and decide which have wheels and which do not. Create a chart to record their observations.

Adaptations: Provide push and pull toys for younger children to investigate wheels.

Goals: Provide opportunities for exploring wheels and sorting/comparing concrete objects.



Objectives for Development and Learning:

13. Uses classification skills.

26. Demonstrates knowledge of the physical properties of objects or materials.

Aligns with: Technology and Engineering 25-Explore and identify simple machines such as ramps, gears, wheels, pulleys and levers through play experiences.

SENSORY PLAY

Wheels and Sand

Materials: Sand, toy vehicles, rolling pins, etc.

Procedure: Allow children to explore how wheels work in sand, and what makes the wheels roll more easily. *What do you think will happen if you press the sand down?*

Adaptations: Add water and try other materials.

Goals: Encourage exploration of sensory materials and wheels and axles.

Objectives for Development and Learning:

7. Demonstrates fine motor strength and coordination.

Aligns with: Technology and Engineering 23-Explore and describe a wide variety of natural and man-made materials through sensory experiences. Cognitive Development 60-The younger toddler experiments with various wet and dry materials to discover their properties.

STORIES AND BOOKS

Our Machine Projects

Materials: Poster board or paper, photos, children's drawings and writing, dictation

Procedure: Take photos of children's investigations of simple machines and collect some of their related drawings and artwork. Ask the children to help you make a big book, using questions to help them relate their experiences. *What would you like to write about this photo? How did you find out what rolled fastest?* Encourage writing and dictation.

Adaptations: Include photos of younger children and write about their experiences. Encourage older children to use the computer to write about their investigations.

Goals: Encourage children to reflect on their explorations and document their work .

Objectives for Development and Learning:

9. Uses language to express thoughts or needs.

Aligns with: Language Arts 16-Use their own words or illustrations to describe their experiences, tell imaginative stories or communicate information about a topic of interest.

Inquiry Skills 4-Record observations and share ideas through simple forms of representation such as drawings.

Language and Communication 49-The older toddler understands writing is a way of communicating.

Suggested books:

Motion: Push & Pull, Fast & Slow-Darlene Stille-SA

Simple Machines-Deborah Hodge-SA

How Do You Lift A Lion?-Robert E. Wells-PS/SA

Roll, Slope and Slide- Michael Dahl-PS/SA

Pull, Lift and Lower-Michael Dahl-PS/SA

Scoop, Seesaw, and Raise-Michael Dahl-PS/SA

And Everyone Shouted "Pull"!-Claire Llewellyn-T/PS

I Spy Little Wheels-Jean Marzollo-I/T/PS

Engineering Elephants-Emily Hunt-PS/SA

Engineering the ABC's-Patty Novak-PS/SA

What Do Wheels Do All Day?-April Prince-I/T/PS

Roller Coaster-Marla Frazee-PS

Mama Zooms-Jane Cowen Fletcher-PS/SA

SPECIAL SECTION:

INNOVATIVE PRESCHOOL STEM EXPERIENCES!

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Science and Engineering Practices

Engage in discussion before, during and after investigations.

Support thinking with evidence. Apply their ideas to new situations.

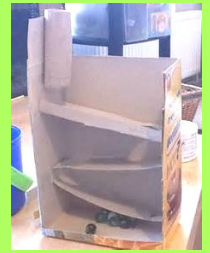
Observe and ask questions about observable phenomena.

Use their senses and simple tools to observe, gather and record data.

Plan and implement investigations using simple equipment, designing/building a solution to a problem.

Construct theories based in experience about what might be going on.

Look for and describe patterns and relationships.



FOCUS ON SCIENCE: Exploring Slope with Ramps and Tubes

Materials: Variety of tubes (paper, PVC, mailing tubes), materials for ramps (card board, wood, blocks, books), rolling toys and other items that will roll, balls of different sizes and weights, string, blocks

Procedure: Begin with a few of the materials above and provide more as the children gain experience with inclined planes (ramps). Encourage them to play with the materials and experiment with how the angle or slope of the ramp or tube effects how far or fast and object will roll. Ask questions to call their attention to how the weight of an object and the texture of the ramp or tube can make things move faster or slower.

What could you try with the ramp to make the car roll faster? What do you notice? Encourage them to measure the distance things roll with non-traditional tools like string or blocks and compare results. **Why do you think that ball rolled the farthest?** When the children have some experience, encourage them to create pathways for rolling balls with tubes., or add barriers to build obstacle courses for balls. Take time to discuss and help the children reflect on and document their discoveries.

Adaptations: Look for ramps in your neighborhood. Read *Mama Zooms* and talk about the importance of wheelchair access. Help younger children to roll balls down ramps and through tubes.

Goals: Encourage science inquiry skills, beginning understanding of forces and how ramps make work easier, exploration of the properties of materials and measurement using non-traditional items.

Aligns with MA Preschool Guidelines:

Inquiry Skills 1-Ask and seek out answers to questions about objects and events with the assistance of interested adults. 2-Make predictions about changes in materials or objects based on past experience.

Physical Sciences 20-Investigate and describe or demonstrate various ways that objects can move.

21-Explore and describe various actions that can change an object's motion, such as pulling, pushing, twisting, rolling and throwing.

Technology and Engineering 25-Explore and identify simple machines such as ramps, gears, wheels pulleys and levers through play experiences.

Aligns with PreK STE Standards:

PreK-PS1-1. Investigate the natural and human-made objects, describe, compare, sort and classify objects based on observable physical characteristics, uses, and whether something is manufactured or occurs in nature.

PreK-PS2-1. Using evidence, discuss ideas about what is making something move the way it does and how some movements can be controlled.

LEARNING EXPERIENCES AND INVESTIGATIONS

FOCUS ON TECHNOLOGY:

Screws and Screwdrivers

Materials: Plastic bottles with screw tops, large screws, screwdrivers, large nuts and bolts, jars with screw top lids, wood or Styrofoam, safety goggles
Procedure: Show children examples of screws and talk about their uses. Encourage them to explore, compare and describe the above materials. *Do you see a screw in the bottle cap? How do you think it's different from screws used in building? What are some of the different ways people use screws? How do screws make work easier?* Allow children to try using screwdrivers with screws and wood or Styrofoam. *Do you think it's easier to screw into the wood or the foam?* Make sure that you have flat or Philips head screwdrivers to match your screws!

Adaptations: Provide materials for children to connect using screws or nuts and bolts.
Goals: Provide opportunities to explore a simple machine, how people use the machine and have hands-on experiences with real tools.



Simple Machines

Materials: Pencils, paper, markers, clipboards if available, camera, chart paper
Procedure: Provide children with paper, pencils and clipboards or notebooks to record their observations, and go on a scavenger hunt for simple machines. The kitchen is a great place to start! Take photos of the items they find. Use questions to encourage their investigations. *Do you think the door is a simple machine? Do scissors make work easier for us?* Provide a place for children to display their drawings along with your photos. Discuss the items and help children to label them with the names of the simple machines (see *Resources*).

Adaptations: Gather a variety of items (clothespins, tongs, scissors, screw tops, pliers, doorstop, rolling pins, etc.) for children to explore and discuss.
Goals: Encourage awareness of simple machines in the environment and how they work.



Aligns with PreK STE Standards:

PreK-PS1-1. Investigate the natural and human-made objects, describe, compare, sort and classify objects based on observable physical characteristics, uses, and whether something is manufactured or occurs in nature.

PreK-PS2-1. Using evidence, discuss ideas about what is making something move the way it does and how some movements can be controlled.

Aligns with PreK STE Standards:

PreK-PS2-1. Using evidence, discuss ideas about what is making something move the way it does and how some movements can be controlled.

Aligns with MA Preschool Guidelines:

Inquiry Skills 2-Make predictions about changes in materials or objects based on past experience.
Physical Sciences 21-Explore and describe various actions that can change an object's motion, such as pulling, pushing, twisting, rolling and throwing.
Technology and Engineering 24-Demonstrate and explain the safe and proper use of tools and materials.
25-Explore and identify simple machines such as ramps, gears, wheels pulleys and levers through play experiences.

Aligns with MA Preschool Guidelines:

Inquiry Skills 1-Ask and seek out answers to questions about objects and events with the assistance of interested adults.
4-Record observations and share ideas through simple forms of representation such as drawings.
Physical Sciences 21-Explore and describe various actions that can change an object's motion, such as pulling, pushing, twisting, rolling and throwing.
Technology and Engineering 23-Explore and describe a wide variety of natural and man-made materials through sensory experiences.
24-Demonstrate and explain the safe and proper use of tools and materials.
25-Explore and identify simple machines such as ramps, gears, wheels pulleys and levers through play experiences.

LEARNING EXPERIENCES AND INVESTIGATIONS

FOCUS ON ENGINEERING

Playing with Pendulums

Materials: String, stick or broomstick, tennis ball or variety of balls, small blocks or other toys
Procedure: Suspend a stick between two chairs or stacks of blocks. Tie a string to a ball and attach the other end to the stick. Explain to the children that this is a pendulum. *Where do you think you could put the blocks so that the ball can knock them down? How many can you knock down at the same time? Encourage experimentation. What do you think will happen if we make the string longer? What if you let the ball go from here?* Try different kinds of balls and knocking down objects of different weights.

Adaptations: Fill a mustard bottle (or other container with an adjustable opening) with paint and tie it to the string upside down. Create works of art with the pendulum!

Goals: Encourage inquiry skills like predicting, comparing and describing during investigation of pendulums.

Aligns with PreK STE Standards:

PreK-PS2-1. Using evidence, discuss ideas about what is making something move the way it does and how some movements can be controlled.

PreK-PS2-2. Through experience, develop awareness of factors that influence whether things stand or fall.

Aligns with MA Preschool Guidelines:

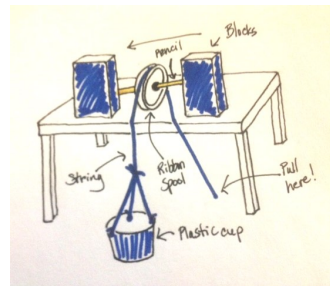
Inquiry Skills 1-Ask and seek out answers to questions about objects and events with the assistance of interested adults.

2-Make predictions about changes in materials or objects based on past experience.

Physical Sciences 1-Manipulate a wide variety of familiar and unfamiliar objects to observe, describe and compare their properties using appropriate language.

Technology and Engineering 23-Explore and describe a wide variety of natural and man-made materials through sensory experiences.

25-Explore and identify simple machines through play experiences.



Making a Pulley

Materials: Ribbon spool, pencil or chopstick, small bucket or plastic container, string or yarn, tape

Procedure: Make a pulley by putting a pencil in the hole of the spool, wrap string over the spool and suspend one end through a stair bannister or other place that will allow the spool to turn. Attach a small bucket to the suspended end. Read *How Do You Lift a Lion?* and talk about how pulleys make it easier to lift objects up by pulling down. Encourage the children to work together and use the pulley to lift toys or objects of their choice. *Which toys do you think are the hardest to lift? Does it make a difference if you hold the string closer to the spool? Why do you think that is?*

Adaptations: Make a horizontal pulley to move a toy across a space.

Goals: Provide opportunities to explore how pulleys work while encouraging cooperation and scientific inquiry skills. Help children connect their own experiences to books.

Aligns with PreK STE Standards:

PreK-PS2-1. Using evidence, discuss ideas about what is making something move the way it does and how some movements can be controlled.

Aligns with MA Preschool Guidelines:

Inquiry Skills 1-Ask and seek out answers to questions about objects and events with the assistance of interested adults.
Physical Sciences 21-Explore and describe various actions that can change an object's motion, such as pulling, pushing, twisting, rolling and throwing.

Technology and Engineering 23-Explore and describe a wide variety of natural and man-made materials through sensory experiences. 25-Explore and identify simple machines through play experiences.

English Language Arts 13-Relate themes and information in books to personal experiences.

LEARNING EXPERIENCES AND INVESTIGATIONS

FOCUS ON

MATHEMATICS:

Measuring and Graphing

Materials: Large paper or poster board, markers, stickers (optional), blocks, string

Procedure: You can use simple graphs to help children record predictions, observations, comparisons and results for many different kinds of measurement activities. Encourage children to measure distance with footsteps, blocks or other non-traditional items. You might start with two columns, one titled *The red ball will roll faster* and a second that says *The yellow ball will roll faster*. Children can express their thoughts by making a mark or putting a sticker in the column of their choice. As children gain more experience, you could add more columns, starting with one for a list of the children's names. For example, make a column for predictions (*Which ball will roll farthest?*), a column for observations or comparisons (*Which ball is the heaviest?*) or a column for results (*How many foot steps away did your ball roll?*). This documentation will help children to reflect as you discuss why things

happened as they did and encourage the children to think of other investigations. *What did you notice? What could we try to find out why that happened?* Visual records also provide a great way to show families what children are learning! Adaptations: Encourage children to measure with string. Hang each string and label with children's names to allow for comparison. Help children to conduct their own surveys to reinforce understanding of graphs, and provide activities to encourage measurement of quantity and weight as well as distance.

Goals: Provide opportunities to explore distance, quantity and numbers through play using concrete materials. Promote understanding of simple graphing as a method to document ideas and science experiences.

	Which ball will roll farthest?	How many foot steps away did your ball roll?
ASIA	●	(5)
Take	●	(3)
Annie	○	(3)
Jamal	○	(5)
Leah	○	(4)
Taylor	●	(7)
Celina	○	(3)

Aligns with MA Preschool Guidelines:

Mathematics 1- Listen to and say the names of numbers in meaningful contexts.

2-Connect many kinds/quantities of concrete objects and actions to numbers.

11- Explore and identify space, direction, movement, relative position, and size using body movement and concrete objects.

12-Listen to and use comparative words to describe the relationships of objects to one another.

14-Use non-standard units to measure length, weight and the amount of content in familiar objects.

15-Organize and draw conclusions from facts they have collected.

LEARNING EXPERIENCES AND INVESTIGATIONS

DRAMATIC PLAY

And Everyone Shouted "PULL"!

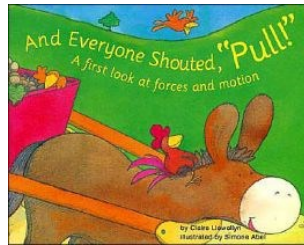
Materials: Wagon or cardboard box, stuffed farm animals or cut outs, play

vegetables, *And Everyone Shouted "PULL"* book

Procedure: Read the book or tell a similar story of a farmer and his animals pushing and pulling a cart to get the vegetables to market. Encourage children to take the roles of the animals and farmer to act out the story.

Adaptations: Help younger children to push and pull a variety of toys.

Goals: Enjoy a creative dramatic play experience and explore the forces of pushing and pulling.



Objectives for Development and Learning:

36. Explores drama through actions and knowledge.

Aligns with:

Theatre Arts 15-Use dramatic play, costumes and props to pretend to be someone else.

Cognitive Development 67-The younger toddler begins to use pretend and dramatic play to act out familiar scenes.

OUTDOOR PLAY

Simple Machines on the Playground

Materials: Balls

Procedure: Visit a playground with slides and swings. Talk about how slides are like ramps and encourage experimentation with rolling objects. Help children to understand that they become part of a pendulum while swinging! What other simple machines can you find on the playground?

Adaptations: Help younger children to roll balls down slides.

Goals: Promote physical activity and awareness of simple machines in the environment.

Objectives for Development and Learning:

12. Remembers and connects experiences.

Aligns with:

25-Explore and identify simple machines through play experiences.

DISCOVERY

Balancing on Paper Tubes

Materials: Paper towel tubes, rulers or cardboard strips, pennies or small toys

Procedure: Give each child a paper tube and a ruler. Ask the children to use the tube (a fulcrum) and balance the ruler (a lever). Encourage them to try adding pennies to each side of the ruler. *What happens if you move the pennies closer to the middle?*

Adaptations: Encourage experimentation with a simple balance scale or using a simple lever to lift an object.

Goals: Engage children in exploratory play to develop understanding of levers and balance.

Objectives for Development and Learning:

11c. Solves problems.

26. Demonstrates knowledge of the physical properties of objects and materials.

Aligns with:

Physical Sciences 21-Explore and describe various actions that can change an object's motion, such as pulling, pushing, twisting, rolling and throwing.

25-Explore and identify simple machines through play experiences.

Cognitive Development 62-The older toddler asks questions and develops inquiry skills.



LET'S GET COOKING!



Tortilla Time!

Ingredients:

Corn flour

Salt

Warm water

Fillings of your choice

Making tortillas requires a rolling pin, which is a wheel and axle! Be sure to talk about how the axle allows the wheel to move as children roll out the dough. *Does the rolling pin make it easier to flatten the dough? What other kitchen tools make our work easier?*

Ask children to mix 2 cups of corn flour with a pinch of salt and 1 to 1 1/2 cups of warm water, then mix well and knead with hands. Show the children how to roll the dough into balls. Sprinkle corn flour on waxed paper and help the children to use a rolling pin to roll the dough into flat circles. Use a frying pan or electric frying pan to cook the tortillas until golden brown, and flip once with a spatula, supervising children carefully as they watch.

Use tortillas to make nachos, tacos or fill with ingredients of your choice and make into rolls. Be sure to talk about different cultures who cook tortillas. Several great children's books in both English and Spanish are available on the topic. Enjoy!

Simple Machines in the Kitchen

You may be surprised to find a number of simple machines in your kitchen. Enjoy a scavenger hunt with the children and encourage them to safely explore the different tools.

- Spatulas, tongs and scissors are levers! A broom is a lever and your hand is the fulcrum. The triggers of spray bottles and fire extinguishers are also levers. Have you noticed that a light switch is a lever too? If you make a shopping list with a pencil or pen, you are using another lever!
- A pizza wheel uses a wheel and axle. A doorknob and many faucet handles work because of wheels and axles. Look carefully at door hinges to find another example.
- Screw tops on bottles and lids on jars use screws, and light bulbs do too.
- A triangular doorstop is a wedge. Knives, forks and vegetable peelers are also wedges.
- If you have shades in your kitchen, they probably operate with a pulley system.
- Steps are one kind of inclined plane.
- Your kitchen clock might have a pendulum.

Please have fun exploring with your children to find more simple machines!



Beware of choking hazards and food allergies when planning any cooking project!

Resources !

Massachusetts Preschool STEM Resources

<http://brainbuildinginprogress.org/> -The *Brain Building in Progress* website has curriculum ideas to promote healthy development as well as other excellent resources.

<http://www.mass.gov/edu/docs/eec/2013/20131008-prek-ste-standards.pdf>– Find the new *Massachusetts Preschool STE Standards* here.

<http://www.doe.mass.edu/candi/commoncore/>- Look here for the *Massachusetts Curriculum Frameworks for Mathematics*.

<http://www.resourcesforearlylearning.org/unit/curriculum/437/>-This site has a comprehensive curriculum for preschoolers based on ramps and rolling. The site includes online self-paced training.

http://www.eec.state.ma.us/docs1/curriculum/20030401_preschool_early_learning_guidelines.pdf – The *Massachusetts Guidelines for Preschool Learning Experiences* contains learning guidelines and ideas for learning experiences in all curriculum areas including STEM.



INTERNET RESOURCES

<http://illinoisearlylearning.org/tipsheets/physics-rolling.htm> -Here you will find ideas for playground science and links to other resources.

<http://www.youtube.com/watch?v=KpZz8jS1v64> -This fun cartoon shows how to use a fulcrum and lever to lift a hippo!

http://www.peepandthebigwideworld.com/guide/vid_buildingramps.html -*Peep and the Big Wide World* explores ramps!

<http://illinoisearlylearning.org/tipsheets/physics-hang.htm> -Look here for some fun ideas to explore pendulums.

<http://staff.harrisonburg.k12.va.us/~mwampole/1-resources/simple-machines/> -Find examples of household simple machines.

http://www.peepandthebigwideworld.com/guide/vid_rollinghill.html -View a video of children experimenting with rolling down a hill.

<http://www.pbslearningmedia.org/resource/cg8.sci.phys.ramproll/curious-george-ramp-n-roll/> -PBS provides media and hands-on activities about ramps and rolling for children.

https://www.youtube.com/watch?v=REj_5e_GQ4E –Watch a video of a marble run made from paper tubes.

<http://www.pbs.org/parents/fetch/activities/act/act-setitstraight.html> -This is an example of the great resources you can find on the *Fetch* website!

A Message to Families...

Greetings! Your child is exploring simple machines with the caring and support of their Clarendon educator. Their activities are designed to help your child learn about important STEM (Science, Technology, Engineering and Math) concepts.

There are six simple machines and we use most of them in our everyday lives. You may be surprised to find many of these in your home! They are wheels and axles, ramps, screws, wedges, levers and pendulums. Simple machines make work easier for us and your child is eager to learn about how things work. To encourage your child's understanding, you might try:

- Rolling different things down the slide at the playground and asking your child about why some objects roll faster or farther than others.
- Looking for wheels and axles in your neighborhood.
- Finding simple machines in your kitchen. Spatulas and tongs are levers. A rolling pin uses a wheel and axle. Screw tops on bottles use a screw to get the job done!
- Talking about why people in wheelchairs need ramps.



Please remember to ask your child questions about their interests, and encourage those interests. Feel free to ask your Clarendon educator for more great ideas about helping with scientific investigations. We hope you enjoy your child's natural curiosity and encourage wonderful explorations of his or her world!

Ask me about:

- How simple machines help us.
- How I knocked down blocks with a pendulum!
- What simple machines we have in our home.
- How I experimented with ramps and rolling things.
- Things that use wheels.
- What I cooked using a simple machine.
- How I painted with a car!



INTERNET RESOURCES

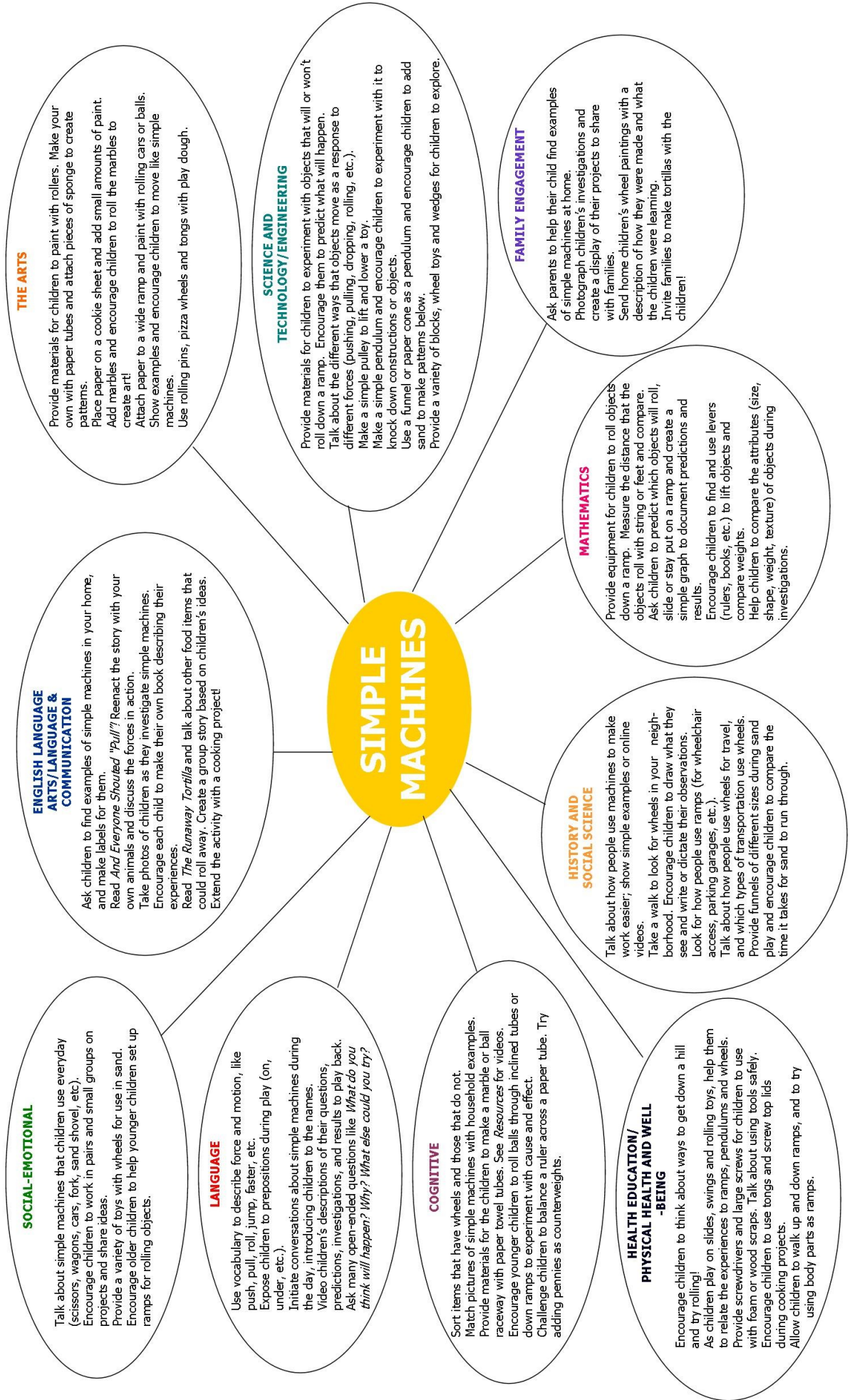
<http://www.resourcesforearlylearning.org/topic/1096/overview/>-Here are some great learning activities for preschoolers based on ramps and rolling.

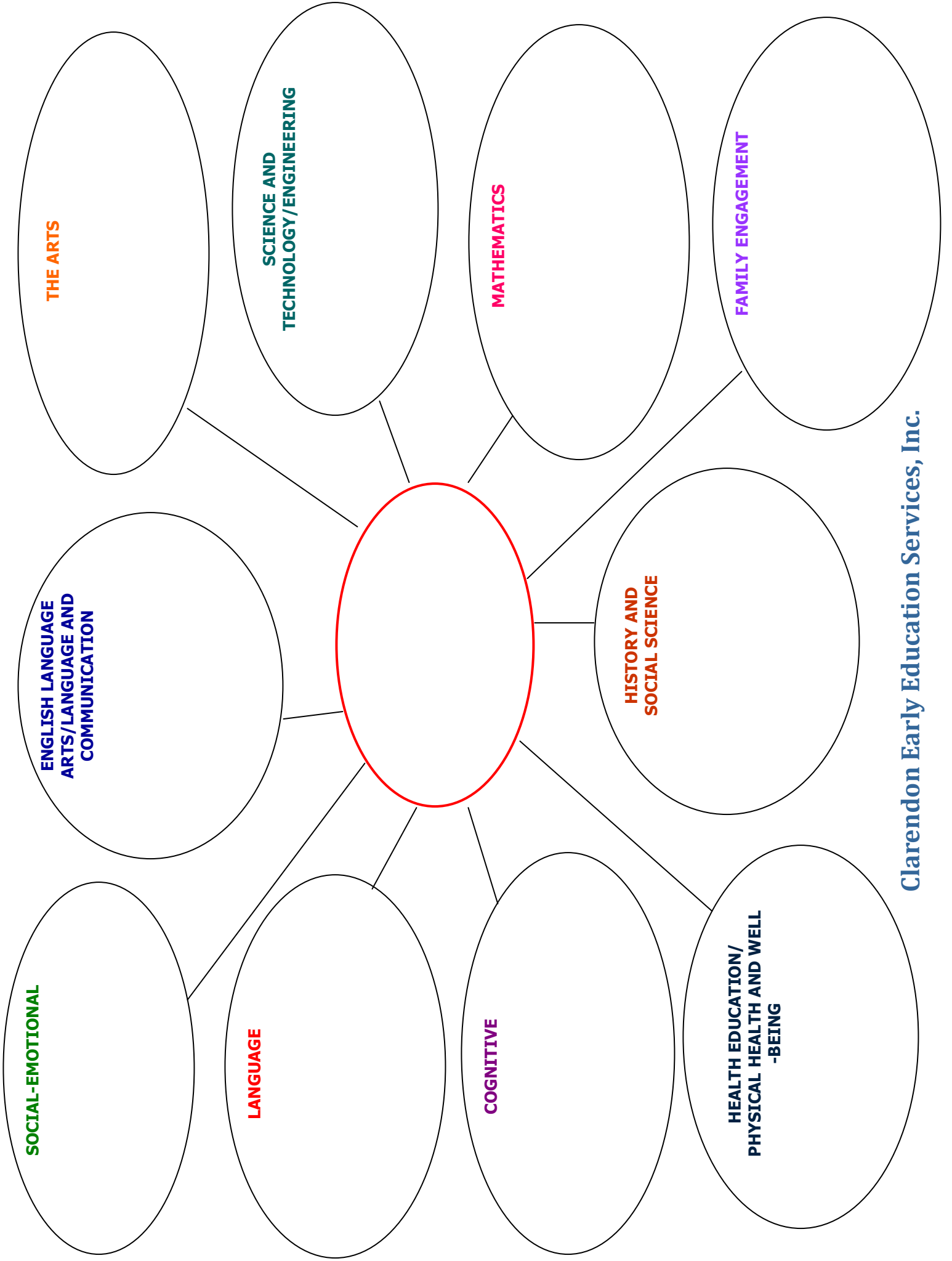
<http://illinoisearlylearning.org/tipsheets/physics-rolling.htm>-Here you will find ideas for fun playground science.

<http://www.pbslearningmedia.org/resource/cg8.sci.phys.ramproll/curious-george-ramp-n-roll/>-PBS provides media and hands-on activities about ramps and rolling for children.

<http://www.peepandthebigwideworld.com/activities/anywhere-activities/>-This site has a list of quick and easy science and math activities to try with your child.

Clarendon Early Education Services, Inc.





**OUR FAVORITE
ACTIVITIES...**

**CHANGES TO THE
ENVIRONMENT...**

SPECIAL EVENTS...



**CHILDREN'S INTERESTS
TO FOLLOW UP...**

Name: _____

Weekly curriculum planning time: _____

Weekly meeting with assistant (if applicable): _____