REGION NINE HEAD START ASSOCIATION

Elevating the Head Start Community™

EARLY CHILDHOOD STEM Institute

Early Childhood

STEM Curriculum Fair

Lesson Plan Book

A Celebration of *Teachers Teaching Teachers*

March 21, 2024

Phoenix, Arizona

Presented by:

Pacific Clinics Head Start

This book is dedicated to:

Edward Condon, Executive Director

of the Region 9 Head Start Association

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Head Start

Early Head Start

PROJECT LESSON PLAN (To be typed)

AGENCY/SITE: KidZCommunity
CLASSROOM: Loomis Head Start
PROJECT TITLE: MAGN-ificent Power
TEAM MEMBERS: Vanessa Aviles Beas, Whitney Stofleth, Brooklyn Pitz, Kitzia Curiel

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☐X	**Science** ☐X

Head Start Early Learning Outcomes Framework: Sub-Domains
Specify age group. Check sub domains that apply

☐ **Infant/ Toddler - Cognition** ☐ Exploration and Discovery ☐ Memory ☐ Reasoning and Problem-Solving ☐ Emergent Mathematical Thinking ☐ Imitation and Symbolic Representation and Play	**Preschool – Mathematics Development and Scientific Reasoning** ☐ Counting and Cardinality ☐ Operations and Algebraic Thinking X Measurement X Geometry and Spatial Sense X Scientific Inquiry X Reasoning and Problem-Solving

Primary Goal(s)

CONCEPT(S): (Primary ideas that are related to this lesson plan.)

The children have been showing an interest in the art easel magnets. In response to their interest, we set up an ice cube and magnet exploration activity. In addition, we enhanced our science area with a variety of metal loose parts and magnetic tools.

HOME SCHOOL/CONNECTION: (Family Engagement)

At home parents and children can explore their environment to see if they can find any magnetic things. This activity can start off as an investigation or scavenger hunt. Teachers can also share with families how they can extend this project with the materials they already have at home. For example, painting/building with magnets or creating a sensory table to explore.

MATERIALS:

For this activity you will need ice cube trays, magnetic wands, metal loose parts (screws, paper clips, bells, magnets, ect.) and non-magnetic loose parts (cotton balls, rubber balls, ect.)

PREPARATION:

For this activity the ice cubes need to be prepped the night before. You can begin by placing magnetic and non-magnetic ice items on the ice cube trays. Then filling up the trays with water to freeze overnight. On the day of the activity, have a tray and magnetic wand for each child.

- Optional: Adding watercolors to the ice cubes for color blending

STRATEGIES (Beginning, middle, end):

Beginning - Start by making a brief statement about the activity. For example: "Here are some magical things that seem to be frozen! Let's see what we can find out about them!" Be sure to sound excited/enthusiastic about the activity, then allow the children to begin exploring right away with ice cubes and magnetic wands.

Middle - Watch how the children responded to exploring the ice cubes and wands. During this time the children may be exploring in different ways, be sure to ask questions, encourage children to build on each other's ideas/explorations, make suggestions, and be intentional with helping children see new possibilities during their magnet and ice exploration.

End - Make sure to give warning that the activity may be coming to an end but remember to be flexible and follow their lead as much as possible. Ask the children about their experience and try to answer all their questions if you're able to look up the answers or grab a magnet book.

OPEN ENDED QUESTIONS

- How does it feel?
- Why do you think only some ice cubes gravitate towards the wands and others don't?
- Why do you think the ice is melting?

- What else in the environment do you think could be pulled by the magnetic force?
- What else can we do there with these magnetic tools?
- What do you think is causing some ice cubes to attract each other?

ANALYSIS AND REASONING QUESTIONS

VOCABULARY (Advanced Language)

Magnetic, force, strength, gravitate, attract.

CONNECTION TO REAL WORLD:

REFERENCES:

Teacher Signature: Vanessa Aviles Beas Date: 02/20/2024

(Can be typed in electronically)

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: KidZCommunity
CLASSROOM / HB GROUP: Carlin C.Coppin Head Start
PROJECT TITLE: Recycled Harmony
TEAM MEMBERS INCLUDING PARENTS: Arezou Azadi Katie Arrow Haydee Vergara Rosa Castillo Elizabeth Godinez

GOAL – Child Outcome(s) (Check all that apply)	Math ☑	Science ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

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CONCEPT(S): (Primary ideas that are related to this lesson plan.)

The concept of building musical instruments using recycled items introduces the idea of repurposing materials to create something new. Children are encouraged to explore their interests and build various items with available recycled materials. This is promoting lessons on reducing, reusing, and recycling. The goal is to foster creativity, problem-solving, and an understanding of basic musical principles among young learners while integrating science, technology, engineering, and math (STEM) principles in a hands-on activity.

HOME SCHOOL/CONNECTION: (STEM At Home)

Children use recycled materials found at home to create their instruments. Once completed, they bring them to school to share with classmates and teachers. They have the opportunity to demonstrate how they made their instruments and explain the creative process behind their designs.
*We sent a letter and materials home to share what learning was happening in the classroom.

MATERIALS:

Recycled materials such as cardboard, tubes, rubber bands, cans, wooden sticks, or any other suitable materials they have available at home or school can be utilized. Note: materials may vary depending on the project's requirements and available resources.

PREPARATION:

Collect a variety of recycled materials that can produce sound or be used as part of an instrument. Prepare age-appropriate tools such as scissors, tape, glue, markers, and any other materials that might be needed during the creating process. Ensure that these tools are easily accessible to the children and safe for their use.

STRATEGIES (Beginning, middle, end):

Introduce the concept of recycling and provide a variety of recycled materials for the children to explore. Offer assistance and guidance as needed, encouraging them to experiment with different rhythms, melodies, and sounds. After the activity, facilitate a reflection session with the children, then clean up the workspace and organize the materials for future use.

OPEN ENDED QUESTIONS

What materials can we find around us that we could use to make musical instruments?
How can we turn a cardboard box into something that makes music?
How can we make our instruments be louder or softer?
Can you show me how you would like to play the instrument you made?
What do you think will happen if we use different sizes of rubber bands on your homemade guitar?

ANALYSIS AND REASONING QUESTIONS

What do you hear when the music plays?
Can you name the instruments you hear in the music?
Do you notice any patterns or rhythms in the music? How do they make you feel?
Can you hear when the music gets louder or softer? Why do you think the volume changes?

VOCABULARY (Advanced Language)

Instruments
Louder/Softer
Patterns
Rhythms
Volume

CONNECTION TO REAL WORLD:

Exploring the world of music and recycling through instrument making.

REFERENCES:

*Instruments
* Books
Don't Throw that away!
Trashy Town
Why should I Recycle?
Dumpster Diver
I Stink

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PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Lexington
CLASSROOM / HB GROUP: Room 1 FD
PROJECT TITLE: Acorns Investigation
TEAM MEMBERS INCLUDING PARENTS: Gilda Eliasyan , Sylvia Alvarez-Nash

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

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CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Children will learn counting, comparing, identifying groups, understand new terminology concepts. Greater understanding of measurements, patterns. Science: cause and effect on increase knowledge of natural world. Hand-Eye coordination, problem solving, one-to-one, and counting skills.

HOME SCHOOL/CONNECTION: (STEM At Home)

Encourage families to take a nature walks to find and observe oak trees and their surroundings. Challenge children by asking to look for acorns and collect them. Collecting a bunch of acorns with child is a great way to get outside as the weather gets cooler. Encourage children to take a note of the different animals they see. Discuss how they fit into a oak tree ecosystem. Give questions , collect information by observing and record it in their journal.

MATERIALS:

Books, nutcracker, magnifying glass, cardboard tubes, paint, spoons, paint tray, water, masking tape, acorns, tweezers, paper towel rolls, and writing tools.

PREPARATION:

Set up the table with materials, introduce topic of acorn, and demonstrate activities.

STRATEGIES (Beginning, middle, end):

Read books about where the acorns come from and the characteristics of acorn: for example, size, shapes, and the texture. Encourage children to participate in a discussion about acorns. Ask open-ended questions. Provide materials for children to do different kinds of activities. weighing, exploring acorns, acorn color matching, and sink and float experiment. Collect information by observing and and record the data in their science journals.

OPEN ENDED QUESTIONS

What animal likes acorn?
What is an acorn?
Are acorns edible for dogs?
What season do acorns grow?
What we can do with acorns?
What do you notice?

ANALYSIS AND REASONING QUESIONS

Do oak tree drop acorns every year? Why?.
Can children play with acorns?
Acorns are safe to eat? How do you know?
How long do acorns last? How do you know?
Do all live oak trees produce acorns?

VOCABULARY (Advanced Language)

acorn, animal, plants, oak, shell, cap, nut

CONNECTION TO REAL WORLD:

Take a nature walks to find and observe oak trees and their surroundings.

REFERENCES:

"Little Acorn"
"Because of an Acorn"
"The Busy Tree"
"The Acorn and The Oak Tree"

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Lexington
CLASSROOM / HB GROUP: 4FD
PROJECT TITLE: "Investigating Shadows"
TEAM MEMBERS INCLUDING PARENTS: Sona Rubenian-Master T., Ana Largaespada-Lead T.,Irina Khristoforov-Asisstant T.

GOAL – Child Outcome(s) (Check all that apply)	Math ☐	Science ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
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CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Through "Investigating Shadows" activity children will examine how light travels- and how object's shadow is different by the intensity and position of the light in relation on both the object and the surface on which shadow is cast. They will have an opportunity to observe not only their body, but also different objects, such as blocks, toys, shadows in a different time of a the day by tracing/measuring shadows on a paper their findings, compare/ contrast and make predictions. Also, they will observe different shadow effects with a light source by playing and creating a puppet show in the classroom.

HOME SCHOOL/CONNECTION: (STEM At Home)

Parents will be encouraged to observe the shadows of different objects when they go on a walk, point out shadows, compare/contrast in different time of a day, talk about why do we see shadows and how they change their position during a day, draw a picture of the shadow in a different time(morning, noon), do some activity at home with lamp/flashlight with different materials/discuss with open-ended questions.

MATERIALS:

Flashlight/Light source
Opaque objects(animals, shapes, our bodies)
Translucent objects(colored paper, plastic letters, magnet shapes)
Card-stock/craft sticks/markers/crayons
Light table with colorful paddles, shells, leaves, sound and sort stackers to investigate.

PREPARATION:

Before to go outside area to investigate shadows, discuss through open-ended questions about what they know about shadow, how shadows are formed and what they would expect to see. Read the book "My Shadow" asking open-ended questions. Also,provide hands-on activities with light table, explore light source inside the classroom to play a puppet show.

STRATEGIES (Beginning, middle, end):

Beginning: Begin by exploring their own body shadows outside. Let them to see,explore,and compare/contrast their shadows with each other by investigating in different time of the day.
Middle: Provide light table with different objects(opaque, translucent) and let them to explore, discuss their findings with open-ended questions.
End: Play a puppet show by creating a story with different effects of a light source.

OPEN ENDED QUESTIONS

Why do we see shadow?
How does shadow look like?
Why shadow moves with us?
Why shadows do not exist on their own?

ANALYSIS AND REASONING QUESTIONS

Why our shadow looks different during different time of a day?
How we can find out?
What do you think will happen when...?
Why we can't see a shadow in a dark?
Why placing something next to screen will not always produce a shadow?

VOCABULARY (Advanced Language)

Opaque objects	Compare/contrast
Translucent objects	Investigate
Reflection-dark/light	Light table
Flashlight	Puppet show

CONNECTION TO REAL WORLD:

Children will investigate/explore basic light skills, why light can make something dark, how the light changes their environment, able to see their own shadows with the sun during different time of the day and compare/contrast their findings with open-ended questions.

REFERENCES:

Children's books: "My Shadow", "Gregory's Shadow", Armenian book translated from Chinese "On My Way to Buy an Egg","Light, Shadows, Mirrors and Rainbows".
Magazines
Book regarding STEM for Our Youngest Learners Series "Investigating Light and Shadow with Young Children"(2022)

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Glendale Ave
CLASSROOM / HB GROUP: 4
PROJECT TITLE: EXPLORING TRANSPORTATION
TEAM MEMBERS INCLUDING PARENTS: Rima Ter-Galstanyan, Sevan Kalemkerian, Lilian Savarani

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
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☐ **Infant/ Toddler - Cognition**	☑ **Preschool – Mathematics Development and Scientific Reasoning**
☐ Exploration and Discovery ☐ Memory ☐ Reasoning and Problem-Solving ☐ Emergent Mathematical Thinking ☐ Imitation and Symbolic Representation and Play	☑ Counting and Cardinality ☐ Operations and Algebraic Thinking ☐ Measurement ☑ Geometry and Spatial Sense ☑ Scientific Inquiry ☑ Reasoning and Problem-Solving

CONCEPT(S): (Primary ideas that are related to this lesson plan.)

-Children will be able to identify different modes of transportation and the vehicles used for each mode
-Ways to travel
-Children will learn about the differences and similarities of the different vehicles
-To build creatively to connect the mode with the mean
-To increase knowledge about different types of transportation

HOME SCHOOL/CONNECTION: (STEM At Home)

To build different types of transportation with recycled materials and share with class.

MATERIALS:

Books, dry/erase board and markers, different types of blocks, different types of vehicles (cars, trucks, train, airplane and etc.), vehicles brought from home. Head bands with a picture of land, air and water.

PREPARATION:

-Prepare a large paper separated by columns. Label the chart-How we get to school. Draw pictures of different ways children travel to school(car, bus, walking ...)
-Provide a picture of water, air, and land for categorizing their projects.
-Make three head bands for the guessing game(picture of air, water and land).

STRATEGIES (Beginning, middle, end):

-Show and tell about the transportation theme vehicles brought from home. Encourage each child to tell their peers about their project.
-After talking about different modes of travel and reading different books, we will ask the children to categorize and to place their project where it would travel(air, land or water).
-Show the children the chart and ask them how they travel to school. Write down the names of the children in each column. Count the names under each mode of travel.

OPEN ENDED QUESTIONS

What kind of materials did you use to make your vehicle?
Tell me about your project? What did you use to make your project?
What do you know about --- ? What does it remind you of?
How can we organize these?
Describe what you know about?

ANALYSIS AND REASONING QUESTIONS

Why do you think...?
What do you think will happen?
In what ways are these vehicles similar/different?
Is there anything you would change about your project? Why?

VOCABULARY (Advanced Language)

Transportation, means and modes of transportation, excavator, carriage, safety jacket, submarine, categorize

CONNECTION TO REAL WORLD:

Modes of transportation - graphing, What transportation do we use to come to school, Talking about transportation and asking questions such as: Have you been in an airplane, boat, train - - - . What is their favorite transportation mode and why? Based on our knowledge and clues we are going to play a guessing game. Guess what I am and where do I travel? (Pretending to be a car, train, bus, bicycle ...)

REFERENCES:

N/A

Construct

GARDENING

CONSTRUCT CONCEPTS - SCIENCE

EXPLORING PLANTS

Concept: The parts of a plant are roots, stems, leaves, and flowers.

Lesson Description:

Exploration:

1. Gather the children in a designated area for the activity and introduce the concept of plants have different parts such as roots, stems, leaves, and flowers.
2. Show them the materials (pots, soil, seeds, watering cans) and discuss their purpose.
3. Allow the children to explore the materials, feel the soil, and observe the seeds.

Observation:

1. Distribute small pots or containers to each child and instruct them to fill their pots with soil.
2. Guide the children in planting the seeds in the soil according to the package instructions. Encourage them to make labels or markings to identify the type of seed planted.
3. Discuss the importance of water and sunlight for plant growth.
4. Instruct the children to water their pots gently using watering cans or spray bottles.
5. Place the pots in an area where they can receive natural light or direct sunlight.

Construct

GARDENING

CONSTRUCT CONCEPTS - SCIENCE

Hypothesis

1. Engage the children in a group discussion about the conditions necessary for plant growth.
2. Ask open-ended questions to stimulate their critical thinking, such as: "Why do you think plants need soil?" or "What do you think will happen if we don't water the plants?" "What parts of the plant will start growing first?"
3. Encourage the children to share their hypotheses and reasoning with the group.

Analysis

1. Over the course of the next few weeks, encourage the children to observe and care for their plants. Instruct them to water the plants regularly and monitor their growth.
2. Facilitate discussions about their observations, asking questions like: "What changes do you see in your plants?" or "How are your plants different from when you first planted the seeds?"
3. Guide a discussion about their findings, emphasizing the different parts of a plant. Visuals can be used in case some parts did not grow.
4. Reflect on their initial hypotheses and compare them with the actual results. Discuss how their observations align with their hypotheses and the concepts learned about plant growth.

Construct

GARDENING

CONSTRUCT CONCEPTS - SCIENCE

PM Extension:

Seed Exploration: Provide a variety of seeds (e.g., sunflower, bean, pumpkin) and magnifying glasses. Let the children examine the seeds closely, observing their different shapes, sizes, and textures. Discuss how seeds are the starting point of a plant's life cycle.

Scientific Inquiry: SCI 2

Materials: Small pots or containers, potting soil or gardening soil, Seeds (e.g., sunflower, bean, radish), Watering cans or spray bottles, Natural light or a sunny area, Labels or markers, Optional: Gardening gloves, magnifying glasses, and gardening tools (e.g., trowels)

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START CURRICULUM

FAIR ACTIVITY LESSON PLAN

SITE: SETA
CLASSROOM: GRIZZLY HOLLOW
PROJECT TITLE: Wild and Fun Slides With a STEM Challenge!
TEAM MEMBERS INCLUDING PARENTS: Eileana Martinez & Angelica Calderon

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
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CONCEPT(S): (Primai ideas that are related to this lesson plan.)

The concept of this activity is to take a normal experience of playing on a slide and add a stem twist for two different age groups. The use of technology, engineering and scientific discovery took place as children observed slides, tested materials and brainstormed how tc make one.
A second STEM twist occurred where the preschoolers wanted to take this activity further and challenged each other to build a water slide.

HOME SCHOOL/CONNECTION: (STEM At Home)

Parents were given a note describing our STEM activity. They were asked to take their child to a local park and observe the slides. A set of questions were given to help build on their child's interest and knowledge.

MATERIALS: Recycled materials such as cardboard, yarn, boxes, paper, tinfoil and foam. We also used tape, scissors, standard and non-standard measuring tools, and introduced books.

PREPARATION:

We first introduced various books based on slides, and then observed slides in our local community. Once children were familiar with various types of slides and the mechanics on how slides worked, children brainstormed on how to make their own unique slide.

STRATEGIES (Beginning, middle, end):

We began by having the children draw out a plan on how they want to design their slide. Next, materials needed were gathered based on their past learned knowledge of how slides work. Children then began to build a slide.

A second STEM challenge took place with the preschool age children where water was added. **OPEN ENDED QUESTIONS**

What is a slide? How does a slide work? What materials help to make a slide faster or slower? What type of slides have you seen? What would happen if you went down the slide too fast? How could you get to the top of the slide? Which slide is longer/shorter? What is a water slide, and how is it different from a regular slide? What could be used to measure a slide? What materials and tools could be used to build a slide? How could you elevate the

ANALYSIS AND REASONING QUESTIONS

Tell me about your slide? What do you think you could change to make your object go faster? Why did the ___ go faster than the____? What will happen if...? What materials or tools can you use? What is the safest way to go down the slide? What is the difference between the materials you used? (the materials that held water vs. the materials that did **VOCABULARY (Advanced Language)**

Steep, slide, speed, engineer, tools, predict, brainstorm, elevation, escalator, elevator, ladder, design, plan, measuring tape, ruler, tunnel, longer, shorter, safety, waterslide.

CONNECTION TO REAL WORLD:

The children had previously been fascinated with the concept of ramps. Since we live in a ommunity with several parks and unique slides, we decided to build on their interests. Since ramps and slides have a similar concept of how they work, we explored a variety of slides and their mechanics. Children then built on their new learned knowledge of slides.

REFERENCES:

Google: images of several slides
Book: Herbert on the slide (by Rilla Alexander)
Visit local parks with slides.

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START CURRICULUM

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	☑ Reasoning and Problem-Solving

CONCEPT(S): (Primar ideas that are related to this lesson plan.)

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MATERIALS: Recycled materials such as cardboard, yarn, boxes, paper, tinfoil and foam. We also used tape, scissors, standard and non-standard measuring tools, and introduced books.

PREPARATION:

We first introduced various books based on slides, and then observed slides in our local community. Once children were familiar with various types of slides and the mechanics on how slides worked, children brainstormed on how to make their own unique slide.

STRATEGIES (Beginning, middle, end):

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Tell me about your slide? What do you think you could change to make your object go faster? Why did the ___ go faster than the____? What will happen if...? What materials or tools can you use? What is the safest way to go down the slide? What is the difference between the materials you used? (the materials that held water vs. the materials that did **VOCABULARY (Advanced Language)**

Steep, slide, speed, engineer, tools, predict, brainstorm, elevation, escalator, elevator, ladder, design, plan, measuring tape, ruler, tunnel, longer, shorter, safety, waterslide.

CONNECTION TO REAL WORLD:

The children had previously been fascinated with the concept of ramps. Since we live in a ommunity with several parks and unique slides, we decided to build on their interests. Since ramps and slides have a similar concept of how they work, we explored a variety of slides and their mechanics. Children then built on their new learned knowledge of slides.

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Visit local parks with slides.

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Early Head Start Home Base-Glendale Ave.
CLASSROOM / HB GROUP:
PROJECT TITLE: Home Base Muddy Boot Farm
TEAM MEMBERS INCLUDING PARENTS: Alejandra, Janeta, Maro, Lissette, Ellen and Monica

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

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CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Children will have opportunity to observe, investigate, and communicate.
Children will learn the process from planting to harvesting. They will harvest fruits and vegetables for their farmer's market. They will then have the opportunity to sort, weight, compare shapes and colors, and sell their harvest.

HOME SCHOOL/CONNECTION: (STEM At Home)

Home/School connection will be supported by exploring and investigating fruits and vegetables used in their home and using their home language. Parents will take children to farmers market and super market where they will observe and learn names of new fruits and vegetables.

MATERIALS:

Dirt
Scale
Grocery Bags
Real and pretend fruit and vegetables
Cash Register
Shovels
Baskets

PREPARATION:

Set up the environment for children to explore and investigate
Age appropiate shovels
Place baskets

STRATEGIES (Beginning, middle, end):

During home visit home educator and parent will start conversation about how fruits and vegetables grow. During socialization we will provide pretend area with opportinities for children to harvest fruits and vegetables for their farmers market. Books about gardening will also be available for them to read. A cash register and scale will be available for them to weigh and sell/buy their harvest. We will end by making a fruit salad with children and parents.

OPEN ENDED QUESTIONS

How do they grow?
Where do they grow?
What can we do with fruits and vegetables?

ANALYSIS AND REASONING QUESTIONS

What can you tell me about fruits?
What can you tell me about vegetables?
Which one is bigger?
Which one is heavier?

VOCABULARY (Advanced Language)

Soil	Harvest	Roots	Stem	Leaves	Weight	Colors	
Shovel	Scale	Cash Register		Gardening	Dig	Out	
In	Fruit	Vegetable	Watering Can		Size	Explore	
Compare	Dry	Wet	Ripe	Customer	Market	Vine	Basket

CONNECTION TO REAL WORLD:

Fruits and vegetables will be explored both during snack and meal times at home. Parents will talk about fruits and vegetables during visit to super market and farmers market. Children and parents will make fruit salad together.

REFERENCES:

Kid Space Museum
Baby Stem
Lakeshore Learning Materials
Learning games
ELOF
Teaching STEM in the Early Years

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Pacific Clinics Early Head Start - Home Base
CLASSROOM / HB GROUP: HB-3, HB-5
PROJECT TITLE: It Goes Round and Round
TEAM MEMBERS INCLUDING PARENTS: Maro Mirzakhanyan and Ellen Dominguez

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

☑ **Infant/ Toddler - Cognition** ☑ Exploration and Discovery ☑ Memory ☑ Reasoning and Problem-Solving ☑ Emergent Mathematical Thinking ☑ Imitation and Symbolic Representation and Play	☐ **Preschool – Mathematics Development and Scientific Reasoning** ☐ Counting and Cardinality ☐ Operations and Algebraic Thinking ☐ Measurement ☐ Geometry and Spatial Sense ☐ Scientific Inquiry ☐ Reasoning and Problem-Solving

CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Infants and toddlers are very curious about the surroundings around them especially the things that are moving and rolling. Toddlers loves to push the wagon, roll the car, kick the ball, and explore the toys and people around them.

HOME SCHOOL/CONNECTION: (STEM At Home)

Parents are going to continue implement learning games and different activities with the children related to the project. Parents will provide some cars, wagons, toys from home and children will explore. Parents will name the parts of the cars, shapes and the colors. Parents will also help the children to make their own cars using recyclable materials from home. Parents will take children to the library and will check out book about cars "The Wheels On The Bus" and other books about moving things.

MATERIALS:

Age appropriate materials, scissor, tape, glue, paper towel roll, cardboard box, jar lids.

PREPARATION:

Parents will provide some recyclable materials and will assist children to make their own cars. Parents will take the children to the park to ride and explore their own creation.

STRATEGIES (Beginning, middle, end):

Parents will introduce the different kinds of cars and will name the parts of the car, shapes and colors. The parents will lead them through the process of making the cars.

OPEN ENDED QUESTIONS

How does your car work?
How do you think a wheel works?
What other things can your car do?

ANALYSIS AND REASONING QUESTIONS

How does the car starts to move?
What do you think causes the wheel moving?
Why did you choose that car?

VOCABULARY (Advanced Language)

Car, transportation, wheel, seat belt, battery engine, gas, windshield,break, big, small, name of the colors, traffic lights, vehicle, school bus, round and round ...

CONNECTION TO REAL WORLD:

Children will learn the traffic rules when they are in the car with the parents. Children will name the car parts and colors. Learning about cars will help children to develop their problem solving skills and their own safety.

REFERENCES:

Learning games,
Baby STEM
Build a Vehicle Project

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Peoria
CLASSROOM / HB GROUP: 1
PROJECT TITLE: Bubbles Discovery
TEAM MEMBERS INCLUDING PARENTS: Annie Wang and Jessica Lepe Rodriguez

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☐	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

☑ **Infant/ Toddler - Cognition** ☑ Exploration and Discovery ☐ Memory ☑ Reasoning and Problem-Solving ☐ Emergent Mathematical Thinking ☐ Imitation and Symbolic Representation and Play	☐ **Preschool – Mathematics Development and Scientific Reasoning** ☐ Counting and Cardinality ☐ Operations and Algebraic Thinking ☐ Measurement ☑ Geometry and Spatial Sense ☐ Scientific Inquiry ☐ Reasoning and Problem-Solving

CONCEPT(S): (Primary ideas that are related to this lesson plan.)

The children will be introduced to sensory play and explore with bubbles. With the experiment, they well explore what makes the bubbles float/fly, how to make bubbles by scrubbing their hands, explore foam paint and feel the difference between foam paint and bubble/soap solution. The children will also be introduced to geometric shapes and explore color changes.

HOME SCHOOL/CONNECTION: (STEM At Home)

Children are encouraged to make "bubbles" while washing and rubbing their own hands.- Sing bubble-themed songs

MATERIALS:

Soap, water, bubbles with bubble wands, different bubble wants, paper, foam paint, bubble wrap, paint, paint brushes

PREPARATION:

Teacher will take the children outside to observe blowing bubbles techniques, then point at the bubble floating in the air and to observe the color changes. Children will be introduced to various bubbles exploring activities.

STRATEGIES (Beginning, middle, end):

Beginning: Teacher will blow bubbles for children to observe how it floats away and encourage to pop the bubbles. Teacher will also point out the different color changes.
Middle: Teacher will introduce foam paint activities to explore bubbles on paper and explore the texture of foam paint vs regular paint
End: Teacher will introduce bubble wrap painting activity to further explore color changes

OPEN ENDED QUESTIONS

Where are the bubbles going? What colors do you see? How do you think there are so many bubbles? What shapes do you see? What makes the bubbles big or small? Can we make other shapes or colors with bubbles?

ANALYSIS AND REASONING QUESTIONS

Are your hands sticky? How are we going to clean your hands? How do you make bubbles with your hand? Why did the bubbles pop when you pop it?

VOCABULARY (Advanced Language)

bubbles, sticky, round, circle, soap

CONNECTION TO REAL WORLD:

Hand washing is important for health and safety. The activities also encourages children to wash their hands more frequently when it gets dirty to prevent spread of germs and bacteria

REFERENCES:

https://www.cmosc.org/the-science-of-bubbles-for-kids/

https://www.frostscience.org/wp-content/uploads/2020/04/Bubbles-Activity-Toolkit.pdf

https://www.scienceworld.ca/resource/bubbles/#:~:text=Water%20doesn%27t%20make%20stable,stay%20stretched%20around%20the%20bubble.

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Peoria
CLASSROOM / HB GROUP: #2
PROJECT TITLE: Salt Dough Making
TEAM MEMBERS INCLUDING PARENTS: Melania Minasvand, Sara Moallempour, Justin Saucedo

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

☑ **Infant/ Toddler - Cognition** ☑ Exploration and Discovery ☑ Memory ☑ Reasoning and Problem-Solving ☑ Emergent Mathematical Thinking ☑ Imitation and Symbolic Representation and Play	☐ **Preschool – Mathematics Development and Scientific Reasoning** ☐ Counting and Cardinality ☐ Operations and Algebraic Thinking ☐ Measurement ☐ Geometry and Spatial Sense ☐ Scientific Inquiry ☐ Reasoning and Problem-Solving

CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Making Salt Dough explores several stem concepts. Children will learn about measurement while preparing the ingredients. They will also explore cause and effect after adding liquids to the dry ingredients and mixing as they use technology (simple tools: mixing spoon) to create the Salt Dough. Throughout the process children will observe and explore the physical properties of the dough. Once the dough is finished children will add color and mix colors into the dough. finally, children will learn about pressure as they use cookie cutters and sensory balls (tech:simple tools) to create shapes and patterns.

HOME SCHOOL/CONNECTION: (STEM At Home)

At Home children can continue measuring, mixing, and the process of soft and squishy dough becoming hard by making cookies. They will learn about measurements and numbers by seeing the numbers on measuring cups, filling the cups, comparing spoon sizes, and counting ingredients. They will also gain an awareness of time while the cookies bake.

MATERIALS:

- Flour
- Salt
- Water
- Bowl
- Mixing spoon
- Measuring cups
- Sensory spheres
- Shape cutter
- Food coloring (main colors)

PREPARATION:

- Put salt and flour in bowls large enough children can easily scoop from them.
- Provide multiple measuring spoons/cups of the same size.
- Prepare a pitcher of water.
- Provide each child with their own bowl for mixing and mentally prepare for a mess.

STRATEGIES (Beginning, middle, end):

Beginning: Test recipe ahead of time and make adjustments. End the first session after creating the dough. Save each child's dough in separate Ziploc bags.
Middle: Second session: divide each child's dough in half, mix each part with different primary color. Combine both to create a secondary color.
End: Final session: use shape cutters/other tools to play with and manipulate the dough.

OPEN ENDED QUESTIONS

- What does it feel when you touch the ingredients?
- What happens after we add water?
- What happens when we add color to salt dough?

ANALYSIS AND REASONING QUESTIONS

- When you're mixing the ingredients what do you see happening?
- What will happen if we don't put the salt dough in a container when we are done?
- How can we make it more sticky? Less sticky?

VOCABULARY (Advanced Language)

- mix(ing)
- texture
- soft
- sticky
- solid
- liquid
- powder
- flour
- measuring cup/spoon

CONNECTION TO REAL WORLD:

- Concrete (sidewalks, buildings) is made by mixing water and powder.
- Dye is added to paint, clothing, and food to make it colorful.
- Before being cooked some foods (tortillas, flatbreads) are made by mixing water and powder.

REFERENCES:

Pacific Clinics Head Start

PACIFIC CLINICS HEAD START

CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: Nesbitt
CLASSROOM / HB GROUP: 2 &3
PROJECT TITLE: Toddler Express
TEAM MEMBERS INCLUDING PARENTS: Sofia Lopez, Lucy Riquelme, Delia Yepez, Bernice Chan

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☐	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

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CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Shapes used to build trains. Colors used to paint the trains. Use of recycled materials such as tissue boxes. Compare and contrast size of materials used to build train. Child built train at home with parent, children gained interest of trains.

HOME SCHOOL/CONNECTION: (STEM At Home)

Collection of recycled materials from home. Reading books about trains, shapes, and colors.

MATERIALS:

Recycled boxes, paint, glue, straws, bottle caps, recycled foam materials, cut out shapes, and Chop sticks, colored tape, yogurt cups, paper towel rolls, markers, stamps.

PREPARATION:
Collection of materials. Reading books about shapes.

STRATEGIES (Beginning, middle, end):
First reading books about shapes,colors, and trains. Second we will gather the recycled materials along with parents at home. Next build our trains.

OPEN ENDED QUESTIONS
What materials are we using?
Is your box big or small?
How many wheels does it have?
What colors are you going to use?
Can you share?

ANALYSIS AND REASONING QUESTIONS
What can we use to build the train?
What materials can we find around the classroom or our house?
What noises do trains make?

VOCABULARY (Advanced Language)
Build, collect, shapes, color, paint, box, recycle, big, small/little and noise.

CONNECTION TO REAL WORLD:
Recycling of materials. Building. Gross motor and fine motor.

REFERENCES:
My colors, Mis colores. My shapes, Mis figuras. Shapes. Shapes/ Figuras. Freight Train. Bear in a square. My very first book of shapes.

Pacific Clinics Head Start

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CURRICULUM FAIR ACTIVITY LESSON PLAN

SITE: S. Mandel Room #1 and #2
CLASSROOM / HB GROUP:
PROJECT TITLE: Creating and learning with Tubes
TEAM MEMBERS INCLUDING PARENTS: Armenuhi Hovsepyan, Roza Navasardyan, Rita Karami

Roza Navasardyan

GOAL – Child Outcome(s) (Check all that apply)	**Math** ☑	**Science** ☑

Head Start Early Learning Outcomes Framework (ELOF): Sub-Domains
Specify age group. Check sub domains that apply

☑ **Infant/ Toddler - Cognition** ☑ Exploration and Discovery ☑ Memory ☑ Reasoning and Problem-Solving ☑ Emergent Mathematical Thinking ☑ Imitation and Symbolic Representation and Play	☐ **Preschool – Mathematics Development and Scientific Reasoning** ☐ Counting and Cardinality ☐ Operations and Algebraic Thinking ☐ Measurement ☐ Geometry and Spatial Sense ☐ Scientific Inquiry ☐ Reasoning and Problem-Solving

CONCEPT(S): (Primary ideas that are related to this lesson plan.)

Creating and learning with tubes will help children to learn about gravity, weight, stability, balance as they build, play and explore. Children will learn cause and effect, by discovering the properties of an object and how each object affects each other. We are educators can support them in the process and encourage children to follow their natural curiosity,inspire them to investigate, and empower them to become independent learners. This topic is naturally embedded in daily routines and activities. Teachers observe and interact with children as they explore. Tubes will provide endless opportunities for learning about numbers, comparing sizes,and lengths.

HOME SCHOOL/CONNECTION: (STEM At Home)

We request family participation by sending letters and asking family involvement in bringing recycled materials from home, books, paper towel rolls, straws, pictures,cardboard tubes, and anything tube related.

MATERIALS:

The materials we are going to be used in the classroom and outdoors are the outdoor tubes and the recycled tubes from paper towel, toilet paper, ropes used to connect the tubes. Water and light table.

PREPARATION:

Both classrooms present the tubes to the children during indoor and outdoor experiences. The children explore and investigate on their own and problem solve how to connect the tubes. The children compare the length and sizes of the tubes.

STRATEGIES (Beginning, middle, end):

Beginning: Introduce and set up different textures, types, weight, size and color of tubes to explore and create. Send a letter to parents about the project.
Middle: Offer children opportunity to observe, touch and get familiar with different types and textures of tubes.
End: Ask open-ended questions throughout the process.

OPEN ENDED QUESTIONS

Which of these is longer? (Show a straw and a paper towel tube.)
How many short tubes equal or long tubes you see?
What happens when we connect the tubes?
What will happens when we lace them?

ANALYSIS AND REASONING QUESTIONS

Can you add to the pattern? (Create a pattern using short and long tubes.)
Can we make an instrument with this? (Show a tube.)
Can we make a binocular with this when we stick 2 equal tubes together?
What happens when you roll this paper?(compare recycle tube with paper tube)

VOCABULARY (Advanced Language)

Tube, plastic, cardboard, recycle, short, long, equal, thread, binocular, cylinder, geometry.

CONNECTION TO REAL WORLD:

Children will make their own binocular from recycle tubes and they will have opportunity to see real binocular.

REFERENCES:

Teaching Strategies (Study of tubes)
Pete The Cat's Groovy Imagination by James Dean and Kimberly Dean
Fun and Easy Crafting with Recycled Materials by Kimberly McLeod

With Contribution from the Following Head Start Agencies:

Pacific Clinics Head Start

SETA

southwest human development
Creating a Positive Future for Young Children

KidZCommunity
Empowering Families

Child & Family Services
Stanislaus County Office of Education

AZHSA
Arizona Head Start Association