

Tiny Tots! Jr Mad Scientist

Theme #2: Mad science experiments

Day 1: Elephant toothpaste

Time: 1 hour (about 45 minutes for activities)

Group Size: 1-15 toddlers (1 toddler requires 1 parent)

Grade Levels: pre-school/kindergarten (age 2-4)

Location: Sahm/allotted facility

Overview of Activity

This Theme is all about weird, cool and wacky science Experiments relating back to the ocean but also being precise about the scientific method and making the kids think and see outcomes. Using the predict and outcome model that reflects on the more complex hypothesis and research methods work, it creates an easy way for kids to begin thinking in that mindset while still having fun.

Learning Focus

2.1 Demonstrate an increased awareness that objects and materials can change in various ways. Explore and describe in greater detail changes in objects and materials (rearrangement of parts; change in color, shape, texture, form, and temperature).

Introduction

5 min Introduction to the program includes

- Welcoming the Jr naturalists with a **song** and setting the mood for learning!
- Toddler friendly songs
- Announcing the activities! /Whiteboard
- Two activities, with Storytime in between or one large activity with Storytime

Activity #1 Elephant Toothpaste reaction

- 15-minute run time

Materials:

- Sugar
- Yeast
- Hydrogen peroxide 3% max for kids to touch and play

- Food coloring
- Erlenmeyer Flasks
- Dish soap
- Goggles (optional)
- Gloves (optional)
- Food coloring
- Syringes (for food coloring)

This activity focuses on reaction and growth when using different household chemicals. Have the kids feel like scientists and wear gloves and goggles and have them feel like they are scientists. Mix hydrogen peroxide, and soap for the kids and prep the yeast (1 tbs of yeast to 3 tbs of water 1/3 ratio). Have the kids add the food coloring with syringes and the yeast to create an overflowing color of elephant toothpaste (foam reaction). The kids can play with it or just observe and if supplies suffice, they can do it again.

Activity #2 Grow animals

- 10-minute run time

Materials:

- Large beakers
- Grow animals
- Warm water

Using the previous demonstration, whether you do this activity first or second have them place their animals in water and patiently observe the growth in the animal. Have a couple of microscopes out for them to see the difference between Brine shrimp eggs and fully grown brine shrimp. While they pass the time looking at microscopes or free play time, they come back to the animals and see how they have grown and at the end of the class they can take them home to see how big they get.

Extended play!

To finish out the hour, Tiny Tots can engage in extended play time to play more of the activities or play in the playscape or use the provided toys.

Day 2 Baking soda Volcano

Time: 1 hour (about 45 minutes for activities)

Group Size: 1-15 toddlers (1 toddler requires 1 parent)

Grade Levels: pre-school/kindergarten (age 2-4)

Location: Sahm/ allotted facility

Overview of Activity

Day 2 will focus on uncontrolled reaction. They will be making their own baking soda volcanoes talking a little about volcanoes and how the earth's crust is formed but also focusing on prediction and outcome development.

Learning Focus

K–2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs

Introduction

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- Toddler friendly songs
- Announcing the activities! / Whiteboard
- Two activities, with Storytime in between

Activity #1 Volcanoes

15-minute run time

Materials:

- Various containers (beakers, cups, glasses etc.)
- Baking soda
- Vinegar
- Food coloring
- Trays
- Aluminum foil

Instructors will give the kids the option of different containers depending on what they chose depends on how their volcanoes will come out. They start with the baking soda first, add a couple drops of food coloring and then foil their container with a hole at the top. From the whole they drop the vinegar and watch their reaction, if it's underwhelming it might mean they need to change their approach.

Storytime- Anything in Tiny tots' selection

- 10-minute run time

Activity #2 Mentos geyser

- 10-minute run time

Materials:

- Mentos
- Diet coke (warm)
- Paper tube dispenser
- Outdoor area
- goggles

The kids will watch another terrestrial explosion of hot water/ gas and pressure being released in the form of diet coke! Make sure everyone is away from the splash zone, have every kid try one if there are enough supplies, if not have them wear goggles and watch one big demonstration on how the earth releases pressure.

Extended play!

To finish out the hour, tiny tots can engage in extended play time to play more of the activities or play in the playscape or use the provided toys.

Day 3 Hagfish Slime

Time: 1 hour (about 45 minutes for activities)

Group Size: 1-15 toddlers (1 toddler requires one parent)

Grade Levels: pre-school/kindergarten (ages 2-4)

Location: Sahn/ allotted facility

Overview of Activity

Day 3 will focus on Slime from the deep sea. Hagfish and a lot of other kinds of deep-sea animals secrete a much thicker slime and is used in a lot of beauty products and health products. The kids will be making their own version with household objects.

Learning Focus

1.3 Recognize that living things have habitats in different environments suited to their unique needs.

Introduction

5 min Introduction to the program includes

- Welcoming the Jr naturalists with a **song** and setting the mood for learning!
- Toddler friendly songs
- Announcing the activities! / Whiteboard
- Two activities, with Storytime in between

Activity #1 Slime time

- 15-minute run time

Materials:

- Glue (clear or White)
- Multipurpose saline Solution or slime activator
- Baking soda
- Water
- Green food coloring

Instructor Will make a big batch of slime while the kids make their own smaller batch. The ratio is 1/1 glue and water mixed and slowly add the saline solution. If the mixture is too sticky add a little water, if it isn't combining slowly add more saline solution. If it's not thick enough add a little baking soda. Once combined they can take it home to play with and they can add a little

food coloring to make it look like green goo from the deep. The big container is also to give out if the kids want more slime or didn't make a good batch of it.

- **Storytime- Gilbert in the deep**

Activity #2 ghost craft

- 10-minute run time

Materials:

- Colored construction paper
- Glue sticks
- Glue bottles
- Cotton balls
- Black paper cut out for eyes

Because it is close to Halloween the kids can make their own ghost marine animal, some kind of fish, or a jelly or even a whale. They use glue to trace the animal figure and use cotton to make the ghost. The black paper will be cut for eyes, and they can take their marine ghost home!

Extended play!

To finish out the hour, tiny tots can engage in extended play time to play more of the activities or play in the playscape or use the provided toys.

Day 4 Witches Brew

Time: 1 hour (about 45 minutes for activities)

Group Size: 1-15 toddlers (1 toddler requires 1 parent)

Grade Levels: pre-school/kindergarten (2-4)

Location: Sahm/ allotted facility

Overview of Activity

This close to Halloween we make witches brew, so a concoction of different colors and smoke. They make a wish or cast a spell and seal it to take home. Now this science brings up curiosity and lets the kids think about the actual changes they can make and steer towards environmental stewardship. The fun is in the concoction of the potion.

Learning Focus

1.4 Indicate knowledge of the difference between animate and inanimate objects, providing greater detail, and recognize that living things (humans, animals, and plants) undergo biological processes such as growth, illness, healing, and dying.

Introduction

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- Two activities, with Storytime in between

Activity #1 Witches brew

- 10-minute run time

Materials:

- Water
- Food coloring
- Message on paper
- Little bottles/ vials
- Dry ice

They make their mixture and add a little bit of dry ice to make it spooky. They make a wish on their paper (how can they better the ocean/ environment), with parents help and they close it

off and take it home! The idea is to encourage environmental stewardship while lining up for Halloween! This is all in good fun and encouraging creativity.

Storytime- The big pumpkin

Activity #2 pumpkin vines

- 10-minute run time

Materials:

- Colored construction paper
- Orange paint (finger paint the best)
- Green markers
- Cotton balls for spider webs/ghosts

This craft requires a little bit of making a mess. Everyone gets a sheet of Construction paper, on which they will draw green vines going across the page. After the vines are done the kids dip their thumb or fingers or fist in the paint and make pumpkins! After their painting you add a stem to it and add some ghosts or cobwebs with the cotton balls that can be stretched out.

Extended play!

To finish out the hour, tiny tots can engage in extended play time to play more of the activities or play in the playscape or use the provided toys.