STEMTaught Camp – I'm a Scientist

Albert Einstein: Day 4 Grades: TK-3

WELCOME

(5 min)

Introduction: Welcome your students to camp. Be friendly.

Remind students they have the opportunity to earn sand dollars when they complete a task, help another student, help set up or clean up, write in their journal, read a book, etc. Tally the amount of sand dollars that each student earned from helping and record it on the weekly payroll sheet.

STEM READERS THEATER

(30 min)

-Act out story: 15 min

-Discuss story: 5 min

-Activity: 30 min

Materials:

- Print one copy of "Day 4: The Miracle Year"
- Three pairs of scissors
- One roll of tape

READ EINSTEIN: ALWAYS ASK WHY, DAY 4: THE MIRACLE YEAR

Prepare beforehand: Print out one copy of "Day 4: The Miracle Year" from the story. Print one coloring page for each student from the "Student Sheets" section. Gather scissors and tape.

What you'll do:

1. **Set up storytelling props (10 min):** Call up volunteers to help with the readers theater. Ask students to cut out the story props found in the story document. Remember to tape the headband ends together to fit a child's head. Students that are not helping with the story setup can color their coloring pages while they wait.

2. Gather all students and have them sit to listen to the reader's theater. Ask students to leave their coloring pages behind.

3. Assign a volunteer actor to handle each prop for story time.

4. Read the story to your students. Guide your volunteer prop holders in following the acting instructions as you read.

5. Discuss the story with your students following the discussion prompts printed underneath the story text.

STEM TIME

(30 min)

LIGHT EXPERIMENTS

Broken pencil

1. Place a paintbrush or pencil in the test tube of water.
Say: "See how it appears broken or bent at the surface of the water? Water is denser than air, the light rays bend in the water."

Materials:

- Tedros Test Tubes
- Water
- Paper
- Markers
- Pencil

Refraction of Light- Watch Your Picture Reverse!

1. Fill a test tube with water.
2. Draw an arrow pointing right, with a marker on a small piece of paper.
3. Draw a sideways rainbow on a small piece of paper.
4. Pass the arrow behind the test tube of water. Hold it a couple of inches away from the test tube. Look through the test tube. As you move the arrow behind the test tube watch for the arrow to shift direction! If you don't see it change, move the paper closer to, or farther away from the test tube and try again.
5. Now try it with the sideways rainbow. How about writing your name? Say: "This is called refraction. Light slows down as it enters the test tube of water and speeds up as it leaves the test tube, causing the change of direction."

ART TIME

(60 min)

Materials:

- Plates
- Trays and bowls
- Spoons/forks
- Toothpicks
- Plastic knives
- Celery
- Almond butter or cream cheese
- Sliced apples
- Cucumbers
- Oranges
- Pretzels
- Grape tomatoes
- Grapes
- Blueberries
- Cashews
- Clementines

Etc.

ENGINEER FOOD SCULPTURES

Say: "We get to engineer with food today! There are chefs all over the world who are challenged with coming up with creative ways to present food. Today we will have a food challenge to see how creative you can be to come up with your own design of insects, animals, or other food sculptures using the food we have here!"

Instructions

1. Be sure to have an ample amount of food for the students to use. Feel free to use other foods to the ones listed. Having lots of food helps students be as creative as possible.
2. Share the PDF with the kids so they can get some ideas.
3. Teachers prepare the fruits and veggies by cutting the celery into smaller sizes and slicing the apples, cucumbers, and oranges. Place all the food items in bowls and on trays for the students.
4. Remind students to wash their hands before the activity for food safety. They may be given a plate and a utensil to pick the food they want to use for their creations. Young students may have a plastic knife to use for the activity.

Be sure to supervise students and help them with what they need. Here are some ideas. Allow the students to create their own designs!

- Caterpillar: Fill the celery sticks with either cream cheese or almond butter. Add the grapes, tomatoes, or blueberries on top of the celery. Add antennae with small slices of celery.
- Snail: Fill the celery sticks with either cream cheese or almond butter. Add the sliced fruit standing up on top of the celery. Add a cashew for a head. You may use either the cream cheese or peanut butter to stick the eyes onto the cashew.
- Butterfly: Fill celery with filling, add two pretzels for wings. Add antennae with small slices of celery.

MICROSCOPES

(60 min)

Materials:

- Microscopes
- Pencils
- Paper

MICROSCOPE ART

Say: "The tip of a pencil is made up of atoms. Think of the tip of a pencil like a tiny town made of itsy-bitsy blocks called atoms. There are so many atoms packed in there that we can't count them all because they're super tiny! It's like trying to count all the raindrops in a storm. So, even though we can't say exactly how many atoms are on the tip of a pencil, we know there are a bunch of them, like a huge crowd of ants at a picnic! Today we are going to use our pencils and microscopes to create teeny tiny art work!"

1. Place a blank piece of paper under the microscope.
2. Turn on the microscope and adjust the lens and lights as needed.
3. Look through the microscope at your paper, and use your pencils to draw tiny artwork. See how small you can make your drawing.
4. Share your art with your classmates!

STEM LAB

(60 min)

Materials:

- Boxes or Building Blocks
- Butcher paper
- Recyclables
- Tape
- Scissors
- Glue
- Markers

GEOMETRIC CITY

Say: "Einstein loved geometry. Geometry consists of shapes, and shapes are all around us!

Your class mission is to build a town out of either building bricks, or boxes, paper and recyclables. You will have 3 days to do this. Think of different things in a town. There are houses, stores, restaurants, schools, parks and more. Choose what you want to make. You can make more than one thing. You can add details like doors, windows, and signs. Design your buildings however you want! Do you want a swimming pool on the roof? Or a bridge from your house to your friend's house? Create it your way!

When you are finished you will draw your creation on paper and list all the shapes you used.

On the last day, when everyone is finished building we will put the town together and have some fun driving the robots through your town!"