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Science Club

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NEBRASKA HONORS PROGRAM
CLC EXPANDED LEARNING OPPORTUNITY CLUBS
INFORMATION SHEET

Name of Club: Science Club

Age/Grade Level: K-2nd

Number of Attendees: 15

Goal of the Club:

The goal is to introduce basics STEM concepts to kids using direct learning.

Resources:

University of Nebraska-Lincoln Honors Program

Content Areas:

- Arts (Visual, Music, Theater & Performance)
- Literacy
- STEM (Science, Technology, Engineering & Math)
- Social Studies
- Wellness (Physical Education, Health, Nutrition & Character Education)

Outputs or final products:

Our final products will be in the form that the kids get to learn about science and its impact on our everyday world.

Introducing your Club/Activities:

The Science Club introduces basics STEM concepts to kids using direct learning like experimenting. Teaching prominent scientists with their significant impact on STEM

General Directions:

We plan to start every day by making a small icebreaker. After the icebreaker, we plan to introduce the scientist of the day. The scientists of the day will be scientists whose work has impacted STEM in a big way or little way too. After that, we would get started with the experimenting, and once the experiment is done, we will discuss to identify what we learn

Tips/Tricks:

Have a game plan to control the students.

If help is available always take it!

It is easier to split the class into three groups of five and have them go at their own pace

LESSON PLAN WORKSHEET

Lesson Activity

Name: Dancing Raisins

Length of Activity: 45 minutes

Supplies: Clear cups, Sierra Mist Soda, Raisins, and Water

Directions:

- Start with an icebreaker.
 - Talk about the scientist of the day.
 - [Dr. Marie Maynard Daly](#)
 - Experiment
 - Have the student fill a cup of water, put in a couple of raisins, and observe what happens.
 - Discuss
 - Have the student fill a cup of Sierra Mist, put a couple of raisins in it, and observe what happens.
 - Discuss
 - Discuss the differences between the raisins in water and in the soda
-

Conclusion of the activity:

The students learned about Dr. Marie Maynard Daly. The students compared the raisins' interaction with the water and the Sierra Mist.

Parts of activity that worked:

The raisins floated and danced in the soda for a long time and the students were excited to add more raisins to Sierra Mist.

Parts of activity that did not work:

It was difficult getting the kids to finish and clean up.

LESSON PLAN WORKSHEET

Lesson Activity

Name: Don't Sink!

Length of Activity: 45 minutes

Supplies: Aluminum foil, pennies, water, large containers to hold water

Directions:

- Talk about the scientist of the day.
 - [George Washington Carver](#)
 - Experiment
 - Fill the containers with water.
 - Instruct the students to build the strongest boat they can out of a square of aluminum foil.
 - Once finished, have the students put their boats in the water and see whose boat can carry the most pennies without sinking.
-

Conclusion of the activity:

The students learned about George Washington Carver and the things he invented. The students learned that just because something is bigger, it does not necessarily mean that it is stronger. Some smaller boats were able to carry more pennies than the bigger boats.

Parts of activity that worked:

The students used their creativity to build boats in many ways.

Parts of activity that did not work:

Due to our age group, some students needed help building their boats.

LESSON PLAN WORKSHEET

Lesson Activity

Name: Lava Lamps

Length of Activity: 45 minutes

Supplies: Vegetable oil, empty plastic water bottles, food coloring, water, Alka-Seltzer tablets

Directions:

- Talk about the scientist of the day.
 - [Mae Jemison](#)
 - Experiment
 - Fill the water bottles about $\frac{3}{4}$ of the way with vegetable oil and about $\frac{1}{4}$ of the way with water, leaving the neck of the bottle empty.
 - Add 10 drops of food coloring to the bottle.
 - Drop half of an Alka-Seltzer tablet into the bottle and put the lid back on.
-

Conclusion of the activity:

The students learned about Mae Jemison. The students learned about density. The oil was denser than the water, causing it to separate and form a layer beneath the water.

Parts of activity that worked:

The students were extremely excited to see the lava lamp in action and they were in love with the food coloring.

Parts of activity that did not work:

This experiment went well!

LESSON PLAN WORKSHEET

Lesson Activity

Name: Slime

Length of Activity: 45 minutes

Supplies: Borax, tablespoons, measuring cups, glue, large mixing bowls, water, food coloring

Directions:

- Pre-experiment (Do this before the experiment)
 - Mix 1 tablespoon of borax with 1 cup of warm water into a plastic bottle and shake until all the borax is fully dissolved. (One bottle per group)
 - Talk about the scientist of the day.
 - [Katherine Johnson](#)
 - Experiment
 - Pour 2 cups of glue into a large bowl and add water. Use the same amount of water as you did glue.
 - Mix the glue and water.
 - Add a few drops of food coloring to the glue solution and mix it.
 - Add a little bit of the borax solution at a time to the glue and knead the goo until you get the consistency that you want
-

Conclusion of the activity:

The students learned about Katherine Johnson. The students saw how the consistencies of the slime changed with the addition of the borax solution.

Parts of activity that worked:

The students loved the slime, and we distributed it to them.

Parts of activity that did not work:

It was difficult for the students to follow directions because they were excited to make slime.

LESSON PLAN WORKSHEET

Lesson Activity Name: Oobleck

Length of Activity: 45 minutes

Supplies: Cornstarch, food coloring, large mixing bowls, measuring cups,

Directions:

- Talk about the scientist of the day.
 - [Marie Curie](#)
 - Experiment
 - Put 1 cup of cornstarch into a bowl.
 - Add a couple of drops of food coloring to ½ cup of water.
 - Slowly add the water to the cornstarch, mixing the solution while you add the water.
 - Mix until desired consistency is achieved
-

Conclusion of the activity:

The students learned about Marie Curie. The students compared the consistency of the Oobleck to the consistency of the slime

Parts of activity that worked:

The students were excited to feel and see the Oobleck and compared the process of making slime to the process of making Oobleck.

Parts of activity that did not work:

Just like the slime, it was difficult for the students to follow directions because they were excited to make slime.

LESSON PLAN WORKSHEET

Lesson Activity

Name: Capillary Action

Length of Activity: 40 minutes

Supplies: Clear cups, water, food coloring, and white paper towels

Directions:

- Talk about the scientist of the day.
 - [Albert Einstein](#)
 - Watch a video on water polarity.
 - [How polarity makes water behave strangely](#)
 - Experiment
 - Line up 7 cups per group
 - Fill cups 1, 3, 5, and 7 $\frac{3}{4}$ of the way with water.
 - Add 10 drops of food coloring to each of the cups filled with water.
 - Make sure to use a different color for each cup.
 - Take a paper towel and fold it in half widthwise 3 times.
 - Put 1 side of it in one cup and the other side in the next cup.
 - Repeat this with the rest of the cup
-

Conclusion of the activity:

The students learned and expanded their knowledge of Albert Einstein. The colored water moved up the paper towels and into the empty cup next to the filled one. The empty cups filled up with the moving water and the colors from the two paper towels mixed

Parts of activity that worked:

The colored water moved up the paper towels for all the groups. The students were fascinated by how it moved.

Parts of activity that did not work:

The kids were not patient and wanted to speed up the process by touching the capillary system, which mean a mess.

LESSON PLAN WORKSHEET

Lesson Activity Name: Build Your Bridge

Length of Activity: 1 hour

Supplies: Paper, pencils, popsicle sticks, plastic cups, straws, tape, toothpicks

Directions:

- We did not have a scientist of the day.
 - Experiment
 - The students draw a design of the bridge they want to build.
 - Once they are drawn, they build their bridge with the materials provided.
 - Once everyone is done building their bridge, have a competition to see whose bridge is the strongest by seeing which bridge can hold the most dominoes.
-

Conclusion of the activity:

The students made their own. They learned the science of engineering, like civil and construction, through this activity.

Parts of activity that worked:

The student's bridges were highly creative and nicely built.

Parts of activity that did not work:

Most students did not want to compete because they did not want to destroy their bridge.

LESSON PLAN WORKSHEET

Lesson Activity Name: Build Your Own House

Length of Activity: 45 minutes

Supplies: Paper, pencils, popsicle sticks, plastic cups, straws, tape, toothpicks

Directions:

- Talk about the scientist of the day.
 - [Sally Ride](#)
 - The students draw a design of the house they want to build.
 - Once they are drawn, they build their house with the materials provided.
-

Conclusion of the activity:

The students had fun drawing and building their own houses.

Parts of activity that worked:

The students were excited to draw and build. We would help guide the students or help with their ideas when they felt stuck.

Parts of activity that did not work:

Some students got drawn in a short amount of time and did not know how they could draw more.

LESSON PLAN WORKSHEET

Lesson Activity Leakproof Bag

Name:

Length of Activity: 40 Minutes

Supplies: Sharpened pencils, Ziploc bags, water, paper towels, toothpicks, food coloring, large container

Directions:

- Talk about the scientist of the day.
 - [Rachel Carson](#)
 - We did this activity outside.
 - We demonstrated how to experiment first.
 - We fill a Ziplock bag half full of water.
 - Sharpen the pencils (very sharp)
 - Hold the top of the Ziploc bag and carefully push the pencil through the bag and leave it there.
 - This can also be done with toothpicks too.
 - Have the students experiment.
 - Have them get into a single file line.
 - One leader fills the bag with water and another leader adds the food coloring to the water and closes it.
 - The students poke the bags
-

Conclusion of the activity:

The students had fun playing with the bags of water and trying to get a pencil or toothpick in it without it leaking.

Parts of activity that worked:

The students were excited to see if they could stick a pencil in without the bags leaking. Most of the students were able to poke bags on their own. The students liked adding color to their water.

Parts of activity that did not work:

The students got bored very quickly after their bags ran out of water. Some students did not want to poke the bag, they just wanted a bag full of water.
