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Out of this World Club!

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Nebraska Honors Program

CLC Expanded Learning Opportunity Clubs

Information Sheet

Name of Club: Out of this World Club! (led by Katherine Osmundson and Alec Miller)

Age/Grade Level: K-5

Number of Attendees: (ideal number) 10
students

Goal of the Club: (learning objectives/outcomes)

To teach students about life outside of Earth's atmosphere, and the missions and history of the space program.

Resources: (Information for club provided by)

Nasa Kids' Club, we are teachers.com (<https://www.weareteachers.com/space-activities-for-kids/>)

Content Areas: (check all that apply)

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

Outputs or final products: (Does the club have a final product/project to showcase to community?)

Making STEM less scary, having students understand that even ordinary kids can learn about space.

Introducing your Club/Activities:

There will be a sign up for this club advertised toward Brownell Elementary students. At the first club, we will lay out expectations and goals.

General Directions:

Respect one another and give your best effort and attention to the club and task. Ask questions if any come up!

Tips/Tricks:

Give opportunities for students to ask questions, check in on students, ensure a safe and respectful environment to learn about space (and have fun!) The instructor should show that they want to be there and have fun too! Ask the students if they have anything they would like to learn about.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Model Solar system

Length of Activity: 50 Minutes

Supplies: Paper, markers, tape, string

Directions:

Assign each student a planet and describe to them what the surface of the planet looks like, then have them decorate a piece of paper and write the name of the planet on it. Use string to mark to scale how far away each planet would be from each other, and have the students spread out to show that.

This website is a great way to show them the information on the smartboard or projector. NASA gives good pictures and descriptions of the planets for them. You can also use their simulation to see what they look like close up.

<https://spaceplace.nasa.gov/planets/en/>

Conclusion of the activity:

Have students comment on how big the solar system is and ask them questions about how far away the planets are from each other.

Parts of activity that worked:

They loved creating the planets, they got to be creative and show the different planets and their surfaces. The younger kids just loved being able to spend time crafting and working with each other.

Parts of activity that did not work:

Spacing the planets out wasn't possible. We didn't have enough space in the classroom, and it wasn't nice outside, so we adapted and just had them each make a planet and then tell the club about it. It was a great way to encourage their public speaking skills which is always great to encourage!

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Crazy Constellations

Length of Activity: 50 minutes

Supplies: Foam, tacks, string

Directions:

Create a grid out of tacks on the foam, then use the string to “map” out common constellations, while doing this, explain the myths behind constellations and where they are found.

<https://www.dkfindout.com/us/space/constellations/>

This website has some easy constellations for the kids to map out, either put it up on the smartboard or print out the guides. It also offers some great information about the constellations and the stories behind them.

Conclusion of the activity:

Give the students ideas of constellations they can look for in the sky that night, and ask them to report back to you next week.

Parts of activity that worked:

They enjoyed learning that there were more constellations than just the big dipper and the little dipper. It was fun for them to pick out their favorite animals that are constellations and to see what they could see from their homes at night.

Parts of activity that did not work:

I wish I would’ve sent home a printout of the constellations we talked about so that they can see if they could find any in the night sky. It’s unlikely they remembered when they were home and I would’ve liked to have the lesson extend past the time in club.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Rover challenge

Length of Activity: 50 minutes

Supplies: legos

Directions:

Have the students pair off into teams and then give them a handful of legos, they will have a list of requirements for their moon rovers, (must hold two people, must be able to slide). Give them 20 minutes to build a rover.

Conclusion of the activity:

Have each team show their rover to the rest of the club, and see if they meet the requirements, have other students offer suggestions to how they could make their rover better, if there is time, see if they can combine all the rovers to make a super rover.

Parts of activity that worked:

It was a great and simple activity for the kids to do! They loved being able to design within the limits of the requirements, and the stories that they came up with for their rovers was so fun to hear about!

Parts of activity that did not work:

Some students got done way before others did, so finding a way to keep them entertained while others were finishing up was difficult, but I think I'd bring in coloring sheets next time.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Phases of the moon

Length of Activity: 50 minutes

Supplies: Plastic cups, sharpies, construction paper

Directions:

Use a flashlight with cardboard cutouts to show shadow examples of the moon phases.

Draw the phases of the moon on the outside of the cup and then put a disk on the inside cup to create a spinning toy that shows the different phases. While creating them, talk about how the phases of the moon impact the tides.

https://www.ducksters.com/science/phases_of_the_moon.php

Conclusion of the activity:

Learn the phases of the moon song and sing it while using the cups to demonstrate them.

Parts of activity that worked:

They loved learning the song and the different phases!

Parts of activity that did not work:

The activity didn't go very well, it was too confusing for the age that we had for the club. It would've been better to do an activity with coloring sheets or balloons! I would probably just avoid this activity in the future.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Blow a Rocket to Space

Length of Activity: 50 minutes

Supplies: Paper rocket template, markers, straws, pipettes, tape, glue, scissors

Directions:

Color the rocket template however you would like and then cut it out. Cut the end off of the pipette. Attach the pipette to the rocket. Slide straw into pipette. Blow air into the straw to make the rocket launch.

Conclusion of the activity:

Students learned how it takes fuel (in this case: blown air) to launch a rocket, and had fun doing it!

Parts of activity that worked:

They LOVED this one! They were so creative with decorating their rockets and launching them is cool to see! I had one student run out to her mom SO excited to show it off.

Parts of activity that did not work:

We ended up just using construction paper to make the rockets instead of an outline, which was great! Make sure you bring a lot of tape, it used more than expected.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Planet sun catchers

Length of Activity: 50 minutes

Supplies: Old crayons, coffee filters, string, hairdryer

Directions:

Have students design their own planet with crayon shavings melted onto a cut out coffee filter, then punch holes in them and hang them up together, creating a solar system made up of everyone's planets.

Conclusion of the activity:

Hang them up on a window that the students can see their work as a "solar system" together. If you can, leave them up so other students in the school can see their work!

Parts of activity that worked:

They loved shaving the crayons with pencil sharpeners, it was fun for them to destroy something! And mixing all the crayons to make the colors that they wanted on the planets (I've never seen a rainbow planet before now!)

Parts of activity that did not work:

We should've brought an iron instead of a hair dryer, the hair dryer took SO long to melt them. If you use an iron make sure to bring wax or parchment paper!

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Rocket builder

Length of Activity: 50 minutes

Supplies: Random craft supplies, tape, glue, stickers

Directions:

Tell the students that their rocket crashed and they are trapped on an unknown planet with only the resources in front of them. Have students use the craft supplies to build a rocket, pointing out important shapes that rockets need (the aerodynamic principles; i.e. a cone or triangle nose cone).

Conclusion of the activity:

Have students name and display their rockets, then congratulate them on being able to get off the planet.

Parts of activity that worked:

They loved the total creative control. It was so fun to see them figure out what they wanted to do and then to just sit back and watch the fun happen. This activity didn't take much set up and was just fun all around.

Parts of activity that did not work:

Some kids just didn't want to participate, which is difficult because you can't force them too. I was tough because I wanted them all to enjoy it, which is a problem I'm not sure how to solve.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Gravity grabbers

Length of Activity: 50 minutes

Supplies: A bucket of water, tongs, gloves, objects that sink

Directions:

Fill the bucket with water and place objects in the tub (some that sink, some that don't) and have students work to grab them using only the tongs. Explain to students how in space the gravity makes it difficult to hold onto things and that they have to use grabby arms from their spacecraft.

<https://spaceplace.nasa.gov/what-is-gravity/en/> This page has some great information to share with them!

Conclusion of the activity:

Clean up, discuss if the tongs were easier or more difficult than just using your hands. Show videos of astronauts using the grabby arms.

Parts of activity that worked:

The kids were so excited to act like “real astronauts” and to mess around in the water too! They were all surrounding the bin the whole time and everyone wanted a turn!

Parts of activity that did not work:

I think it would've been good to have a supplemental activity because not everyone could go at once at the bin, as it was max two people at a time. So I should've planned a worksheet or a video that would have given the other students something to do while they were waiting.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Design your own planet

Length of Activity: 50 minutes

Supplies: Paper, pencil, markers

Directions:

Come up with your own planet. Describe your planet on paper with words and pictures. Get as creative as you would like. You may include creatures, plants, people, or even just a desolate planet. Share with the club.

Conclusion of the activity:

Students were able to use what they already know about planets in order to come up with their own. They were able to be more comfortable and confident coming up with their own independent, scientific ideas.

Parts of activity that worked:

They were excited to have control and combined aspects from all the planets we had previously talked about, which was really cool to see! They were loud and interacted with the other club kids the whole time. I put music on in the background and we just all had creative freedom.

Parts of activity that did not work:

Some students got done immediately (they didn't put much effort into it) so trying to get them to stay engaged and work hard was a little difficult.

Lesson Plan Worksheet

(copy table as needed)

Lesson Activity Name: Marshmallow Constellations

Length of Activity: 50 minutes

Supplies: Marshmallows, toothpicks, constellation printouts

Directions:

Have students make constellations out of marshmallows and toothpicks, assign each student a different constellation. The toothpicks are the “lines” and the marshmallows are the stars. You could also mix it up and have them try to build rocket ships out of the marshmallows too.

<https://www.dkfindout.com/us/space/constellations/>

This website has constellation outlines

Conclusion of the activity:

At the end, they can eat them! A fun treat to end a great club! Also talk about their favorite parts of the club and give each student a compliment to send them out with a positive interaction.

Parts of activity that worked:

They loved the marshmallows and were so creative in making their own constellations. I even had one kid make a constellation that spelt out his name! He was so excited, and it was so sweet!

Parts of activity that did not work:

They tried to eat the marshmallows right away. And kept taking their masks off to eat them, which wasn't ideal. I think we needed to space them out more and tell them if they eat them then they have to be done with the activity.
