READ The Stars!

July 20 – July 25

Do you ever look at the sky and wonder what is out there? What do you see? The sky, sun, moon, stars and planets. Away from city lights, on a clear night, you might see the beautiful band of the Milky Way, stretching across the sky. Is anything else up there in space? Let's take a closer look.

Research: Read a few books. Ask a few questions. Look at the sky and wonder about its color, where it ends, if it ends.

Explore: Find out how far up you have to go to be in "space." How many things are in space? What is the coolest thing in space? How would you train to be an astronaut? When is the best time to see falling stars?

Activities: Make Moon Pies. Launch rockets! Lots of rockets! Learn about astronauts. Sing songs. Watch amazing videos.

Discovery: What surprises you most about space? Would you like to be an astronaut? Or a scientist to help put a person on Mars?

Experiments

NASA STEM Engagement https://www.nasa.gov/stem

How to Defy Gravity https://www.youtube.com/watch?v=q8Z6gU4drJ0

Gravity is a force that tries to pull two objects toward each other. Anything that has mass also has a gravitational pull. The more massive an object is, the stronger its gravitational pull. Earth's gravity is what keeps you on the ground and what causes objects to fall. Astronauts float around in space because there is zero gravity in space.

Model of the earth. Start with a marble, then layer about five different colors of playdough around it to form Earth. The outside layer could be blue and green to look like Earth. Now for the magical part: cut into the earth and see into the center.

Did you know that Earth is the third planet in our solar system? It is our home.

Rocket Launcher

Make a cone shape using paper and tape. Place the cone on top of a milk jug. Squeeze the milk jug hard and fast to push the air quickly out of the jug. The cone rocket should shoot up into the air. How does the rocket work? When you squeeze the bottle, the air inside is forced out through the top. This sends it shooting up, towards the sky. The harder you push the sides of the bottle, the greater the force of air leaving the bottle and the higher the rocket will go.

How could you make your rocket fly higher?

How could you slow down the flight of your rocket?

What would happen if you used a smaller container? A soda bottle?

How could you set up an investigation to find out what happens if you use a smaller container? What conditions would you need to keep the same?

Challenges to work through

Penny Pick Up. While wearing gloves, pick up as many pennies as you can in 30 seconds and put them in a cup. Tip: Slide the pennies into your glove or into the cup.

Kryptonite Fall-out. Cleanse the area of kryptonite (tinfoil shaped into balls and tossed around the area). Be careful not to touch it. Use tongs to pick up. Warning: this activity could be very dangerous! Just ask Superman.

Games to play

NASA STEM Activities for Families https://www.jpl.nasa.gov/edu/teach/activity/stem-activities-for-families/

The Cat in the Hat: The Great Space Chase https://pbskids.org/catinthehat/games/the-great-space-chase

Be like an astronaut for a day. Wear gloves to do your chores and other activities to see what it might be like for astronauts in space. Put on your space suits (snow suits), and walk around, jump, play and enjoy your day. Float around the room while you eat things like dried fruit, pudding in a bag and a juice box.

Places to go

Royden G. Derrick Planetarium - BYU 801-422-4361

Clark Planetarium https://slco.org/clark-planetarium/clark-planetarium-classroom/

Things to see

Look outside at night and see the stars, moon and planets. Find constellations. Can you see the International Space Station?

ISS schedule to spot the International Space Station https://spotthestation.nasa.gov/sightings/index.cfm

Sky View Lite App - get the app and look for stars, planets and more.

Questions to think about

Space Quiz https://www.sciencekids.co.nz/quizzes/space.html

What is the closest planet to the sun?
What is the name of the 2nd biggest planet in our solar system?
What is the hottest planet in our solar system?
What planet is famous for the big red spot on it?
What planet is famous for the beautiful rings that surround it?
Can humans breathe normally in space as they can on Earth?
Is the sun a star or a planet?
Who was the first person to walk on the moon?
What planet is known as the red planet?
What is the name of the force holding us to Earth?
Check the link to see more questions and get the answers.

Crafts

Make a straw rocket - https://www.jpl.nasa.gov/edu/learn/project/make-a-straw-rocket/

Supplies needed: pencil, paper, 4 ½" x 1 ½", tape, a straw. For younger children use a marker for the pencil and a larger piece of paper, 4 ½" x 2 ½". Loosely wrap the paper around the pencil. Tape edge to make a long tube. Twist the top of the paper around the sharpened end of the pencil to close end of the tube. Add fins if you would like. Pull rocket tube off the pencil and slide onto the straw. Blow into the straw and blast off your rocket.

How to make a DIY rocket ship toy - https://lalymom.com/diy-rocket-ship-toy#_a5y_p=3292867

Hovering on a cushion of air - https://www.jpl.nasa.gov/edu/teach/activity/hovering-on-a-cushion-of-air/

Moon Rocks Recipe:

Combine 2 cups sand, 1 cup flour, 1/2 cup water

Add food coloring, if desired. Shape the mixture around a ball (or whatever you want to put inside) and then let dry. Crack the moon rocks open on the ground.

Baking Soda Rocket

https://www.science-sparks.com/baking-soda-rocket/

Cork that fits tightly inside the bottle neck
Tissue
1 tablespoon baking soda
Vinegar or lemon juice
3 Straws
Tape

INSTRUCTIONS

*Use the tape to attach the 3 straws to the side of the bottle so it stands up, upside down.
*Pour about 1/4 -3/4 cup of vinegar into the bottle.
*Wrap the baking soda up in tissue or paper towel to make a little parcel.
*Choose a launch site outside. It needs to be on a hard surface.
*When you're ready to launch, drop the baking soda parcel into the bottle, quickly add the cork, put the rocket down and stand back!
Warning – make sure you have a clear empty space and keep observers back from the launch site because the rocket shoots up very quickly.

BAKING SODA ROCKET TOP TIPS

The cork needs to be a tight fit, so the gas cannot escape.
To slow down the reaction, wrap the baking soda in a paper towel before adding it to the bottle. This slows down the reaction and gives you time to put the cork in and stand the rocket up.

WHY DOES THIS WORK?

Baking soda and vinegar react to neutralize each other, which releases carbon dioxide.
The carbon dioxide gas builds up inside the plastic bottle. When the pressure of the gas in the bottle is high enough, the cork is forced out of the bottle.
The downward force of the cork being forced out of the bottle creates an upward thrust force, which makes the bottle shoot up into the air. This is an example of Newton's Third Law. For every action there is an equal and opposite reaction.

Warning – Take care when setting this up and wear eye protection because the bottle can shoot up very quickly!

Recipes

Galaxy Popcorn

Ingredients:

1 Bag of Popcorn – popped

1/2 bag of white chocolate morsels

Sprinkles

Spread out the popped popcorn on a cookie sheet. Melt the white chocolate chips in a microwave safe bowl in the microwave at 30 second intervals until melted. Now you have to act quickly. Take a fork or a spoon and drizzle melted chocolate over the popcorn. Quickly top with your favorite sprinkles. Allow to cool. Then break apart and enjoy!

Moon Pies

With an electric mixer, combine: 1 box chocolate cake mix
1 egg
8 Tablespoons butter, melted

Dough may be crumbly. On a sheet of waxed paper, form the dough into a 6-inch log. Wrap dough in waxed paper and chill 1 hour.

Line 3 cookie sheets with parchment paper. Unwrap dough and cut into 24 slices, $\frac{1}{4}$ inch thick. Place on cookie sheets, keeping the cookies as round as possible. Bake 350 degrees, 10-12 minutes. Cool. Make marshmallow filling. Use filling to sandwich two cookies together.

Filling:

With an electric mixer, mix together until smooth: $\frac{1}{2}$ cup butter
1 cup powdered sugar
$\frac{1}{2}$ teaspoon vanilla
1 cup marshmallow crème

Use 1-2 Tablespoons filling to sandwich cookies.

Phases of the Moon https://www.giftofcuriosity.com/montessori-phases-of-the-moon-activities/

Do you like Oreo cookies? Use them to make the phases of the moon. There are a total of eight phases representing the new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, last quarter, and waning crescent.

Especially for preschoolers

- Sort socks (white and not white), washers and bolts, buttons (two holes and four holes).
- Put shaving cream on paper. Draw shapes with your finger. Smooth over. Draw pictures.
- Lay a rope or cord on the floor in a straight line. Have your child walk on it, then tip toe, walk backwards, walk sideways. Change the rope shape and start over.

At the end of the week, send us a picture or a message highlighting your favorite activity. One submission per family per week. Submissions are due by 5:00 PM Saturday, July 25. With your **email** submission, your name will be entered in a drawing for a gift card to a local business. One prize will be awarded each week. Winners will be notified on Mondays.

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TAG us on Facebook and Instagram.
#PGREADallaboutit
#READthestars

Songs to sing

Orbiting Around the Moon

Sung to: "Coming around the Mountain"

We'll be orbiting around the moon, yes we will
We'll be orbiting around the moon, yes we will
We'll be orbiting around the moon X 3
Yes, we will

other verses
We'll be landing on the Moon
We'll be walking on the Moon
We'll be blasting off again
We'll be landing back on Earth

Climb aboard the Spaceship!

Sung to: "itsy bitsy spider"

Climb aboard the spaceship,
We're going to the moon.
Hurry and get ready,
We're going to blast off soon.
Put on your helmets
And buckle up real tight.
Here comes the countdown,
Let's count with all our might.
10-9-8-7-6-5-4-3-2-1---BLAST OFF!!

We're
Flying

Sung to: "The Farmer in the Dell"

We're flying to the moon
We're flying to the moon.
Blast off, away we go
We're flying to the moon.

Other verses:

We're going in a spacecraft
We're walking out in space
We're landing on the moon
We're collecting moon rocks
We're flying back to Earth
We're landing on the Earth

Books to READ:

Astronauts **by Allison Lassieur E Life Jobs**
Night Sky **by Stephanie Warren Drimmer E Science Space**
Planets **by Betsy Rathburn E Science Space**
Stars and Galaxies **by James Buckley Jr. E Science Space**
Armstrong: the adventurous journey of a mouse to the moon by Torben Kuhlmann PIC KUH
Birthday on Mars **by Sara Schonfeld PIC SCH**
Bitty Bot **by Tim McCanna PIC MCC**
Child of the Universe **by Ray Jayawardhana PIC JAY**
The Girl Who Spoke to the Moon **by Land Wilson PIC WIL**
If You Had a Jetpack **by Lisl H. Detlefsen PIC DET**
Moon's First Friends **by Susanna L. Hill PIC HIL**
The Rocket Ship Bed Trip **by Jane N. Quackenbush PIC QUA**
Do You Really Want to Visit Mars**? By Thomas Adamson PIC Science Space**
Do You Really Want to Visit the Moon**? By Thomas Adamson PIC Science Space**
Space Exploration: From Rockets to Space Stations **by Tracey Kelly PIC Science Space**
You Can't Ride a Bicycle to the Moon**! By Harriet Ziefert PIC Science Space**
Stanley In Space by Jeff Brown J FIC BRO
We Dream of Space by Erin Entrada Kelly J FIC KEL
Planet Earth is Blue by Nicloe Panteleakos J FIC PAN
How Long Do Stars Last? **By Emily Hudd J Science Space**
The Know-Nonsense Guide to Space **by Heidi Fiedler J Science Space**
Living on Other Worlds **by Gregory Vogt J Science Space**
Night Sky **by Carole Stott J Science Space**
Space Discoveries **by Tamra Orr J Science Space**
Super Space Encyclopedia **by Clive Gifford J Science Space**
Voyager's Greatest Hits: The Epic Trek to Interstellar Space **by Alexandra Siy J Science Space**

Movies
Gravity **DVD J Science**
Greatest Discoveries with Bill Nye. Astronomy. **DVD J Science**
Popular Mechanics for Kids: Radical Rockets and Other Cool Cruising Machines **DVD J Science**

Websites to Visit:

NASA live https://www.nasa.gov/nasalive

Next Mars Rover...https://www.bbc.com/news/science-environment-51761833
The Perseverance rover has recently arrived at Nasa's Kennedy Space Center in Florida to begin its final preparations for launch. This will take place between 17 July and 5 August 2020. It's a seven-month cruise to the Red Planet. Engineers have targeted a touchdown for shortly after 20:30 GMT on Thursday, 18 February, 2021.

SOLAR SYSTEM - The Dr. Binocs Show | Peekaboo Kidz https://www.youtube.com/watch?v=w36yxLgwUOc

Astronauts! Fun Astronaut Facts for Preschoolers and Toddlers
https://www.youtube.com/watch?v=eT1PtaRA7ZM

How We Are Going to the Moon https://www.youtube.com/watch?v=_T8cn2J13-4

10 AMAZING SPACE ROCKET Launch Videos! https://www.youtube.com/watch?v=k-QdTpIp5m0

Mars in a Minute: How Do Rovers Drive on Mars? https://www.jpl.nasa.gov/edu/learn/video/mars-in-a-minute-how-do-rovers-drive-on-mars/

Mars in a Minute: How Do You Get to Mars?
https://www.jpl.nasa.gov/edu/learn/video/mars-in-a-minute-how-do-you-get-to-mars/

If I Were an Astronaut (story read from space)
https://www.youtube.com/watch?v=9wV8yw7iV8w

There Was a Black Hole that Swallowed the Universe | STEM Story | Space for Kids
https://www.youtube.com/watch?v=_BCCTrD5rao