



MAKE A FRISBEE

Grades 4-8, Day 5

RING TOSS AND MAKE A FRISBEE

STEM READER'S THEATER

(30-40 min)

Materials:

- Print one copy of "Day 5: Family Portrait"
- Three pairs of scissors
- One roll of tape



Read:

Read Day 5 of Voyage through the Galaxy with your students. Talk about the story and let volunteers listen to act out their part.

Prepare beforehand: Print out one copy of "Day 5: Family Portrait" from the story. Gather scissors and tape.

What you'll do:

1. Setup storytelling props (10 min):

Call up volunteers to help with the reader's theater. Ask students to cut out the story props found in the story document.

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

3. Read the story to your students. Guide your volunteer prop holders in following the acting instructions written in red and behind the props as you read.

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



STEM MOVIE + PROJECT

(60 min)

Materials:

- Sticky note pad
- Markers
- Coloring utensils + coloring sheet



MAKE A FLIP BOOK ANIMATION

Show students the Jupiter relaxing music movie while they draw:

<https://www.youtube.com/watch?v=El4YHWapzQk>

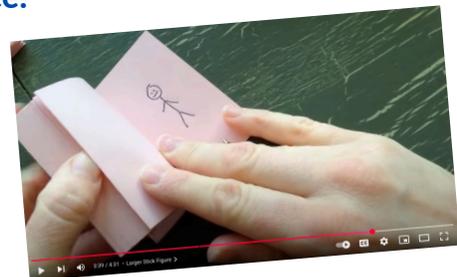
Say: **This movie was made using 66 images Voyager took over 60 Jupiter days. The photos were taken every 10 hours from January to February 1979, every time Jupiter longitude 68W passed under Voyager, and then joined together to create a time-lapse. Today we will make a flip book animation of space!**

Students watch this video:

<https://www.youtube.com/watch?v=Njl-uqnmBGA>

They can make the pale blue dot, Earth, stars, a Christmas tree, Voyagers or anything they like.

Each student can create their own flipbook on a sticky note pad. Flip through the flipbooks and share!



STEM TIME

(30-60 min)

Materials:

- Paper plates (2 per student, already cut out)
- Decorating materials (colored utensils)
- Tape



MAKE A PAPER PLATE FRISBEE

Say: “Frisbees were inspired by pie tins tossed at Yale in the 1950s. Students found that when thrown with the right force, they could glide using lift and spin. Today, you’ll make your own paper plate frisbee!”

Instructions:

1. Students stack two paper plates with the bottoms facing out.
3. Use tape or glue to securely attach the edges of the plates.
4. Students use paint, markers, or stickers to decorate their frisbee!
5. Students go outside to experiment with their frisbee. Measure how far they go and notice how the frisbee glides.

Optional extension:

- Cut the edges off the plates, and tape together to create a different shaped frisbee. For instance, does a square shaped frisbee glide longer and faster?
- Stack multiple plates to create a sturdier, heavier frisbee.
- Building on what students learned about wing design in earlier weeks, encourage them to add a curved edge: Fold the edges of the plate slightly upward or downward to create a more aerodynamic shape. Does this help the frisbee stay in the air longer? *You can also use a target like the ring toss challenge to experiment with aiming the frisbee.

MINI-FLIER PLAY!

(30 min)

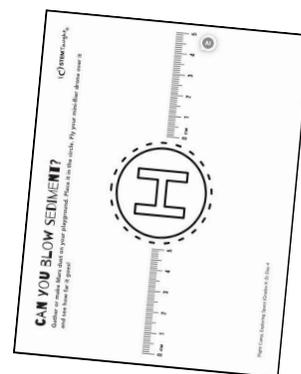
Materials:

- Landing pad handout
- Sand, soil, grass, or pebbles



EXPLORE DRAFTS WITH YOUR MINI-FLIER!

Objective: Students gather “Martian” dust (sand, soil, grass, or tiny pebbles) and place in on the helipad sheet. They hold their mini flyer over the sample and measure how far the sediment blows due to the draft created by the Mini-Flier propellers. Let them experiment with different kinds of “Mars” dust to answer the question, “Do smaller sized sediments blow farther?”



SPORTS / GAMES

(20 - 30 min)

Materials:

- Paper plates (2 per student)
- Scissors
- Cone



PAPER PLATE SATURN RING TOSS

Objective: Each student takes turns throwing their paper plate from the throw line toward the target.

1. Help students fold a plate in half and cut out a circle. Repeat with another fresh plate (2 paper plates per student).
2. Take students outside with one plate. Leave the other one behind. Say: **Just like the Voyager missions aimed their instruments to capture images to send back home, now it's your turn to aim!**
3. Place a cone, hula hoop, or other marker as the target. Mark a line where students will stand.

Scoring:

- If the ring plate lands within the target (e.g., inside the hula hoop), they get 3 points.
 - If it lands close but outside the target, they get 1 point.
 - No points for missing the target area.
4. Each student throws 3-5 times. The STEM Coach will keep track of the scores. The player with the highest score at the end of the game wins.

STEM PICTURE

(10 min)

Materials:

- Chalk



TAKE AN INTERSTELLAR SELFIE

Students use the board to draw elements such as stars and planets and create a wonderful backdrop. Say: **The voyagers are still exploring and continuing their adventure! What do you think they can see beyond the Oort cloud and the heliosphere? Let's all draw a giant backdrop together and take our last day of camp photo. It can be our own family portrait.** Note: As an exciting culmination, it will be wonderful to create a mural together outside. Students can then lay on the asphalt and you can take a picture from above.



STEM GAME

(20 min)

Materials:

- Chair
- Board
- Chalk or marker



PLAY “GUESS THE WORD: ONE WORD CLUE”

Students give one word clues to a student in the “hot seat” to help them guess a word.

Say: **NASA scientists sent short, precise signals to the Voyagers to help them navigate space. In this game, you’ll give one-word clues to help your teammate guess a secret space-related word!**

1. Students are split into 2 teams. They will act as Mission Control.
2. The STEM Coach chooses one student from Team #1 to sit in the hot seat, facing away from the board, acting as the Voyager.
3. The STEM Coach writes a word on the board behind the student.
4. Students from Team #1 Mission Control can give clues to help the student in the hot seat guess the word. **The clues should be one word and not include any part of the word.**
5. Students can give 20 clues. If the guesser figures out the word, the team gets a point.
6. Students switch roles, with the next guesser coming from Team #2. Alternate turns until one team reaches 5 points.

Here are some space and Christmas related words to help you get started: **rocket, launch, scientist, planet, moon, NASA, fuel, orbit, star, stocking, ornament, cookies, Santa, snowball, wreath, eve**

LANGUAGE GAME

(20 min)

EXIT SLIP

(20 min)

Materials:

- Exit slips/Landing notes



DO A WORD SEARCH

Let students puzzle over this December themed word search.



MISSION DEBRIEF

Teacher prep:

Cut out the slips and have extra paper available.

Instructions: Students respond to the prompt on their exit slip before leaving the camp.

Say: **Thank you for being part of this incredible journey of discovery. I hope you always remember the beauty of space and the spirit of those who explore it. Before we finish, take a moment to reflect on something that inspired or made you proud. Share a memory that made Space Camp special. Merry Christmas and Happy New Year! May your boosters be strong, your stars bright, and your heart full of cheer. Merry Christmas and Happy New Year!** 😊

**RING TOSS +
FRISBEE****DRAFT
EXPLORATION****METRIC****3-PS2-1.**

Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

3-5-ETS1-3 Engineering Design

Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

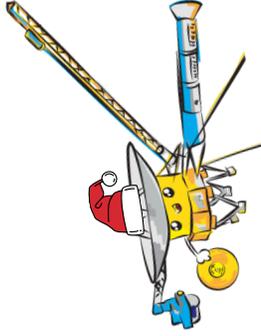
3-5-ETS1-2.

Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

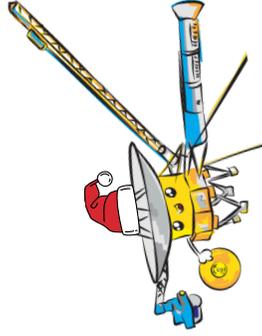
Crosscutting Concept: Cause and Effect

Students notice how drafts affect their mini-flyer's flight.

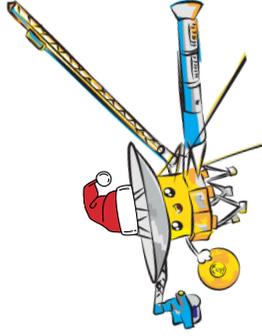




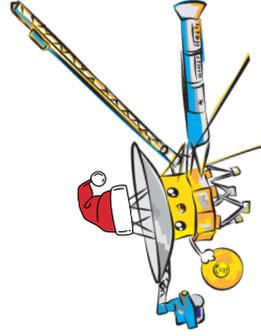
This holiday season, you've voyaged through galaxies, navigated drones like planetary explorers, designed your own airborne objects, crafted beautiful Christmas creations and imagined missions beyond the stars. Which moment made you feel the most curious, brave, or proud—and why? Write on the back and take more paper.



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CAN YOU BLOW SEDIMENT?

IC STEM Taught®

Gather or make Mars dust on your playground. Place it in the circle. Fly your mini-flier drone over it and see how far it goes!

