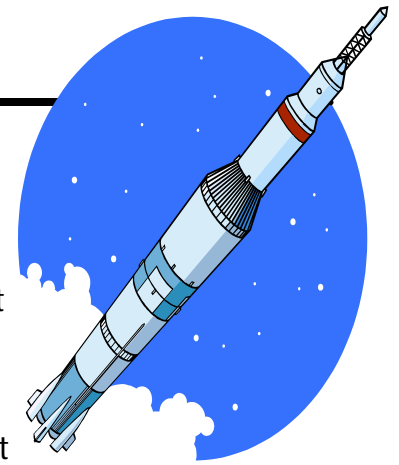


# Saturn V Straw Rocket

## Saturn V Rocket Activity Background Information

As part of our NASA Tram Tour, you have the opportunity to view a Saturn V Rocket at our Rocket Park. This particular rocket was slated to launch Apollo 18, however this mission was cancelled due to cuts in funding. You can view this rocket at Rocket Park when you take the NASA Tram Tour at Space Center Houston.



The Saturn V was developed to carry the Apollo spacecraft into lunar orbit. At 104 tons, the rocket payload was roughly 4 times that of the Space Shuttle. The 3 stage Saturn V is the largest rocket in the world measuring 363 feet long.

NASA has completed 6 manned missions to the moon. The first manned mission to land on the moon landed July 20, 1969. The last manned mission to the moon was launched December 7, 1972. Each of these six missions landed in various locations as indicated on the photograph of the moon.

Prior to these manned mission, NASA sent Surveyor probes to the moon. The Surveyor probes took close-up images of the lunar surface to determine if the terrain was safe for manned missions. In addition, the Soviet Union launched several Luna probes to explore the moon.

## **K-4**

**National Science Standards:** Unifying Concepts and Processes, Science as Inquiry, Physical Science

**National Social Studies Standards:** Time, Continuity, and Change; and Science, Technology, and Society

## **Day 1 Activity Procedure:**

1. Hold up a picture of the Moon (p. 5) and ask the following questions:
  - *What is this a picture of?*
  - *Has any person ever been to the Moon?*
  - *How many manned missions has NASA sent to the moon?*
  - *How do you think the astronauts got to the Moon?*
2. Show the students a picture of the Saturn V Rocket and explain to them that it is the rocket that brought the Apollo astronauts to the Moon.
3. Tell the students that they are going to create their own Saturn V Rocket (hold up a complete straw rocket) and launch it to the Moon (hold up the picture of Moon).
4. Show the students how to launch the rocket.
5. Pass out one rocket template to each student and allow them to begin coloring their rocket.
6. Model for the students how to cut out the rocket and how to tape or glue it together. Remind them not to tape or glue the bottom area of the rocket where the straw is placed.

## **Materials**

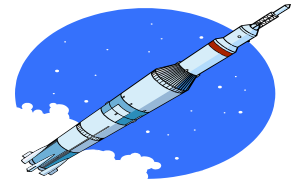
- 1 Straw Rocket template per student
- 1 Plastic Straw per student
- Picture of the Moon
- Picture of the Saturn V Rocket
- Crayons and Markers
- Scotch Tape or Glue sticks

7. Designate an area where the students will take turns launching their rocket to the Moon picture (p. 6) on the floor. Remind students about launching safety and make sure they understand the classroom “rocket launching” rules.
8. Pass out the straws only when it is time to launch. Remind students to wait for permission from ‘Mission Control’ before launching.
9. Students will form a line and try to launch their straw rockets to the Moon picture on the floor. Point out the different Apollo Landing sites.
10. Each student will attempt to land on the moon in the order of the Apollo mission landings. (Apollo 11, 12, 14, 15, 16, 17)

### **Extension:**

Ask students what they notice about the Apollo mission numbers. (Mission 13 is missing.) Ask why they think the number 13 is missing. (Apollo 13 was unable to land on the moon due to an explosion in the fuel cells. They had to return to Earth without landing on the moon.)

Discuss forces and motion in the context of their rocket launches. The force of the air puts their rockets into motion. The floor stops the motion.



## **K-4**

**National Science Standards:** Science as Inquiry

**National Mathematics Standards:** Measurement, Connections

### **Day 2 Activity Procedure:**

1. Tell the students that now they will launch to one specific Apollo landing site on the moon and measure the distance using non standard forms of measurement.
2. They will first predict and record how far their rocket will travel, then launch their rocket. They will measure and record how far their rocket travelled. Then they will compare their prediction to the actual distance travelled.
3. Students will complete step 2 twice.
4. Pass out the Measurement Graph worksheet to each student.
5. Review what a prediction is if necessary, and model a few rocket launches so the students can see how to complete the graph. Tell the students they will predict, launch, and measure two times.
6. Place several Moon pictures on the floor and divide the students among these landing sites. Remind students to make predictions and record these on the graph.
7. Begin the rocket launching and observe the students to ensure they are measuring correctly.
8. Use the worksheets and observations for assessment.

### **Materials**

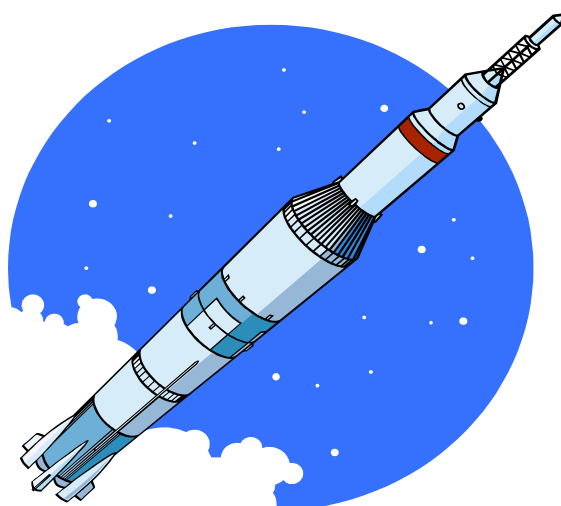
- Completed Straw Rocket
- Several pictures of the Moon with landing sites marked
- Student Measurement Graph per student
- Non Standard forms of Measurement: Linking cubes, Unifix cubes, pencils, etc..

Name\_\_\_\_\_

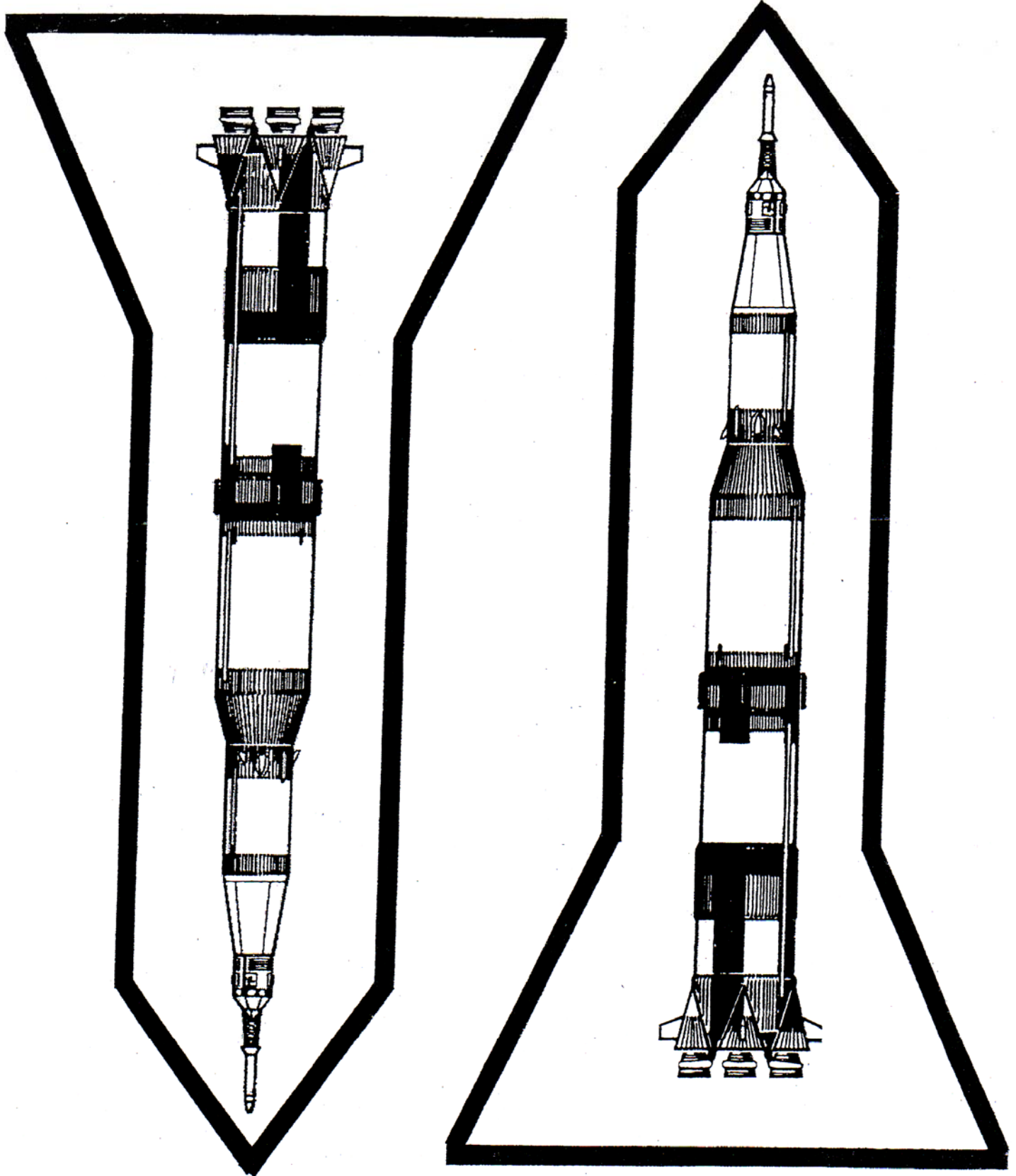
Date\_\_\_\_\_

## Measurement Graph

	Prediction	Distance travelled	Compare Prediction to Actual Distance
Rocket Launch 1			
Rocket Launch 2			



# Saturn V Straw Rocket Template



# The Moon









