

GET TO KNOW JET PROPULSION LABORATORY

AT A GLANCE

Students will learn about JPL and the experts who work there, generate a list of questions for a NASA expert and practice their interview skills and mission roles.

OBJECTIVES

Students will:

- Understand the purpose and function of the Jet Propulsion Laboratory (JPL.)
- Generate appropriate questions for JPL experts.
- Understand videoconference procedures.
- Role play in their mission groups and participate in a videoconference scenario.

SUGGESTED GRADE

LEVELS: 6—8

ILLINOIS STATE LEARNING GOALS

Middle/Junior High

4: A ,B

COMMON CORE STANDARDS

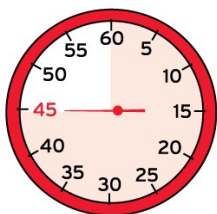
ELA/SS, S and T

Speaking and Listening, 6

Research to Build and Present
Knowledge, 7

PACE YOURSELF

Two 45 to 60 MINUTE PERIODS



MISSION TO MARS



ADVANCE PREPARATION

1. Make a copy of the Jet Propulsion Laboratory Worksheet for each group. Be sure not to copy the answer key which is on the last page. Make enough copies of the PDF and the JPL Experts handout so that each group can have one. A link to the PDF is listed under Digital Resources.
2. Place the handouts in a good location where the groups can collect them.
3. Cut out a cardboard or paperboard frame to represent a TV screen for the videoconference practice.
4. Recruit some volunteer parents or other school staff to represent NASA experts for the practice videoconference.



MATERIALS

Per Group:

PDF and JPL Experts handouts for students to read (one of each per group)

JPL worksheet

Paper/pens

Per Class:

Cardboard or paperboard cutouts to represent video screens

Volunteers to represent NASA experts (optional)

Per Student:

Two index cards



WHAT YOU NEED TO KNOW

It is essential that students have a basic understanding of what people do at JPL and that they understand the basics of how a videoconference works. Since our mission must be completed within the 90-minute timeframe we are scheduled for, it is crucial that students are clear on what will be happening during the mission.



WARM UP

Write the word “videoconference” on the board. Ask students what they think this means. Since the word was used in a previous lesson, students may have a good understanding. Ask students what they think a videoconference looks like. Tell them that you will be practicing a videoconference in class to prepare for their videoconferencing mission and that they will be learning about JPL.

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ACTIVITY

1. Explain to students that they will be working in groups to research the Jet Propulsion Laboratory and some of the experts that work there. Explain that during their *Mission to Mars* they will be videoconferencing with an expert from this center.
2. Place students in their mission groups. Provide each group with a copy of the JPL Worksheet. Review the handout with the students. Encourage students to refer to their *Mission to Mars* Overview handouts from the previous lesson as well.
3. Assign the team names and roles to each group and ask team recorders to write them down on the worksheet.
4. Point out the location in the room where the JPL information pages are located. Display them in separate piles and remind the teams that they will need one from each pile. Ask whose job is it to collect these for the team? (Answer: managers.)
5. Review the student roles from the worksheet briefly and explain to the students that they will have a specific amount of time to complete the worksheet. Announce the time for worksheet completion and have the team Recorders note that time on the worksheet. Tell the students to start working in their groups. Move through the room to answer questions as necessary.
6. Announce when time is up and ask the students to quit working on their papers. Ask the managers to return the JPL information pages to the proper location.
7. Explain to students how the videoconference will work. The videoconference will happen at three separate locations. One class will be at a Challenger Learning Center in Normal or Woodstock. Another class will participate from the Museum of Science and Industry in Chicago. The NASA expert will participate from the Jet Propulsion Laboratory. Each site with a class will have a facilitator who will direct the videoconference. Explain that students will sit in a room and see the other participants on a large TV or projector screen.
8. Review the Behavior Expectations for Videoconferences and discuss as necessary. Use examples to be clear with students that questions should be appropriate and behavior good.
9. Explain that when their group has a question they should hold up a piece of paper in their hand. Ask who will do the speaking for the group (answer: communicator). Explain that the paper is more visible than simply holding up a hand. Explain that students must wait to be called on before asking a question. While in group work, the facilitator will come to them to answer questions. When speaking to someone in another location, the student should stand up when asking a question or presenting information for the group.
10. Tell students they will now practice a videoconference. Station an “expert” behind a video frame if you are using them. If you do not have a volunteer, assign a student to this role.
11. Act as the facilitator and ask if anyone has a question for the expert. Be sure that each team’s communicator asks at least one question. The expert can make up a reasonable answer. Monitor students for proper behavior and questions. Make sure that the student asking the question holds up a piece of paper, waits to be called on and stands up when called on. The student should speak in a loud, clear voice. All other students should listen quietly.
12. Continue practicing until students are comfortable with and understand the behavior rules. In group work students need to talk quietly; during times where we are communicating to different locations, it

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is very important for students to remain quiet remain quiet during the question and the answer from the expert.

13. Have each student write two questions for the NASA expert on an index card. Be sure students place their names on these cards and collect them. Bring these cards the day of the mission to help remind students of their questions. Students may ask new questions during the videoconference but these questions will help them to be prepared if no new questions come to mind.



DIGITAL RESOURCES

Print out one of these for each group:

- JPL facts
http://www.jpl.nasa.gov/news/fact_sheets/jpl.pdf



If you prefer you may complete this lesson in a computer lab. Links for JPL are:

- <http://www.nasa.gov/centers/jpl/home/index.html>
- <http://www.jpl.nasa.gov/>
- <http://www.jpl.nasa.gov/news/factsheets.cfm>