



The Federation of Galaxy Explorers

Grade 3 | Lesson 5

Why Go To Space?

Key Questions

What they will explore today

Why go to space?

How do people and groups work together in space?

Note to Mission Team Leaders

Feel free to modify the presentation below according to the interests of your group of Galaxy Explorers!

Objectives

What students should be able to know/do by the end of this lesson

- Students will understand that there are three major functions in space - commercial, exploration and military - and be able to give examples of each.
- They will also understand that these functions are national and international, and be able to give examples of both.

Vocabulary

Key and/or tricky words used

commercial, exploration, military, satellites, International Space Station

Materials Needed

- *Why Go To Space?* lesson plan
- paper and any supplemental materials you want to add to the activity

Preassessment

What do they already know about this topic? What do they want to know?

Opening question embedded at the start of the Presentation section below. Students' responses to the first question will give you an idea of what they already know.

Presentation

Outline

1. *Why go to space?*
2. *What groups of people go to space?*
3. *How do people and groups work together in space?*

Script

Why go to space?

What are some reasons that you or other people might want to go to space?

Their answers might include the following. Contribute as needed, especially the last 2.

- Space is cool
- Things float in zero-gravity
- You ride a rocket to space
- There are things to explore in space: moons, stars, asteroids
- There are things to learn in space: How old is our planet? How does the sun work?
- There are things to do in space: satellites help us make phone calls and watch TV
- Sometimes people just feel the need to know what's out there. Space is SO big and has so much stuff we don't understand yet. We want to know what's out there.
- We even want to know if we can live there. Just pretend you lived on a small island. If you could see other islands would you want to visit them? See if other people lived there? Maybe even live on another island? Well space is no different. We need to learn what's out there. Students will understand how people, governments and business look at space and how they interact.

In this lesson we will talk about some aspects of space which you probably haven't given much thought to. Specifically we will talk about why we go to space and different groups of people who work in space and how they work together.

So: why go to space? There are lots of reasons, like we just discovered, but they can be grouped into three kinds of reasons: **military** reasons, **exploration** reasons, and business reasons, also known as **commercial** reasons. So let's look at those three groups.

What groups of people go to space?

Business people go to space for **commercial** reasons. There are lots of people who depend on **satellites** to make a living. TV and telephone companies, people who take pictures of the earth to help farmers, people who want to open hotels in space or give rides to space.

For years there have been companies that are working to make space flights something that people can buy. Their hope is that, just like today where people can pay money to go skydiving for fun, some day

people will be able to pay to go on a short flight into space, just for the adventure of it. And a company that could do that would make a lot of money. So there are lots of commercial reasons that people want to go to space.

Explorers and scientists go to space for **exploration** reasons. People want to find out what the moon is made of. People want to look out into space and see things they can't see on Earth. People want to learn about the Earth by looking down at it from space.

Military people go to space. Just like the cavalry in the old wild west, the military is in space with the explorers and businesspersons. They put spy satellites and other military technology in space so they can better protect their own countries.

How do people work together in space?

People cooperate in space in all kinds of ways. Two common examples:

- Businesses build rockets and satellites for explorers.
- Military people let other people use their launch pads

Does anyone know what international means? International means “involving two or more nations.” Countries cooperate too! 16 different countries are helping build and run the International Space Station.

What group of people in the USA work on the Space Station? (NASA)

Are they explorers, military or businessmen? (Explorers and scientists)

Does NASA also work with businessmen and military? Yes! Many of the astronauts are military people. And over 100,000 people working in over 500 businesses help run the International Space Station.

In conclusion, as Mission Team Members we need to remember what we learned today. We need to remember there are lots of reasons that we go to space. Right now, many different groups of people and different countries go to space. Lots of times people can work together to do the things they want to do in space.

Activities

Create space news headlines and accompanying images with captions.

Today's activity is about space news. Each group must come up with one headline for a newspaper for each of the following subjects. After a headline, we are going to draw pictures and write a few words for an article. We will put our work together to make our newspaper. You could say that this is going to be our first space newspaper –The Solar System Times. The articles should talk about the following areas.

- Commercial
- Military
- Exploration

- International Cooperation

We're going to break up into groups of three or four and come up with headlines. Then we'll draw some pictures to illustrate the headlines. Finally, we'll write captions to describe the pictures. At the end we'll share what we came up with the rest of the mission team members. Be creative, and when you write your headlines make sure it's about something that you would be interested in. Here are some examples:

- First pizza shop opens on the moon
- Galaxy Explorer Smith discovers aliens on Jupiter
- Canada and Brazil build fastest rocket ever
- China launches 20 new spy satellites

Recap

A chance to summarize and check for understanding

So, to come back to our essential questions:

What are some ways that people and groups work together to go to space?

And why go to space in the first place? What are the three main kinds of reasons?

As students answer, ask them to provide examples of what that might look like,.

Be thinking about the reasons that *you* are most interested in space - perhaps your interest could lead to a space-related career in that area!

Extensions

Optional homework or next steps

Create a Solar System Times newsletter or newspaper

Put together a newsletter or newspaper that describes the space program and why we should go to space. Mission Team members write articles and illustrations.

Meet to collaborate and write a "space newspaper" for sponsoring organization or school. Set up a basic web site. You can use a free web site or FOGE will provide a page. You can also write an article for FOGE magazine.

Standards

Correlations to educational standards

NGSS Connections:

K-LS1-1 Use

Maryland's STEM Standards of Practice:

5. E

Standards for Mathematical Practice:

3. C

Science and Engineering Practices:

practice 6: C

Resources*For building background or for further exploration*

- **Kid Zone 3: International Space Station** - This interactive NASA webpage teaches elementary-age students all about the ISS.
<http://solc.gsfc.nasa.gov/modules/kidszone3/mainMenu.php>
- **Virgin Galactic** - This company is one of the leaders in commercial space flight.
<http://virgingalactic.com/>
- **What is a satellite?** and **Orbits'R'Us** - These two NASA webpages give good basic information about how satellites work and what they do, including animations.
<http://www.nasa.gov/audience/forstudents/k-4/stories/what-is-a-satellite-k4.html>
<http://spaceplace.nasa.gov/geo-orbits/en/>