

## Speaking Notes

### Careers in Space Exploration

#### **Slide 1: Careers in Space Exploration**

- Who's ready to launch into space today? Great! Today you are an explorer of the future! And we are going to talk about future careers, exploration, and a lot of great stuff that involves space, technology and innovation.

#### **Slide 2: Sustainable Development Goals**

- Another important consideration for this project is the 17 Sustainable Development Goals (SDGs). These are international goals aimed at improving the quality of life, preserving the environment, and promoting sustainable development for 2030 proposed by the United Nations in 2015.
- This project will connect to several the Sustainable Development Goals:
- SDG 9: Industry, Innovation, and Infrastructure
  - o Goal 9 is all about building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation.
- SDG 12: Responsible Consumption and Production
  - o Goal 12 is ensuring sustainable consumption and production patterns.
- SDG 13: Climate Action
  - o Goal 13 is about taking urgent action to combat climate change and its impact.
- SDG 15: Life on Land
  - o Goal 15 is about protecting, restoring, and promoting sustainable use of terrestrial ecosystems, sustainably manage forests. It is also concerned with combating desertification, halting and reversing land degradation, and halting biodiversity loss.
- SDG 17: Partnerships for the Goals
  - o Goal 17 is strengthening the means of implementation and revitalizing the Global Partnership for Sustainable Development.
- So, are we ready to dive in, spacesuits and all? Let's go!

### **Slide 3: Project Objective**

- Let's begin with the details of the project we'll be working on.
- Today we'll explore career opportunities in the field of space exploration and mining.
- There are many existing and future opportunities in this sector. And we'll get into some of them today.

### **Slide 4: Learning Outcomes**

- For our space session today, we will be focusing on 5 learning outcomes.
- These 5 learning outcomes are: Gain awareness of career opportunities, develop research skills, foster creativity and imagination, engage in critical thinking, and promote awareness of global issues.
- After this presentation, you'll have a better understanding and awareness of career opportunities in space and mining. Throughout each activity you will develop your research skills, use your imagination, show your critical thinking, and spread awareness of ongoing global issues.

### **Slide 5: Materials Needed**

- Today we will be using a few materials for our project.
- First, we will be using different research materials like books, website articles, and other references.
- You can use art supplies and video recording equipment to enhance the creation of your project, if you like, but it's totally optional.

### **Slide 6: Project Outline**

- Next, let's go over the project outline. It has three main parts: a Class Discussion, Career Research, and a Career Showcase. In Part 1, we'll discuss space exploration and mining where we all have a chance to share our thoughts. In Part 2, you'll dive into researching the various types of careers. And in Part 3, you'll showcase what you've learned to the class, more details about these careers, and more!
- Feel free to ask questions as we go along.

### **Slide 7: Let's Get Started! (Part 1: Discussion)**

- Let's get started with Part 1: Our Class Discussion.
- Remember, we would love to hear from everyone if you're comfortable sharing.

### **Slide 8: What is Space Exploration? (Discussion Question)**

- To kick things off, what does space exploration mean to you?
- PAUSE – ASK STUDENTS TO ANSWER
- Let's think about how space exploration has changed over the years?
- PAUSE – ASK STUDENTS TO ANSWER
- If you were to go to space, what would you like to explore and learn about?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 9: Why is Space Exploration Important? (Discussion Question)**

- Now, let's dive into why space exploration is crucial. Think about scientific discoveries, advancements in technology, and how countries across the globe can work together in space. Can anyone think of an example?
- PAUSE – ASK STUDENTS TO ANSWER
- Why would it be important to work collaboratively?
- PAUSE – ASK STUDENTS TO ANSWER
- When we think about going into outer space, what makes us excited?

### **Slide 10: Traditional and Emerging Roles (Discussion Question)**

- Great job ! You all gave some very interesting answers! Let's move onto careers in the space sector, can you name some traditional roles in space exploration?
- PAUSE – ASK STUDENTS TO ANSWER
- Who knows what an astronaut does? What about a space engineer? We have seen astronauts, space engineers on the International Space Station, lunar missions and many more. What do they do?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 11: Collaboration in Space Exploration (Discussion Question)**

- Wow! I love the enthusiasm!
- We know space exploration requires a lot of teamwork. How do different areas of expertise, like science, engineering, and even law, collaborate to advance space exploration efforts? For example, in space exploration, scientists analyze data and design research objectives, while engineers develop the necessary technology and infrastructure for these missions to take place and be successful. Now, let's all think of other ways all these fields work together.
- Let's think about the steps that should be taken to ensure each element of a mission is performed correctly. This includes consulting with different

agencies, personnel, and resources involved to make innovative solutions and discoveries.

- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 12: Create a Job in Space Exploration (Discussion Question)**

- Amazing work everyone! The ideas we are joining together are fantastic! Imagine you could create a brand-new job related to space exploration.
- What would it be? Think creatively and share your ideas.
- We can also think about roles related to analytics, artificial intelligence and machine learning as we consider these unique careers!
- PAUSE – ASK STUDENTS TO ANSWER
- What impact would your new job have?

### **Slide 13: Part 2: Research**

- These are some great career ideas! I think we're ready to move onto Part 2.
- The Research.

### **Slide 14: Research Options**

- For your research, you have two options: become an expert on an existing career, or design your own unique career in space exploration. Think critically and creatively as you decide. Looking forward to seeing what everyone picks! If you
- choose to become an expert on an existing career, think about professionals in the field of your choice and how they have made an impact. If you chose the second,
- let's think about discoveries you would like to make in space. How do your skills and interests connect to space exploration and mining? How can you make your best impact?

### **Slide 15: Career List**

- Here's a list of possible careers you can choose from: Astronaut, Scientist, Engineer, Technician, Astrophysicist, and many more.
- You can pick from this list or come up with your own idea. Let's discuss some of the responsibilities these roles might have.
- PAUSE – ASK STUDENTS TO ANSWER
- When we take a closer look at these careers, they cover many sectors of space exploration and mining. We see careers in STEM, law, arts and many more fields of interest. There are many ways to take part and contribute!

### **Slide 16: Research Task 1**

- For your first research task, investigate the day-to-day tasks and responsibilities of professionals in your chosen career. What do they do on a daily basis?
- For example, let's look at an astronaut's responsibilities. Astronauts work to conduct scientific experiments, research, install equipment, and maintain satellites. This is important in order to see how these individuals approach their goals and vision.
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 17: Research Task 2**

- Next, look at how these professionals contribute to space exploration and mining efforts. What roles do they play in advancing these fields?
- Here, let's think about some of the skills and methods used when contributing.
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 18: Research Task 3**

- For your third research question, explore how your chosen career involves collaboration with other professionals in different fields. How do they work together?
- PAUSE – ASK STUDENTS TO ANSWER
- This is an interesting question. When we saw various careers titles earlier, we saw positions from different backgrounds.
- How can these different career choices contribute to the other professional's goals?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 19: Research Task 4**

- Great work so far everyone!
- Let's consider how this career addresses sustainability and environmental concerns in space exploration and mining.
- What steps are taken to ensure these activities are sustainable?
- PAUSE – ASK STUDENTS TO ANSWER
- Can we think about examples of space missions or projects that have successfully implemented sustainable practices?
- PAUSE – ASK STUDENTS TO ANSWER
- These sustainable practices can be reusable materials in space, energy-conserving machines, low-emission technology, and more.

### **Slide 20: Research Task 5**

- Finally, provide examples of successful projects or missions led by professionals in this career.
- What are some notable achievements?
- PAUSE – ASK STUDENTS TO ANSWER
- How have these projects helped in this field and better our vision on space exploration and mining?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 21: Part 3: Career Showcase**

- Let's move onto Part 3. In Part 3, you will present your findings in a Career Showcase. Highlight the significance of your chosen career in space exploration and mining.
- Get ready to impress your classmates with everything you have learned! This is your time to shine!

### **Slide 22: Showcase Introduction**

- Start your showcase by introducing your chosen career and explaining why it's important in the field of space exploration and mining. You will want to show some research on its importance, studies, and how it can improve on current times.
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 23: Showcase Responsibilities**

- Next, highlight the responsibilities of your career.
- How do professionals in this role contribute to space exploration and mining missions?
- PAUSE – ASK STUDENTS TO ANSWER
- With the role you have chosen, how does one attain these skills?
- PAUSE – ASK STUDENTS TO ANSWER
- Why are these roles and responsibilities important?
- PAUSE – ASK STUDENTS TO ANSWER
- These are great questions to think about as you present.
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 24: Showcase Skills**

- Let's talk about the skills aspect of your showcase. Discuss the necessary skills for your career.

- What are the most important skills, and why are they crucial for success in this field?
- PAUSE – ASK STUDENTS TO ANSWER
- With the role you have chosen, how does one attain these skills?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 25: Showcase Projects**

- Let's jump into some applications of these roles. Provide examples of projects or missions that involve your career. What significant contributions have professionals in this role made?
- PAUSE – ASK STUDENTS TO ANSWER
- How did these projects improve on current issues/challenges?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 26: Showcase Impact**

- Great work! Now you all must explain the impact of your career on society, technology, and the future of space exploration.
- How does this role help shape the future?
- PAUSE – ASK STUDENTS TO ANSWER
- Do you believe that there will be a large demand for this career?
- PAUSE – ASK STUDENTS TO ANSWER

### **Slide 27: Showcase Sustainability**

- Finally, discuss how your career contributes to sustainable practices in space exploration and mining.
- What efforts are made to ensure that these practices are environmentally friendly?
- Here is an opportunity to connect to the United Nations Sustainable Development goals to specifically address this section.
- PAUSE – ASK STUDENTS TO ANSWER