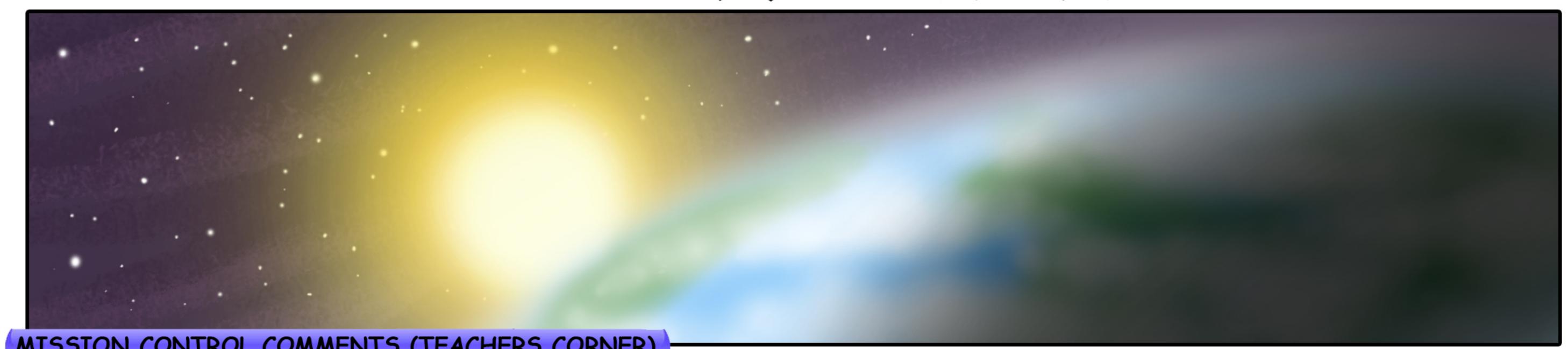
Life Sciences: Habitats and Communities

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Welcome Stellar Teacher! Let's Grow Some Astronauts.

EARTH: WHERE WE LIVE



MISSION CONTROL COMMENTS (TEACHERS CORNER)



CURRICULUM OUTCOMES

Habitats and Communities Students will gain an understanding of what humans need to survive.

Students will explore the meaning of habitat and community.

Extreme Environments Students will understand the challenges faced when exploring an extreme environment.

Students will research technologies used to explore extreme environments.

Students will describe Canadian contributions to extreme technologies.



TIME FLOW

(A) Where You Live minimum 1 x 45 minute lesson

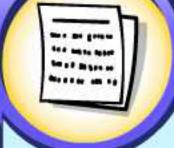
B Extreme Environments minimum 2 x 45 minute lessons (could be longer depending on

the type of research)

The Big Bang - Making Connections 60 minutes (may vary depending on how students present their

information and if they choose to play Jeopardy with the

information they have gathered about each extreme environment)



EXTRA RESOURCES

StarAcers.com has links for your mission!

A scientific report outline in the Common Documents

Student and teacher rubrics

SUGGESTED RESOURCES

- Have book and internet resources available for student use
- Guest speakers who have travelled to an extreme environment
- Resources on habitats and communities

Life Sciences: Habitats and Communities

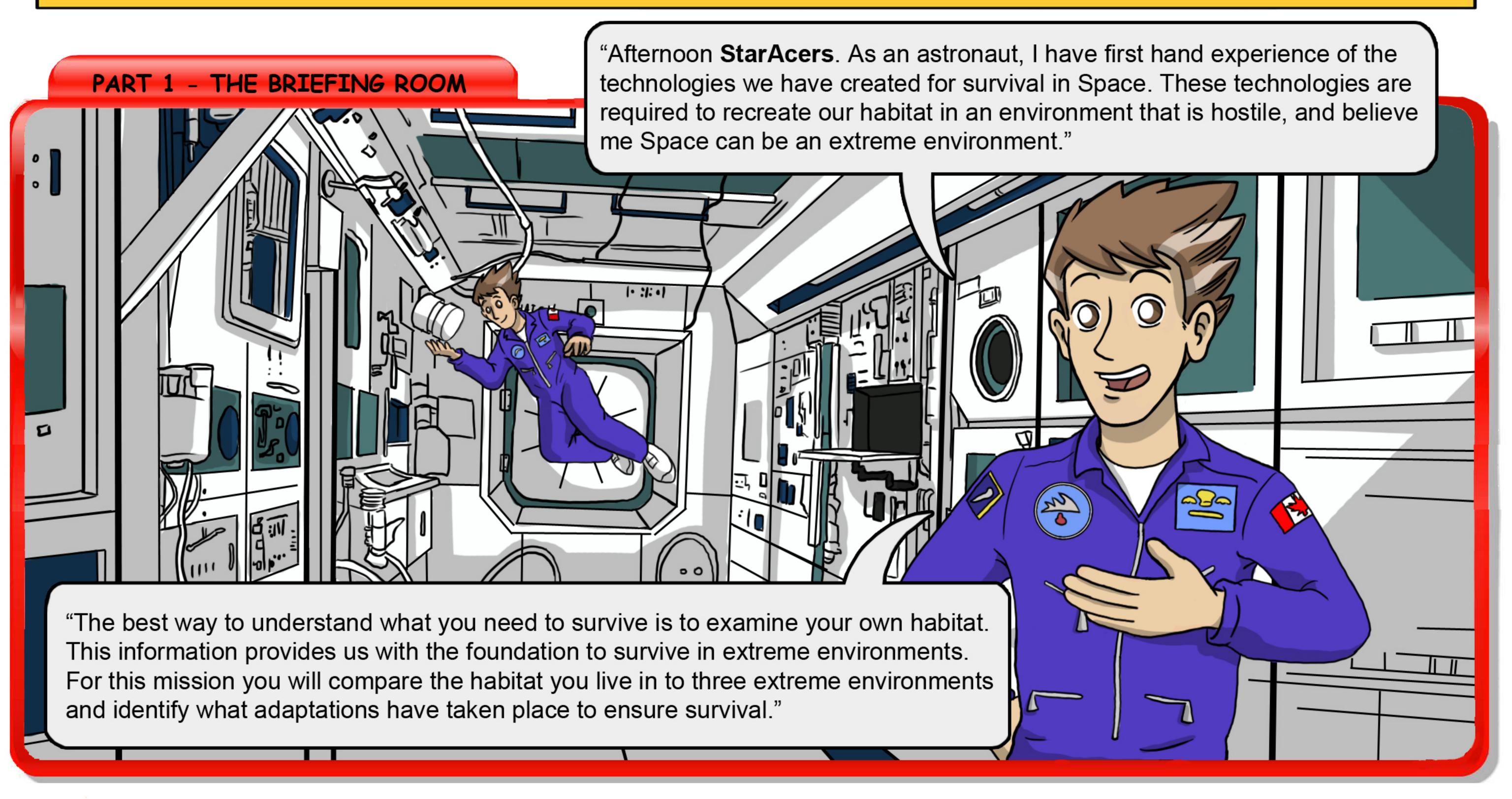
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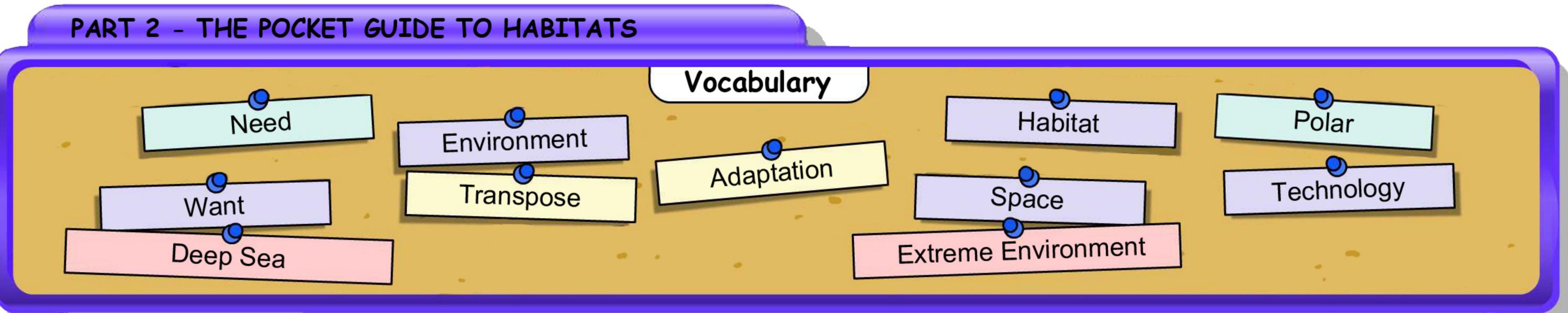


EARTH: WHERE WE LIVE



Our home and communities are our habitat. Our habitats consist of the environment and the things it provides to let us survive. Over millions of years we have adapted to survive in our environment. In the past century we have rapidly created technologies that allow us to recreate our habitat in extreme environments.



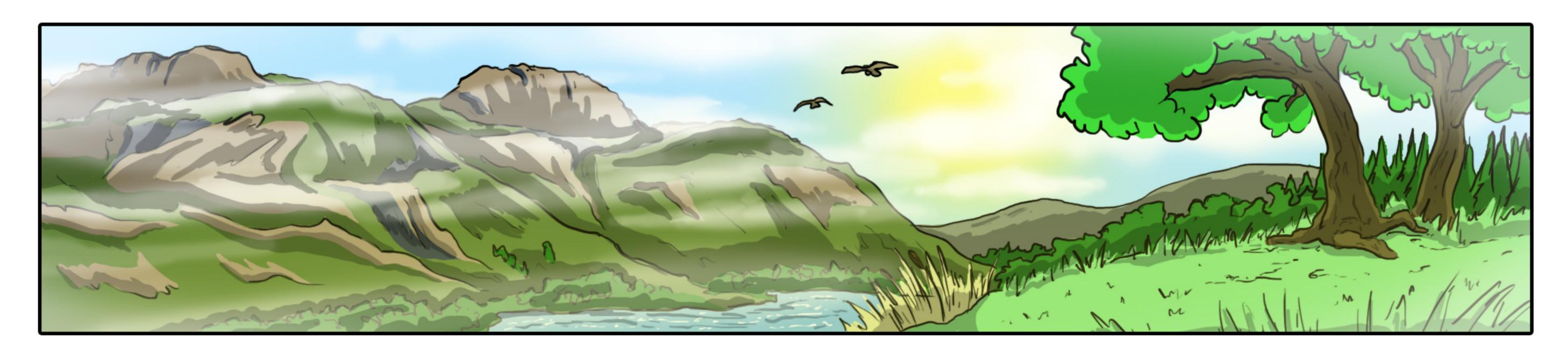


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EARTH: WHERE WE LIVE



A. PART 3- WHERE YOU LIVE

Your mission will be to create a detailed list of the characteristics of, and the ways in which we survive, in our local habitat. Be sure to explain and separate between needs and wants.

B. PART 4 - EXTREME ENVIRONMENTS

You will need to identify the characteristics of the following extreme environments: a polar region (Arctic or Antarctic), deep sea, and space. Present the similarities and differences these environments have to your own habitat. You can do this in which every way you would like. Possibilities may include Venn diagrams, charts, or drawings.

RECORD YOUR OBSERVATIONS	

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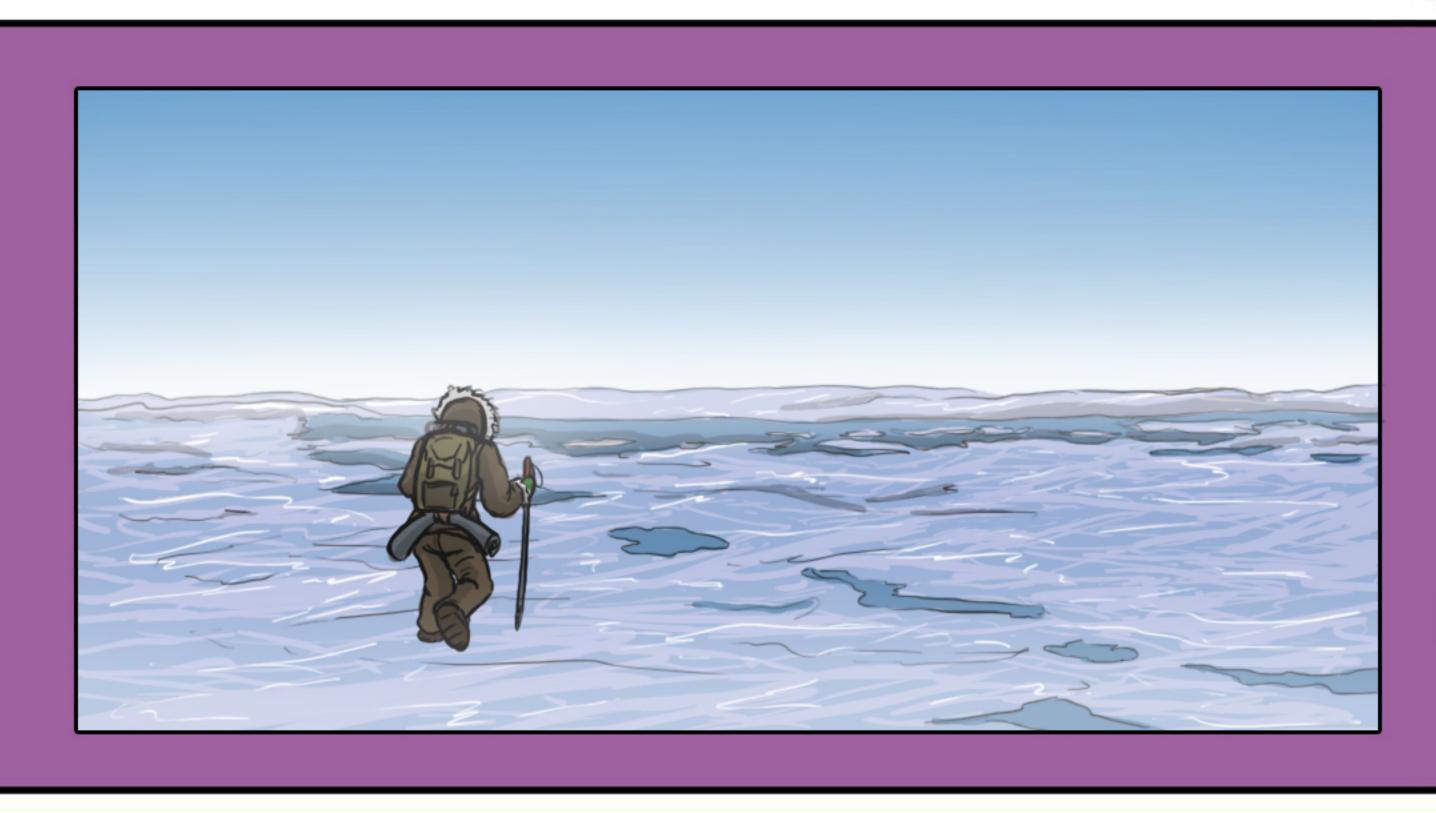
EARTH: WHERE WE LIVE



THE BIG BANG - MAKING CONNECTIONS

What adaptations have we made to transpose our habitat into these extreme environments to allow for human surivival? This is where you get to explore some of the cool technologies humans have created to spend time in largely uninhabitable environments. Have these technologies been brought back to your own habitat for mass use?

You will be presenting the information you have researched in the form of an Extreme Environment "Jeopardy Game". You will to turn the information researched into at least 10 questions and answers to give to your teacher.









DO YOU MEASURE UP?

Get a rubric from Mission Control. How do you measure up based on the work that you have just completed in Mission 006?

WANT MORE ADVENTURE?

Want a challenge? Try answering these questions:

- Construct your own space habitat!
- Name your habitat (perhaps it has an acronym)

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SIMILARITIES	
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DIFFERENCES	

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EARTH: WHERE WE LIVE

Create a detailed list of the characteristics of, and the ways in which we survive, in our local habitat. Be sure to explain and separate betweens the wants and the needs.

Life Sciences: Habitats and Communities

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EARTH: WHERE WE LIVE - MAKE A SPACE HABITAT!

Explore and Explain: Class activity

Student Task (1 hour)

Separate the class into groups of 4 people. Ask each group to design their own lunar habitat given the following guidelines:

- 1. Mission Purpose: What is the purpose of your habitat (short term or long term, research, health, family, science, farming, etc....)?
- 2. What is the name of your lunar home? Perhaps it has an acronym like ISS (International Space Station).
- 3. Lunar Home Design: What does it look like? Who is designing it and building it? Why? Will you use materials from the moon or bring materials (Think of the space and weight constraint in getting to the moon in your rocket). Are the materials different from the ones used to build houses on Earth?
- 4. What is your crew size? Where does your crew come from? Who is the crew and what is their role for the mission?
- 5. Life on the Moon: What will your lunar crew members do for entertainment? What are their sleeping facilities like?
- 6. Science: What do you think is the most important research to be done in this lunar home?
- 7. Emergency Situations: What would be the worst to have in your lunar home (malfunctions, emergencies, fire...)? What kind of emergency would cause you and your lunar crew mates to leave your home? What could you do to your lunar home to help you in these situations?
- 8. Where will your habitat be located in a crater out of sunlight or on the surface of the moon?

Have student groups present their habitats to the class. Explain the purpose of each of the rooms and why they designed it like this. (10 minutes per group)





Next Steps

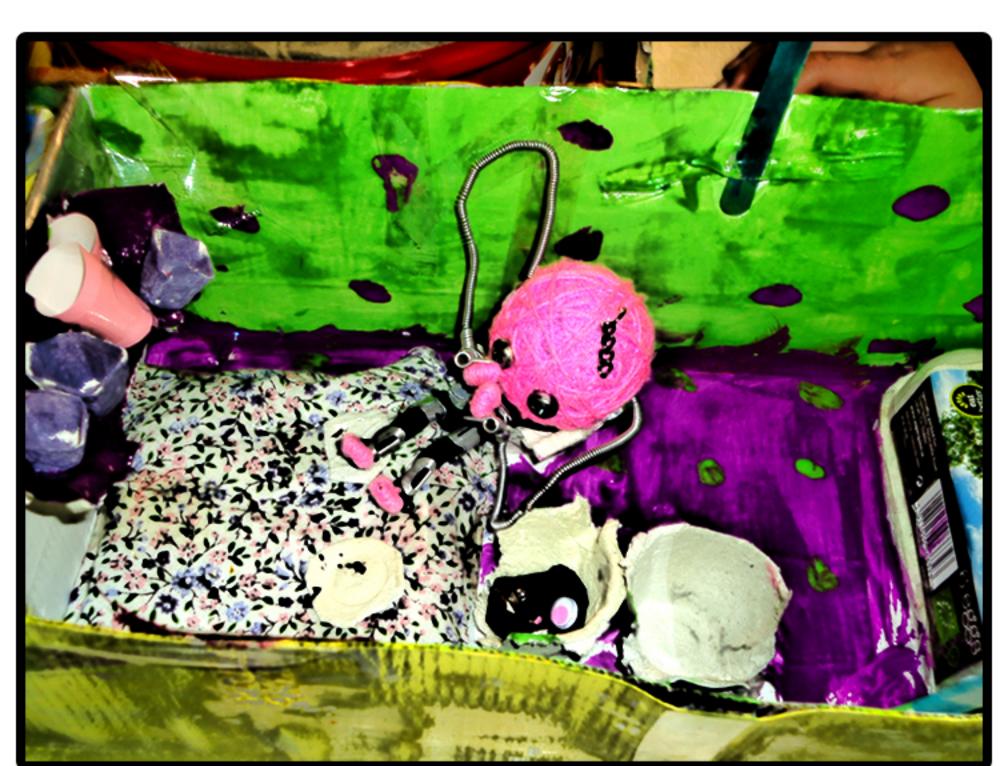
There are two follow on projects the class can do:

1 – Build the habitat (use as a 2-hour art lesson):

- o Instruct the teams to collect cardboard, bottles and any other let-over item that might be useful to build their lunar home.
- o Where will the rooms be located
- o What will the beds look like
- o Be as creative as they can
- o Present their habitat to the class and explain why they make it like this

2 – Spaceship Earth:

- o Who is in control of spaceship Earth?
- o Where are they taking us?
- o Who are the passengers on Spaceship Earth and do they all agree with where we are going?
- o If you were in control of spaceship earth, what would you do differently?
- o Just like on our spaceship we need to provide a life support system for the astronauts, spaceship Earth provides the life-support system that we need to survive. It keeps us alive and we need to look after it and protect it so it can protect us.



These activities were created by Dr. Norah Patten Science Blastoff – My Moon Habitat