

Space The Final Frontier

Written by: Doug Sylvester



Rainbow Horizons Publishing Inc.

Tel: 1-800-663-3609 | **Fax:** 1-800-663-3608

Email: *service@rainbowhorizons.com*

www.rainbowhorizons.com

ISBN-13: 978-1-55319-011-0

Copyright © 1995 Rainbow Horizons Publishing Inc.

Permission to Reproduce

All pages of this publication designated as reproducible and may be reproduced under licence from Access Copyright. All rights are otherwise reserved and no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanic, photocopying, scanning, recording or otherwise, except as specifically authorized.

Permission is granted to the individual teacher who purchases one copy of this book to reproduce the student activity material for use in his or her classroom only. Reproduction of these materials for colleagues, an entire school or school system or for commercial sale is strictly prohibited. We acknowledge the financial support of the Government of Canada through the Book Publishing Industry Development Program (BPIDP) for our publishing activities.

SPACE - THE FINAL FRONTIER

UNIT OVERVIEW

In this unit, students explore the exciting and intriguing world of space. The unit is divided into two main sections. The first, uses lecture style notes combined with interesting assignments and activities to build up an information base. The second centers around four fun activities devoted to space exploration and how a rocket works. Each student receives an **Activity Handbook** that contains related assignments. Students are guaranteed to get a “blast” out of this unit.

PART I - SPACE - THE FINAL FRONTIER

- Notes (using overhead) provide a base of information.
- Lesson topics are:
 - 1) Space, Weightlessness, and Gravity
 - 2) A Day in the Life of a Star
 - 3) Galaxies, Constellations
 - 4) Solar System - The Skydome Model
 - 5) The Solar System - Planets, Asteroids, Moons and Satellites
 - 6) Planet Brochures
 - 7) Planet Song
- Students receive an Activity Handbook that contains assignments and activities related to lesson topics.

PART II - SPACE EXPLORATION and ROCKETS

- Activities include:
 - 1) Space Menu
 - 2) Parachute Making Competition
 - 3) Rocket Boat Competition
 - 4) Egg Splat Competition
 - 5) Exam
- Students complete activities and assignments in their booklets as the unit progresses.

PART I - SPACE - THE FINAL FRONTIER

PART I - Lesson 1 - Space, Weightlessness and Gravity

Student Objectives and Activities

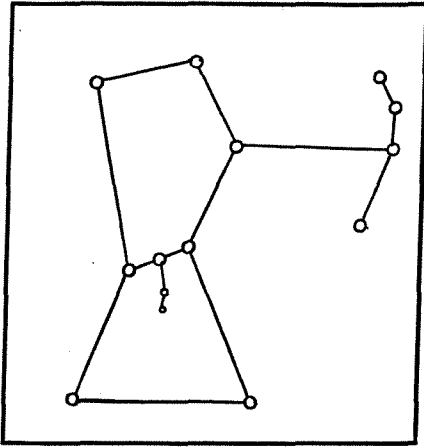
- The class discusses the question “What is it like in space?”
- Students complete an activity that demonstrates weightlessness.
- Students complete overhead notes and answer related questions.
- Students begin colouring the cover of their **Space Handbook**.

Suggested Teaching Strategies

- Introduce the unit by asking students to describe what they think it is like in space.
- Hopefully students will be able to identify some of the characteristics of space - especially weightlessness.
- Once on this topic, simulate the weightlessness of space with the following activity:

Stand in a doorway, arms at your sides with palms turned inward. Spread your arms outward until the backs of your hands are pressing against the doorframe. Now push outwards as hard as you can for 40 seconds. Step out of the doorway and slowly raise your hands over your head - they should feel “weightless.” (With smaller children, a doorway may be too wide for this activity and the teacher will have to find a narrower space)
- After the weightlessness activity, students begin writing down the notes in their science books, copying from the overhead projector.
- Stress the **emptiness** of space. Stars and planets are not as close together as they appear on “Star Trek”. It takes light 4.3 years, travelling at the speed of light, to go from Earth to the nearest star, Alpha Centauri (not including the Sun). The speed of light is about 1 billion kilometers per hour.

CONSTELLATION NAME : "Orion the Hunter"



Orion sighted the huge bear soon after he began the hunt. He crept in downwind so the bear was unable to smell him and pulled back the string of his bow. Twang!

The arrow flew straight and true striking the great bear in the shoulder. But the bear was only wounded and ran off into the bush with Orion following a trail of blood behind.

Orion had searched for an hour when he pushed aside a thicket of trees and was surprised by a hail of slashing claws and gleaming teeth. Orion grabbed the bear and plunged his knife deep into the heart of the bear.

Orion skinned the dead bear and started off home. Suddenly he tripped. Looking down, he saw the arrow sticking into the shoulder of the grizzly who had laid down in the tall grass to die. And that is the legend of how Orion killed two bears, one with a bow, one with a knife.

AUTHOR : Derek Bell.