

How to Use This Book

Welcome to *Cross-Curricular Building Blocks*, a series of books full of educationally-based activities that can be used in a wide variety of teaching situations.

A unique selection of articles and non-fiction stories appropriate for specific grade levels have been compiled here that can serve as a starting point for cross-curricular studies. Through writing, researching web sites, and answering geographic and math questions, it's possible to use the articles as either a quick break during the day or as complete, comprehensive units. They can also easily be added to existing classroom studies because of the wealth of subjects covered and the fact that each of them supports multiple National Education Standards.

At the end of each article is a *Branching Out* section, which is written specifically for the teacher. This section contains ideas and suggestions for additional class discussion based on the original article content. Also provided are many opportunities for you to challenge those students who finish quickly or for the class who wishes to explore the subject in more depth.

Table of Contents

All articles in the *Cross-Curricular Building Blocks* series address the following National Standards:

Language Arts: NL-ENG.K-12.1, NL-ENG.K-12.4
Mathematics: NM-PROB.PK-12.2, NM-PROB.CONN.PK-12.3
Technology: NT.K-12.3, NT.K-12.5



Additional Standards addressed are listed under each article title:

All Aboard the International Space Station (The ISS)	4
National Standards: Science – NS.5-8.4, Social Studies – NSS-G.K-12.1	
Celebrating a New Year (Chinese New Year)	9
National Standards: Language Arts – NL-ENG.K-12.9, Social Studies – NSS-G.K-12.1	

Early Cave Paintings (Cave Paintings).....	14
National Standards: Fine Arts – NA-VA.5-8.4, Language Arts – NL.ENG.K-12.5	
Earthquake! (Earthquakes)	19
National Standards: Science – NS.5-8.4, Social Studies – NSS-G.K-12.1	
A Gathering of Special People (Special Olympics)	24
National Standards: Language Arts – NL.ENG.K-12.5, Physical Education – NPH.K-12.7	
Helping the Largest Organ Heal Itself (Skin)	29
National Standards: Science – NS.5-8.3, NS.5-8.7, Social Studies – NSS-G.K-12.1	
Iron Beauties (Statue of Liberty/Eiffel Tower)	34
National Standards: Fine Arts – NA-VA.5-8.4, Language Arts – NL.ENG.K-12.5	
Please Pass the Protein! (Insects).....	39
National Standards: Language Arts – NL. ENG.K-12.5, Science – NS.5-8.3	
Pluto, the Maybe Planet (Pluto)	45
National Standards: Language Arts – NL. ENG.K-12.5, Science – NS.5-8.4, NS.5-8.7	
Quit Copying Me! (Mimicry in Nature)	50
National Standards: Language Arts – NL. ENG.K-12.5, Science – NS.5-8.3	
Reporting on Rainforests (Rainforests)	55
National Standards: Science – NS.5-8.3, NS.5-8.6	
A Woman Ahead of Her Time (Abigail Adams)	60
National Standards: Language Arts – NL. ENG.K-12.5, Social Studies – NSS-G.K-12.1	

All Aboard the International Space Station

Do you think it's hard to get your science project finished? Just imagine being astronaut Bill McArthur. He was a member of the Expedition 12 crew on the International Space Station (ISS). He did his science projects hundreds of miles above Earth. His wife, Cindy, a teacher, helped plan science experiments to be done in space. McArthur was videotaped in space performing activities that relate to science, math, geography, engineering, and physics.



The International Space Station's first launch took place in 2000. Sixteen different countries have been part of the program. Some have provided equipment, while others have sent astronauts.

The ISS is being built in stages. Scientists estimate it will take more than a hundred spacewalks to add all the pieces. The space station is designed to be 290 feet long, 361 feet wide, and about as tall as a 14-story building. It will weigh 500 tons. Inside, it will have room for a crew of seven and will be about the size of two 747-jet passenger compartments. Three main sections, or modules, make up the ISS. One is living space for the crew. The other two are for service and research.



Life in space has special challenges. There is very weak gravity, known as microgravity. Because there is less work for bones and muscles to do, they can weaken during space travel. To keep fit, astronauts exercise every day for about two hours. They ride a stationary bike, run on a treadmill, and use big rubber bands instead of weights. By placing this

extra stress on their bones, the astronauts remain strong and their bones don't lose density. Astronauts' immune systems also grow weaker in space. Wounds heal more slowly there, too. So far, scientists don't know why this happens.



Microgravity affects the meals that space travelers eat. Crew members must be very careful because crumbs can break off and float into equipment. The ISS has a microwave and a refrigerator, but much of the food comes in sealed pouches and may be eaten hot or cold. Some food is dried, and the astronauts must add water. Eating this kind of food, sometimes through a straw, quickly gets

boring. Crew members look forward to visits from the space shuttles that bring fresh food. Ice cream, fruit, vegetables, and non-powdered milk are all favorites.

To sleep in space, astronauts crawl into special sleeping bags. The bags have straps that go around their waists to hold them in their bunks. There are also loops for their hands, so that the astronaut's arms don't float around. They use sleep masks, too. If they didn't, they'd be awakened by the sunrise every hour and a half! Pumps, fans, and equipment on board make a lot of noise, so astronauts use earplugs to block the sound.

How did Astronaut McArthur do on his science experiments? His wife said she'd give him all A's!



Understanding What You Read



Fill in the blanks to complete the sentences below.

1. _____ countries are part of the International Space Station.
2. _____ can cause bones and muscles to lose density and become weak.
3. Most food in space is _____.
4. The _____ appears every hour and a half.
5. The ISS has _____ main compartments, or modules.

Tell Your Own Story



Imagine that you are traveling in space. Write an entry in your space ship's log. Describe what you do and what you see. _____

Vocabulary Builder



Use a dictionary to find the original meanings of these words that come from the Greek language. Then write a sentence for each.

1. astronaut _____

2. cosmonaut _____

3. atmosphere _____

4. telescope _____
