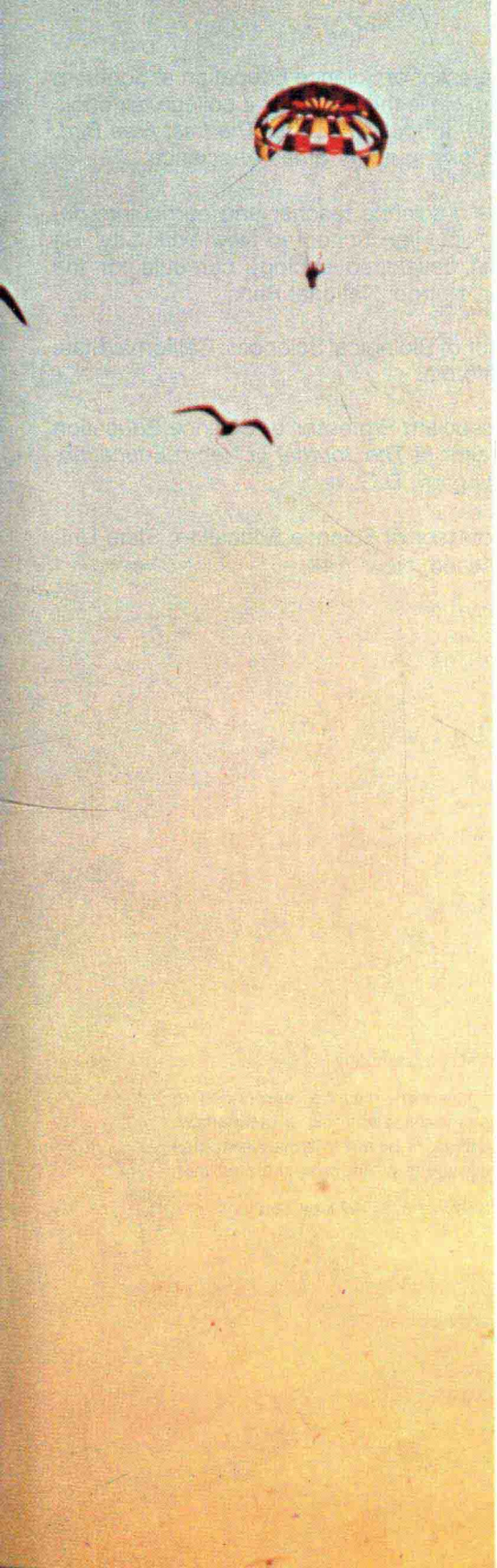
Spaceship Earth

Life Science



Spaceship Earth

Life Science

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Key to Pronunciation Guide

Some words in this book that may be unfamiliar to you or hard to pronounce are followed by a pronunciation guide in parentheses. The guide syllable printed in capital letters should be given the greatest emphasis when you say the word. In the key below, the first column is a list of the letters or marks used in many dictionary pronunciation guides, with an example of the sound that each one stands for. The next column shows how the same sound appears in the guides in this book. The third and fourth columns list examples of words that contain that sound, and their pronunciation guides.

Letter or mark	*Appears in this book as:*	*Example*	*Guide*
a (hat, map)	a	alphabet	AL fuh beht
ā (age, face)	ay	Asia	AY zhuh
â (care, air)	ai	share	shair
ä (father, far)	ah	farming	FAHR mihng
ch (child, much)	ch	China	CHY nuh
e (let, best)	eh	test	tehst
ē (equal, see,	ee	leaf	leef
machine, city)		tangerine	tan juh REEN
ėr (term, learn,	ur	earth	urth
sir, work)			
i (it, pin, hymn)	ih	system	SIHS tuhm
ī (five, ice)	y	alive	uh LYV
	eye	island	EYE luhnd
k (coat, look)	k	corn	kawrn
o (hot, rock)	ah	otter	AHT uhr
ō (open, go, grow)	oh	rainbow	RAYN boh
ô (order, all)	aw	normal	NAWR muhl
		always	AWL wayz
oi (oil, voice)	oy	boiling	BOYL ihng
		poison	POY zuhn
ou (house, out)	ow	fountain	FOWN tuhn
s (say, nice)	s	mice	mys
sh (she, revolution)	sh	ration	RASH uhn
u (cup, butter,	uh	study	STUHD ee
flood)		blood	bluhd
u̇ (full, put, wood)	u	pull	pul
		wool	wul
ü (rule, move, food)	oo	tune	toon
zh (pleasure)	zh	measure	MEHZH uhr
ə (about)	uh	America	uh MEHR uh kuh
(taken, purple)	uh	middle	MIHD uhl
(pencil)	uh	citizen	SIHT uh zuhn
(lemon)	uh	lion	LY uhn
(circus)	uh	focus	FOH kuhs
(curtain)	uh	mountain	MOWN tuhn
(section)	uh	digestion	dy JEHS chuhn
(fabulous)	uh	famous	FAY muhs

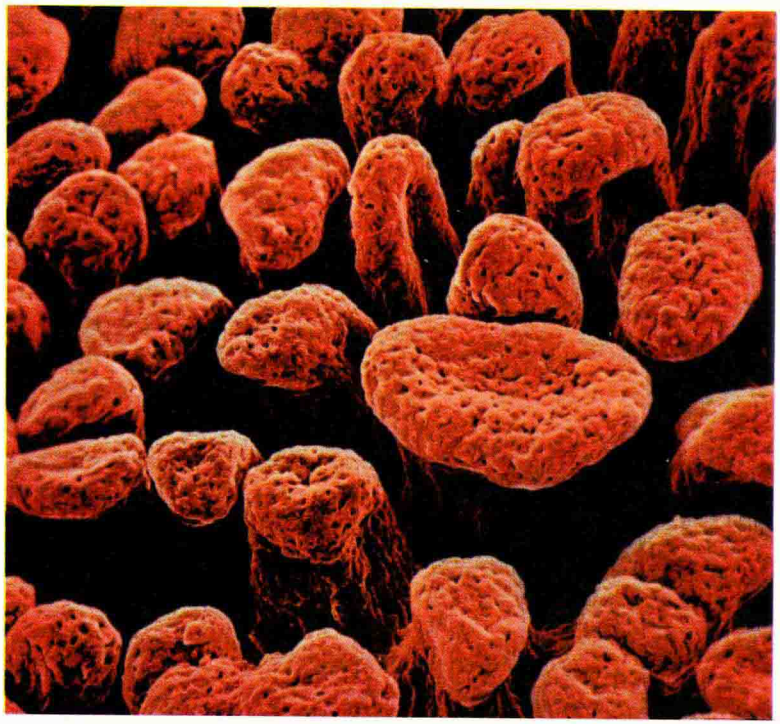
Contents

Preface to the Student

When you begin your study of the life sciences you have to know how to start. Should you start with things you know about or with new ideas and new observations? The next page will help you think about this question. Each of the pictures is of something you know quite well. But you may not have seen each in the same way that you will see them here. Turn the page and start your study of the life sciences.

Can you guess what these pictures are? Do they show living things or non-living things? Do you think the real things are the same size as they appear here? If you knew the real size, would you be able to make better guesses? Does the color help, or the shapes you can see?

These are just some of the questions that scientists ask. As you do the activities in this book, you will also learn to ask questions as scientists do. And you will find that in science, as in most other things, asking the right questions is often more important than finding the answers.



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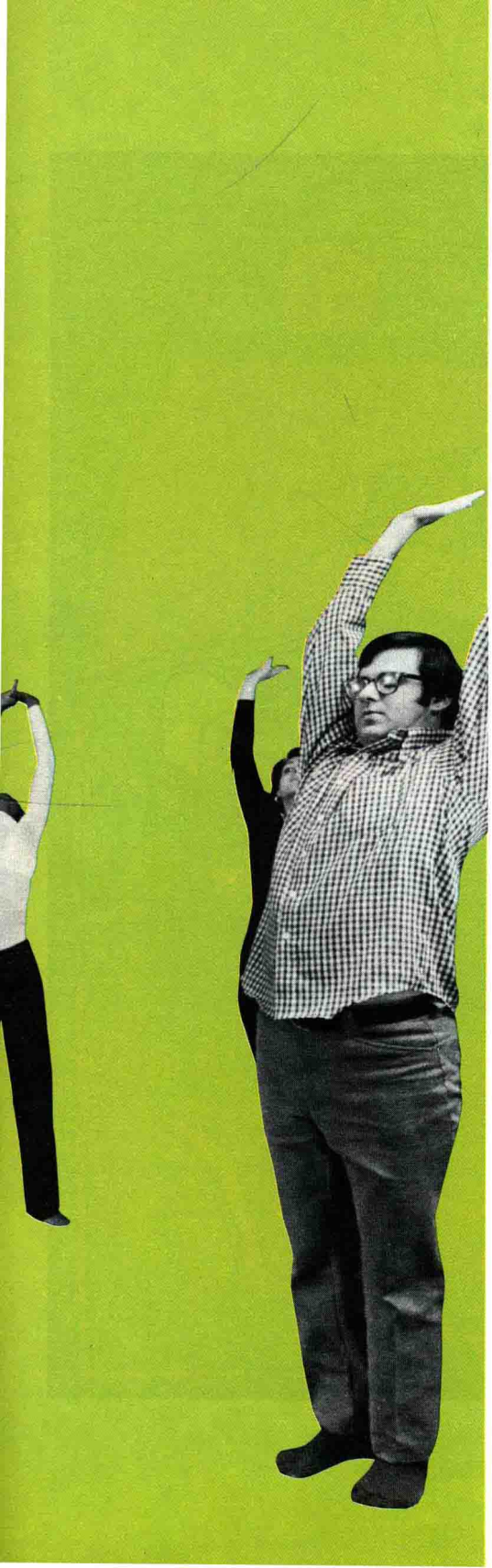
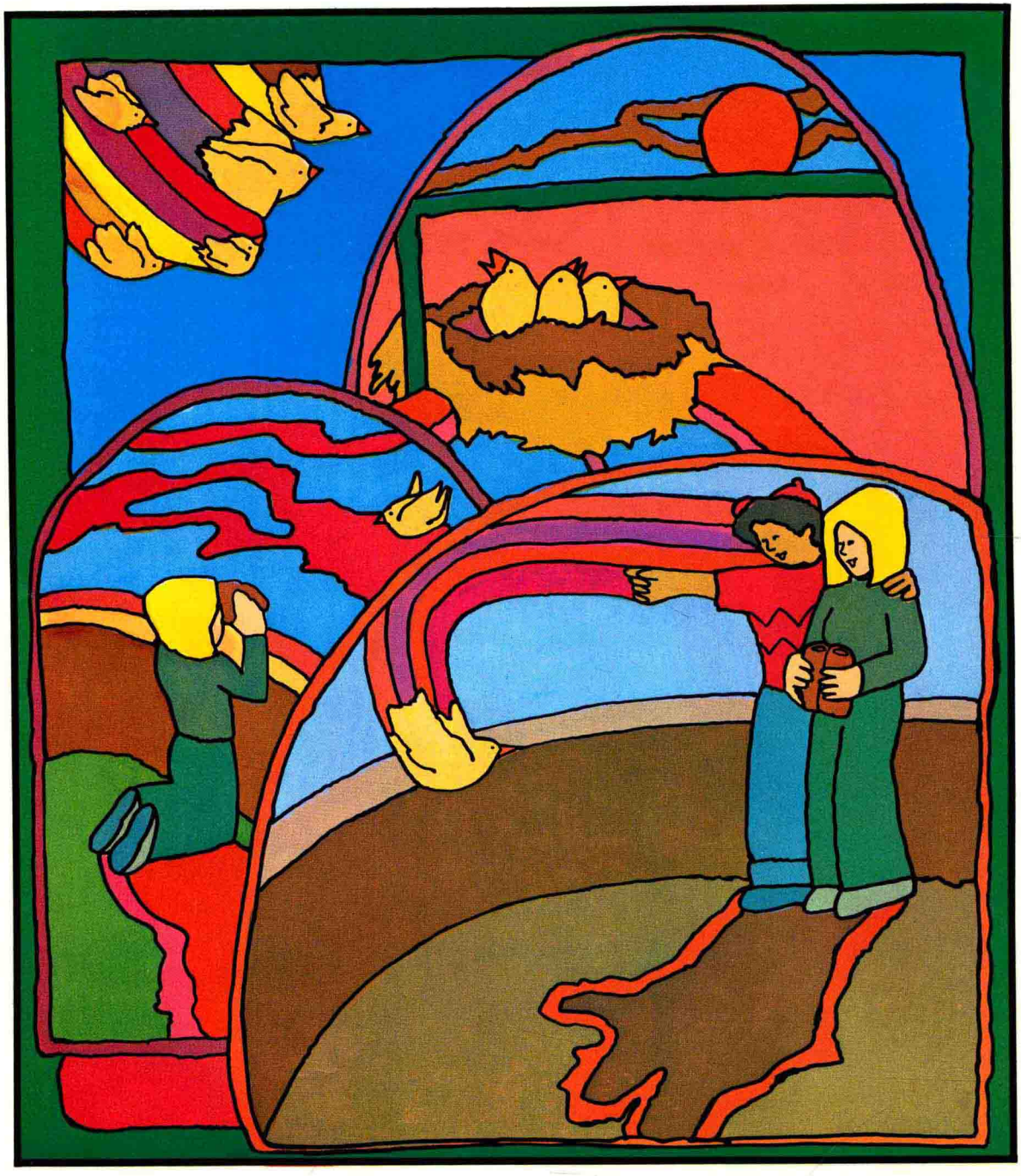


1

Learning to Learn

Before I can learn
what I want
to know,
I have to
experience enough
so that I can
learn.



Miguel and Melanie went to Miguel's flat roof top every day for three weeks. They hoped to see the first flight of the baby pigeons. Nothing had happened yet.

One day, when they were looking at the baby birds in their nest, Miguel tried to think like a bird. He told Melanie how he thought he might feel if he were a young bird who had to learn to fly.

"I'm sure I would be afraid," he said. "It's a long way down to the ground."

"Yes," agreed Melanie. "If you didn't fly the first time, you would probably fall and die. I wouldn't even try it."

Miguel thought for a while. "But you couldn't stay in the nest for the rest of your life, could you? You might not try today but I bet that one day, maybe tomorrow, you would try. Maybe it's like when we learned to walk."

A couple of days later they went to the roof top as usual. But the nest was empty. Looking up, they saw the young pigeons and their parents flying back to the nest. Miguel and Melanie had missed the first flight.

"I wonder how they learned so quickly?" Melanie asked.

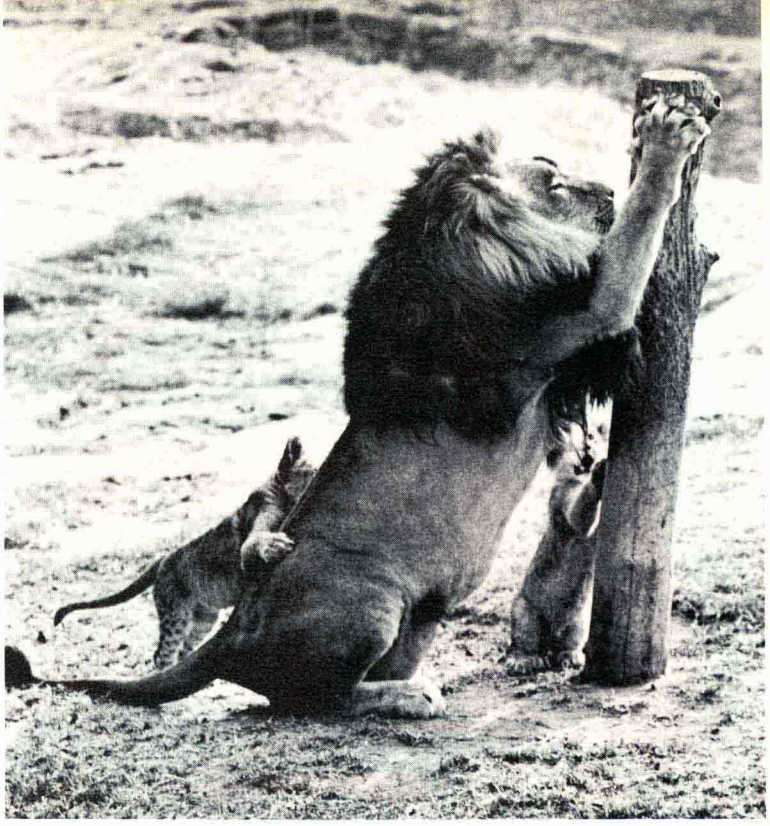
"I don't know," said Miguel. "All that time we spent watching, we didn't see them take off. Just yesterday they seemed afraid to fly."

Later Miguel told his mother that the birds had learned to fly in one day.

"I don't understand such fast learning," he said.

"What did you learn from watching the birds all these weeks?" his mother asked him.

Miguel looked at her questioningly. She said, "Well, did you notice that the birds didn't learn until they tried to fly?"



Is there any learning going on here?

What Is Learning?

People **learn,** from the moment they are born. A baby animal learns to recognize its own mother and father. Children learn to walk even if no one teaches them.

People learn in many different ways. Learning about how we learn is one way to know more about ourselves. Here are some examples of the ways people learn.

When you were about a year old you made sounds that almost no one understood. Soon you imitated the words you heard older people say. Children learn by saying and doing what other people say and do. Many animals learn this way too.

Did you ever have to find your way to a place you'd never been to before? You needed some information before you left. Maybe someone told you which way to go, or made a map for you. On your way there, you may have seen buildings and signs that you could remember, some with