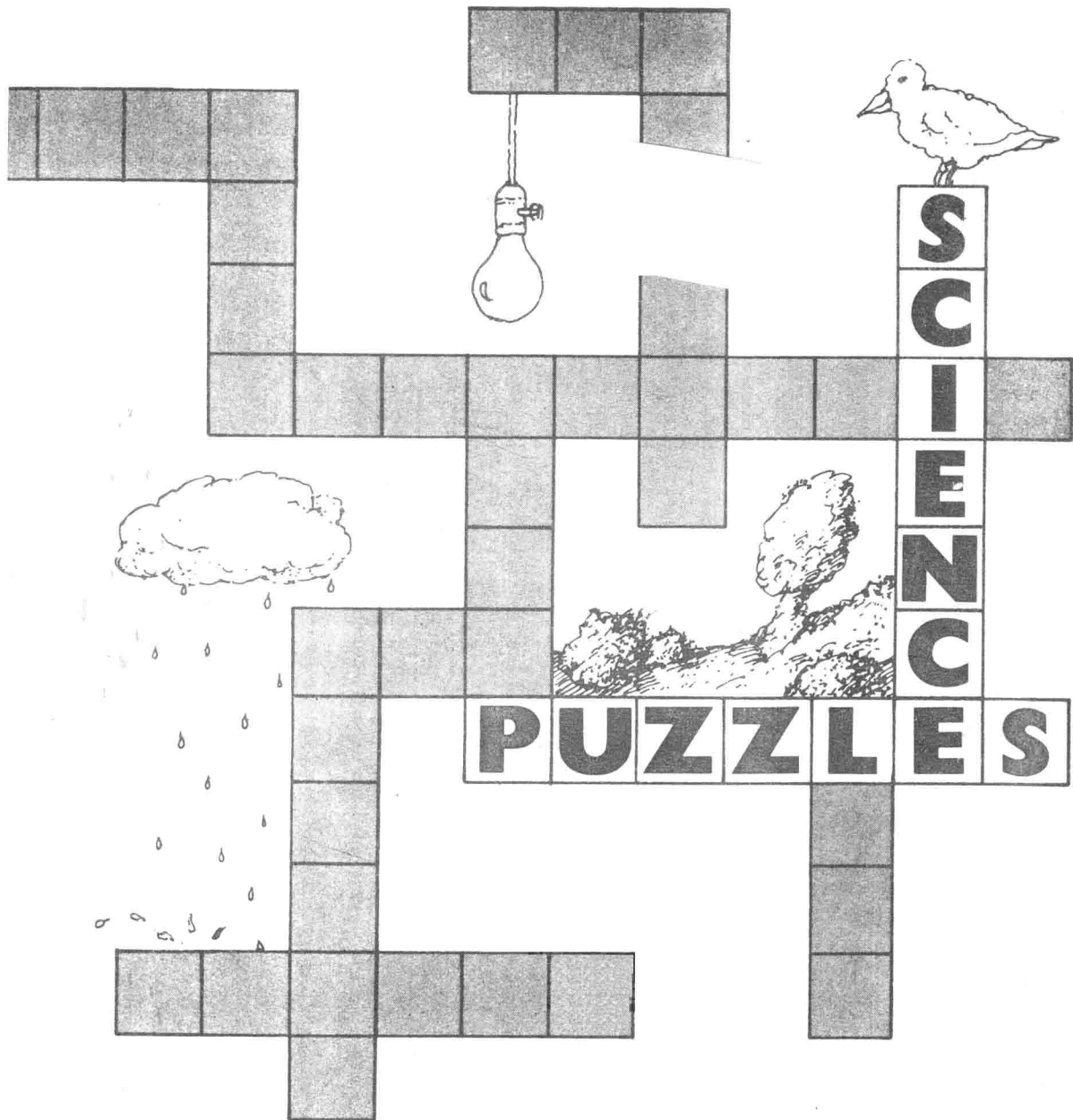


BY JEROME AND LELIA K. WILLIAMS

Illustrated by Myron Grossman



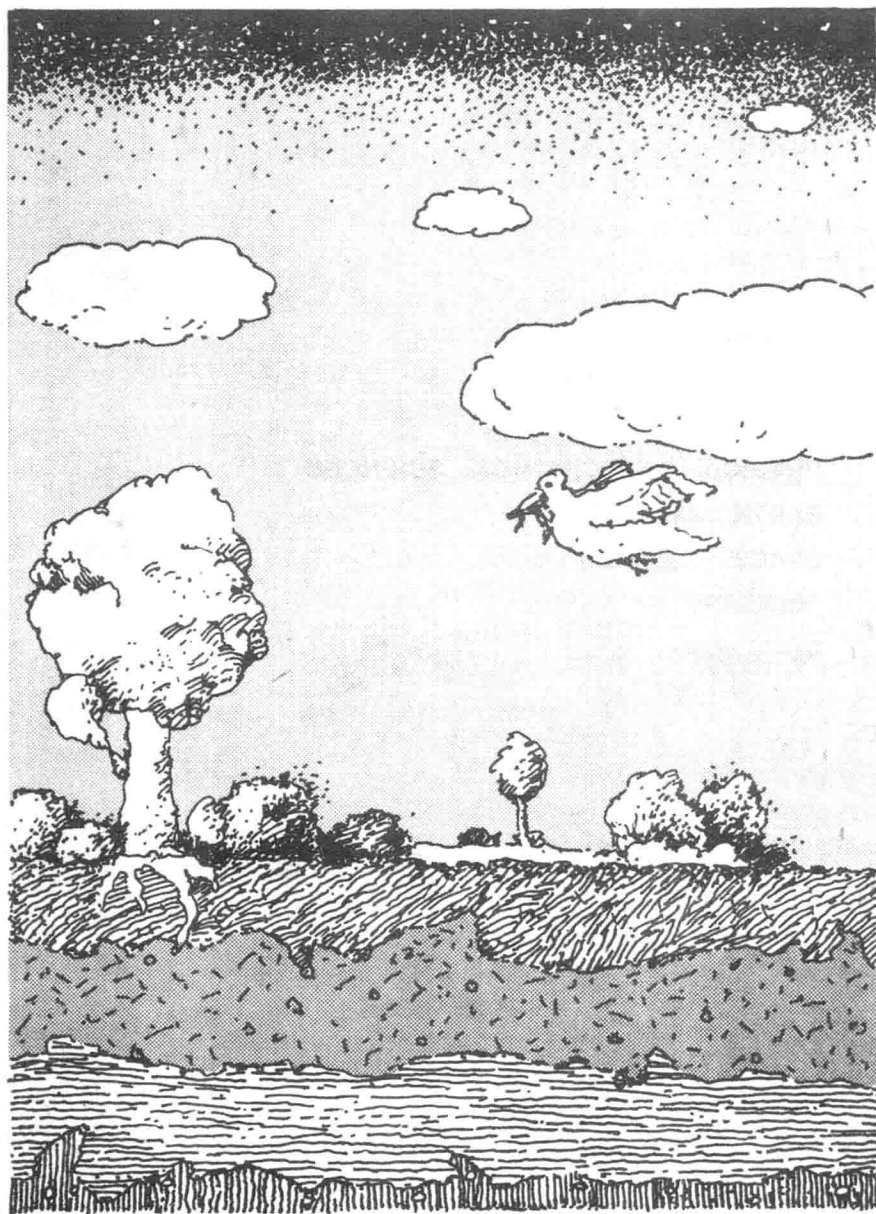
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Franklin Watts

New York | London | Toronto | 1979

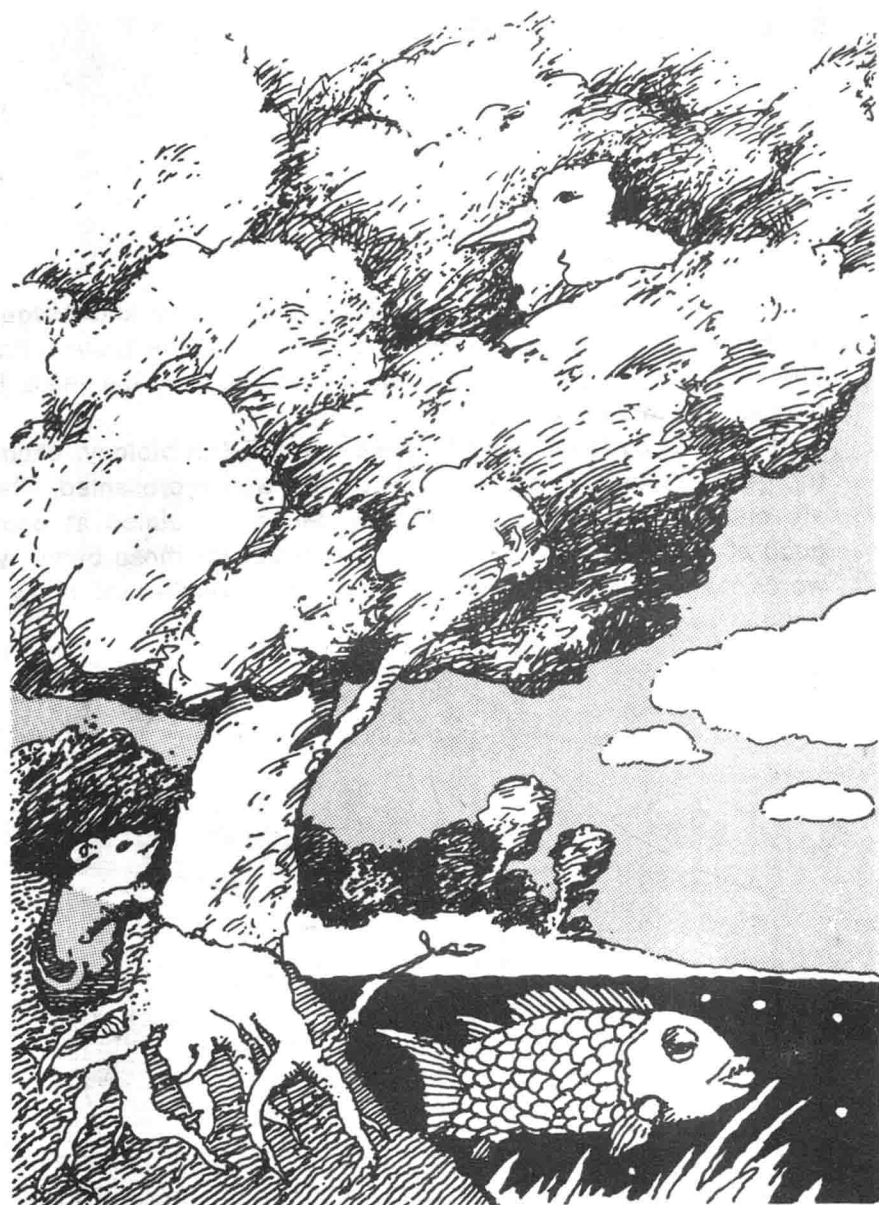
SCIENCE PUZZLES



INTRODUCTION

This is a book of puzzles based on an elementary knowledge of science. Some of the puzzles are very easy, and some are very hard. The easy ones for some will be hard for others, and vice versa. But they all should be fun.

All of science is included in these puzzles, but biology, chemistry, geology, and physics are particularly well represented. There are many different types of puzzles. Some are aimed at people good at mathematics, while others are easier for those better with words than numbers. They all require some thought, and many introduce new facts or ideas.



CONTENTS

INTRODUCTION	vii
BIOLOGICAL SCIENCE	1
WEATHER AND CLIMATE	12
PHYSICAL AND CHEMICAL SCIENCES	17
EARTH SCIENCES	30
SPACE SCIENCES	37
SUMMARY	41
SOLUTIONS	50

BIOLOGICAL SCIENCE

1 *Category Puzzle* Copy or trace the puzzle form onto a piece of paper. In each column, fill in a word beginning with the letter at the top of the column that is a plant, insect, animal, and part of the human body. For example, if the letter C were at the top of a column, possible answers would be: cactus, cicada, camel, and cerebellum.

CATEGORY	L	A	M	B
PLANTS				
INSECTS				
ANIMALS				
HUMAN BODY				

Plants 2 *Matching Puzzle* Find a definition in Column B for each term in Column A.

- | A | B |
|-------------------|------------------------------------|
| 1. Cork | a. An underground stem |
| 2. Fibrous root | b. Large main root |
| 3. Photosynthesis | c. Small, hairy root |
| 4. Rhizome | d. Plant found in a desert |
| 5. Succulent | e. Outer layer of woody plant stem |
| 6. Taproot | f. Process necessary for all life |

3 *Word Equation Puzzle* To solve these equations, add and subtract letters instead of numbers. For example,



- PR = side.

1



- AT +



- B = ?

2



- AR +



- G = ?

3



- NI +



- T = ?

4



- AS +



- I = ?

5



- S -



+ A +

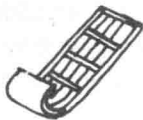


- T = ?

4 *Triple Word Equation* This puzzle is similar to the one above. To solve, decide what each picture represents, add a U, and then rearrange the letters to form three words associated with plants.

11

+



+



+

U = ?

The Animal Kingdom: Insects

5 *Respell Puzzle* The four stages of insect development for most insects are given below, but one letter in each stage is incorrect and the order in which the stages occur is scrambled. Correct the spelling and then arrange the stages in the correct order.

S U P A

L A R K A

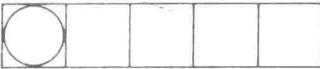
A D U C T

I G G

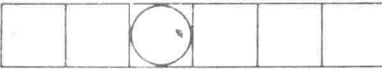
6 *Key Word Puzzle* Copy or trace each set of squares and circles onto a piece of paper. Fill in the proper words from their definitions. Then rearrange the circled letters to form the *key word*, which is something sweet that bees use to make honey.



Main sense organ of insects



Some insects go through this stage

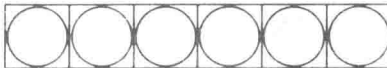


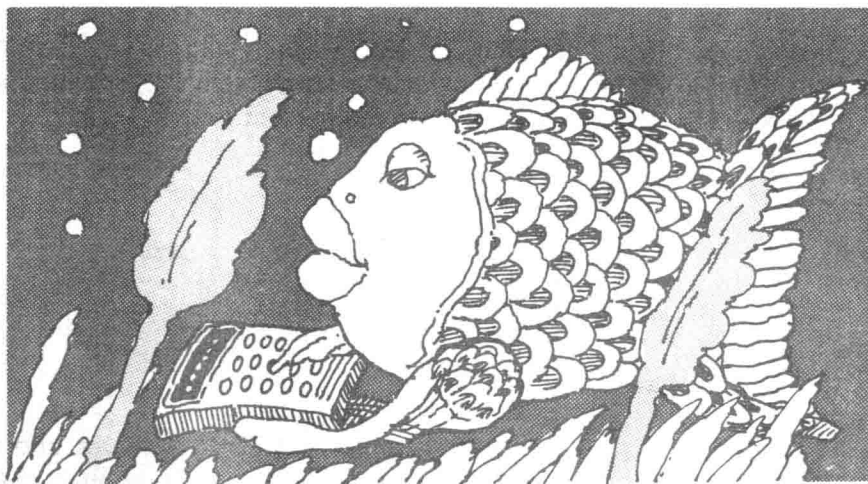
Case enclosing pupa of a moth



A male bee

KEY WORD





The Animal Kingdom: Other Animals

7 *Calculating Fun* These puzzles are fun to do on a calculator, but they may be done with paper and pencil too. Many of the numbers on a calculator readout look like letters when turned upside down. Those most easy to recognize are:

1 3 4 5 7 8 0

which, when turned upside down look like:

I E h S L B 0

For example, the number 7714 looks like the word "hILL" when looked at upside down. CALCULATING FUN puzzles require you first to get a numerical answer. When you turn the answer upside down, you will see the word you are looking for.

a. Multiply the number of arms of a starfish by the number of "tacles" of a jellyfish. Multiply this product by 15. Now subtract 17, and the upside-down answer will be a long, thin marine animal.

b. To the number 328, add the number of legs of an insect. Next add to this sum the number of stages in an insect's life (including the pupa). The resulting number when turned upside down will be a common insect.

8 *Hidden Word Puzzle* How many vertebrates can you find in the following sentences? In what class of vertebrates does each belong? The number of hidden words in each sentence is shown in parentheses.

- a. Did the troops manage to advance eleven miles (17.7 km) during a lull in the battle? (4)
- b. Was her ring that was found in the pan damaged or not? (2)
- c. Was one snip enough to cut the ribbon for the new town hall celebration? (4)
- d. Does your family prefer corn on the cob rather than cut off? (3)
- e. Do doctors dare risk inklings of suspected fatal illnesses? (2)

9 *Key Word Puzzle* On a piece of paper, copy or trace the squares and circles. Fill in the squares from the definitions. Rearrange the circled letters to form the names of two invertebrates, and then tell which class each belongs in.



Has a mouth at both ends of its body



Has a soft body covered by a hard shell



One-celled animal



Only invertebrate with jointed legs



Spiny-skinned animal

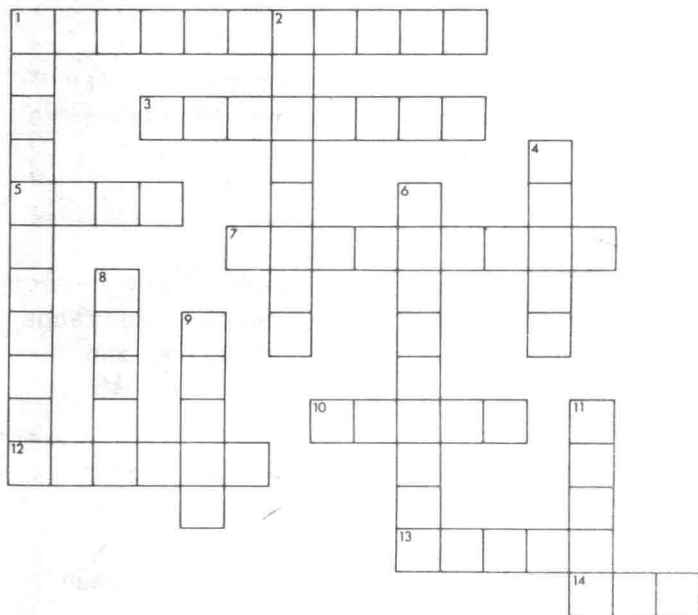


and

KEY WORDS



The Human Body Structure 10 □ Crossword Puzzle Copy or trace the puzzle form onto a piece of paper. Then fill in the squares, using the definitions below the puzzle.



Across

1. Flow of blood
3. Small bone in backbone
5. Organ for breathing
7. Process of changing food to a soluble substance
10. Body's pumping machine
12. Watery liquid used in digestion
13. Human backbone
14. Color of 4 down

Down

1. Tiny blood vessels
2. Tubes that carry blood from the heart
4. Liquid in the body
6. Tube that connects mouth and stomach
8. Bones that form the head
9. Controls flow of blood
11. Storage place for body fuel

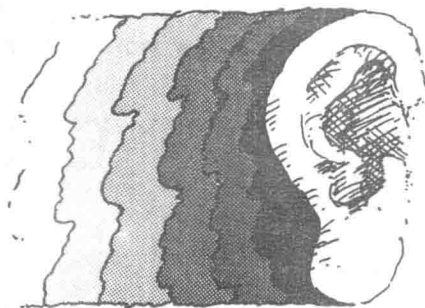
11 *Pyramid Puzzle* On a piece of paper, begin with the one-letter word shown. Without changing the order of the letters, add one letter on each line to form a new word until the final word is reached.

A	A	I
— —	— —	— —
— — —	— — —	— — —
H E A D	— — — —	— — — —
	H E A R T	— — — —
		F I N G E R

The Human Body: The Senses 12 *Respell Puzzle* Each of the boxes below represents one of the five senses. The problem is that their identities are hidden due to misspelling. By correctly changing only one letter in each box, you will reveal the true names of the senses.

H E A T I N G	B A S T E	
T O U G H	L I G H T	S M A L L





13 **Key Word Puzzle** On a piece of paper, copy or trace the squares and circles. Fill in the squares from the definitions. The circled letters will form the *key word*, which describes something that helps you hear.

○			
---	--	--	--

Impulses are carried through this from the dendrites to the end brush.

		○		
--	--	---	--	--

Visual cells sensitive to color

○					
---	--	--	--	--	--

--	--	--	--	--	--

Vibrating these produces sound (two words).

			○		
--	--	--	---	--	--

The inner lining of the back of the eyeball

○					
---	--	--	--	--	--

The voice organ

KEY WORD

○	○	○	○	○
---	---	---	---	---

The Human Body: The Nervous System

14 *Boxed-in Puzzle* Copy or trace the set of squares onto a piece of paper. Fill in each blank square with one of the given letters in its column. By choosing the correct letters, you will write a sentence about the nervous system. Note: Words do not end at the last square in a line but at each solid square. To help you get started, the first two words are filled in.

T	H	E		N	E	R	V	O	U	S		
O	(H)	D	E	A	(E)	D	I	B	A	A	D	C
R	R	(E)	S	M	F	I	S	H	E	A	I	E
(T)	S	E		(N)	N	P	T	N	M	L	N	E
Y	U	P		O	S	(R)	(V)	(O)	R	(S)		S
	V	T							(U)			N

Ecology: 15 *Unblank-It Puzzle* The consonants of two words in the following sentence were misplaced.

Water and Living Things All and need

water to live.

On another piece of paper, fill in the blanks in these words, using the following consonants:

L L M N N P T S S

16 *Riddle* One part of me is explosive, the other produced by plants. I am colorless, yet I make rainbows. I am light at times and heavy at others. Without me, this book would not exist, nor would you. What am I?

Ecology: 17 *Word Propagation Puzzle* *Photosynthesis* uses sunlight to produce food for us. Use the letters in "photosynthesis" to produce as many words as you can. Have at least three letters in each word and do not use plural forms. Twenty-five words in ten minutes is very good.

18 *Spaced-out Puzzles* Can you decipher the following sentence? The letters are correct; the spacing is not.

THEO NLY SOUR CEOF EN ER GYF OR EVE RYB IT
EOF FOO DYO UEA TIST HES UN.

Ecology: 19 *Substitution Code* Can you read the following equation? Since this is a code puzzle, do not add the numbers but instead find a letter to substitute for each number. To help you get started, the underlined word is "air."

$$(2,9,15,19,16,8,5,18,5) = (12,9,6,5) (26,15,14,5) = \\ \underline{(1,9,18)} + (23,1,20,5,18) + (19,15,9,12)$$