

**Task 2**

According to the reading, what jobs do these people have?

- 1 Stephen Bisque \_\_\_\_\_
- 2 Robert Jastrow \_\_\_\_\_
- 3 Sallie Baliunas \_\_\_\_\_
- 4 David Graham \_\_\_\_\_

**Task 3**

What do these expressions refer to? Find the information in the text and copy it on the lines.

- 1 24-inch \_\_\_\_\_
- 2 M14 \_\_\_\_\_
- 3 \$100 \_\_\_\_\_



Watch the sky in the morning and check the time when Mars stops shining. Check the time when Venus starts shining in the evening.

**Words at work**

**Task**

- PREFIX DE- Undo, reverse the action of, as in defrost.
- SUFFIX IZE. A verb-forming suffix meaning: to cause to be or become, make conform with or resemble, make as in "democratiz e," "steriliz e," etc.

Fill in each blank with the appropriate word:

DEMORALIZED- DEVITALIZE- DECARBONIZE- DENICOTINIZE- DEHUMANIZE

Stephen Bisque's investigations took a long time. In spite of many difficulties he did not become \_\_\_\_\_ because of poor results. Making money or becoming famous were not his goals. He says that money and power corrupt and \_\_\_\_\_ people.

David Graham used to smoke 40 cigarettes a day. He decided to stop smoking when he and his colleagues decided to research and write articles about telescopes. Now they are all non-smokers. David says it's a good opportunity to \_\_\_\_\_ his lungs and his telescope!

Robert Jastrow knows that it is time to tune up his car because the old spark plugs and filters will \_\_\_\_\_ the car's engine. Mechanics have to put new spark plugs, they shouldn't \_\_\_\_\_ the old ones.



**Clearing it up** Present Perfect Passive

Put the words in the correct order to make sentences. Think about the meaning of the sentences.

- technology been new developed a has at NASA \_\_\_\_\_
- have used home computers been for playing games \_\_\_\_\_
- been observed have planets and galaxies at night \_\_\_\_\_
- invited been participate high schools to have in the project \_\_\_\_\_
- been High schools has in shown interest \_\_\_\_\_

**Writing (Pairwork)**

This letter was sent to Mount Wilson Observatory.

Mr. Robert Jastrow

Director

Mount Wilson Observatory.

According to information published in Popular Science Magazine, High schools can have access to facilities offered at Mount Wilson Observatory. We would like to have more information about this, because many students in our high school are very interested in visiting the observatory next summer. If possible, send a brochure to:

Preparatoria Numero \_\_\_\_\_  
 Calle \_\_\_\_\_  
 Colonia \_\_\_\_\_  
 \_\_\_\_\_ N.L., México.  
 Telephone number \_\_\_\_\_

**Task 1**

Can you write another letter using the information in boxes?

NAMES	JOB TITLES	PLACES	MAGAZINES	TIME
William Smith	Chief of Public Relations	NASA	"Space"	Next year
Richard West	Director	San Diego launch center	"Cosmos"	Next December
Peter Carter	Technical Adviser	Cape Kennedy	"Discovery"	Next Spring break

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Task 2a**

Writing (Pairwork)

**INTERVIEW WITH MR. BISQUE**

Your physics teacher is very interested in Bisque's investigations. He wants you to conduct an interview with Bisque. Write an interview outline taking into account your teacher's ideas. Boys will prepare the questions and girls prepare the answers. Your teacher advises you to:

- greet Mr. Bisque
- tell him you come from Mexico
- tell him all what you want about your school
- explain him that you read about this investigation in a magazine
- ask for detailed information about his investigation
- ask for printed material on this topic
- thank him for his time, telling that we appreciate very much all this information

**Boys**

Good morning  
What can I do for you?  
Where do you come from?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Girls**

Good morning Mr. Bisque  
Well

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Task 2b**

Oral practice (Pair work)

Now conduct an interview with the closest partner.

**Task 2c**

Oral practice (Interview)

Now, role-play your interview with a partner from another team.

**Task 2d**

Write a report on the information you received. Imagine the report will be published in your high school newspaper.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Time to read!**<sup>(4)</sup>

Scan the data to find the answers to these questions:

- 1 Date of first moon landing. \_\_\_\_\_
- 2 Nationality of non-US astronaut. \_\_\_\_\_
- 3 Name of space module that followed Apollo 16. \_\_\_\_\_
- 4 Mercury, Apollo, Discovery, Challenger, and \_\_\_\_\_

**U.S. MANNED FLIGHTS**

**Maiden Flight of  
Columbia, the first  
reusable shuttle**

1961	Mercury 3	Suborbital	1985	Discovery	Secret military mission
	Mercury 4	Suborbital		Discovery	First U. S. senator in space
1969	Apollo 9	First manned flight of the lunar module	Challenger	Carries European Spacelab	
	Apollo 10	Lunar module descends within 50,000 feet of the moon	Discovery	Launches four satellites	
	Apollo 11	July 20: first lunar landing	Challenger	Carries Space lab 2	
	Apollo 12	Second lunar landing	Discovery	Repairs satellite Syncom 3	
			Atlantis	Fourth shuttle craft	
			Challenger	Carries Space lab 1-D	
			Atlantis	First Mexican in space, engineer Neri Vela	
1970	Apollo 13	Aborted lunar landing			
1971	Apollo 14	Third lunar landing			
	Apollo 15	Fourth lunar landing			
	Apollo 16	Fifth lunar landing			
1975	Apollo 17	The last man on the moon, astronaut Eugene Cernan, during the Apollo 17 voyage			

??

He became famous \_\_\_\_\_

His family is proud of him.

He traveled on an Atlantis flight.

He's not an American.

Who is he? \_\_\_\_\_

If you wanted to be the second Mexican in space, you'd have to follow certain steps. Tick the recommendation that could help you and put a cross against those that are unnecessary.

- Improve your handwriting.
- Be good at math and physics.
- Have good grades in biology.
- Have a sense of achievement.
- Develop a positive social attitude.
- Be disciplined when studying.
- Take care of your physical appearance.

Check with a partner and discuss your answers.

## Read

## Making Space Affordable

"One of my personal goals is to demythologize space, to make space operations commonplace, and that means reducing costs," says Dr. Antonio L. Elias, the former assistant professor of aeronautics and astronautics at the Massachusetts Institute of Technology who heads Orbital Sciences Corp.'s Pegasus design team.

"For example, I can see a network of little twenty-pound microsattellites to detect distress calls from people in remote locations worldwide."

A Pegasus could launch several of these satellites in one shot.

"I see the end of space science in this country produced by the length of time and the amount of money it takes nowadays to launch anything into space. People used to be concerned that space-science experiments took longer than a graduate student's thesis time span. Now, even deans of engineering wonder if they should risk their careers on a project that may not produce any useful results in their lifetime. We are into an awful spiral where there's no motivation or incentive to do any space science.

"I would like to bring back the couple-of-million-dollar-twenty-four-months-from-cradle-to-grave-space-science experiment: from designing the experiment to getting and publishing the data in the journals in two years.

"The next logical step would be to attack the high cost of medium-size rockets, not by using exotic technology, but by being unconventional. Maybe the answer is in concentrating the expensive guidance and electronic parts of the rocket on reusable modules that can be returned to Earth. This is easier said than done, but it can be done."

## Task

After reading the text, answer the following statements. Tick the right completion.

### 1 Communications will improve by using

- a small satellite network
- the Pegasus
- the appropriated electronic parts

### 2 An advantage of using the Pegasus is that

- it is less risky
- distress calls can be detected
- it can launch more than one microsattelite each time

### 3 Not many scientists study space because

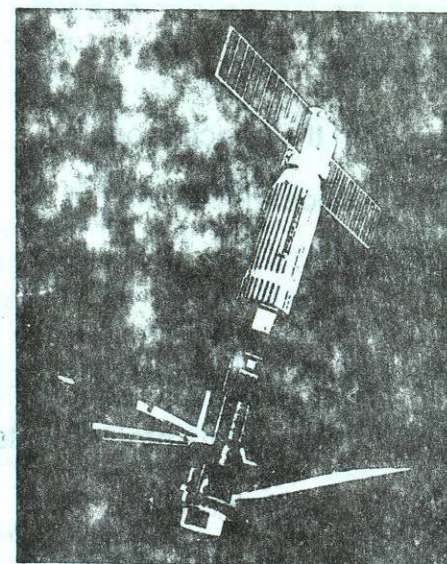
- experiments take a lot of time and money
- it is a very difficult field
- there's no government support

### 4 Up to now the problem with medium-sized rockets is that

- they are very expensive
- few parts of them are reusable
- they can't be produced on an industrial scale

### 5 Costs can be reduced by

- not using medium-sized rockets
- eliminating unnecessary processes
- re-using parts of the rockets



An artist's rendition of Seasat 1, which mapped ocean characteristics worldwide 16 years ago. Courtesy NASA.

**Words at work****Task**

Tick the expression that conveys the same meaning

## 1 "to demythologize space "

- confront mythology with science
- eliminate legends about gods from outer space
- change people's attitude toward space

## 2 "to demilitarize space"

- free the outer space from organized military control
- equip and prepare the outer space for war
- fill the outer space with militarism

## 3 "to dehumidify the space module"

- moisten the space module
- remove moisture from the space module
- make the air in the space module humid

## 4 "to decalcify the astronaut's tank"

- remove calcium from the astronaut's tank
- cover the astronaut's tank with a stony substance
- fill the astronaut's tank with calcium

## 5 "to demagnetize the tools"

- give magnetic properties to the tools
- reinforce the magnetism of the tools
- deprive the tools of magnetism

**Skill:** Use of dictionary.**Task 1a**

You have already read this paragraph in the reading (4) text. Read it again.

"I see the end of *space* science in this country produced by the length of time and the amount of money it takes nowadays to launch anything into *space*."

Now, read this entry from the dictionary. It gives several meanings for the word "*space*" Which of these meanings is the one used in the text?

Answer: \_\_\_\_\_

Belgium], 1. a mineral spring. 2. any place, especially a resort, having a mineral spring.

**space** (spās), *n.* [ME.; OFr. *espace*; L. *spatium*], 1. distance extending without limit in all directions; that which is thought of as a boundless, continuous expanse extending in all directions or in three dimensions, within which all material things are contained. 2. distance, interval, or area between or within things; extent; room: as, leave a wide *space* between the rows; hence, 3. (enough) area or room for some purpose: as, we couldn't find a parking *space*, put your answers in these *spaces*. 4. reserved accommodations, as on a train or ship. 5. interval or length of time: as, too short a *space* between arrival and departure. 6. the universe outside the earth's atmosphere: in full, **outer space**. 7. in *music*, an open place between the lines of a staff. 8. in *printing*, any blank piece of type metal used to separate characters, etc. 9. in *telegraphy*, an interval when the key is open, or not in contact, during the sending of a message. 10. [Obs.].

**Task 1b**

You have also already read the following paragraph:

"One of my personal *goals* is to demythologize space, to make space operations commonplace, and that means reducing costs," said Dr. Antonio L. Elias.

In the following entry taken from a dictionary you'll find several meanings for the word "goal." Which of these meanings is the one used in the text?

Answer \_\_\_\_\_

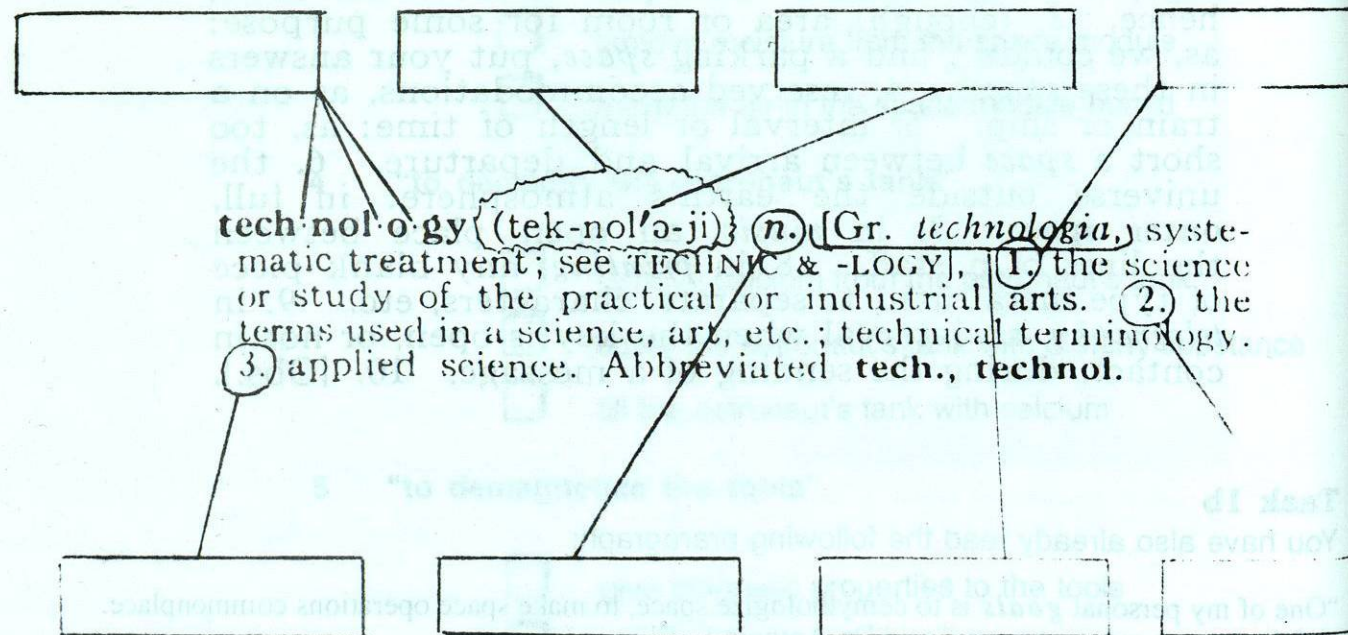
**go-a-head** (gō'ə-hed'), *adj.* 1. moving forward; hence, 2. [Colloq.], enterprising; pushing. *n.* permission or an order to proceed in an undertaking: usually with *the*.

**goal** (gōl), *n.* [ME. *gol*, boundary; prob. < AS. \**gal*, inferred < *galan*, to hinder, impede], 1. the line or place at which a race, trip, etc. is ended. 2. an object or end that one strives to attain; aim. 3. in certain games, a) the line, crossbar, or net over or into which the ball or puck must be passed to score. b) the act of scoring in this way. c) the score made. d) a goalkeeper. —*SYN.* see *intention*.

**goal-ie** (gōl'i), *n.* [Colloq.], a goalkeeper.

**Task 1c**

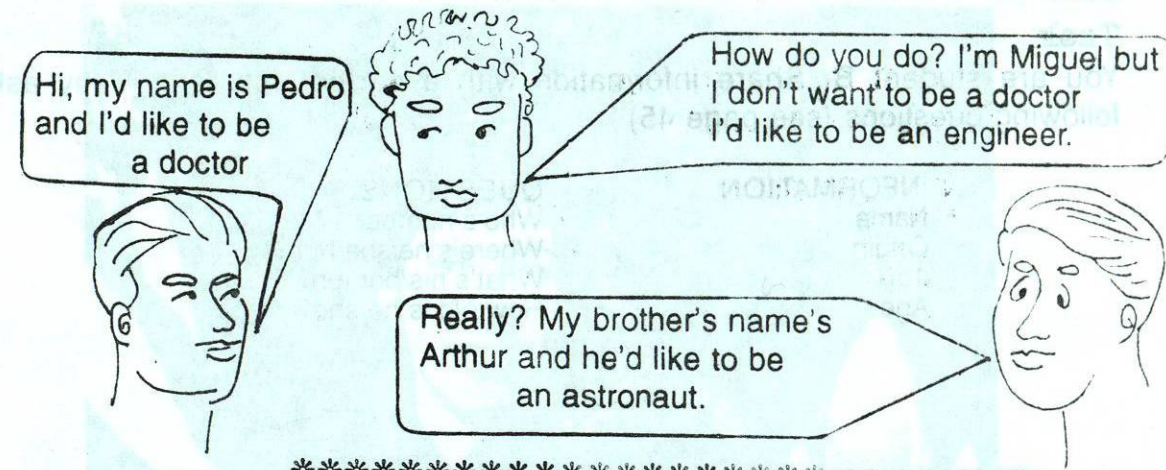
Here we have several definitions of the word "technology." Fill in the boxes using the expressions below:



FIRST MEANING-SECOND MEANING-THIRD MEANING-  
STRESS-PRONUNCIATION-ETYMOLOGY-SYLLABLE DIVISION-  
PART OF THE SPEECH (NOUN).

**Oral practice.**

After looking at the following situation, sit in groups of 4 or 5 and practice the chain drill below.



\*\*\*\*\*

**STRUCTURE**

POSSESSIVE  
ADJECTIVE

WOULD ('D) LIKE  
+ TO + VERB.

MY name's Pedro and I'D LIKE TO BE a doctor  
YOUR name's Jane and YOU'D LIKE TO BE a dentist  
HIS name is Miguel and HE'D LIKE TO STUDY space engineering  
HER name's is Gloria and SHE'D LIKE TO GO to the moon.

\*\*\*\*\*

**CHAIN DRILL**

My name's Gloria and I'd like to go to the moon.  
Her name is Gloria and she'd like to go to the moon.  
My name's \_\_\_\_\_ and \_\_\_\_\_ be an astronaut  
(His-her) name's \_\_\_\_\_ and \_\_\_\_\_  
My \_\_\_\_\_ be a passenger to Mars.  
(His-Her) \_\_\_\_\_  
My \_\_\_\_\_ work at NASA.  
(His-Her) \_\_\_\_\_  
My \_\_\_\_\_ go to Russia.  
(His-Her) \_\_\_\_\_  
My \_\_\_\_\_ take pictures on the moon  
(His-Her) \_\_\_\_\_  
My \_\_\_\_\_ study aeronautics.

After the first round you can keep on practicing with changes in the second part ("Would like to + Verb) according to your creativity.

Oral practice

Task


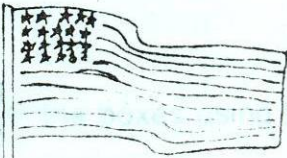




You are student **B**. Share information with a partner (student A) by asking the following questions (see page 45)

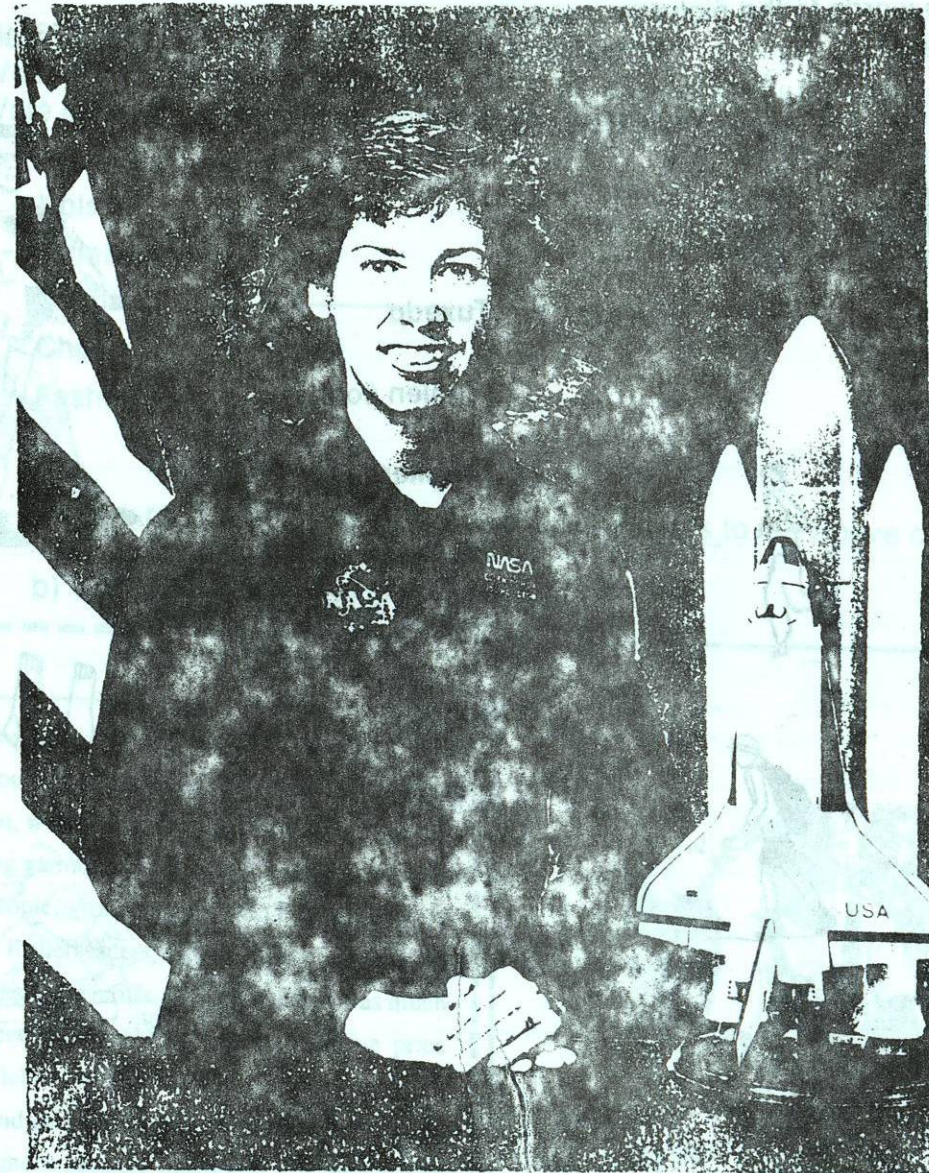
INFORMATION

Name  
Origin  
Job  
Age

QUESTIONS

Who's number 1? (2,3,4.)  
Where's he/she from?  
What's his/her job?  
How old is he/she?

#1 ?	 Neil Armstrong born in 1931	ASTRONAUT #1 
#2 ?	 Yuri Gagarin born in 1930	ASTRONAUT #2  Russia
#3 ?	 Betty Smith born in 1942	HARVARD UNIVERSITY ASTRONOMER #3 



*Doctor Ellen Ochoa*  
*First female American astronaut of Mexican descent.*