

Module 2. S.P. Korolev

Lead-In

1. *Space Quiz. How much do you know about space exploration? Choose the correct variant.*

1. Who was the first man to fly in space?
A. S.P. Korolev
B. Neil Armstrong
C. Yury Gagarin
D. Konstantin Tsiolkovsky
2. Which country was the first to land a human on the Moon?
A. France
B. The USA
C. Russia
D. Australia
3. What was S.P. Korolev?
A. a cosmonaut
B. a director of SSAU
C. a designer
D. a pilot
4. When was the first artificial Earth satellite launched?
A. In 1920s
B. In 1950s
C. In 1980s
D. In 2000
5. Who was the first woman cosmonaut?
A. Valentina Tereshkova
B. Ivins Marsha Sue
C. Svetlana Savitskaya
D. Yamazaki Naoko
6. Which of these animals were never in space?
A. Dogs
B. Monkeys
C. Beavers
D. Turtles
7. Which of these places doesn't hold an airshow?
A. Baikonur
B. Le Bourget
C. Zhukovsky
D. Farnborough



Did you know that

The real names of Belka and Strelka were Albina and Markisa, but they were not suitable for the Soviet dogs-cosmonauts

Reading

1. *Practise reading the following words.*

launch	[lɔ:n(t)ʃ]
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vehicle	'vi:k(ə)l
enthusiast	in'θju:ziast
jet propulsion	['dʒet prə'pʌlʃ(ə)n
weapon	['wεp(ə)n
cruise	kru:z
missile	['mɪsʌɪl
artificial	ɑ:ti'fiʃ(ə)l
satellite	['sæt(ɪ)laɪt
authority	ɔ:'θɔ:ri:ti

2. Match the terms with their Russian equivalents. Make use of a dictionary if necessary.

- | | |
|--------------------------|------------------------------------|
| 1. space exploration | a) крылатая ракета |
| 2. rocket weapon | b) планер |
| 3. glider | c) ракета-носитель |
| 4. jet propulsion | d) освоение космоса |
| 5. cruise missile | e) совершающий космические полеты |
| 6. manned spacecraft | f) искусственный спутник |
| 7. space booster | g) ракетное оружие |
| 8. space-faring | h) межпланетная зондирующая ракета |
| 9. artificial satellite | i) реактивное движение |
| 10. interplanetary probe | j) пилотируемый космический |
-

аппарат

3. a) *You are going to read the text about S.P. Korolev. Brainstorm what information it will contain.*

I think the text can be about his family...

b) Read the text to see if your guesses are correct.



Sergei Pavlovich Korolev (1907-1966) is the founder of the Soviet space program. Korolev, like many of his colleagues, went through Stalin's prisons and later participated in the search for rocket technology in occupied Germany. His energy, intelligence, belief in the prospects of space flight, managerial abilities and skills in decision-making made him the head of the first Soviet rocket development center. He deserves the most credits for turning rocket weapons into an instrument of space exploration and making the Soviet Union the world's first space-faring nation.

Sergei Korolev was born on January 12, 1907, in the city of Zhitomir in present day Ukraine, in the family of a Russian language teacher.

In 1922 Sergei Korolev passed qualifying exams at the Odessa professional construction school. At the time, Sergei was already interested in aviation.

In 1924, Korolev was transferred to the Kiev Polytechnic Institute, where he joined a group of glider enthusiasts. Two years later Korolev moved to Moscow's Bauman High Technical School, the best engineering college in Russia.

Korolev graduated from the university in 1929 and in 1931 he joined the Central Aero and Hydrodynamics Institute. In July 1932, Korolev was appointed chief of Jet Propulsion Research Group. In 1933, the group was reorganized into the Jet Propulsion Research Institute, where Korolev worked as Deputy Chief of the institute. The development of cruise missiles and of a manned rocket-powered glider was led by Korolev.

At the peak of his career, Korolev led the development of the world's first ballistic missile, which are known today as R-7. They became a base for a long-lasting family of space boosters, carrying Russian cosmonauts into orbit for decades in the future.

In the following years, several generations of ballistic missiles, artificial science, military and communications satellites, interplanetary probes and manned space vehicles were being developed. The Soyuz spacecraft which turned 40 years in operation in 2006, was created and launched under his guidance. Korolev died at the height of his career on January 14, 1966.

Due to secret nature of the Soviet space industry, Korolev's contribution to the space program was publically recognized by the Soviet authorities only after his death.

Dates

Write 15 October – Say "the fifteenth of October" or "October the fifteenth"

Write on 14 January, 1966 – Say on the fourteenth of January in nineteen sixty-six

4. Say whether these sentences are true or false.

Phrases of agreement

- Exactly so.
- I agree.
- That is true
- You are right
- That is correct

Phrases of disagreement

- I don't think so.
- I disagree.
- That is false.
- I think you are wrong.

- a) Korolev headed the first German rocket development centre.
- b) Korolev joined a group of glider enthusiasts in 1922.
- c) Korolev graduated from SSAU in 1924.
- d) Cruise missiles and manned rocket-powered gliders were developed under Korolev's guidance.
- e) Today's space boosters are based on R-7.
- f) Korolev died when he was 80 years old.
- g) People didn't know about Korolev's contribution to the Soviet space science when he was alive.

5. Match the words with their definitions. State their part of speech.

- | | |
|---------------------|--|
| 1) Deputy Chief (n) | a) a group of people with official power |
| 2) to recognize | b) man-made |
| 3) authorities | c) the second leader of the company |
| 4) to appoint | d) help and advice |
| 5) artificial | e) to know |
| 6) guidance | f) continuing for a long period of time |
| 7) long-lasting | g) to choose someone for a job |

6. a) Match the following words to make noun-noun collocations.

- | | |
|----------------|----------------|
| 1) rocket | a) enthusiast |
| 2) space | b) missile |
| 3) glider | c) weapon |
| 4) engineering | d) exploration |
| 5) cruise | e) college |

b) Give the Russian equivalents of the phrases above.

NB! When you see the noun-noun collocations, you should know that the main noun is the last one, and all the rest are its attributes.

*** jet propulsion research group**

group – группа

research group – группа для исследования

jet propulsion research group – группа для исследования реактивного движения

7. a) Read the text and substitute the underlined words and phrases with their synonyms from the box below. b) Translate the text into Russian.

operated	appointed	managerial abilities	to participate
graduate from	space vehicle	due to	deserved the credits



Valentina Tereshkova is the first woman to fly in space in 1963.

She didn't (1)finish a university, because she had to help her mother support the family. She was a textile worker when she

was selected (2)to take part in the Soviet Union cosmonaut program in 1962. She

was the first cosmonaut who was not a pilot. She was (3)chosen mainly

(4)because of her experience with parachute jumping. She had made more than a hundred jumps.

After 18 months of training, Tereshkova's Vostok 6 spacecraft was launched. On June 16, 1963 she went into orbit and in about 80 hours (more than three days)

completed 48 orbits before returning to Earth. She parachuted from her

(5)spacecraft as it fell to Earth. That is how the Vostok spacecraft (6)worked.

Her colleagues said that she (7)earned respect because of her enthusiasm and ambition, besides, she had great (8)organizational skills.

Tereshkova never flew in space again. She served in the Soviet parliament for a while.

(edited from <http://www.astronautix.com>)

You should remember the following words and phrases!

to participate	принимать участие
managerial abilities	организаторские способности
decision-making	принятие решений
to deserve the credits	заслужить уважение
a weapon	оружие
space exploration	освоение космоса
to appoint	назначать
jet propulsion	реактивное движение
Deputy Chief	заместитель директора
cruise missile	крылатая ракета
manned vehicle	пилотируемое транспортное средство
to launch	запускать
space booster	ракета-носитель
artificial Earth satellites	искусственный спутник Земли
an interplanetary probe	межпланетная зондирующая ракета

authorities	власти
guidance	руководство
to operate	работать, управлять
to make contribution	сделать вклад
publically recognized	признанный

Grammar

Active voice – The subject performs the action

- The group of engineers launched the spacecraft.

Passive Voice – The subject receives the action

- The spacecraft was launched by the group of engineers.

Passive Voice is used when it is more important to stress the thing done rather than the doer, or when the doer is unknown. If the doer of the action or the instrument is mentioned, it is preceded by **BY** or **WITH** respectively.

Tense	Active Voice	Passive Voice
Present Simple	V1, Vs /-/? do(does)	am/is/are +V3
Present Continuous	am/is/are +Ving	am/is/are +being+V3
Present Perfect	have/has+V3	have/has+been+V3
Present Perfect Cont.	have/has +been+Ving	-
Past Simple	V2(ed) /-/? did	was/were + V3
Past Continuous	was/were + Ving	was/were + being + V3
Past Perfect	had + V3	had + been + V3
Past Perfect Cont.	had + been +Ving	-
Future Simple	will + V1	will + be+ V3
Future Continuous	will + be + Ving	-
Future Perfect	will + have + V3	will + have + been + V3
Future Perfect Cont.	will + have + been + Ving	-

1. In the text (p. 3), underline all the predicates. Define the Voice.

2. Transform the Active Voice into Passive and vice versa.

a) Authorities have appointed Mr. Simon Deputy Chief of the space exploration program.

b) Samara University is publically recognized as a leading research university in Russia.

- c) I'm sure that our new manager will make a great contribution to the success of our organization.
- d) The first artificial earth satellite was launched in 1957.
- e) The team of engineers is testing the weapon at the moment.
- f) The surface of the Moon has been explored by the interplanetary probes.
- g) A new project will be presented by this research group.
- h) In 1926 Korolev transferred his documents to the engineering college in Moscow.
- i) Rocket weapons are being controlled by the leaders of the European Union.
- j) Every year enthusiasts organize a research club in the laboratory.

3. Read the following text and put the verbs in brackets into the correct form of Active or Passive Voice

"One small step for man, one giant leap for mankind"

In July 20, 1969 Neil Armstrong (1) _____ (to say) "one small step for man, one giant leap for mankind". This was the day that men from the Earth first (2) _____ (to land) on the Moon. It was the culmination of years of research and development.

Neil Armstrong was born August 5, 1930 on a farm in Wapakoneta, Ohio. Neil (3) _____ (to work) at the local airport. After starting flying lessons at the age of 15, he (4) _____ (to give) a pilots license on his 16th birthday.

Armstrong (5) _____ (to send) to Naval Air Station in Florida in 1949 before he (6) _____ (to graduate) from the university. He then (7) _____ (to fly) 78 combat mission in Korea, earning three medals, including the Korean Service Medal. Armstrong, being an engineer by training, (8) _____ (to criticize) by some of the non-engineering pilots, that his flying technique was too mechanical.

Then in September of 1968 he (9) _____ (to select) as the first American civilian to fly in space. Later Armstrong (10) _____ (to appoint) Command Pilot of the Apollo 11, which (11) _____ (to touch) down on the surface of the Moon on July 20, 1969. The American flag (12) _____ (to plant) on the surface by Neil Armstrong and Buzz Aldrin.

The astronauts (13) _____ (to return) to the Earth on July 24, 1969.
Armstrong and Aldrin (14) _____ (to award) the Presidential Medal of Freedom.

(edited from <http://space.about.com>)

4. Translate the following sentences from Russian into English.

- a) Ежегодно сотни исследовательских групп создаются властями для освоения космоса.
- b) Первый пилотируемый космический аппарат был запущен 12 апреля 1961 года.
- c) Этот молодой конструктор будет назначен заместителем руководителя группы по исследованию реактивного движения.
- d) Проект по созданию нового ракетного оружия будет завершён к концу этого года.
- e) Огромный вклад в развитие ракетно-космических технологий был сделан советскими космонавтами Юрием Гагариным и Владимиром Комаровым.
- f) Русские были признаны первой нацией в мире, совершающей космические полеты.
- g) Благодаря энтузиазму и организаторским способностям С.П. Королева крылатые ракеты, пилотируемые космические аппараты, ракеты-носители, искусственные спутники земли и межпланетные зондирующие ракеты были сконструированы и произведены в Советском Союзе.
- h) Термин «пилотируемый» значит, что транспортное средство управляется человеком.

Speaking

1. a) Work in groups of 2-3 people. Make a report on the biography of a famous cosmonaut or a designer and the contribution they made into the development of space exploration. You may choose to speak about:

- Konstantin Tsiolkovsky
- Kathryn Thornton
- Buzz Aldrin
- Vladimir Komarov
- Yury Gagarin
- Valentin Glushko



➤ Any other scientist you consider important

b) Choose one speaker from the group and make a two-minute presentation in the name of this person.

c) Prepare at least two questions to the other speakers.

Writing

By **making notes** you actively process and interpret ideas and information. This aids concentration and understanding so you learn more. Notes help identify main points and organize your ideas into a logical order.

1. Key words and phrases provide instructions about what to do; trigger your memory; lead on to other ideas / explanations. They must be easy to find within your notes. **Highlight** such words in the following text.



In June 1967, Robert Henry Lawrence, Jr. was named the first African-American astronaut, though he never made it into space. Several months later, on December 8, Lawrence died when his F-104 Starfighter jet, in which he was a co-pilot/passenger during a training flight, crashed at Edwards Air Force Base, California.

Robert Henry Lawrence, Jr. was born October 2, 1935, in Chicago. He received an undergraduate degree in chemistry from Bradley University in 1956, and was commissioned a Second Lieutenant into the US Air Force upon graduation at age 20. Lawrence later earned a Ph.D. in physical chemistry in 1965 from Ohio State University.

Robert Henry Lawrence, Jr. distinguished himself as an exceptional Air Force test pilot and was among the first to be named to the USAF Manned Orbiting Laboratory (MOL) program, which was a precursor to today's successful NASA space shuttle program.

In 1997, thirty years after his tragic death, the Chicago native son's name was the 17th added to The Astronauts Memorial Foundation Space Mirror. The mirror was dedicated in 1991 to honor all US astronauts who have lost their lives on space missions or in training for missions.

(taken from <http://space.about.com>)

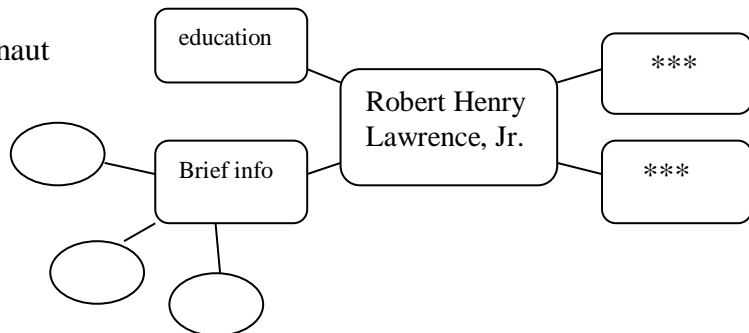
2. Always write a heading or title to your notes. Give titles to the 4 paragraphs above.

3. Write notes in a logical order to show how ideas are related. The notes may be of two types: linear and patterned. Choose the one to your liking and complete it.

Linear

- I. Brief Information
 - a) First Afro-American astronaut
 - b) never made it to space
 - c) died in a crash
- II. Education
 - a)...
- ...

Patterned



4. Develop your own 'shorthand' using abbreviations and symbols. The following abbreviations could be useful:

- e.g. – for example
- i.e. – that is
- < - less than
- > - greater than

- etc – and so on
- so, therefore
- aka – also known as

5. Make note on the text about S.P. Korolev (p.3) using the techniques above.

6. Be brief, but not so brief that your notes don't make any sense. You will need to read your notes in the future and should be able to understand what you have written. Be ready to retell the text about S.P. Korolev using the notes you have made.