**Конкурсная работа**

**«Space age»**

**Вострова Светлана Сергеевна**

**учитель английского и немецкого языков высшей квалификационной категории**

**бюджетное общеобразовательное учреждение**

**Чувашской Республики среднего профессионального образования «Чебоксарский электромеханический колледж»**

**Министерства образования и молодежной политики ЧР**

**г.Чебоксары, Чувашская Республика**

**e-mail:** [**www.sveta2010@l**](http://www.sveta2010@l)**ist.ru**

**План – конспект урока.**

**Предмет: английский язык**

**Курс: 3**

**Тип урока: комбинированный урок**

**Тема урока: «Применение ИКТ в космосе»**

**Длительность урока: 1 час 30 мин.**

**Цели урока:**

**Обучающие:**

1.Расширить знания студентов по теме «Применение персональных компьютеров», научить использовать в речи лексику по теме « Информационные технологии в космосе».

2.Способствовать активизации употребления студентами технической и компьютерной лексики в устной речи.

3.Интегрировать знания английского языка и информатики*.*

4.Повторить грамматический материал по теме «Условные предложения».

**Развивающие:**

1.Развивать навыки чтения и перевода технической литературы с терминологической лексикой.

2.Способствовать развитию логического мышления, памяти, внимания и умения анализа и сравнения.

3.Интегрировать знания английского языка и информатики с применением ИКТ.

**Воспитательные:**

1. Воспитывать любовь и интерес к избранной специальности.

2. Повышать мотивацию к изучению иностранных языков.

3. Развивать умение работать коллективно.

4. Формировать инициативность, самостоятельность, способность к успешной самореализации.

**Задачи урока:**

1.Вовлечь студентов в активную речевую деятельность на уроке путем использования современных средств обучения и различных организационных форм работы.

2.Тренировать навыки произношения технических и компьютерных терминов.

3. Формировать навыки поискового и изучающего чтения с использованием технической лексики.

4. Контролировать выполнение домашнего задания (компьютерные проекты).

5. Совершенствовать умение понимать английскую речь на слух.

7. Контролировать умение применять полученные знания в устной речи.

8. Обобщить и систематизировать полученные знания.

9. Рефлексия. Подвести итоги занятия.

**Оснащение урока**

1. Компьютер.

2. Мультимедийный проектор.

3. Маркерная доска.

4. Компьютерная презентация урока.

5. Компьютерные презентации студентов.

6. Раздаточный материл (папки с материалом урока, напечатанным на разноцветных листах бумаги).

7. Видеоматериалы.

8. Учебники, справочники, технические словари.

**Методы обучения:**

1. Словесный

2. Объяснительно - иллюстративный

3. Наглядный

4. Дедуктивный

5. Поисковый

6. Коммуникативный

7. Проектный

8. Практический

**Формы обучения:**

1. Фронтальная

2. Групповая

3. Парная

4. Индивидуальная

**Технологии:**

- Предметной интеграции с ИКТ

- Мультимедийная

- Проектная

- Личностно- ориентированного обучения

- Интерактивного обучения

- Проблемного обучения.

**Комбинированному уроку соответствует структура:**

1. Организация начала урока,
2. Проверка домашнего задания, постановка целей урока;
3. Подготовка студентов к восприятию нового учебного материала, т.е. актуализация знаний и практических и умственных умений;
4. Изучение нового материала, в том числе и объяснение,
5. Закрепление материала, изученного на данном уроке и ранее пройденного, связанного с новым;
6. Обобщение и систематизация знании и умений, связь новых с ранее полученными и сформированными;
7. Подведение итогов и результатов урока, задание на дом.

**План урока**

1.Организационный момент.

2.Введение в ситуацию урока.( видео, рассказ преподавателя, план урока, беседа о планете Земля).

3.Формирование фонологической компетенции.( работа над произношением сложных слов урока).

4.Формирование лексической компетенции.( работа над лексикой урока).

5.Формирование речевой компетенции.(выполнение лексико-грамматических упражнений с использованием новой лексики и условных предложений).

6. Формирование энергосберегающей компетенции. Момент релаксации. Викторина.

7.Формирование образовательной компетенции. Проверка домашнего задания.( компьютерные проекты студентов на заданную тематику).

8. Формирование рецептивной компетенции. Развитие навыков чтения и понимания аутентичного текста. Silence reading.(чтение текста про себя, беседа о прочитанном).

9.Формирование продуктивной компетенции. Развитие навыков аудирования и монологической речи.

10.Формирование коммуникативной компетенции. Развитие навыков диалогической речи. (составление диалога из реплик данных вразброс, составление диалога с использованием интернет - ресурса).

11.Формирование лингвистической компетенции. Развитие навыков аудирования. Просмотр и обсуждение видеоролика, выполнение теста.

12. Выводы урока.

13. Формирование оценочной компетенции. Рефлексия. Домашнее задание: выучить диалог.

**Сценарий урока**

**1.Организационный момент.**

How are you? Greet our guests. Is anybody absent? What is the news? Is there anything new?

**2. Введение в ситуацию урока.**(видео, план урока, беседа о планете Земля)

**1)Объявление темы и плана урока.**

The topic of our lesson is space exploration and information technologies used in space exploration.

Today you will practice your reading, translating, listening, and, of course, speaking skills.

We shall watch some video films, do some exercises and tests.

Просмотр видеоролика о планете Земля **(**[**http://video.mail.ru/mail/iznaurovna/3940/3983.html**](http://video.mail.ru/mail/iznaurovna/3940/3983.html)**) (video\_1).**

Now look at the screen.

**2)Стихотворение о планете Земля (автор Вострова С.С.).**

Look how beautiful our planet is!

With its high mountains and evergreen trees

With its blue rivers running to the seas

And lots of flowers growing in the fields.

But on this planet people are so rude,

This fragile nature we must not pollute.

Keep cities tidy and the country clean.

Leave them to children as they have always been.

**3)Беседа о планете Земля.**

What have you seen? Now get ready and say some words about the Earth.

What can you tell us about our planet?

We live on the Earth, but people always dreamed about flying into space. Space travel is humanity’s greatest adventure – the chance to explore the moon, the planets, and the stars. The space age began on October 4, 1957. On that day, the Union of Soviet Socialist Republics launched the first artificial satellite to circle the earth. The first manned space flight was made on April 12, 1961, when a Soviet cosmonaut, Yuri Gagarin, orbited the Earth in a spaceship. During the years that followed this first space expedition, many flights carried people into space.

What holiday do we celebrate on the 12th of April?

What is the anniversary of this holiday this year?

That`s why today we speak about space and space exploration.

People have always wanted to **explore** the unknown. Mankind always dreamed of **overcoming gravitation** and reaching other planets. Among the achievements we may enumerate the landing of automatic stations on the Moon, the flights of **space laboratories** towards the Venus and Mars. During the years that followed this first **space expedition**, many flights carried people into space. There are **manned and unmanned spacecraft** (carry instruments and radio equipment)A manned spacecraft is called **a shuttle**. The first **astronauts** were sent into space in small capsules that sat on top of rockets. The first **space station**, Salyut 1, was **launched** in 1971, and was visited by the Soyuz for 23 days.  
 In 1986 Russia launched “Mir”, the central module of a new space station far more complex than Salyut. Mir was designed to receive both manned Soyuz craft and unmanned Progress craft. The space age developed a huge industry called the aerospace industry to design and build space **equipment**. A new field of medicine called space medicine came into being to study the problems of living and working in space. Weather forecasts receive warning of storms with pictures taken by weather satellites. Telephone calls and television pictures are sent around the world by communications **satellites**. Signals from navigation satellites enable ship navigations. Earth survey satellites, used for detecting mineral deposits and map-making; military satellites, used mainly for reconnaissance and intelligence gathering; and astronomical satellites, which are observatories in space, orbiting above the blanketing layer of the Earth’s atmosphere.

**3.** **Формирование фонологической компетенции.**

Today at the lesson we`ll need the following words. Read them after me.

- NASA (National Aeronautics and Space Administration)

- ISS (International Space Station)

- RIACS (The Research Institute for Advanced Computer Science)

- to land (landing)

- to launch (launching)

- to orbit

- to develop

- to explore

- exploration

- space exploration

- gravitation ( overcome gravitation)

- equipment

- observation

- space technology (develop specific technologies )

- discovery

- invention

- experiment

- outer space

- manned

- unmanned

- satellite

- shuttle

- spacecraft

- astronaut (cosmonaut, spaceman )

- mankind, humankind

Read and translate the words one by one.

**4.** **Формирование речевой компетенции.**

**Select** the nouns…

The verbs….

The adjectives**….**

**Now let`s make some phrases.**

What can we explore, launch, orbit, develop?

What can be manned and unmanned?

What can we make?(discovery, experiment, observations)

What can we develop?( space technology, equipment)

What can we launch?(satellite ,shuttle, spaceship)

Who is working in space?

How do we call the whole population of the planet? ( mankind)

**(Приложение 1)**

**Complete the phrases:**

1)…………… gravitation(overcome)

2)…………… exploration(space)

3) to launch……..(a satellite, a shuttle)

4) to orbit……….(the Earth)

5)………….. spacecraft(manned)

6)…………..space(outer)

7)to………..the Earth(to orbit)

8)……………new space technologies

9) to make …………( an invention, discovery, experiment)

10)to ………..the Moon(to land, to explore)

**5.** **Формирование речевой компетенции. Групповая работа.**

**1) On your desks you can see blue sheets of paper with some texts. Your task is to work in two groups and fill in the missing word in the text, asking each other questions . (Приложение 2).**

**Space Exploration**

|  |  |  |
| --- | --- | --- |
| For thousands of years man dreamed of flying to the stars. At the beginning of the century the great Russian scientist Tsiolkovsky predicted that "mankind will not remain on Earth forever". Half a century later his words came true, the dream became a reality. It happened on October 4, 1957, when the 1st artificial satellite, the sputnik, was launched. The Russians were the 1st in the world to fly into outer space. Then the most remarkable event in the history of cosmonautics took place. On April 12, 1961 the spaceship "Vostok", piloted by Yuri Gagarin went up. He orbited the Earth only once, staying in space for 108 minutes. Mankind will always remember him. A new era of man's exploration of outer space began. Many space rockets went up by our cosmonauts. Among them were Titov, Nikolaev, Leonov, Tereshkova, Savitskaya and others. Today Russia wants the exploration of space to be based on broad international cooperation. Many international crews went up in space. This is the best example of the possibility of peaceful cooperation.  **1 группа**  **Space Exploration**   |  | | --- | | For thousands of years man dreamed of flying to the stars. At the beginning of the century the great Russian scientist ………….predicted that "mankind will not remain on Earth forever". Half a century later his words came true, the dream became a reality. It happened on October 4, 1957, when the 1st artificial satellite, the sputnik, was launched. The Russians were the 1st in the world to fly into outer space. Then the most remarkable event in the history of cosmonautics took place. …………..the spaceship "Vostok", piloted by Yuri Gagarin went up. He orbited the Earth only once, staying in space for ………minutes. Mankind will always remember him. A new era of man's exploration of outer space began. Many space rockets went up by our cosmonauts. Among them were ………………and others. Today Russia wants the exploration of space to be based on broad international cooperation. Many international crews went up in space. This is the best example of the possibility of peaceful cooperation.  **2 группа** |   **Space Exploration**   |  | | --- | | For thousands of years man dreamed of flying to the stars. At the beginning of the century the great Russian scientist Tsiolkovsky predicted that "mankind will not remain on Earth forever". Half a century later his words came true, the dream became a reality. It happened …………..when the 1st artificial satellite, the sputnik, was launched. The ………….were the 1st in the world to fly into outer space. Then the most remarkable event in the history of cosmonautics took place. On April 12, 1961 the spaceship "Vostok", piloted by Yuri Gagarin went up. He orbited the Earth only once, staying in space for 108 minutes. Mankind will always remember him. A new era of ……………….began. Many space rockets went up by our cosmonauts. Among them were Titov, Nikolaev, Leonov, Tereshkova, Savitskaya and others. Today Russia wants the exploration of space to be based on broad international cooperation. Many international crews went up in space. This is the best example of the possibility of peaceful cooperation. | |

**2)Read and guess what it means:**

[**(http://festival.1september.ru/articles/419982/)**]((http:/festival.1september.ru/articles/419982/))

**(Приложение 3)**

1. to find something: new place, fact, substance

2. to make, design or think of new type of things

3. the act of traveling through a place in order to find out about it

4. something that you notice when watching something or someone

5. a natural phenomenon by which physical bodies attract with a force proportional to their mass

6. the societies in the world considered as a whole

7. new machines, equipment, and ways of doing things that are based on modern knowledge about science and computers

8. making tests using various ideas, methods to find out how good or effective they are

9. a person working in space

10. the tools, machines, clothes that you need to do a particular job or activity

**Key words:** equipment, observation, astronaut, exploration, technology, to discover, to invent, experiment, mankind, gravitation

**3) Match the combinations of words:**

|  |  |
| --- | --- |
| 1. satellite  2. shuttle  3. fuel  4. spacesuit  5. aircraft  6. vehicle  7. space  8. weightless environment  9. device  10. probe  11. manned spaceship  12. essential problems  13. interplanetary flight  14. zero gravity | · топливо  · транспортное средство  · условия невесомости  · зонд  · основные проблемы  · спутник  · космический корабль с человеком на борту  · отсутствие гравитации  · самолет, летательный аппарат  · скафандр  · космос  · межпланетный полет  · корабль многоразового использования  · средство, приспособление |

Key: 1- f, 2- m, 3- a, 4- j, 5- i, 6- b, 7- k, 8- c, 9- n , 10- d, 11- g, 12- e, 13- l, 14- h.

**1) Complete these sentences. These combinations of words will help you:**

1. to produce new materials in zero gravity

2. to live and work in orbital space cities

3. try to survive in critical situations

4. to explore outer space and other stars

5. to make interplanetary flights to Mars

**For example:**

If I were a cosmonaut…

If I lived on another planet…

If could fly to the stars…

If I worked in orbital space station…

If I landed on unknown planet…

**2) Correct the mistakes in the sentences:**

* If he was an astronaut I would explore other planets.
* If the astronauts had better equipment they will work in outer space.
* If you looked through the telescope you would saw a lot of stars.
* If we orbit the Earth in a spaceship we would see the beauty of our planet from space.

**6. Формирование энергосберегающей компетенции.** **Момент релаксации. Викторина (слайды в презентации).**

**7. Формирование образовательной компетенции.** **Проверка домашнего задания (компьютерные проекты студентов).**

**8.** **Формирование рецептивной компетенции. Развитие навыков чтения и понимания аутентичного текста. Silence reading. (чтение текста про себя, беседа о прочитанном)** [**(http://www.usra.edu/cs/riacs)**]((http://www.usra.edu/cs/riacs)%20%20%20)  **(Приложение 4).**

Find the orange sheets of paper, read the text in silence and get ready to discuss it.

**RIACS**

The Research Institute for Advanced Computer Science (RIACS) is focused on developing the next generation enabling technologies that will facilitate both human and robotic space exploration. Since its inception in 1983, the Institute has conducted basic and applied computer science research across a variety of aerospace-related disciplines, including supercomputing, computational fluid dynamics, computational chemistry, high-performance networking, and artificial intelligence.

Today, RIACS scientists are engaged in five core research areas: Autonomous Systems and Robotics, Collaborative & Assistant Systems, Discovery & Systems Health, Robust Software Engineering, and Small Spacecraft Systems. Research in these areas, conducted in partnership with NASA Ames Research Center, will provide the fundamental technologies to enable manned and unmanned space missions. Some examples of technologies developed by RIACS are the Remote Agent, the first artificial intelligence software to control a spacecraft, and EUROPA-MAPGEN, an artificial intelligence application used to generate daily activity plans for the Mars Exploration Rovers.

Much of the Institute's technology portfolio has broad application beyond the aerospace community, so RIACS is working with non-NASA government and industry customers to develop and deliver innovative and intelligent information systems. Through the creation of strategic partnerships, technology licensing agreements, and cooperative agreements, RIACS is leveraging its technology for the benefit of humankind.

Dr. David Bell, RIACS Director

RIACS Director Dr. David Bell has fifteen years of experience conducting research on collaborative and intelligent systems for technology organizations, with nine patent applications and over 30 academic papers. Prior to joining RIACS in 2002, Dr. Bell worked for ten years at the Xerox Palo Alto Research Center in the Scientific & Engineering Reasoning Area, and held a two-year term at MIT where he led a research program in the National Science Foundation-funded Center for Innovation in Product Development. Dr. Bell received a Ph.D. from Cornell University in 1993, with a dissertation on product development process dynamics.

**9. Формирование продуктивной компетенции.** **Развитие навыков аудирования и монологической речи.**

**Now we will watch some videos. Your task is to describe what you have seen.**

**(http://video.yandex.ru/#search?text=vostok1&filmId=34470982-09-12 -восток1) (video\_8)**

**(http://www.youtube.com/watch?v=BweqSPexl7Q –комета) (video\_2)**

**(http://www.youtube.com/watch?v=eUxXfzUTfX4 –солнце) (video\_7)**

**(http://www.youtube.com/watch?v=DOIEhyYDQ9A –астронавт) (video\_6)**

**(http://www.youtube.com/watch?v=2AeMIY11iMM -солнечная система) (video\_5)**

**(http://www.youtube.com/watch?v=s9VRukVd6cE –мир) (video\_4)**

**(http://www.youtube.com/watch?v=WXZKu38YpPg –гагарин) (video\_3)**

**10.** **Формирование коммуникативной компетенции. Развитие навыков диалогической речи. Составление диалога из реплик данных вразброс. (Парная работа).(Приложение 5).**

**1)Arrange the phrases logically:**

• **-**That is why the requirements to the computers used in space must be very strict.

• -Yes, I have read about it in mass media. But I haven't paid much attention to it. And you?

• -I have no information about it, but I think that the large spaceships and shuttles need a lot of good technique.

• -As for me, I believe that spacecraft requires the best and the most reliable hardware, equipped by the last word of technology.

• -Have you heard what computers are used by NASA astronauts in space?

• -Yes, I quite agree with you. Space exploration is very important for the mankind, but it may be dangerous for the astronauts.

• -Do you know who is the best space computer producer in the world?

**Now let`s check up your answers.**

-Have you heard what computers are used by NASA astronauts in space?

-Yes I have read about it in mass media. But I haven't paid much attention on it.

-I believe that spacecraft requires the best and the most reliable hardware, equipped by the last word of technology.

-Yes, I quite agree with you. Space exploration is very important for the mankind, but it may be dangerous for astronauts.

-That is why the requirements to the computers used in space must be very strict.

-Do you know who is the best space computer producer in the word?

-I have no information about it but I think that the large spaceships and shuttles need a lot of good technique.

**2)Развитие навыков продуктивной диалогической речи с использованием интернет – ресурса. (Парная работа)(Приложение 6).**

**(**[**http://www.refolit.narod.ru/English/engl\_dialog\_phrases.html**](http://www.refolit.narod.ru/English/engl_dialog_phrases.html)**)**

Now your task is to make up your own dialogues using the phrases from the box on the screen.

|  |  |
| --- | --- |
| As to (for)..., | Что касается ..., |
| As(so) far as I know (remember)… | Насколько мне известно… |
| As far as I can see, ... | Насколько я знаю, |
| It is not surprising that... | Не удивительно, что ... |
| It is important to note that ... | Важно отметить, что ... |
| It's common knowledge that... | Общеизвестно, что ... |
| An important point is that ... | Важным является то, что ... |
| It's well known that ... | Известно, что ... |
| Besides,... | Кроме того, ... |
| What's more, ... | Более того, ... |
| I'm sorry, but you must be mistaken. | Извините, но вы, должно быть, ошибаетесь. |
| Do you mean that…? | Вы хотите сказать, что… |
| I think (believe)… | Я думаю… |
| I'm of the same opinion. | Я того же мнения. |
| I'm not sure, in fact. | Вообще-то, я не согласен. |
| I see what you mean. | Я понимаю вашу точку зрения. |
| From my point of view ... | С моей точки зрения ... |
| In my opinion ... | С моей точки зрения ... |
| It seems to me ... | Мне кажется ... |
| The thing is ... | Дело в том, что ... |
| That may be true, but on the other hand ... | Возможно это верно, но с другой стороны ... |

**Example:**

-Do you know what ISS is?

-Yes of course, it is International Space station. It is called sometimes space home. And I know. NASA spends lot of money on it.

-It is not surprising that the connection of I and Space technology made a great push in development of space and earth technique.

-As for as I know, NASA produced a lot of Commercial off the shelf system for the last 20 years. But the main feature of then is not maximum of computer power, but reliability.

-Do you know how many operating electronic systems NASA has today?

-I believe they are more than a hundred And mast of them are placed out the stations.

-Do you mean in the outer space?

-Yes, you are quite right.

**11. Формирование лингвистической компетенции.** **Развитие навыков аудирования. Просмотр и обсуждение видеоролика, выполнение теста. (**[**http://www.youtube.com/watch?v=mQXUFmtPP9w**](http://www.youtube.com/watch?v=mQXUFmtPP9w)**)(** **video\_9)**

Now let`s watch a short film and discuss it.

What have you seen in this film?

Answer my questions and do the short test.

**12. Подведение итогов урока.**

It is high time to make the conclusion of our lesson.

You will work in pairs, use these words and make up sentences for the conclusion of our lesson.

Read and translate your sentences. **(Приложение 7).**

**The key:**

1. Space research is very important for the development of humankind.
2. Space age developed the aerospace industry to design space equipment.
3. Spacecraft must be equipped with innovative and reliable hardware and software.
4. Space equipment requires new discoveries and knowledge of information technologies .

**13. Формирование оценочной компетенции. Рефлексия, домашнее задание: выучить диалог.**

I liked the way you worked at the lesson and I would like to know your opinion about it.

1. Was the lesson interesting for you?

а) Yes, of course; c) I don`t know;  
 в) I believe so; d) No, it wasn`t.

2.Can you speak on this topic now ?  
 а) Yes, I can; c) It is difficult for me;  
 в) I am not sure; d) I am afraid not.

3. Will you be able to discuss this topic?  
 а) I am sure, I can; c) I don`t think so;

в) I hope, I can; г) No, I won`t;

4. What did you find the most difficult at the lesson?  
 а) to read and translate; c) to listen and understand;  
 в) to ask and answer questions; d) to do exercises.

5. How did you like the lesson? Choose one of the pictures on the screen.

**Литература**

1.Oxford English Computing. Eric H. Glen. - Oxford University, 2005.

2.Английский язык. Основы компьютерной грамотности. Радовель В.А. –Ростов н/Д: Феникс, 2005.

3.Англо-русский словарь ПК. – М.: ОЛМА-Пресс Образование,2006.

4.Английский язык для пользователей ПК и программистов. Самоучитель. Е.В. Гольцова. -Корона-принт, 2007.

**Интернет ресурсы**

[**http://video.yandex.ru/#search?text=vostok1&filmId=34470982-09-12**](http://video.yandex.ru/#search?text=vostok1&filmId=34470982-09-12)**-восток1**

[**http://www.youtube.com/watch?v=BweqSPexl7Q**](http://www.youtube.com/watch?v=BweqSPexl7Q) **–комета**

[**http://www.youtube.com/watch?v=eUxXfzUTfX4**](http://www.youtube.com/watch?v=eUxXfzUTfX4) **–солнце**

[**http://www.youtube.com/watch?v=DOIEhyYDQ9A**](http://www.youtube.com/watch?v=DOIEhyYDQ9A) **–астронавт**

[**http://www.youtube.com/watch?v=2AeMIY11iMM**](http://www.youtube.com/watch?v=2AeMIY11iMM) **-солнечная система**

[**http://www.youtube.com/watch?v=s9VRukVd6cE**](http://www.youtube.com/watch?v=s9VRukVd6cE) **–мир**

[**http://www.youtube.com/watch?v=WXZKu38YpPg**](http://www.youtube.com/watch?v=WXZKu38YpPg) **–гагарин**

[**(http://festival.1september.ru/articles/419982/)**]((http:/festival.1september.ru/articles/419982/))

[**http://www.refolit.narod.ru/English/engl\_dialog\_phrases.html**](http://www.refolit.narod.ru/English/engl_dialog_phrases.html)

[**http://www.usra.edu/cs/riacs**](http://www.usra.edu/cs/riacs)

[**http://www.youtube.com/watch?v=mQXUFmtPP9w**](http://www.youtube.com/watch?v=mQXUFmtPP9w)

[**http://video.mail.ru/mail/iznaurovna/3940/3983.html**](http://video.mail.ru/mail/iznaurovna/3940/3983.html)

[**http://www.xard.ru/post/19147/**](http://www.xard.ru/post/19147/)

[**http://www.membrana.ru/particle/3264**](http://www.membrana.ru/particle/3264)

[**http://simple-ware.ru/index.php?newsid=27**](http://simple-ware.ru/index.php?newsid=27)

[**http://www.usra.edu/cs/riacs**](http://www.usra.edu/cs/riacs)