**План-конспект интегрированного урока по английскому языку и математике в 7 классе.**

**Место урока в учебном процессе:** урок-практикум по ознакомлению с некоторыми математическими понятиями в рамках межпредметных связей.
**Вид занятия:** комбинированный урок.
**Цели урока:**
1. Образовательные: познакомить учащихся с некоторыми математическими понятиями, часто встречающимися в текстах на английском языке;
2. Развивающие:
– коммуникативно–речевое развитие учащихся через ознакомление с некоторыми математическими понятиями;
– развивать любознательность, познавательный интерес к математике, иностранному языку;
– использовать математические и лингвистические навыки в нестандартных ситуациях;
– развивать мышление, память, речь.

**Задачи урока:***1. Образовательные:*– совершенствовать речевые навыки и умения;
– совершенствовать произносительные навыки;
*2. Практические:* организовать устную тренировку учащихся на основе известного математического материала при обсуждении различных понятий, выполнении упражнений и решении задач:
*3. Развивающие:*
– систематизировать “математический словарь” учащихся;
– расширять лингвистический кругозор учащихся;
– способствовать развитию творческой деятельности учащихся.
Оснащение урока (технические средства обучения): – дидактический раздаточный материал, презентация Power Point, телевизор.

**Ход урока:**

**Вступительное слово**

Вступительное слово преподавателя: задается «рабочая» атмосфера, озвучиваются цели и задачи урока, уточняется ход проведения урока.

Good morning boys and girls! I’m glad to see you. I hope you are all feeling nice. We have an unusual lesson today. As you have noticed we have some guests at our lesson today. And I’m sure that you you will do your best to show your brilliant knowledge. So let’s start.

**2.** **Активизация обучающихся, настрой на дискуссию. Разминка с использованием «мозгового штурма».**

The topic of our lesson is MATHS QUIS. And that means that you will have a chance to compete with each other in two subjects at once: Mathematics and English. Today we have two teams: “Eggheads” and “Wise guys”. And we are going to find out which team is the best in Mathematics and English as well.

By the way do you like Mathematics? Is it your favourite subject? What about English? Good.

Перед началом викторины повторяются числа и раздаются карточки со шпаргалками (сложные слова, которые будут попадаться в викторине и основные математические действия):

Now, first of all I want you to learn some new words that you will need to do the sums and solve the mathematical problems. These word are essential, so be very attentive and try to remember them all. Look at the slide please and repeat after me.

**to divide** – делить

**to multiply** – умножать

**to add** – прибавлять

**to subtract** - вычитать

**to** **the** **power** – в степени

**square** – квадрат

**area** – площадь

**quarter** – четверть

**fraction** – дробь

**numerator** – числитель

**denominator** – знаменатель

**root** – корень (**square root** – квадратный корень)

**to equal** – равняться, **equality** – равенство, **equation** – уравнение

Now let’s try to do arithmetic.

Fine. Now listen to me please, think and give answers to my questions.

**4. Викторина**

Fine. Now listen to me please, think and give answers to my questions.

**Level 1** *Arithmetic (1 point)*

*Ведущий делает блиц-опрос каждого игрока в команде (сначала одного в одной, потом - в другой).*

*Задания простые, на ответ даётся несколько секунд, далее – переход к следующему игроку.*

**Answers:**

1. What is eight add nine? (seventeen)
2. What will you have if you subtract three from twenty one? (eighteen)
3. What is sixty divided by ten? (six)
4. What is five multiplied by twelve? (sixty)
5. What is eight divided four plus two? (four)
6. What is ten percent of one thousand? (one hundred)
7. What is the square root of sixteen minus one? (three)
8. What is three to the second power multiplied by two? (eighteen)
9. What is thirty percent of one hundred? (thirty)
10. The side of a square is 5 centimeters. What is the area of the square? (twenty-five cm)
11. Express a quarter as a percent. (twenty-five percent)
12. What is the square root of six hundred and twenty-five? (twenty-five)
13. What is ten to the power of four? (ten thousand)
14. What is twenty-eight plus twelve minus nine? (thirty-one)
15. What is more: a half or a quarter? (a half)
16. What is more: nine multiplied by three or four multiplied by eight? (nine multiplied by three)
17. What is two multiplied by six multiplied by five? (sixty)

**Level 2** *Word problems (2 points)*

*Let’s solve the problems!*

*Read, translate, think and give an answer in English and in Russian.*

*На листке даётся задача. Обе команды решают на скорость. Кто первый поднимает руку – озвучивает ответ. Ответ принимается только на английском и без ошибок, иначе право ответа переходит второй команде.*

*После правильного ответа раздается следующая задача.*

1. Marshall had 7 apples. He cut each apple into 9 slices. How many apple slices did Marshall make? (sixty-three)
2. A boy thinks of a number, multiplies it by 2, and then adds 3. The result is 11. What is the number? (four)
3. There are 12 oranges on a plate. Mother takes half of the oranges and divides them equally between her three children. How many oranges does she give to each child? (two)
4. 65 coconuts were picked. 25 were put in one basket and the rest divided equally among 2 more baskets. How many coconuts did each basket have? (twenty-five, twenty and twenty)
5. The train has travelled 240 kilometers in 4 hours. What is his speed in km/h? (sixty)
6. Tiffany eats at a cafe and the cost of her meal is $20. She would like to leave a 15% tip (чаевые). What is her total bill including tip? (twenty-three $)

 Are you tired? Let’s warm up. Stand up please. We shall do some exercises.

**Зарядка.**

**Level 3**

So the next task is to watch the video about Pythagoras? A famous philosopher and mathematician, who made a lot of discovering in Mathematics and be ready to answer the questions. You all have them on your desks.

*Видеоролик*

*Раздать листки с заданием, дать время прочитать вопросы. Запустить ролик (можно два раза), после собрать листки. Проверить, проговорив ответы вслух.*

*Предупредить заранее, чтобы все делали заметки по ходу просмотра.*

**Questions:**

1. Where was Pythagoras born? (Samos)
2. Pythagoras’ years of life are from 570 BC to 495 BC. How many years has he lived? (75)
3. What was the name of the school of thought founded by Pythagoras?
4. Pythagoras believed that all people have immortal souls which after they die enter a new body. What is that theory called?
5. What was the idea that Pythagoras and his followers were obsessed by?
6. What did Pythagoras discover in a system of musical tuning?

**Level 4.** *Text*

*Прочитать текст и ответить на вопросы True/False (2 points)*

**Isaac Newton** (25.12.1642 - 20.03.1727) - English physicist, mathematician and astronomer.

Isaac Newton was born on 25 December 1642 at Woolsthorpe Manor in Woolsthorpe-by-Colsterworth, Lincolnshire, England. His father was a wealthy farmer, who died 3 months before the birth of Isaac. His mother, Hannah Ayscough, married for the second time when Newton was three years old. Afterwards she left Isaac in the care of his grandmother and began to live with her new husband.

When Newton was twelve he was admitted to The King’s School, Grantham. He studied there until seventeen. Newton abhorred (презирать) farming but his mother wanted him to manage a household (хозяйство).

From 1661 he was educated at Trinity College, Cambridge. Four years later Newton discovered the generalized binomial theorem (обобщенная биномиальная теорема).

Isaac Newton made a lot of discoveries in mathematics, physics, astronomy and other sciences. One of the most famous books of Newton is Philosophiꬱ Naturalis Principia Mathematica. It was published in 1687. There are a lot of important discoveries in this book including universal gravitation and three laws of motion. The first practical reflecting telescope was also invented by Newton. Between 1670 and 1672 he studied optics. As a result Newton showed that a prism could decompose (разложить) white light into a spectrum of colours. Isaac Newton is an author of the development of differential and integral calculus (дифференциального и интегрального исчисления) and he shares this mathematical discovery with Gottfried Leibniz. As legend has it Newton developed the theory of gravitation when he watched an apple that fell from a tree. Isaac Newton also attempted (пытаться) to predict the end of the world and he supposed that the world would end no earlier than 2060.

It should be noted that Isaac Newton was religious and studied theology. According to different sources he was Antitrinitarian. Newton studied the Bible and published some of his theological researches.

Newton also devoted his time to alchemy but he didn’t publish any alchemical works. It is known that mercury (ртуть) was found in his hair after his death. According to the suppositions this was a result of his alchemical experiments.

**Answers:**

1. Isaac Newton never knew his father. (T)
2. A new husband of Newton’s mother adopted him and took care of him (F)
3. Isaac wanted to be a farmer. (F)
4. Isaac Newton discovered the generalized binomial theorem after his graduation from the college. (T)
5. Isaac Newton developed the theory of gravitation with his friend Gottfried Leibniz. (F)
6. According to Isaac Newton’s prediction, people will be able to live till 2055. (T)
7. The falling apple helped Isaac Newton develop the theory of decomposing of light by means of a prism. (F)
8. Isaac Newton was an atheist. (F)
9. Isaac Newton took an interest in chemical experiments. (T)
10. He published a lot of important works including alchemical researches. (F)

**Level 5.** *Mathematical riddles (2 points)*

Now listen to me and try to find the right word.

1. It equals ninety degrees. (the right angle)
2. Schoolchildren learn that table all over the world. (the multiplication table)
3. It is a part of a whole or any number of equal parts. (a fraction)
4. The bottom number in a fraction. (a denominator)
5. The mathematical sign that indicates [addition](https://wikivisually.com/wiki/Addition). (Plus)
6. It is a math term used to describe an idea that can be proved. (a theorem)
7. It is a way of expressing information symbolically, by means of signs, letters etc. (a formula)
8. It is a statement that says that the value of two mathematical expressions is equal. (an equation)
9. It is a branch of mathematics concerned with questions of shape, size, relative position of figures, and the properties of space. (Geometry)
10. It is a [unit](https://en.wikipedia.org/wiki/Units_of_measurement) of [length](https://en.wikipedia.org/wiki/Length) in the [metric system](https://en.wikipedia.org/wiki/Metric_system), equal to one hundred centimeters. (Meter).

*- Our lesson has come to an end. Did you like it? Let’s sum up. Count your points to find out who are the winners today.*