Guidelines

Circle Records. Lesson 4

The main terms discussed at the lesson

- Graphic editor
- Sounds, music
- Animation
- Game level adding
- Audio editor

Electronic educational resources used at the lesson

- Internet-enabled computer
- preinstalled RobboScratch3, Zoom or Blue Jeans
- Own account in the community on https://scratch.mit.edu/

Features of the lesson's representation

This course has been developed by the ROBBO Methodological Department specially for distance learning.

A special thing about the course is that the material is presented visually in the form of slides. Explanations for each slide follow below.

Greeting.

Hello, children! Welcome back to our RobboClub. This is our third lesson. In the past, we 've finished our underwater game.
https://scratch.mit.edu/projects/388470914 reference to a teacher 's game.

You should already have your Scraps online accounts. I hope that some of you trained at home and fixed your scripting skills.
Run RobboScratch3 and open your Scratch online account. Show on your screens how it works and what doesn 't work. Discussion. Who works everything, chat.

Repetition.

Let's repeat the basic terms, learned at the last lesson.

Slide №2

What the letters in the Scratch are used to indicate coordinates? At the last lesson, we trained to determine the **coordinates**. Let's train it for a few more minutes. As you remember, the sprite moves from its place to the place called as the **coordinates of the sprite** by the test subject.

Let's train: https://scratch.mit.edu/projects/392273105

Slide №3

Describe the drawing algorithm. A pen (pencil, marker, ballpoint pen, and other drawing tools) acts in a similar way in real life and in the Scratch program. This means that before you start drawing, it is important to ensure that the Sheet is clean (the Stage in Scratch), then raise the Pen, select a color and size, and lower it onto the sheet (Stage).

Slide №4

How many messages can a sprite send? As soon as the Cat gets to the Muffin, a **message** will be sent to both the Muffin and the Mouse. After receiving the message, muffin swims to the Cat (for a short time), and the Mouse will be offended and grumble.

Let's check your memory again:
https://scratch.mit.edu/projects/389535033 The clicker is a small test for command recognition.

Let's study new topic.

First of all:

https://scratch.mit.edu/projects/387341536 Eye gymnastics (45 seconds).

Slide № 5

The cat had missed. The game becomes more interesting if the actions of the characters are accompanied by sounds. For example, when a cat touches a wall, it meows plaintively and falls back to its original position. Add these sounds to the Cat script: meow (meom), but not meow2 (meom2). And the sound of the splash type (the plunge). It is logical to use the same sound when the cat loses to the Mouse. He also falls right back home. This happens as a **"when I get go hungry"** event. Create it in the Cat's sprite, the **message** sender for this event is, of course, the Mouse. Go to the Mouse's sprite and provide it with the appropriate command "**send go hungry!**".

Slide № 6

Mouse Script. Initial conditions. Check. Is everything all right? We set IC (the initial conditions) at the last lesson. Continuation of the script is on slide 7.

Slide № 7

Mouse Script. Continuation. As already mentioned, the speed (**walking ... steps**) must be selected. Half a step is a good speed for code on the scratch.mit.edu site, and in the ROBBO Scratch program, the speed should be slightly less. This may depend on the speed of your computer. Insert the long-awaited command into place - **send go hungry**. Receiving this message, the cat will plunge into a puddle, wherever cat is located. The Mouse is already **"touching the muffin"** and is not going to share it with the Cat. Also defiantly saying "**I ate everything for 2 seconds**". This is why she got fat (**set the size to 100%**). But we still see and "**change the costume to 2**". Now we will change it. Just finish the script. The Mouse will test its new suit "**wait for 1 second**", make a "**180 turn**", remember to expand its tunnel (**set the pen size to 55**) and - "**swim 1 seconds to the point**" ... home. Then "**wait 1 more second**" and "**erase everything**". Return the size, suit, and direction, i.e. the initial conditions. **Stop this script**. Try not to put this **plug** on, and you'll see what happens.

Question to the chat. What will happen?

Warm up. **Slide 18** Choose music.

Slide № 8

Mouse's costumes: don't eat too many muffins! Let's make a fat Mouse. Enter the costumes. Click the costume with RMB. Then duplicate. Enter the costume 2. Click on the Mouse back. It is highlighted in blue. Hover the cursor over the upper middle blue dot, click the LMB, and stretch the Mouse body. It is important to do this carefully so that the Mouse does not come apart. Adding additional volume to the Mouse, let's remember what it got fat from. Enter the Muffin's sprite and make such a script. After all, the Mouse ate it, so it was hidden. As you understand, the Mouse also sent text messages to two addresses at once: Cat and Muffin.

Slide № 9

Let's continue to voice the Cat.

Let's continue to voice the Cat and check its script. We will not list the commands, because they are visible on the slide. Check them against your own. We have a new feature in this script-the green command for the "**drum to play 40 0.2 bits**". We will insert it in the **"loop operator repeat 5 times"**. After the Cat arrives home with a victory and a Muffin - Drum roll! We move on to the next slide.

https://scratch.mit.edu/projects/387341536 Eye gymnastics (45 seconds).

Slide № 10 (optional)

Music and microphone. Click Add extension in the lower left corner of the screen. Select the **Music - Extension** on the opened page. Listen to the sound of various instruments. This is an exciting activity! After the drum roll, we hear the greedy purr of a Cat eating a muffin. This sound is recorded by means of a **microphone**. Go to the **Sounds**-to the right of the **Costumes**. At the bottom, click on the **speaker** icon. Select the **microphone** icon, **record**. A blue page opens. You may be asked for permission to use your microphone. You'll have to allow it. An orange **Record** button appears. Click, record your voice! Try yourself as an actor and imitate a rumble or just say it with feeling: "Yum-yum, how delicious!" Before recording, warn people around you: "Silence in the Studio! As soon as the recording starts, the little brother's screams will appear along with the rumbling. Enter the **Codes** and open the **Sound command block**. The sound of your **record1** appears in the "**play sound**" command. Insert it into the Cat script. Our game is prepared!

Question to the chat. What do pen and sound have in common? Answer: the command color is green))

https://scratch.mit.edu/projects/387341536 Eye gymnastics (45 seconds).

Slide № 11

Second level. Labyrinth. Tail. Our game has already got a complete look and sense. You can play it! And for those who like complexity, we will come up with and program a new **level** in the game. On the **Second level** the cat enters a new more complex labyrinth. The new labyrinth layout will look as shown on the slide. The algorithm for developing a new labyrinth is as follows. First click the **checkbox** and immediately **Stop**. Let all sprites take their places and watch our actions. Go to the **Backgrounds**, **duplicate** our background. Select the **rectangle** tool. Choose the **Filled** one. Click on the color, take the **pipette**, point at the gray walls of the labyrinth. Place the cursor almost in the upper left corner. By clicking the LMB, we pull the cursor to the right and down, expanding the gray field and closing the corridor. We will stretch the gray rectangle approximately to the pantry with the muffin. Let's leave the Cat and the muffin in their places. We will not change the **initial conditions** of sprites for simplicity. Look at the stage, make sure that both the Cat and the Muffin are at the same place: in the previous labyrinth. Let's create a new corridor. Choose a **brush**, choose a **color (fill)**, choose a **size: 77.** Brush size (=the size of the corridor) will be slightly larger than the size of a Cat. Later you will understand why this is necessary. You can enter the brush size in two ways: increase the value using the **arrows** to the right of the number, or type on the keyboard. Use the **brush to draw** an arbitrary semicircular passageway. It is important that the turns of the corridor are smooth. This will complicate the passage of the corridor for the player. The player will need more dexterous fingers at the new level of difficulty. In the corridor, the Cat 's tail will get in the way. The protruding tail will touch the walls on turns. We will change the Cat's costume and turn the tail closer to the body. In order to do this, you need to click on the tail with the cursor. The tail will be highlighted! Why should we be happy about this? Because we use the advantages of vector mode. You can select and change any element of a vector drawing at any time. Soon we will need it for animation. So, the tail was selected and moved, if necessary, turned by the anchor at the bottom of the selection frame. The tail took this position (red). Let's get some animation now.

Question to the chat. How many clicks are necessary for all sprites to return to their original places - 1 or 2, or as many as sprites? Answer: 2. **Check box** and **stop** immediately.

Slide № 12

Second level. Animation.

Do you know how to make cartoons? One character is drawn in different poses, then the drawings are quickly changed and it seems that the drawing comes to life. Each individual drawing is called a phase, a phase of movement. In Scratch, the phase is called the **costume**. By creating different costumes and **changing them in the code**, we will bring the characters to life.

We are already working in a graphic editor, so you can immediately get acquainted with the animation or animation of characters. Without animation, the Cat's movement is more like sliding than running. The cat must move its paws at every step to run. To do this, select the legs and turn. First we'll apply it to one costume, and then to the other one. We have two opposite legs, so that the cat runs, not swims. If you change the position of the two front legs at the same time, and then the two back legs together, the cat will look like a breaststroke swimmer.

Let's program the change of different costumes as shown on the slide. First, without delay and make sure that the **costumes** change too quickly. For the natural movement of the Cat, it is important that each **costume** is delayed for a while. Insert the command "**wait 1 seconds**" in the code. The cat went, but falls asleep at the same time. **Costumes** change too slowly. Reduce the time "**wait**". Let's reduce it by 5 times at once. Click. The Cat went with a good athletic pace.

Task №1 in AB.

Slide № 13

Second level. Animation 2. We took a ready-made cat and changed his costumes ourselves. And the cat came alive! For other games, you can find sprites in Scratch that already have several costumes for animation. The more costumes, the more interesting and smooth the movement! In a real cartoon, the hero changes 24 poses, phases, and costumes within one second.

If you want to use sprites from previous Scratch versions, use the "**Load sprite**" command. By clicking this button, you can choose any image in your computer from your stock. You can use photos from your smartphone as sprites. The loaded sprite will have all the same rights in the project as the other sprites. The Dino sprite on the slide is loaded from old works made in Scratch2. He has 7 costumes. If they change in 1.4 seconds, then Dino looks like a live one! Now it is in the **Materials**. In the next lesson we will get to know it better.

The numbers 1/5, 2/10, and 0.2 (0 and two tenths) are the same value, written differently. I tell those guys who haven't done it in school yet. These are fractional numbers, they are greater than 0, but less than 1. This is like 2 watermelons divided equally into 10 people. Everyone will get significantly less than 1 watermelon, but more than nothing (than 0). Here's what numbers less than 1 but greater than 0 are.

Question to the chat. How many costumes does Dino change every second? 3, 5, or 6?

Slide № 14

Second level. Cat controls. Let's change the Cat's controls a little. Instead of 4 separate scripts for each arrow, we make the script common for all directions. However, the principle does not change. Each **direction** can be defined using a **conditional operator**, which inserts a **key sensor** from the **sensor block**. The algorithm is the same: find the appropriate direction for each **arrow** and give the **direction** the speed "**go 3 steps**". The control allows the sprite to walk diagonally, obliquely, if you simultaneously press the arrows of adjacent **directions**. For example, up and left. All 4 scripts of the previouc control (**when the arrow key ... is pressed**) should be deleted. For those who have used animation, it is better to change the script to the right option. This way the cat will go faster. In other words, you need to insert a small animation block consisting of two commands into the cyclic "**repeat always**" operator: "**next costume**" and "**wait 1/5 seconds**". And the speed "**walk 3 steps**" should be replaced with **"walk 6 steps"**. But the fact that the cat's step lengthens can hurt him. He will walk less carefully. Let's say that it jumps 4 steps to the wall, and it jumps 6 steps every time you click on it. Dangerous! You need to get used to checking the code so that the improvement of one does not lead to the deterioration of the other.

Task №2 in AB.

Slide № 15

Second level. Mouse Script. Let's add the Mouse script. It is her task to complicate the level of the game. When the cat first reaches the Muffin, ahead of the mouse, it will grumble at him, and then move to its original position. So that the new background doesn't have any old traces, it should **erase everything**. "**Raise the pen**" - so as not to leave a trace. And only after going to your house "**put down the pen**". At this point, we program the change of level – "**change background**" to "**next background**". Our characters have finished the game, returning to their positions, and now at a new level, they will each find themselves in their own house. Let the background change have a musical accompaniment - the **sound** of teleportation. The indefatigable Mouse will immediately rush back to the Muffin, and the Cat will wait for your control. Here you will appreciate it. It won't work immediately. The question is: how is it possible to stop the game? To do this, create the 3rd **background**. He will also express the joy of victory. Make it in raster mode. Fill it with two gradient colors. And a cheering inscription. The mouse can also be animated.

Slide № 16

Second level. End of game. The question will arise: how can I stop the game? To do this, create the 3rd background. It will also the expression of joy from the victory. Make it in raster mode. Fill it with two gradient colors. Make a cheering inscription. **The background code l**ooks like this. And it also has sound. This is the sound of a **Gong**. It is convenient for indicating both the beginning and the end of an event. But it's too long. What is the easiest way to do this?

Slide № 17

Second level. Audio editor. Sounds can be edited in the sound editor. This way you can cut or shorten the sound. There are other tools. Try it. We shortened the sound of the Gong more than one and a half times. Everything that goes on after 10 seconds is almost inaudible. It doesn't affect your mood in any way.

Question to chat. What kind of pink patterns does the sound editor draw?

The louder the sound, the wider the band. The sound fades and the band narrows.

Task №3 and №4 in AB.

This is the end of our lesson. You did a good job today.

Slide 18

Warm up. Used at the discretion of the teacher several times during the lesson. An alternative version of gifs has appeared for physical training. Instead of gifs, you can use your own cartoon for physical training. Here is the link https://scratch.mit.edu/projects/397666421

Completing tasks in Activity Books.

Task № 1

true

Task № 2

Right. The sprite will go diagonally.

Task № 3

Deploy option.

Task № 4

Option 2).