

SCENARIO

Title	MUSIC AND KEYBOARD
Summary	This exercise is about learning basics on Block Programming with Mbot. During this exercise student will learn about download FREE MP3, assign audio in MBLOCK and also working on assign KEY from keyboard to execute commands.
Author/s	AIJU

DIDACTIC OBJECTIVES

- Teach basics of coding by block
- Learning about BLOCK CODING, using KEYBOARD to interact with SCRATCH
- Downloading FREE MP3 files from internet
- Learning Music Scale and Rhythm

Music **X** Mathematics Information Technology **X** Robotics Programming **X**

Education Level: 10-12 years **X** 12-14 years

PROBLEM STATEMENT

„InnoExperiment – Innovative Approach to Teaching through Experiment”

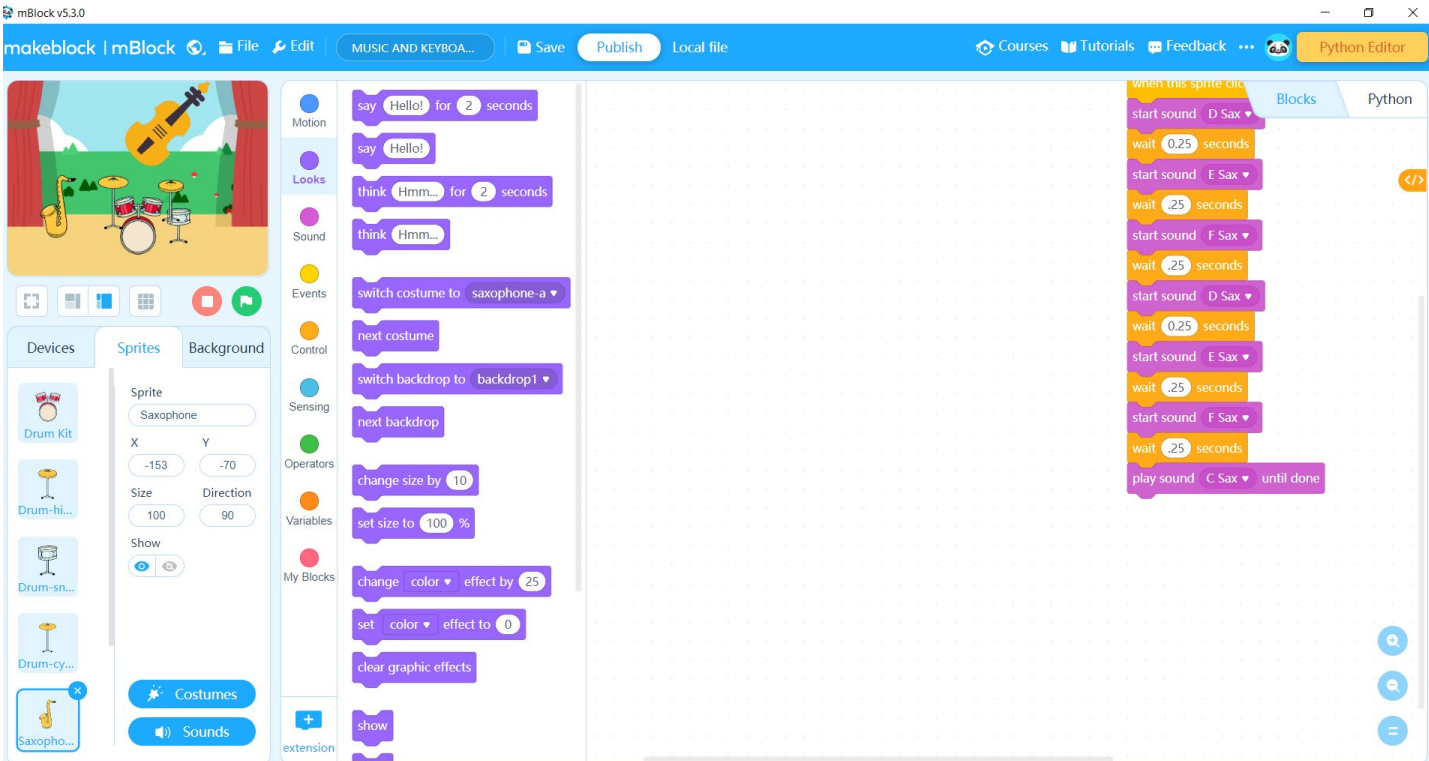
Project Leader: Zespół Szkolno – Przedszkolny w Goniądzu (ZSP)



Begin to teach programming to students through simple block language and image assignment. In a simple way, students begin to understand concepts such as variables, assignments, conditionals.

BOM (Bill Of Materials needed)

- MBOT software 5.3.0v
- Assets from MBOT software



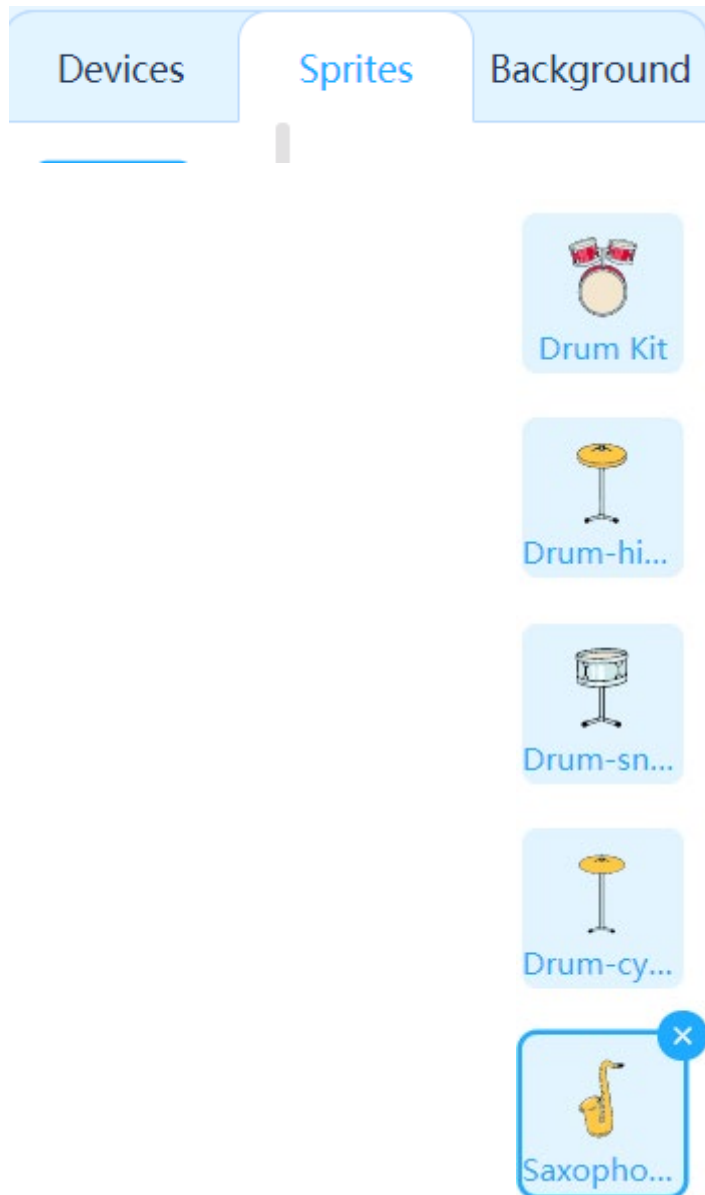
The screenshot displays the mBlock 5.3.0 software interface. The main workspace shows a stage with a saxophone sprite and a sequence of blocks: 'say Hello! for 2 seconds', 'say Hello!', 'think Hmm... for 2 seconds', 'think Hmm...', 'switch costume to saxophone-a', 'next costume', 'switch backdrop to backdrop1', 'next backdrop', 'change size by 10', 'set size to 100 %', 'change color effect by 25', 'set color effect to 0', 'clear graphic effects', and 'show'. The right panel shows a Python editor with the following code:

```
when this sprite clic
start sound D Sax
wait 0.25 seconds
start sound E Sax
wait 0.25 seconds
start sound F Sax
wait 0.25 seconds
start sound D Sax
wait 0.25 seconds
start sound E Sax
wait 0.25 seconds
start sound F Sax
wait 0.25 seconds
play sound C Sax until done
```

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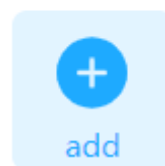
ACTIVITY DESCRIPTION

First, we need to create scene:

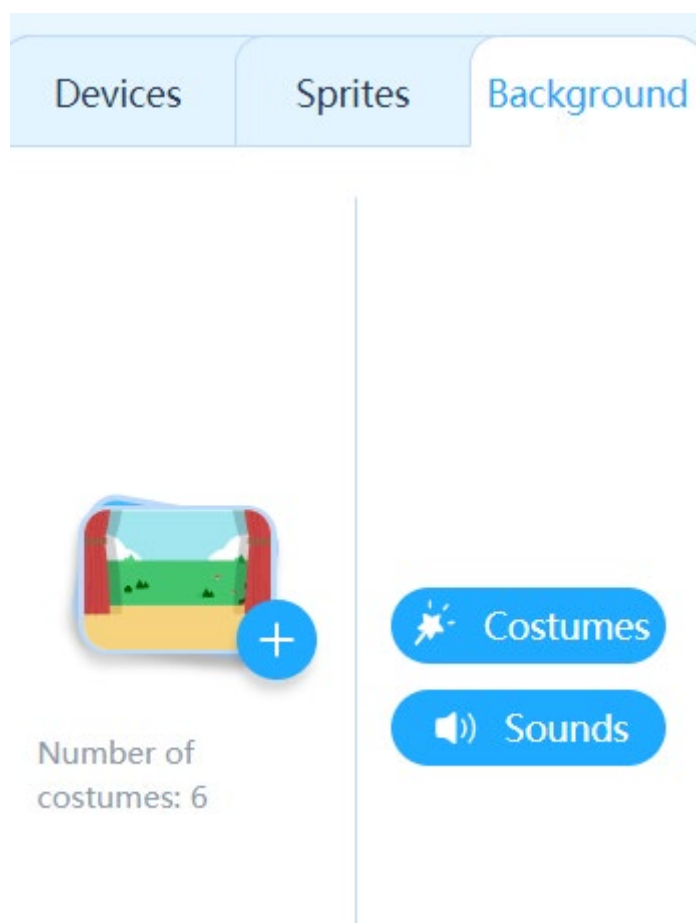


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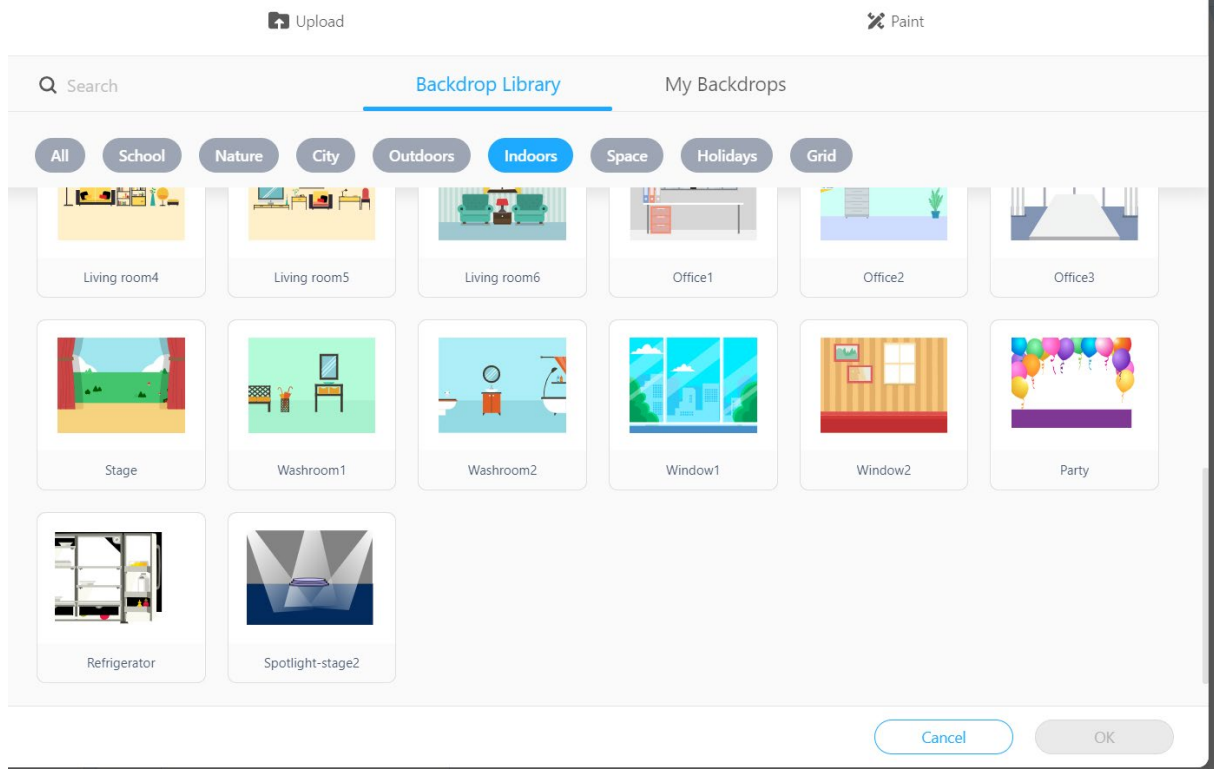
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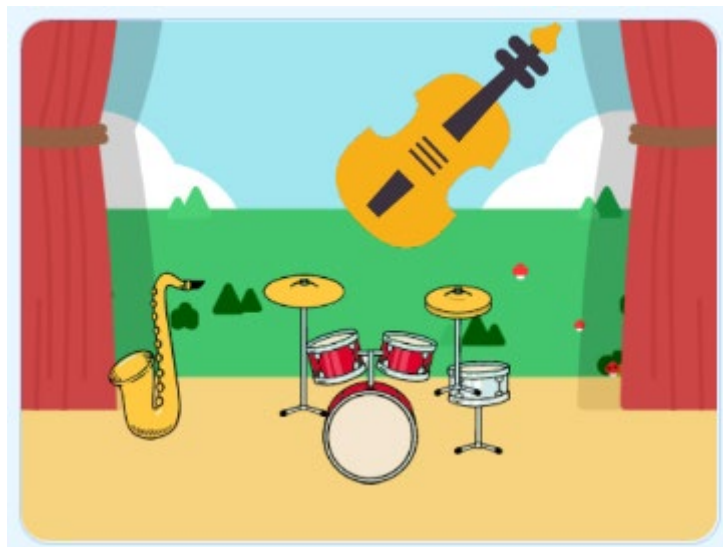
And background:



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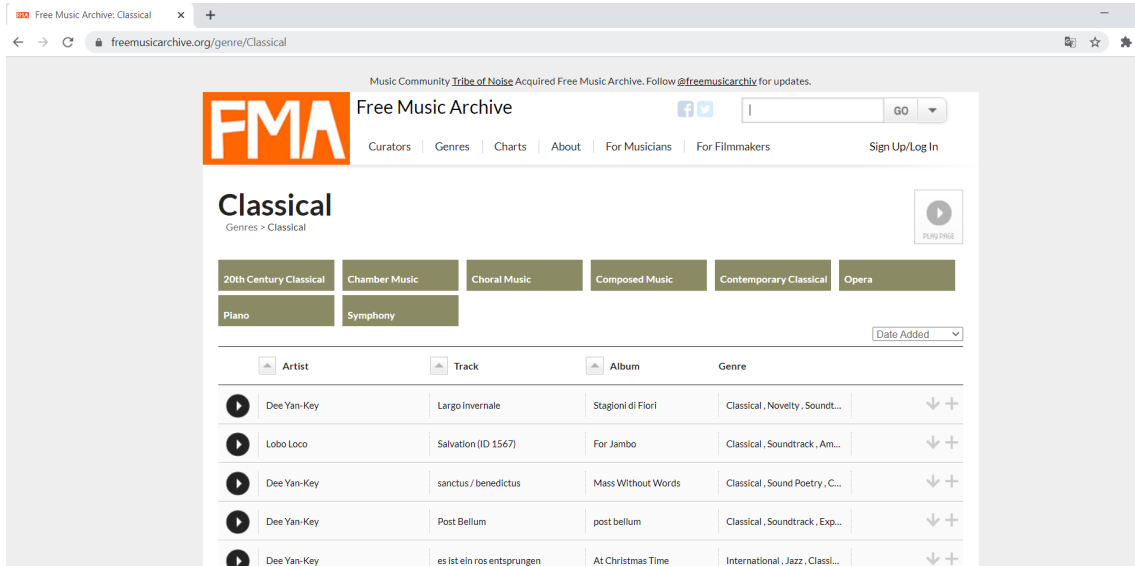


Create visual scene:



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Now, we go to Internet Browser to download a FREE MP3:



Free Music Archive: Classical

freemusicarchive.org/genre/Classical

Music Community **Tribe of Noise** Acquired Free Music Archive. Follow @freemusicarchive for updates.

FMA Free Music Archive

Curators | Genres | Charts | About | For Musicians | For Filmmakers | Sign Up/Log In

Classical

Genres > Classical

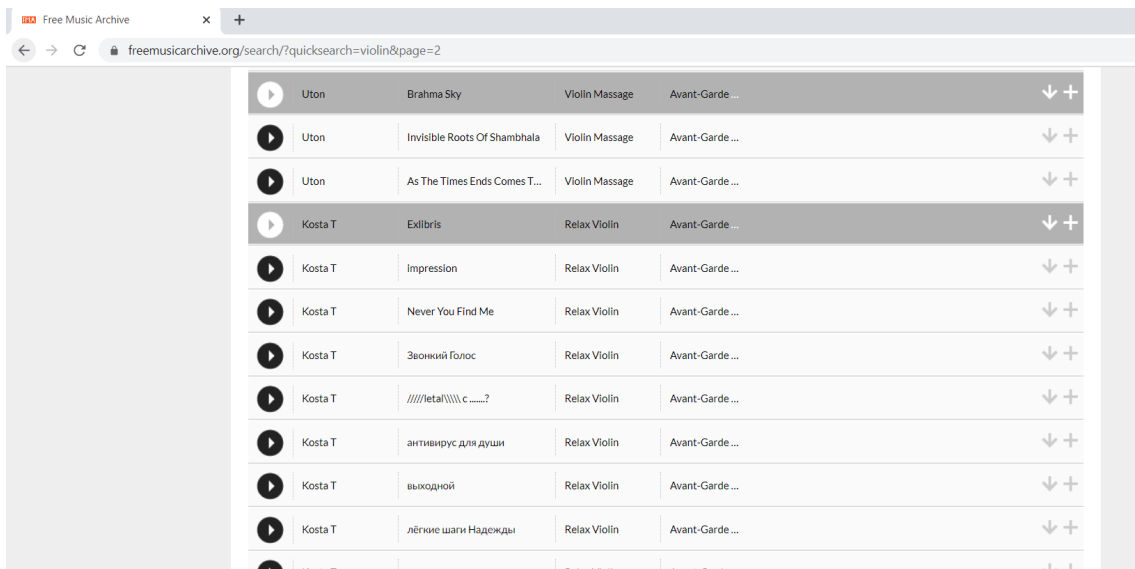
20th Century Classical | Chamber Music | Choral Music | Composed Music | Contemporary Classical | Opera

Plano | Symphony

Date Added

Artist	Track	Album	Genre	
Dee Yan-Key	Largo invernale	Stagioni di Fiori	Classical, Novelty, Sound...	↓ +
Lobo Loco	Salvation (ID 1567)	For Jambo	Classical, Soundtrack, Am...	↓ +
Dee Yan-Key	sanctus / benedictus	Mass Without Words	Classical, Sound Poetry, C...	↓ +
Dee Yan-Key	Post Bellum	post bellum	Classical, Soundtrack, Exp...	↓ +
Dee Yan-Key	es ist ein ros entsprungen	At Christmas Time	International, Jazz, Class...	↓ +

Downloading: Kosta T - Exlibris.mp3 file

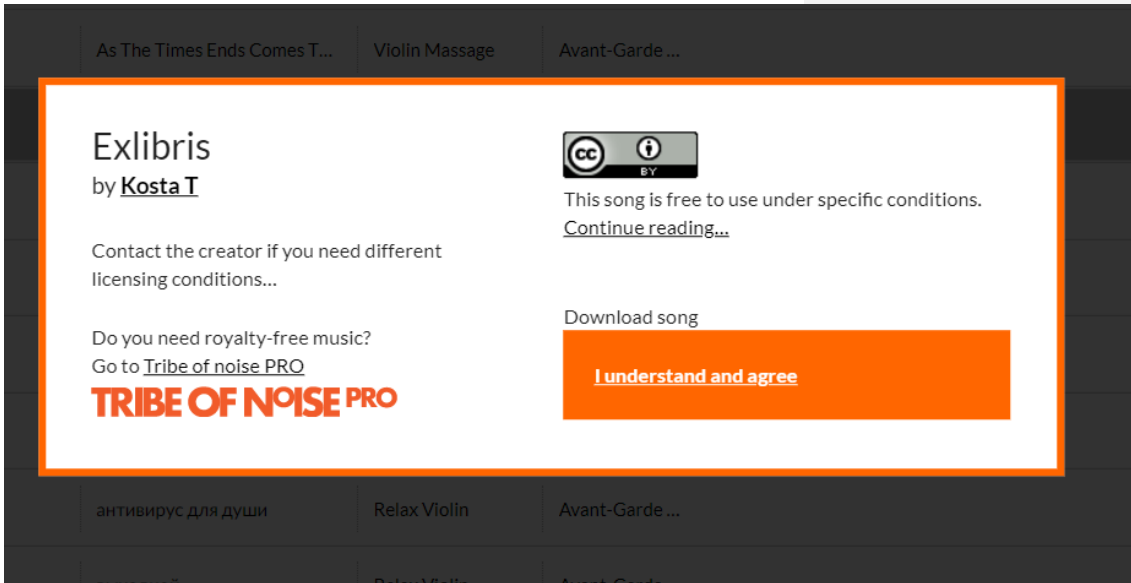


Free Music Archive

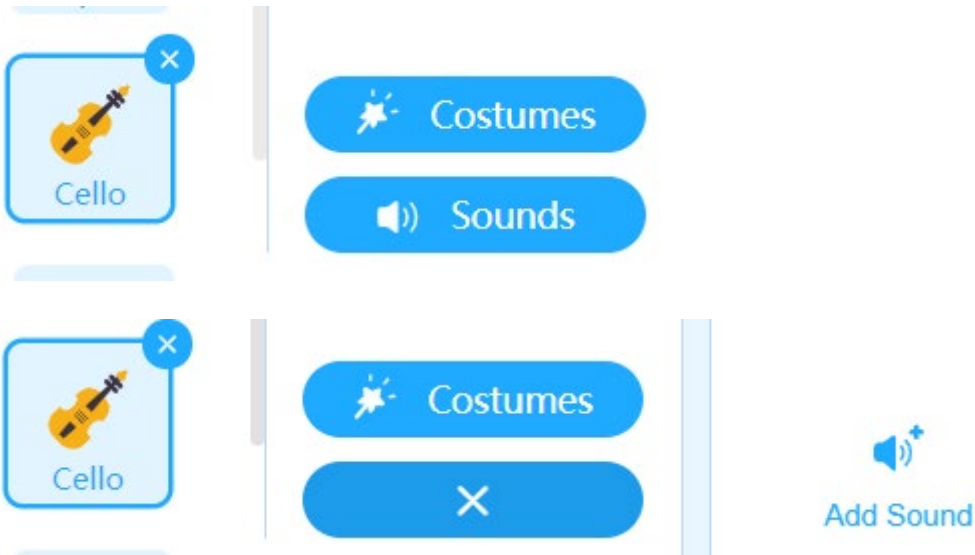
freemusicarchive.org/search/?quicksearch=violin&page=2

Uton	Brahma Sky	Violin Massage	Avant-Garde ...	↓ +
Uton	Invisible Roots Of Shambhala	Violin Massage	Avant-Garde ...	↓ +
Uton	As The Times Ends Comes T...	Violin Massage	Avant-Garde ...	↓ +
Kosta T	Exlibris	Relax Violin	Avant-Garde ...	↓ +
Kosta T	Impression	Relax Violin	Avant-Garde ...	↓ +
Kosta T	Never You Find Me	Relax Violin	Avant-Garde ...	↓ +
Kosta T	Звонкий Голос	Relax Violin	Avant-Garde ...	↓ +
Kosta T	//////latal\\\\\\ с?	Relax Violin	Avant-Garde ...	↓ +
Kosta T	антивирус для души	Relax Violin	Avant-Garde ...	↓ +
Kosta T	выходной	Relax Violin	Avant-Garde ...	↓ +
Kosta T	лёгкие шаги Надежды	Relax Violin	Avant-Garde ...	↓ +
Kosta T	Relax Violin	Avant-Garde ...	↓ +

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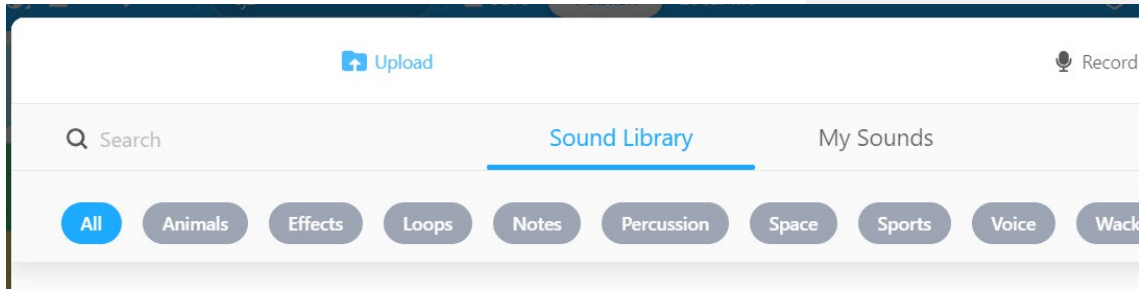


Going back to MBOCK, we will assign MP3 to CELLO Sprite:

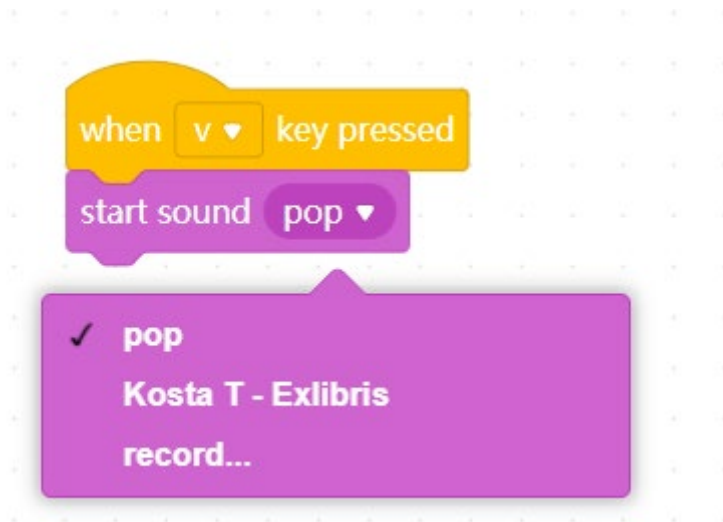


Click in Add sound, Upload Button and selecting file from Desktop folder:

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Finally, we will create this BLOCK CODE, when we Press v Key, MP3 will be sound:



Now we will assign sounds and Keys to other instruments:

DRUM KIT,

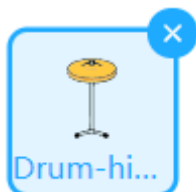


keys SPACE, d, f, sounds „DRUM BASS3”, „HIGH TOM”, „LOW TOM”



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DRUM HITHAT



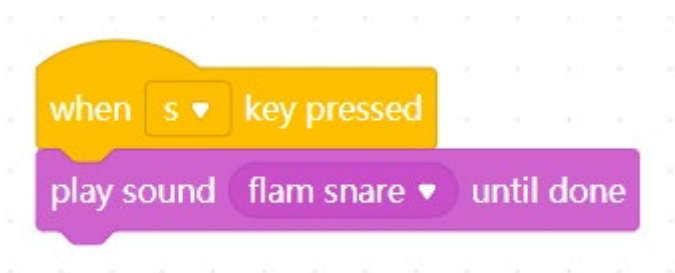
KEY a, „HIHAT CYMBAL” SOUND



DRUM SNARE



KEY s, play sound „FLAM SNARE”



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SAXOPHONE



CLICKING OVER SPRITE, PLAY A MUSIC SCALE

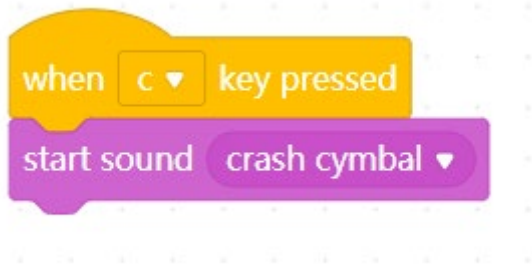


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DRUM CYMBAL



KEY c, PLAY SOUND „CRASH CYMBAL”

**STUDENTS' EVALUATION**

The way to evaluate the students would be for them to demonstrate on paper how they have developed the exercise and to use the program / game to check the solutions.

SCALABILITY

Regarding the concept of scalability, the complexity could be increased by adding problems that need more letters and functionalities