Worksheets provide guidance throughout the program creation.

Mind the following symbols that..

- structure your work progress and show subgoals,
- provide help, mark and explain challenging and important notes
- include assignments and activities.

**Jigsaw Method: Sound and Communication**

In this section you will learn how to create **characters** with **(in the example the 🐱 and how they can communicate with each other.)**

Are you curious? Well, let’s get started!

**Place a second figure:**

- For this purpose, simply click on this button: **Menu**
The **character library** opens.
- Browse the character library and select a character by clicking on the left mouse button.
- Confirm your selection with a *double click*, or click the "OK" button.

If you do not like your selection, you can delete it here by right-clicking on the character.
Now create a matching costume name for your characters or change the existing costume name (here "giga-a").

Attention:
This symbol 🧙‍♂️ is available twice! Click on this icon to the right of your stage to create a new character. By clicking on the symbol in the Costumes menu, you can only assign a new costume to your character.
**Produce a Sound:**

Now let's hear something from our characters! To do this, we need some puzzle pieces from **Events** and **Sound** from the **scripts** menu.

To let your character (for example the cat) know when it starts, we have to set a **starting condition**.

For this purpose, select the start condition "**if-key-space**" from **Events** in the **scripts** menu, and drag it to the right of your **programming interface**.

- Choose the sound function and let the 🐱 play its "meow" (if you have a different character, you can see on the next page how to select a suitable sound.

- Test your program by pressing the **spacebar**.

- Now let the cat try out an **instrument** and test your program again. 😊
Scratch – Jigsaw Method

Sound and Communication

What does this program do? Explain in your own words!

- Write down your thoughts here:

- Now try to combine several Sounds in a program.

Now find a new sound from the sound library in the sound menu. Click on the speakers for this purpose.
Choose the **Sound** function in the *scripts* menu. You will find your chosen sound again.

![Scratch Block Editor](image)

Watch out! The new sound only applies for the character you worked with last!

If you want to use a new sound for another character, you have to create it again! Just click on the character with which you want to create sounds.

![Scratch Menu](image)

Click on me to assign a new sound to me!

Well done! Let’s have a short break!!
**Sending messages:**

Now you have to decide which of your characters is supposed to **send** a message and who should **receive** it. The sender's script is written first.

In this example, we are going to start with the 🐱, with which you are already familiar with. It is going to be the **sender**.

We need puzzle pieces from **Events**, **Control** and **Sound**.

- Drag the puzzle pieces "if-key-spacebar-pressed" and "broadcast-message1" from the **Event** function into your programming interface.
- By selecting you can choose “new message”.
- Write the **message** you want to send in the pop-up window.
- If you press the spacebar now, your message will be sent.

**What do you have to do in order to let the recipient feels appealed now?**

**Precisely! You have to write a program to me as a receiver, so I know I should receive something.**
Scratch – Jigsaw Method

Sound and Communication

- Search for the recipient’s the start condition for you recipient in **Events**,

- Add a "wait-1-sec" from the **Control** function to the start condition

- Lastly, choose a puzzle piece from **Sound**.

- Test your programs!

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Please make sure to use the same starting condition for several, parallel programs of the **transmitter**.
(In the example, the empty key)

All programs - of sender and receiver - can be started at the same time with one click.

Make sure you have also marked the character you want to write a program for!

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If your programs look this, you did it right!
Additional task:

Try to have your character play several sounds after receiving the message. You can also create one or more other characters and let them respond to your message with a sound; You will have an orchestra so to speak. 😊

Congratulations,
you have reached your goal!