



Music Blocks Lesson Plan

Music Deducto

Age:

7-12 years

Lesson duration:

60 minutes

- Introduction: Deducto, a pattern-matching game (10m)
- Part 1: Creating a Deducto Game (20m)
- Break (5m)
- Part 2: Creating your own patterns (15m)
- Performance/Critique (10m)

Number of students:

Up to 10.

Rationale:

Deducto is a learning activity to help children learn the art of inductive logic through pattern recognition.

Objectives:

Students will program patterns in music and hone their listening skills.

LESSON

Introduction: Introducing Deducto.

Sit with the students and explain that today's lesson is about patterns. Ask them to give some examples of patterns. Encourage them to come up with examples of patterns with music. See if together they can come up with a definition for "pattern".

Deducto is a pattern-matching game invented by a former student, Jon Orwant.

In the game, patterns are presented. The patterns are created based on secret rules, and the player's goal is to determine the rules. The way the game is played is first there is a discovery phase, where there is a presentation of patterns that follow the secret rules and a presentation of patterns that do not follow the secret rule. Then there is a guessing phase, where a sequence of patterns are presented that may or may not follow the secret rules. The player must guess whether or not the rule is followed. If a pattern follows the secret rules and they guess "yes", then they get a correct answer. If a pattern does not follow the secret rules and they guess "no", then they also get a correct answer. If they get four correct answers in a row, then they win the game.

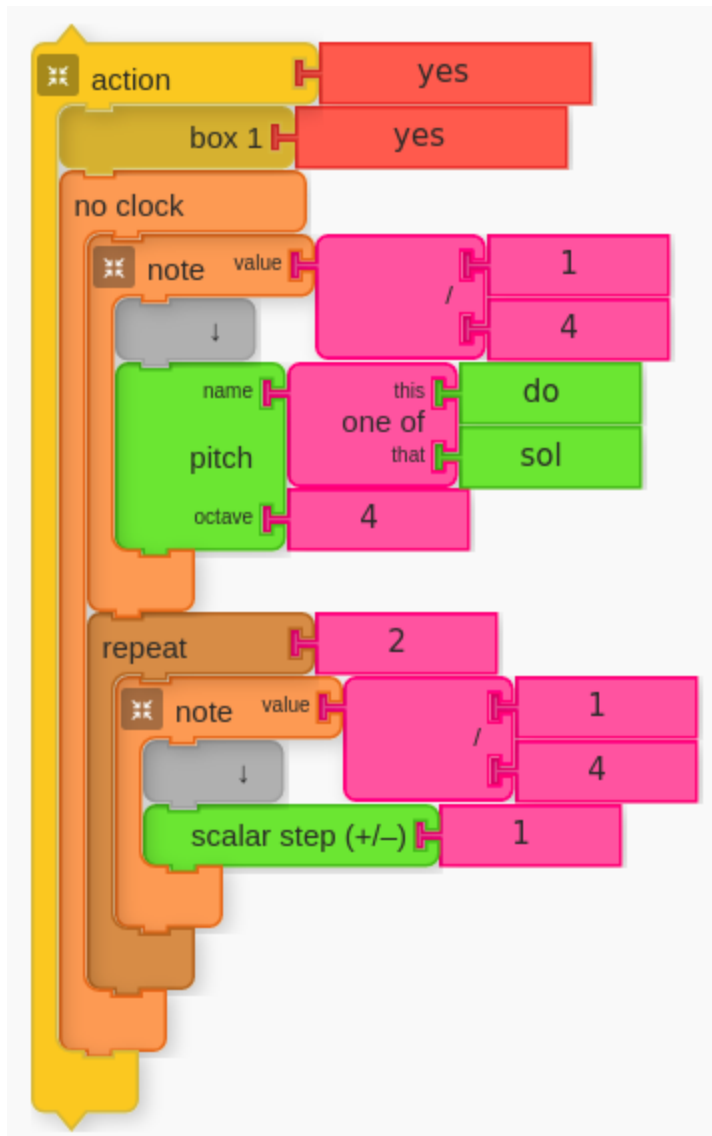
Today, we are going to create a musical version of Deducto. But first we will try to guess the secret rules by playing the game.

[Play Deducto](#)

Were you able to guess the secret rules?

Part 1: Creating a Deducto Game.

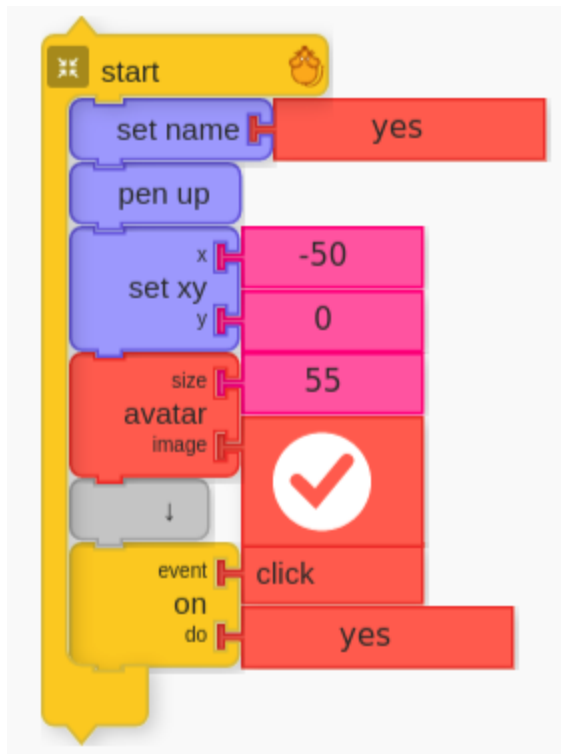
- A. We need to assemble several parts to make our game. We need our secret rules and we need a way to practice (the discovery phase) and to play (the guessing phase).



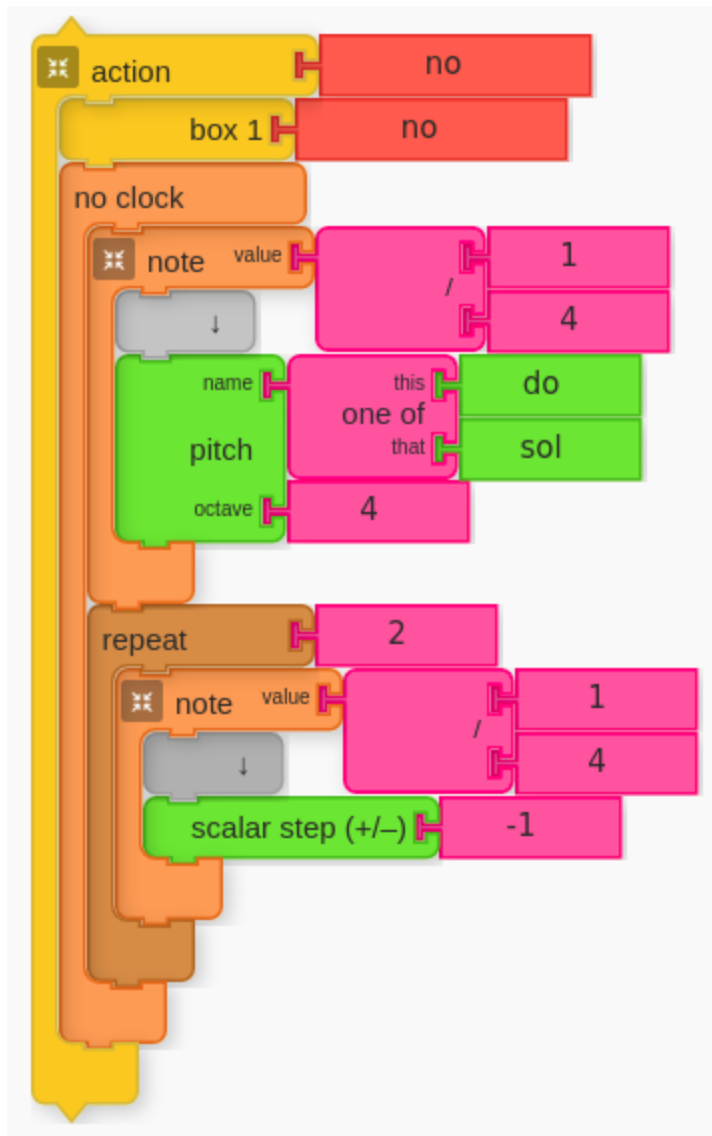
This is one of two secret rules. Patterns that match -- “yes” patterns -- start with one of either Do or Sol and then play the next two notes in an **ascending** scale.

Note that in Box 1 we store “yes”. This so that we know what pattern we are playing. We’ll refer to Box 1 later.

Also note that we are using the “No Clock” block from the Meter palette. This is because we are playing notes with button pushes rather than as a melody.



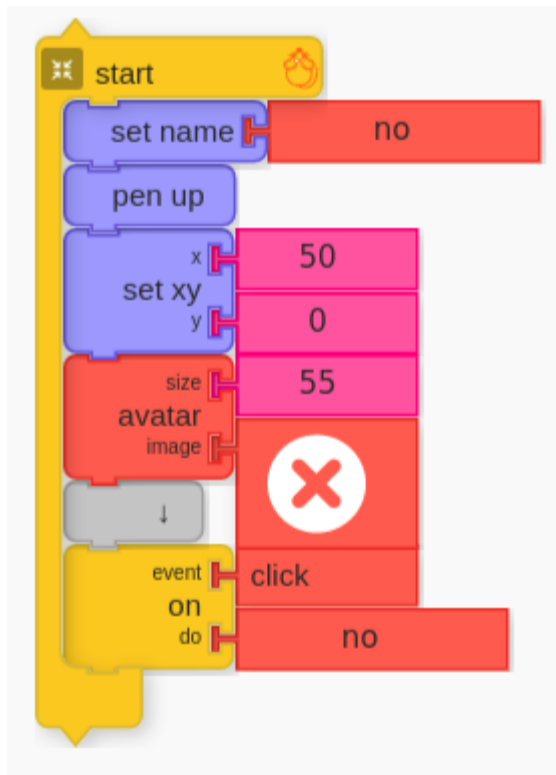
We can dedicate a Start block to a button for generating positive -- “yes” -- examples. Whenever the button is clicked, the Yes action is played and we hear a pattern.



The other secret rule is for the patterns that do not match -- the “no” patterns. Again, we start with either Do or Sol, but in this pattern, two notes in a **descending** scale are played.

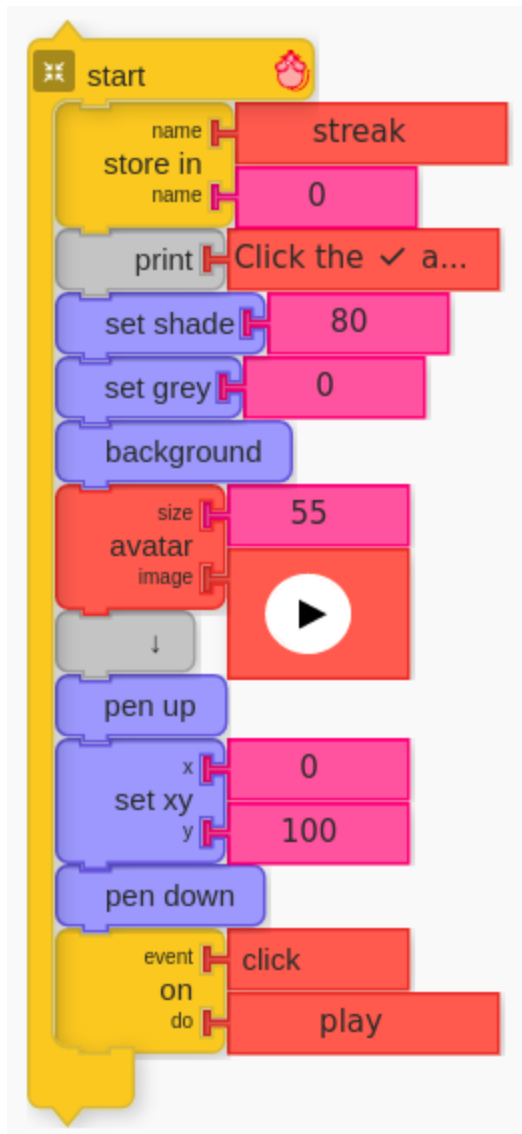
Note that this time we store a “no” in Box 1. Again, this so that we know what pattern we are playing. We’ll refer to Box 1 later.

Also note that we are using another “No Clock” block from the Meter palette.

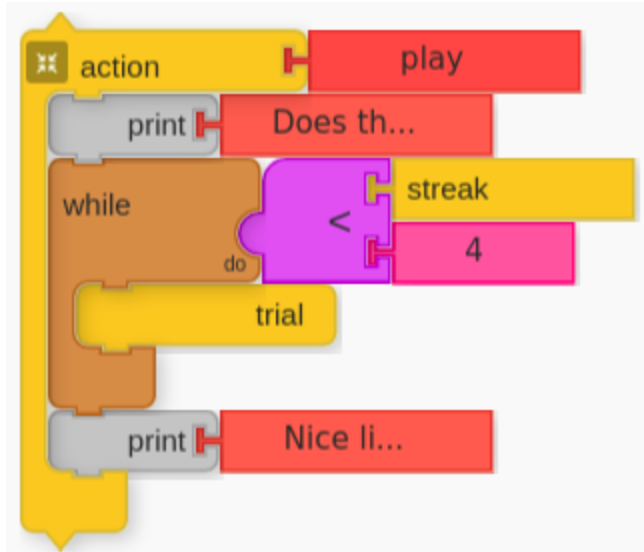


We can also dedicate a Start block to a button for generating negative -- “no” -- examples. Whenever the button is clicked, the No action is played and we hear a pattern.

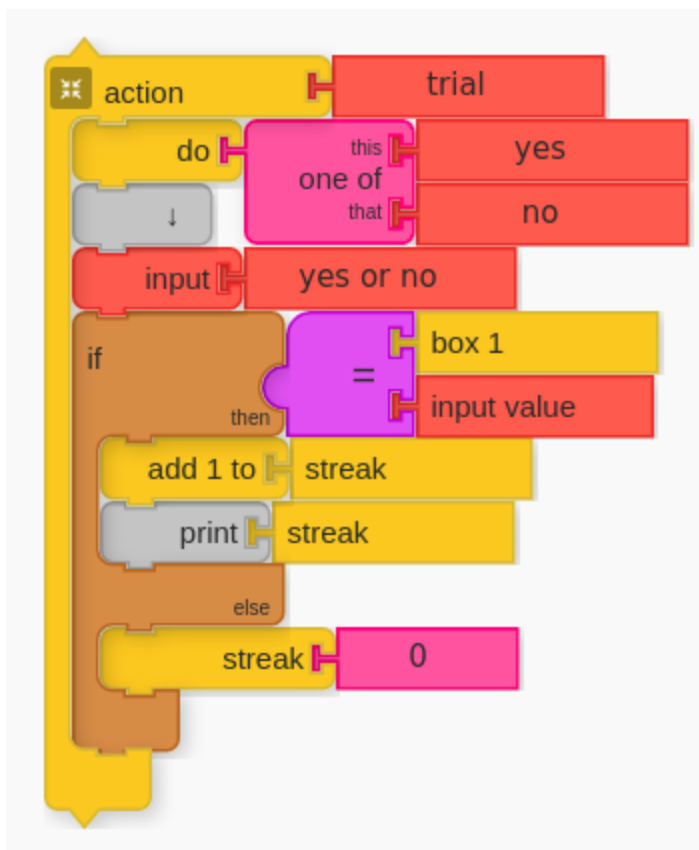
We can use these two buttons to discover the pattern.



We can use a third Start block for the Play button. To play the game, first we put a zero in the Streak box, which we will use to count our “streak” of correct answers. When the Play button is clicked, we run the play action.



The play action keeps running the trial action while the streak of correct answers is less than 4.



Each “trial” plays either a “yes” pattern or a “no” pattern and then prompts for the player to input either “yes” or “no”. If the guess is correct (Box 1 equals the input), then we add 1 to the streak. If the guess is wrong, we reset the streak to 0.

Break

Part 2: Creating your own patterns.

Now it is time for you to come up with your own patterns. Once you have programmed your patterns, see if your friends can guess it and win Deducto. You can add graphics to your patterns as well.

Performance/Critique:

1. Have each student talk how they designed their patterns..
2. Engage in a discussion about their different approaches. What aspects of music can be used to make patterns? What makes it easy or hard to tell two patterns apart?

Key events:

- Introduction of key concepts: patterns in music, game structure.

Materials:

- Music Blocks software

Assessment:

- Observe participation.
- Does the program perform as expected?



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