



This folder contains the following:

- The following folder contains 10 lessons in which circuits are implemented using Littlebits in Greek as well as in English. The first 5 lessons implement simple circuits for the step-by-step exploration of Littlebits, while the last 5 lessons implement circuits using wireless networks to simulate simple Internet of Things (IoT) applications.

Co-funded by the
Erasmus+ Programme
of the European Union



Educational Robotics at Schools Online with Augmented Reality - eROBSON project has received funding from the European Union's Erasmus Plus programme, grant agreement 2020-1-NO01-KA226-SCH-094120
<https://erasmus-plus.ec.europa.eu/projects/search/details/2020-1-NO01-KA226-SCH-094120>

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1. Design of a control circuit using a led bar and push button.
2. Design of a control circuit using a fan and a push button.
3. Design of a control circuit using a fan and a slide dimmer.
4. Design of a control circuit using a led bar and a pressure sensor.
5. Design of a control circuit using a led bar and a pressure sensor.
6. Design of a signal transmitter circuit using a push button and a transmitter.
7. Design of a signal transmitter circuit using a push button and a transmitter.
8. Design of a signal transmitter circuit using a slide dimmer and a transmitter.
9. Design of a signal transmitter circuit using a pressure sensor and a transmitter.
10. Design of a signal transmitter circuit using a pressure sensor and a transmitter.

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How to use this educational material:

- Firstly, the student must download the ARTutor mobile application (if not already done, see info in the next page) and scan the ARTutor QR to download the lesson's Book.
- Secondly, print the Cardboard and the Library of Bits sheets.
- Thirdly, cut out the Bits' cards and try to place them on the cardboard in the correct order.
- The student could augment all the cards to have an immersive experience:
 - To learn more about the Bits using the 3D model
 - To tap/trigger on a Bit to have extra details (video, text, sounds)
- After that, the following steps are on the Cardboard:
 - The initial step is the **Exercise marker (1)** (the QR on the left side of the Cardboard), which provides instructional guidance about the exercise through a video.
 - The next step is the **Play marker (2)** (the QR at the center), utilizing LearningApps quizzes to examine the correct Bit module placement on the cardboard.
 - The last step is the **Solution marker (3)** featuring a video of the actual circuit in operation.

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Download ARTutor mobile APP here...



Available for all Android devices that support ARCore



Available for all iOS devices that support ARKit



eROBSON Hub



<https://www.schoolofthefuture.eu/en/community/erobson-hub>

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CIRCUIT #1

2

Play!

eROBSON

Exercise

1

CIRCUIT #1

Design of a control circuit using a led bar and push button

Solution

3

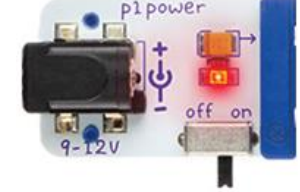
LIBRARY OF AVAILABLE LITTLEBITS



o9 BARGRAPH



i3 BUTTON



p1 POWER



o13 FAN



i5 SLIDE DIMMER



BATTERY



o6 BUZZER



i11 PRESSURE SENSOR



INFO



Lesson_1_eng

Δημιουργός

petraman

Το βιβλίο είναι διαθέσιμο για κατέβασμα σε μορφή pdf από τον ακόλουθο σύνδεσμο:

<http://artutor.ihu.gr/artutor/file/Text/1/a5dbad27395b6d4e.pdf>



CIRCUIT #2

eROBSON

A large grid of circles for drawing a circuit diagram. In the center, there is a circular button with a play icon and the text "Play!". To the left of the play button is a small circle containing the number "2". Above the play button is a QR code. The grid is divided into four quadrants by a central vertical and horizontal line.

Exercise

A QR code for the exercise. To its right is a blue speech bubble containing a white question mark. Below the QR code is a small circle containing the number "1".

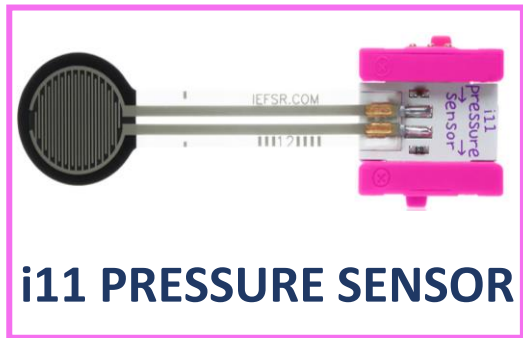
CIRCUIT #2

Design of a control circuit using a fan and a push button

Solution

A QR code for the solution. To its left is a dark blue circle containing a glowing yellow lightbulb icon. Below the QR code is a small circle containing the number "3".

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Lesson_2_Eng

Author

petraman

The book is available for downloading in PDF format from the following link:

<http://artutor.ihu.gr/artutor/file/Text/1/59919b6a735e8e91.pdf>



CIRCUIT #3

eROBSON

A large grid of 20 columns and 15 rows of small circles, with four 5x5 square areas highlighted in white for circuit design.



Exercise



CIRCUIT #3

Design of a control circuit using a fan and a slide dimmer

Solution



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o9 BARGRAPH



i3 BUTTON



p1 POWER



o13 FAN



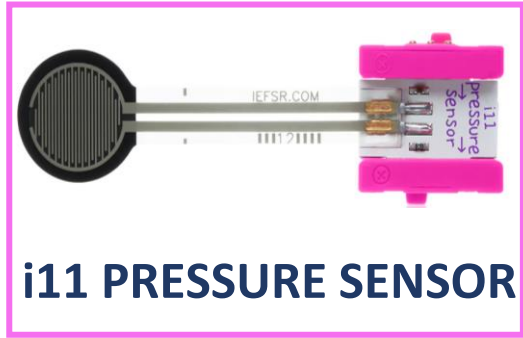
i5 SLIDE DIMMER



BATTERY



o6 BUZZER



i11 PRESSURE SENSOR



INFO



Lesson_3_Eng

Author

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CIRCUIT #4

Exercise



CIRCUIT #4

Design of a control circuit using a led bar and a pressure sensor

Solution



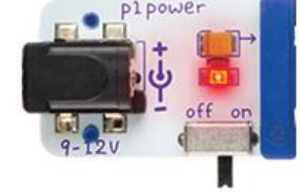
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i3 BUTTON



p1 POWER



o13 FAN



i5 SLIDE DIMMER



BATTERY



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i11 PRESSURE SENSOR



INFO



Lesson_4_Eng

Author

petraman

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CIRCUIT #5

eROBSON

2

Play!

Exercise

1

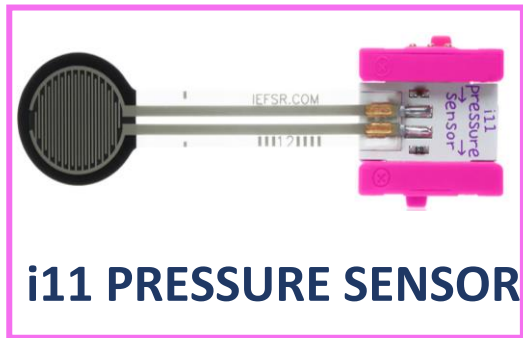
CIRCUIT #5

Design of a control circuit using a led bar and a pressure sensor

Solution

3

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Lesson_5_Eng

Author

petraman

The book is available for downloading in PDF format from the following link:

<http://artutor.ihu.gr/artutor/file/Text/1/1a941a92ef0db4b2.pdf>





Exercise



CIRCUIT #6

Design of a signal transmitter circuit using a push button and a transmitter

Solution





Exercise



CIRCUIT #6

Design of a signal receiver circuit using a led bar and a receiver

Solution



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w22 WIRELESS TRANSMITTER



o9 BARGRAPH



i3 BUTTON



p1 POWER



w21 WIRELESS RECEIVER



o13 FAN



i5 SLIDE DIMMER



BATTERY



INFO



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BATTERY



p3 USB POWER



Lesson_6_eng

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TX

Exercise



CIRCUIT #7

Design of a signal transmitter circuit using a push button and a transmitter

Solution



RX

2

Play!

eROBSON

Exercise



CIRCUIT #7

Design of a signal receiver circuit using a fan and a receiver

Solution



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w22 WIRELESS TRANSMITTER



o9 BARGRAPH



i3 BUTTON



p1 POWER



w21 WIRELESS RECEIVER



o13 FAN



i5 SLIDE DIMMER



BATTERY



INFO



o6 BUZZER



BATTERY



p3 USB POWER



Lesson_7_eng

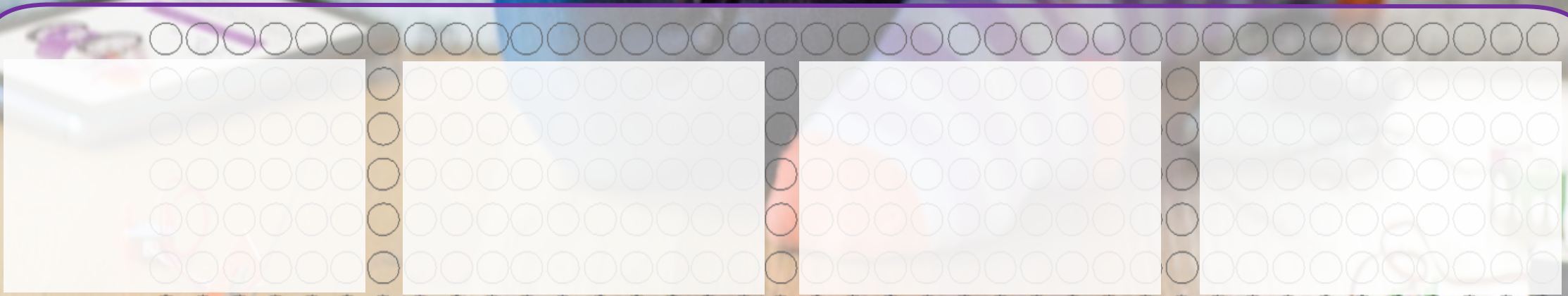
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<http://artutor.ihu.gr/artutor/file/Text/1/64336e2949f15587.pdf>





Exercise



CIRCUIT #8

Design of a signal transmitter circuit using a slide dimmer and a transmitter

Solution





Exercise



CIRCUIT #8

Design of a signal receiver circuit using a fan and a receiver

Solution



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o9 BARGRAPH



i3 BUTTON



p1 POWER



w21 WIRELESS RECEIVER



o13 FAN



i5 SLIDE DIMMER



BATTERY



INFO



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BATTERY



p3 USB POWER



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Exercise



CIRCUIT #9

Design of a signal transmitter circuit using a pressure sensor and a transmitter

Solution



RX

2 Play!

eROBSON

Exercise



CIRCUIT #9

Design of a signal receiver circuit using a led bar and a receiver

Solution



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o9 BARGRAPH



BATTERY



p1 POWER



w21 WIRELESS RECEIVER



o13 FAN



i5 SLIDE DIMMER



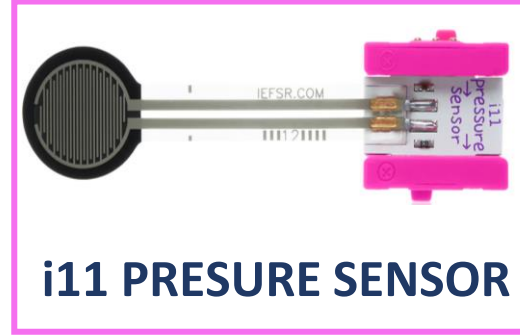
BATTERY



INFO



o6 BUZZER



i11 PRESURE SENSOR



p3 USB POWER



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Exercise



CIRCUIT #10

Design of a signal transmitter circuit using a pressure sensor and a transmitter

Solution





Exercise



CIRCUIT #10

Design of a signal receiver circuit using a buzzer and a receiver

Solution



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o9 BARGRAPH



BATTERY



p1 POWER



w21 WIRELESS RECEIVER



o13 FAN



i5 SLIDE DIMMER



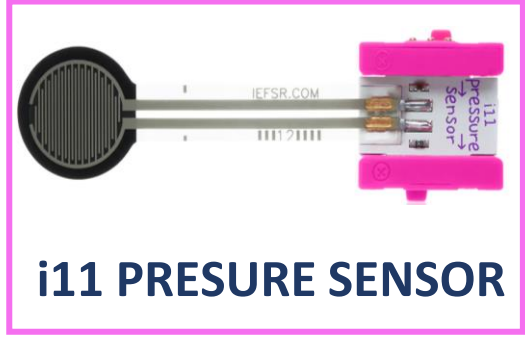
BATTERY



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o6 BUZZER



i11 PRESURE SENSOR



p3 USB POWER



Lesson_10

Author

peamana

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