
HEDGEHOG HOUSE BUILDING INSTRUCTIONS

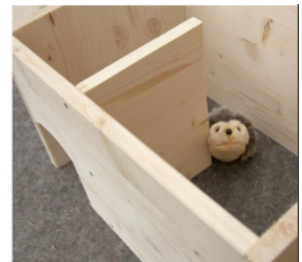
MATERIAL LIST

Construction Material

- 1x board 49 x 36 cm for the roof
- 2x boards 26 x 26 cm for the floor + false ceiling
- 2x boards 30 x 28 or 30 cm for the side walls (beveled)
- 1x board 40 x 28 cm for the front wall
- 1x board 40 x 30 cm for the back wall
- 1x board 17 x 28 or 30 as partitioning wall
- 1x piece roofing felt approx. 50 x 50 cm
- nails or screwdrivers, hammer, table saw, or handheld saw, tape measure, drilling machine
- non-toxic, environmentally friendly glaze
- Hot glue gun

Technical Material

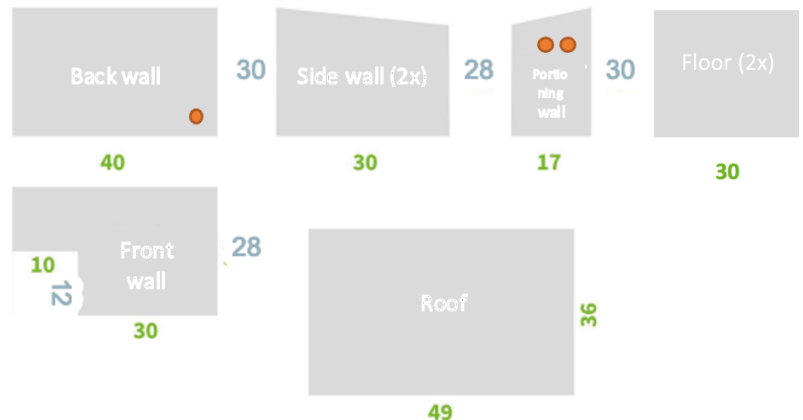
- 1x Arduino Uno
- 2x PIR-Sensor
- 1x RTC
- 1x Load Cell Sensor
- 1x DHT-Sensor
- 1x SD-Modul
- 1x SD-Card
- 1 power bank
- Wire
- 1 plastic box
- silicone



SIMPLE HEDGEHOG HOUSE¹

A wooden house for the hedgehog can be built from leftover pieces of tongue and groove boards that can be put together, but also from wooden boards or chipboard.

1. Draw in dimensions
2. Sew out the components with a jigsaw, then smooth the edges with a wood file
3. Mark and pre-drill holes for wood screws
4. Screw the components together
5. For the roof: measure the depth of the interior and shorten the roof battens accordingly. Screw them onto the previously sawn-out roof. Cover the roof with roofing felt
6. Impregnate the hedgehog house with environmentally friendly glaze and air it out for a week



¹ The instruction is based on those of NABU and has been expanded by us: <https://www.nabu.de/umwelt-und-ressourcen/oekologisch-leben/mission-gruen/17295.html>

TECHNICAL INSTRUCTION

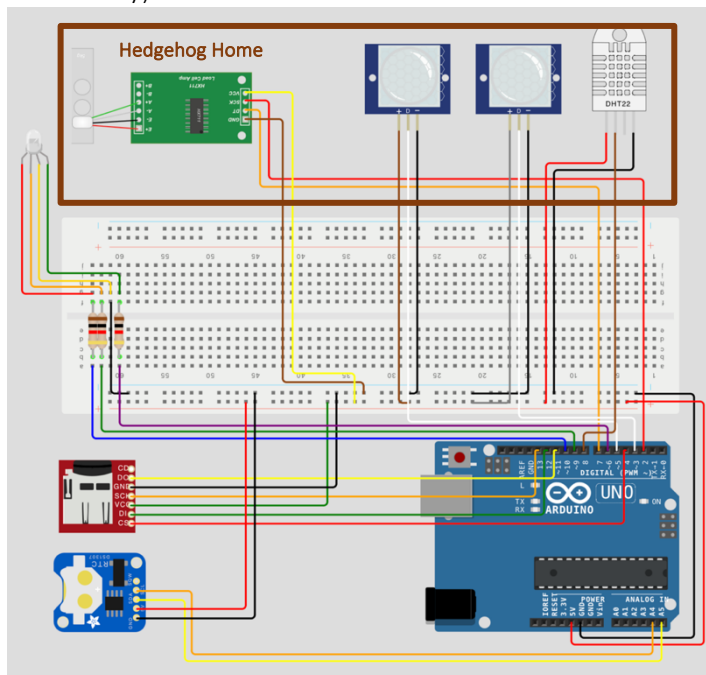
The following extensions are necessary to equip the hedgehog house with the sensors.

1. Drill a hole (1.5 cm Ø) in the back wall and the plastic box.
2. drill two holes in the partition (1.5 cm Ø)
3. fix the plastic box to the back wall
4. fix the double bottom on the scale
5. protect the back of the sensors from water with transparent clear varnish
6. fix the sensors in the hedgehog house with the hot glue gun as follows:

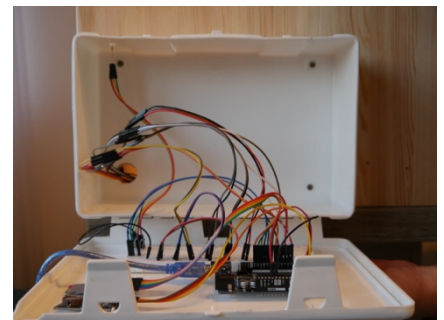


Top: Temperature & Humidity Sensor
Left: Input and indoor motion sensor
Middle: Scale

7. Do the wiring as shown in the figure below (the exact pinout can be looked up code additionally).



8. Place the Arduino, SD card module, and Realtime Clock in the waterproof plastic box.
9. Drill a hole for the LED and place it on the plastic box using the hot glue gun.






INITIALIZE ARDUINO

1. Install Arduino IDE: <https://www.arduino.cc/en/software>
2. Connect the Arduino Uno to the PC via a USB cable
3. Open Arduino IDE
4. Open the code file from GIT-Hub <https://github.com/smarterigelhaus>
5. Click the upload button in the Arduino IDE to upload the code to the Arduino Uno.
6. Now everything is ready, and the hedgehog house can be put outside.

DIFFERENT STAGES

The LED light indicates the following states.

	House is empty.
	Hedgehog is in the house.
	Hedgehog is underweight – please check after the hedgehog and consult with the hedgehog care provider if action is needed.

MEMORY TRANSFER TO THE BACK-END

1. Install Python
2. Simple Google search and install software from the website
3. Install Pip library
 - a. The following libraries need to be installed from the terminal
 - b. Type in “pip install ...
 - i. boto3
 - ii. pandas
 - iii. psycopg2
4. Create a folder
 - a. Python script and SD card files in .txt format should be placed there
5. Download the Python script from the project hub and put it into the folder
 - a. Start script via terminal with the command (navigate into according folder via cd command first):
 - i. Python "script name" and the according file ending (.py)
 - ii. Remove the SD card from Arduino and insert it into the laptop
6. Drag the text file into the created folder
7. Execute Python script
 - a. Type in personal username as required by console input in terminal (automatically once script is started)
 - b. Credentials for database connection (such as port, etc) might need to be changed according to own specifications (port availability, password, etc)
8. Put the SD card back into the Arduino

***A FULL DESCRIPTION CAN BE FOUND HERE:
PROJECT HUB BUILDING INSTRUCTIONS***
