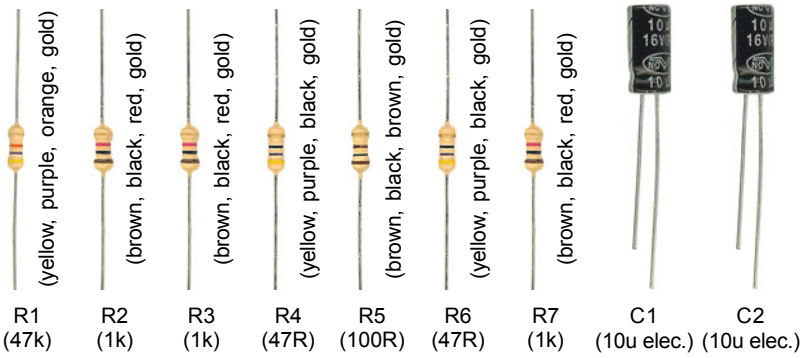
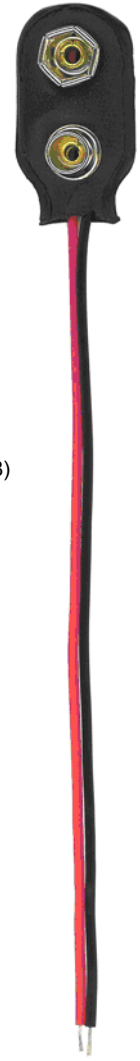
WHACK-A-MOLE

memory and reaction games

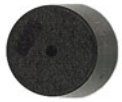


R1 (47k) R2 (1k) R3 (1k) R4 (47R) R5 (100R) R6 (47R) R7 (1k) C1 (10u elec.) C2 (10u elec.)

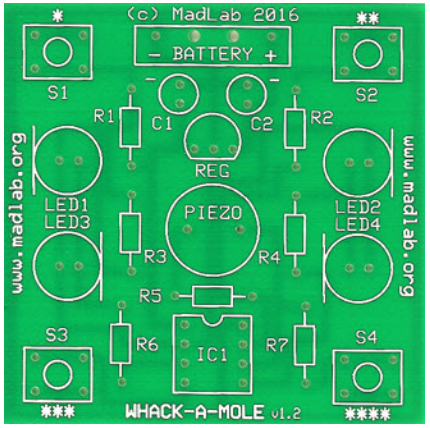


Battery snap

REG (78L05)



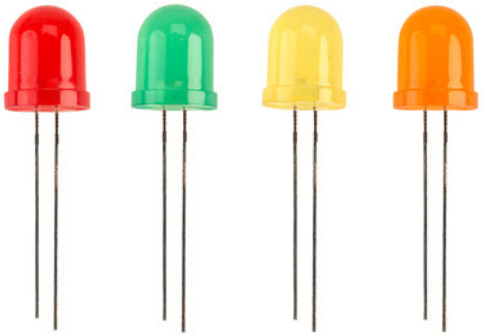
PIEZO



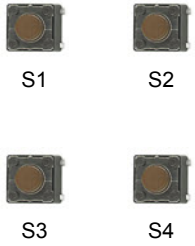
Circuit board

IC1 (PIC12F508)

IC1 socket



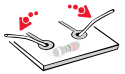
LED1 LED2 LED3 LED4



S1 S2 S3 S4

1. Identify the different components using the spotter chart.

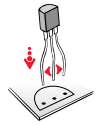
2. Fit and solder the resistors (R1 to R7) to the circuit board telling them apart by the coloured bands around their bodies. They can be fitted either way around.



3. Fit and solder the capacitors (C1 and C2) to the board putting the shorter leg into the hole with the – sign. The shorter leg also has a stripe on the side of the body.

4. Solder the chip socket (IC1) matching the notch in the socket to the notch on the board. **Do not solder the chip directly to the board.**

5. Solder the lights (LED1 to LED4) to the board putting the shorter leg into the hole with the line. The shorter leg may also have a flattened edge on the rim.

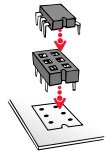


6. Solder the regulator (REG) matching the half-circle shape of the regulator to the half-circle shape on the board.

7. Solder the pushbuttons (S1 to S4) either way around.

8. Solder the piezo (PIEZO) to the board either way around.

9. Push the battery snap leads up through the larger holes in the board from the metal side of the board. Fit the metal tip of the red lead into the BATTERY + hole and the metal tip of the black lead into the BATTERY – hole. Solder the metal tips to the tracks on the board then pull the wire loops back.



10. Carefully bend the legs of the chip inwards a little with your fingers. Fit the chip into its socket matching the small notch in the chip to the notch in the socket.

11. Connect a battery **(9V PP3)** to the battery snap. If *Whack-a-Mole* is working properly all the lights should flash and it should beep twice.

HOW TO USE WHACK-A-MOLE

Whack-a-Mole is a game that tests whether you have fast reactions.

Press S1 (*) for the standard version of *Whack-a-Mole*. In this version a light will come on at random and you must quickly press the pushbutton nearest to the light. If you press the wrong button or take too much time then you lose (shown by the lights flashing alternately).

Try to stay alive as long as you can. The game gets faster the longer you survive and you have also less time to respond.

Press S2 (**) for a harder version of the game. In this version two lights sometimes come on at the same time and you must then press two pushbuttons together. Again try to stay alive as long as possible.

Another game called *Moley Says* can also be played. This game is a test of how good your memory is.

Press S3 (***) for the standard version of *Moley Says*. A random sequence of lights is displayed, and you must repeat the sequence by pressing the corresponding pushbuttons in the same order (after the sequence has finished). A double flash of the lights indicates you have entered the sequence correctly. If you make a mistake or take too much time then you lose. This is shown by the lights flashing alternately.

Try to stay alive as long as you can. The sequences get more complicated the longer you survive (an extra flash indicates that the sequence has just got longer).

There is also a harder version of *Moley Says* by pressing S4 (****). In this version two lights sometimes come on at the same time and you must press two buttons together when repeating the sequence.

Be careful not to touch the back of the board with your fingers when playing as this can short out the pushbuttons.

To save your battery, *Whack-a-Mole* will go to sleep when it is not being used (but it is a good idea to remove the battery anyway when you will not be using it for any length of time). Press any pushbutton to re- awaken it.