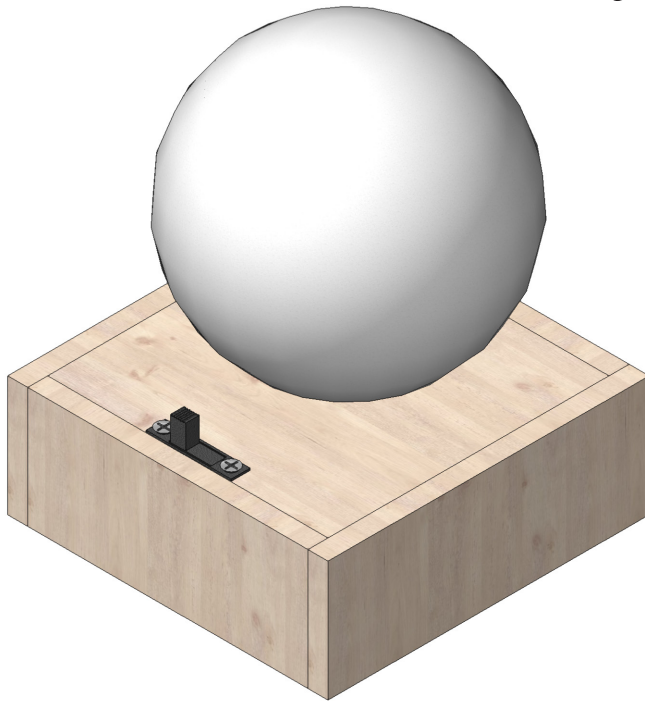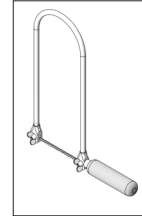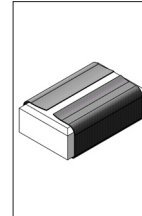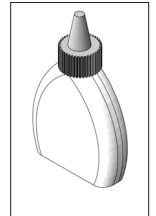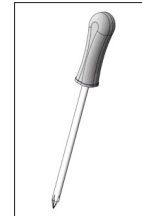# 108.982
Rainbow Light Ball
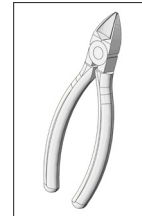

Tools Required:

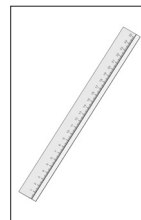jigsaw or fine saw

sandpaper

wood glue

Phillips screwdriver
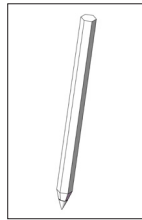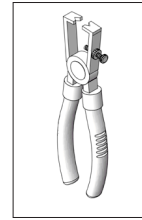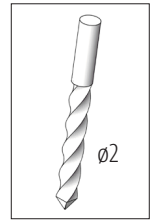

side cutter
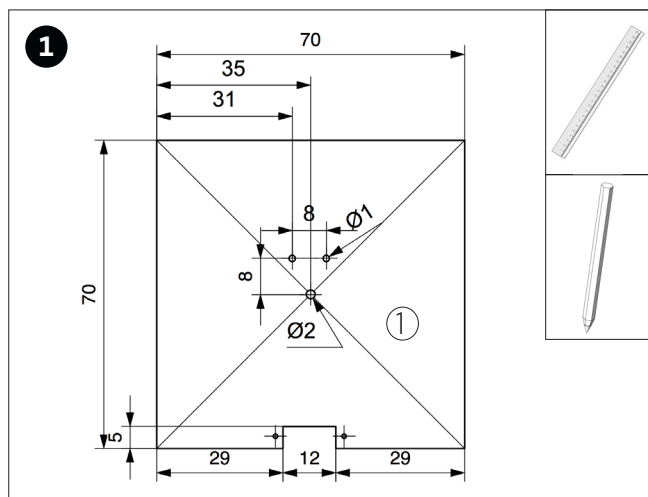

pliers

ruler

pencil

wire stripper


drill ø2

Please Note

The Opitec Range of projects is not intended as play toys for young children. They are teaching aids for young people learning the skills of craft, design and technology. These projects should only be undertaken and operated with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation!

Parts List	Quantity	Size (mm)	Designation	Part No.
plywood	1	70x70x6	base plate	1
wooden strip	2	200x30x5	side panels	2
plastic ball	1	ø70	light ball	3
rainbow-LED clear case	1	ø5	lighting	4
micro slide switch	1	19x6	switch	5
countersunk screws	2	2,2s6,5	switch mounting	6
blade receptacle	2		battery connection	7
jumper wire, black	1	500	connection cable	8
jumper wire, red	1	500	connection cable	9
Phillips-head tapping screw	1		ball mounting	10
thumbtacks	2		cable mounting	11
resistor 47 Ohm	1		series resistor	12

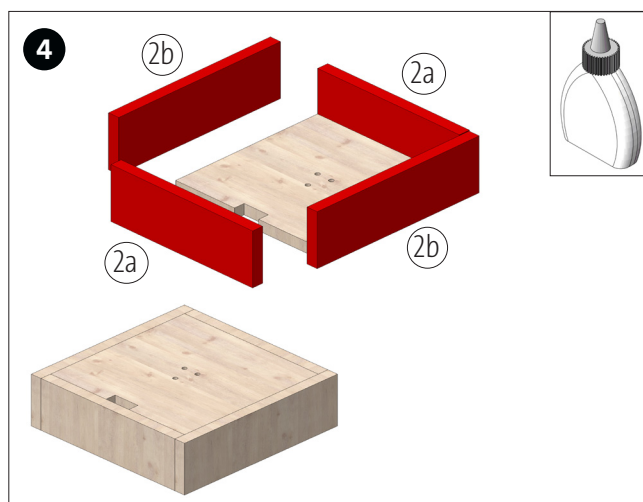**OPITEC**

1

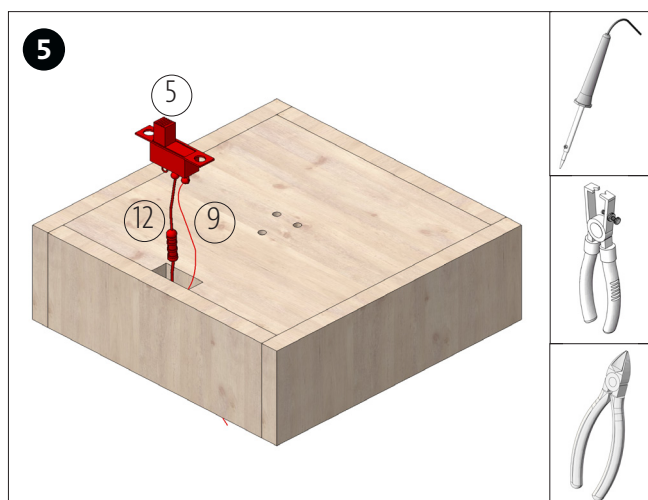Transfer the recess and the holes to the plywood panel (1) according to the drawing.

2
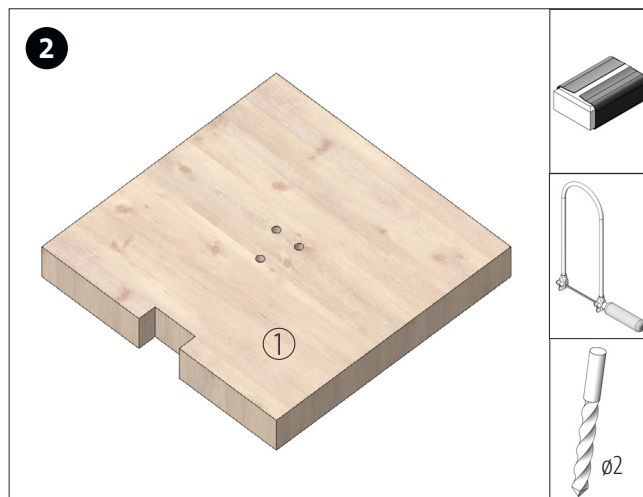
Then saw out the recess and drill through the holes (ø2).

3
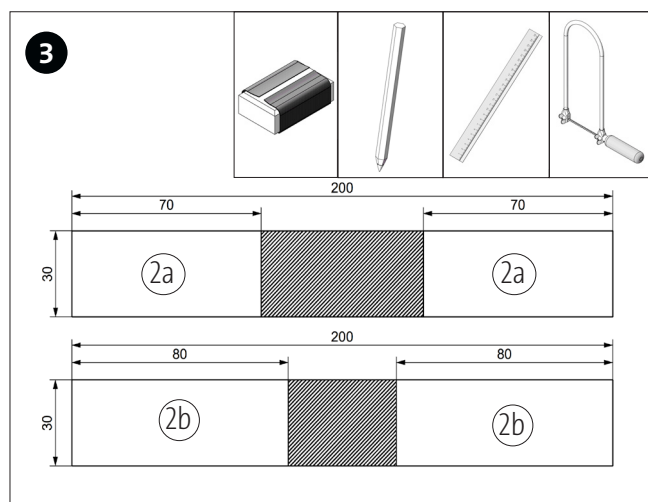
Transfer the dimensions as shown to the two wooden strips (2) and cut them. Clean saw cuts.

4

Glue the strip cuts (2a+2b) around the base plate as shown. Allow the glue to dry well.

5

Strip a piece of the red jumper wire (9, approx. 70mm) on both sides and solder or twist it to the outer switch terminal as shown. Then connect the resistor (12) to the middle switch terminal. Then put the switch (5) into the recess from above.
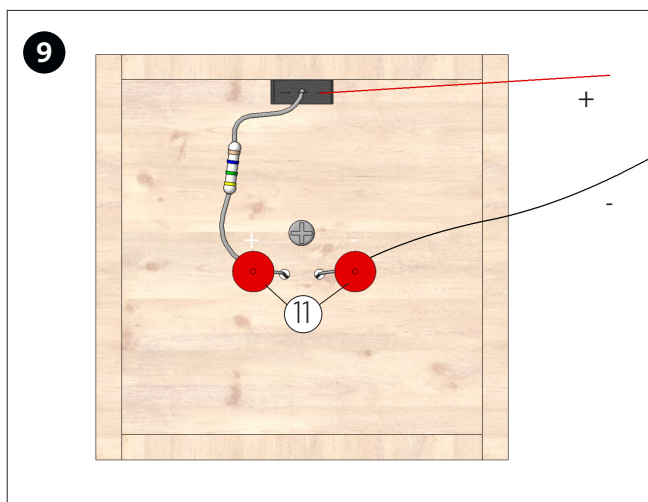
6
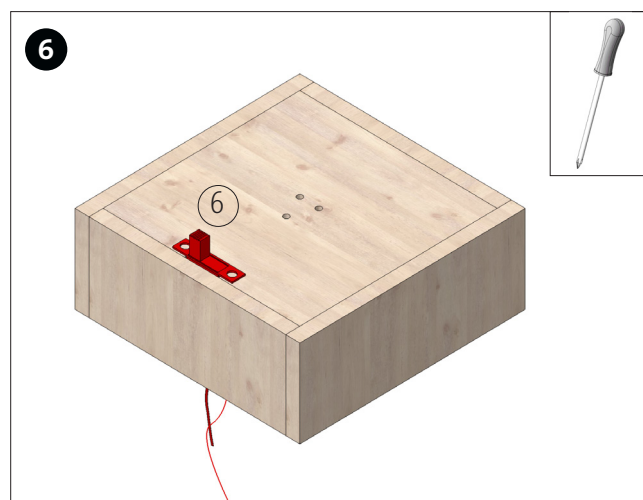
Fasten the switch from above with the two screws (6).
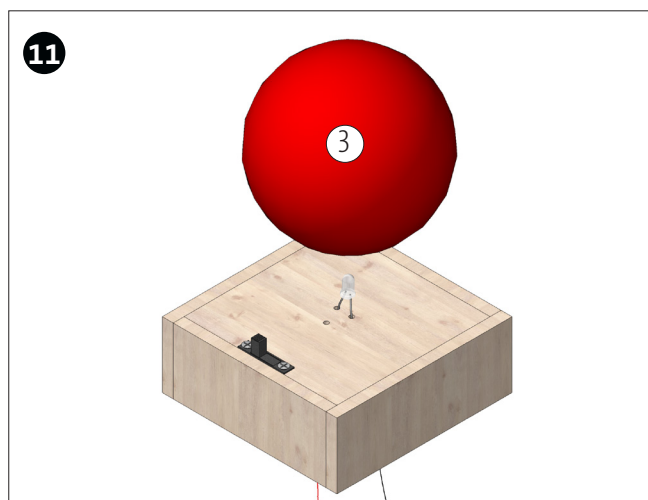**Note: The switch can also be glued into the recess.**
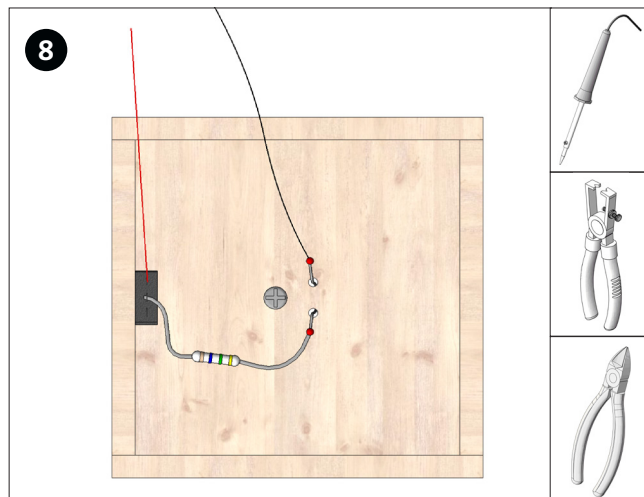
OPITEC

7

anode
cathode
(4)

+ –
anode cathode
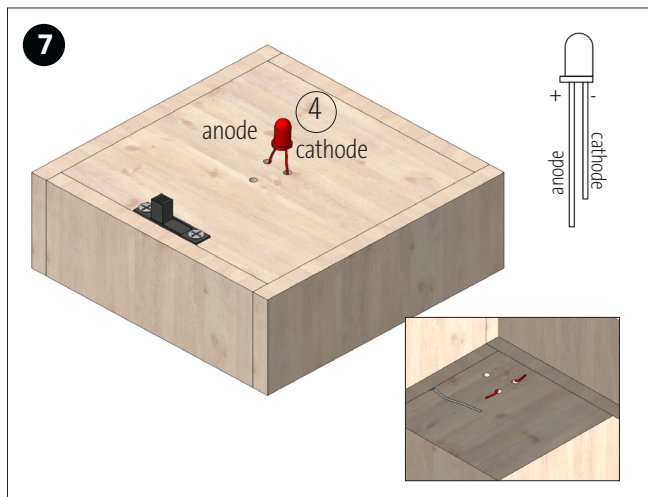
Insert the LED (4) into the provided holes from above as shown. Pay attention to the anode and cathode! Kink the legs of the LED from below as shown in the detail.
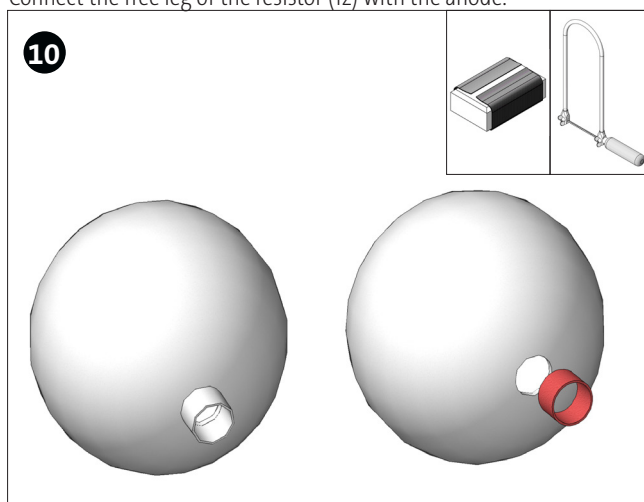
8

Strip the black jumper wire (8 approx. 70mm) from both sides and solder or twist it to the cathode of the LED as shown.
Connect the free leg of the resistor (12) with the anode.

9

+

–

(11)

Fix the wiring to the underside of the base plate as shown with the two thumbtacks (11).

10

Cut off the round rod fixation from the plastic ball with the fretsaw.
Clean the saw cut with sandpaper.

11

(3)

Place the plastic ball with the opening over the LED so that i the LED disappears into the ball.

12

(10)
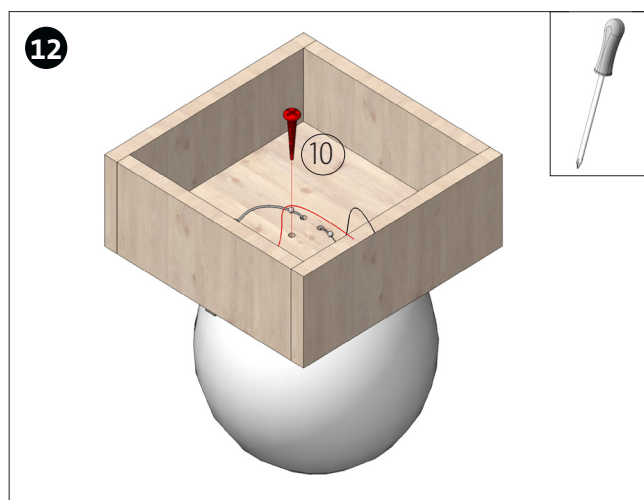
Now fix the ball from below through the still free hole with the screw (10) on the base plate.

OPITEC
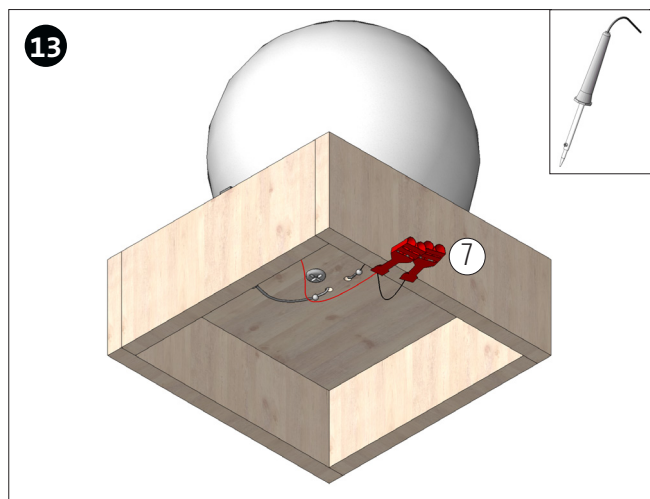
Attach the two blade receptacles (7) to the two cable ends. (soldering or twisting/ clamping)

tip:

To fix the battery, drill a hole (ø2) in two opposite strips. Cut off 2 pieces with a length of approx. 100mm from the remaining jumper wires and attach a knot to one end of each. Thread the wires from the outside through the holes, the knots prevent them from slipping through. Insert the battery and twist the cables over the battery.
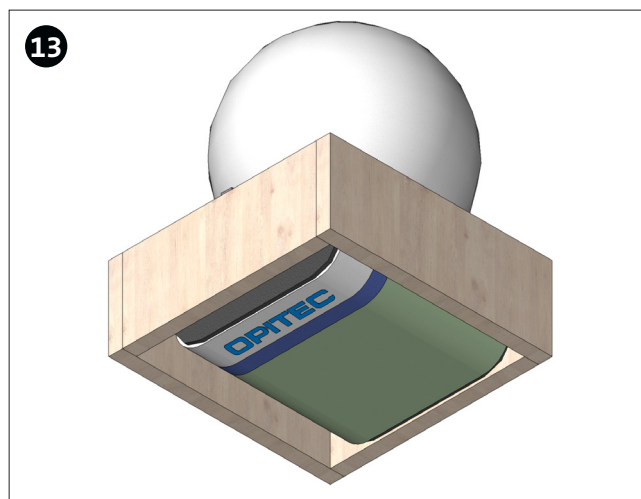
Connect a flat battery as shown and place it in the frame. Note: This can be attached with double-sided adhesive tape or hot-melt adhesive.

OPITEC