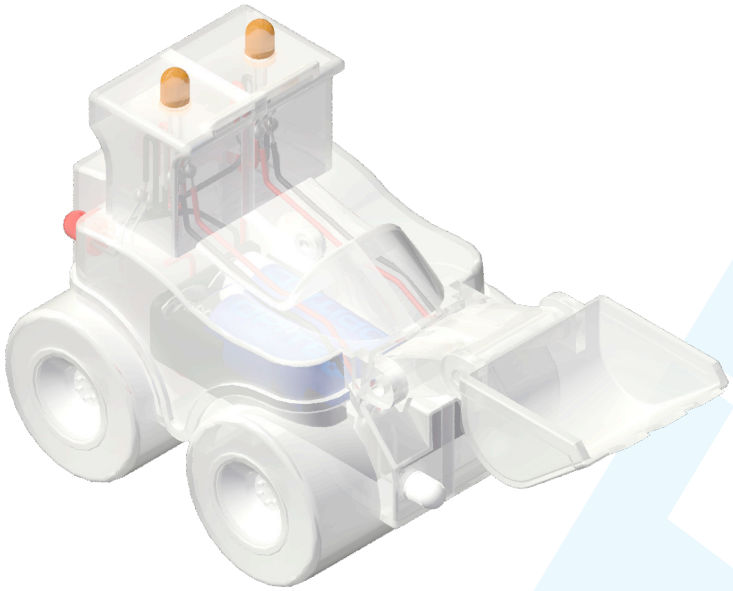
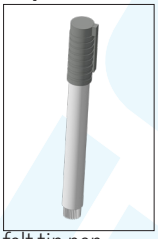
125.526

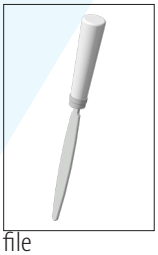
Acrylic tractor with LED

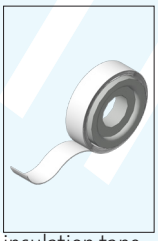


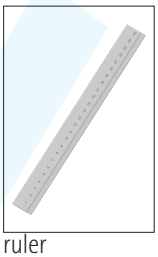
Required tools:


felt-tip pen

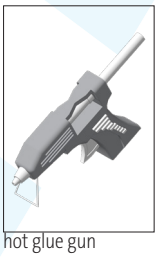
Drill bit


file

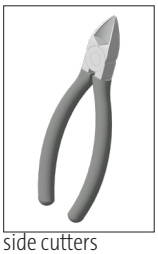

insulation tape


ruler

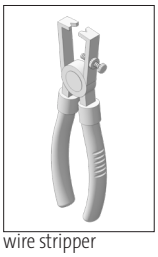

soldering iron


hot glue gun


jigsaw


side cutters

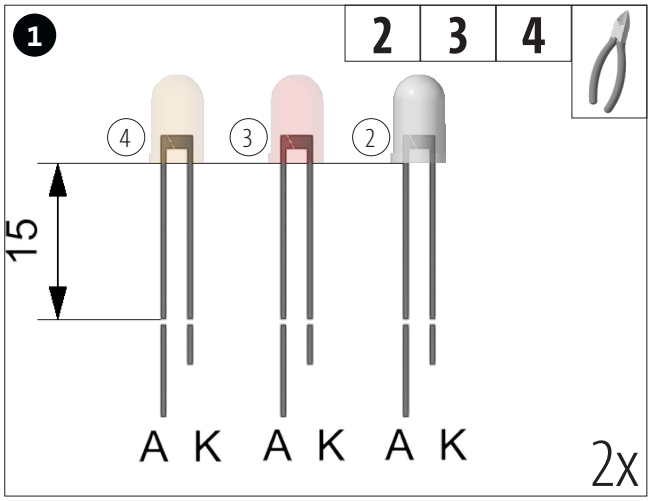
additionally required:
2x AAA batteries


wire stripper

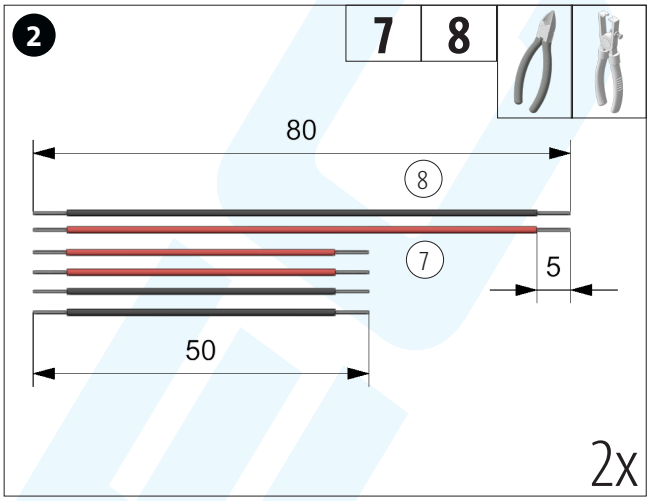
NOTE:

Once completed, the OPITEC work kits are not articles with the character of toys of a generally commercially available type, but teaching and learning aids to support educational work. This kit may only be built and operated by children and young people under the guidance and supervision of a competent adult. Not suitable for children under 36 months. Choking hazard!

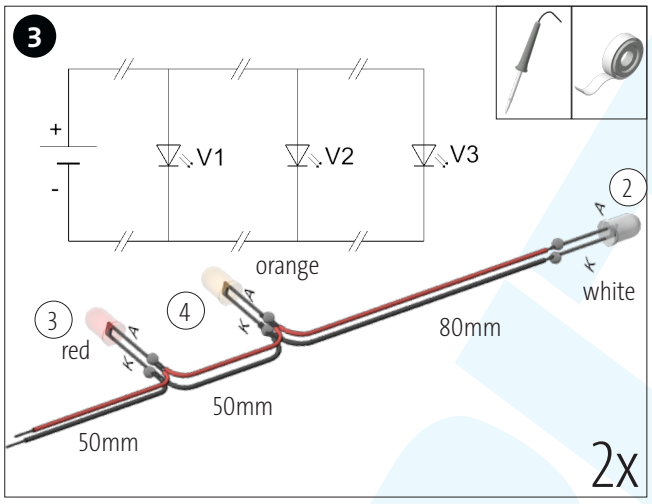
parts list	number of pieces	Dimensions (mm)	Description	Part no.
acrylic tractor crystal clear	1	130x75x60	tractor	1
LED white	1	Ø5	LED white	2
Flashing LED red	1	Ø5	LED red	3
Flashing LED orange	1	Ø5	LED orange	4
Micro slide switch	1	10x11x7	switch	5
battery holder 2x AAA	1	52x24x12	battery holder	6
Electrical Wire Red	1	0.5m	red cable	7
Electrical Wire Black	1	0.5m	black cable	8



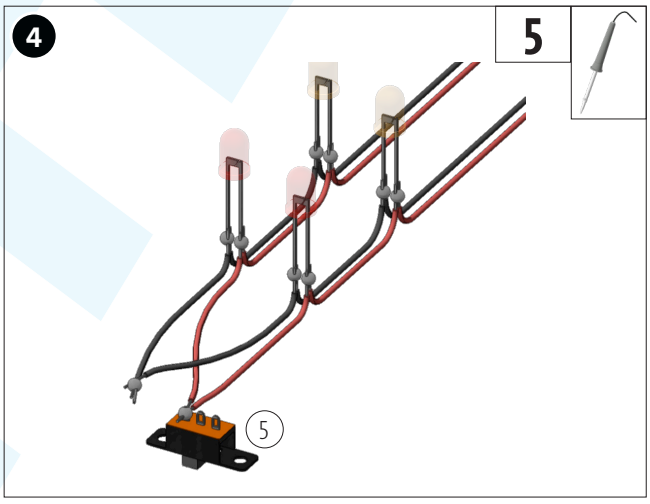
Shorten the legs of the LED to approx. 15mm. The cathode (minus) can then still be identified by the flattened edge and the larger inner part of the LED.



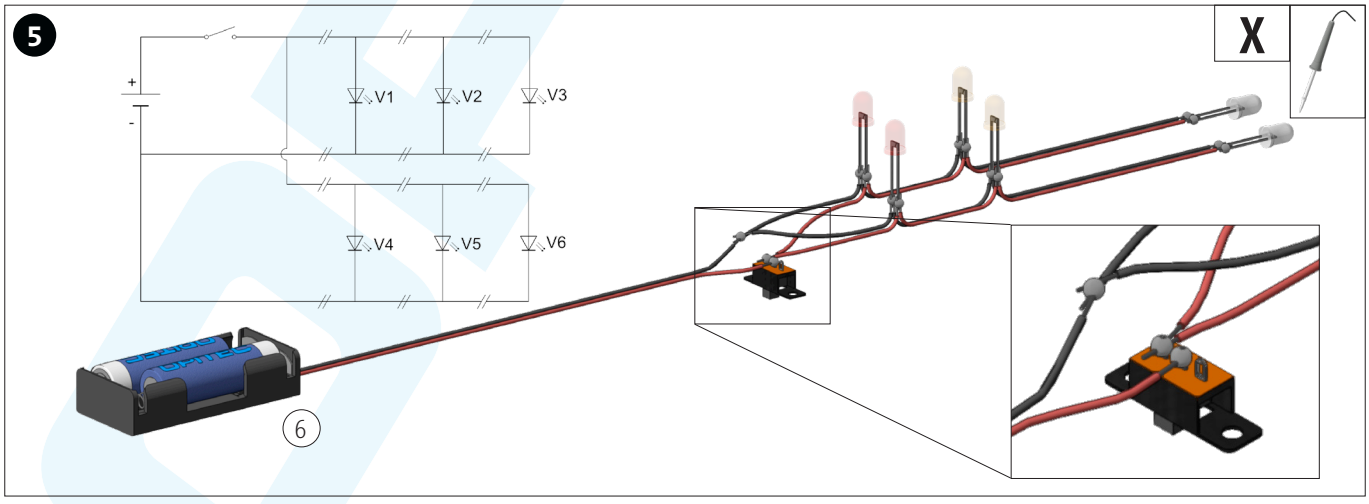
Cut the cable to length and strip approx. 5mm of insulation on both sides: 1x red and black 80mm long per LED string, 2x red and black 50mm long each.



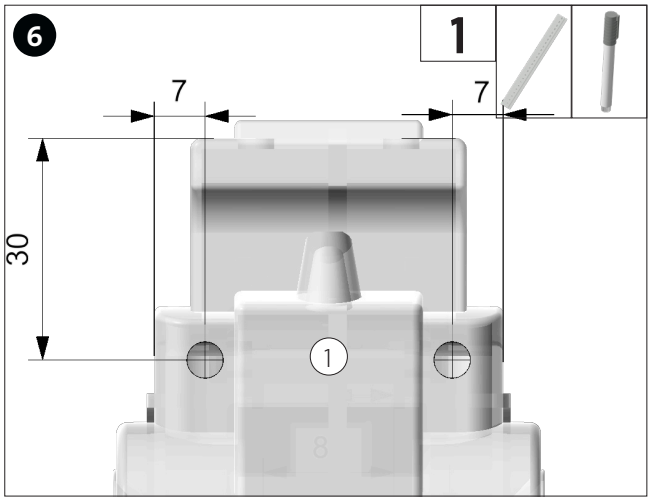
Solder the cables to the LED as shown in the picture. Pay attention to the polarity, red cable to anode A, black cable to cathode K. Wrap the soldering points and free wire ends of the LED individually with insulating tape! (To avoid short circuits).



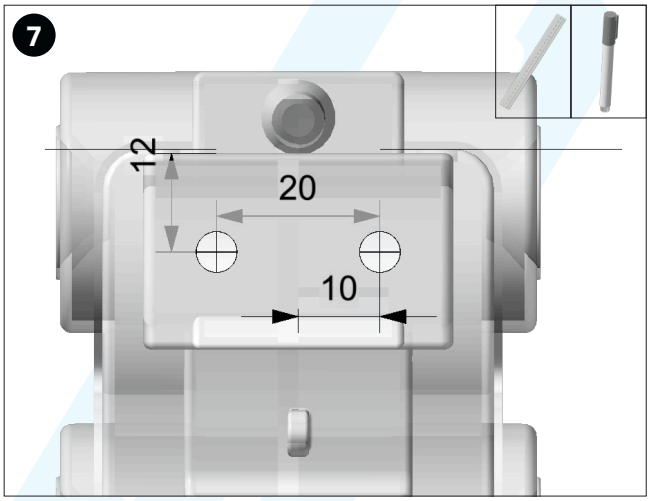
Connect the two strands together: To do this, solder the free black ends and the free red ends together. Solder the two red ends to an external connection on the switch.



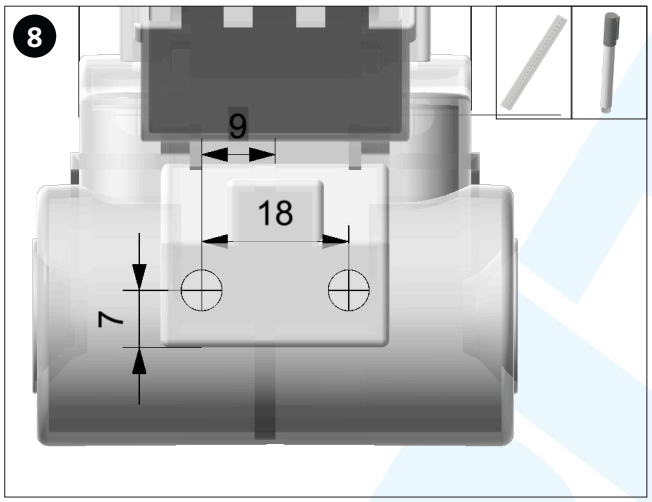
Solder the black cable of the battery holder to the free black cables of the LED strings, solder the red cable of the battery holder to the middle switch connection (see small picture). Insert the batteries. Now you can test the function: the white LEDs should light up constantly, the orange and red ones should flash.



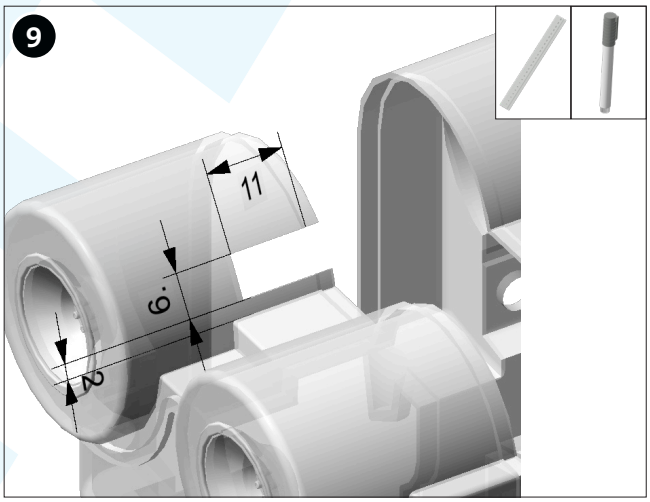
Mark the hole positions for the LED: All holes are drilled with a 5mm drill. Front lights (white)



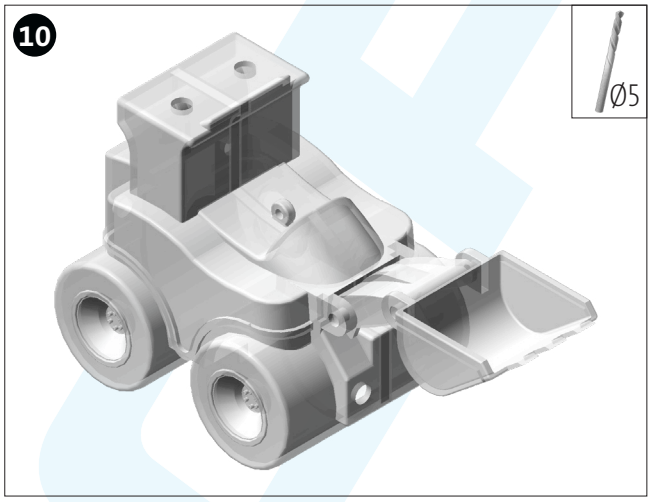
Roof lights (orange)



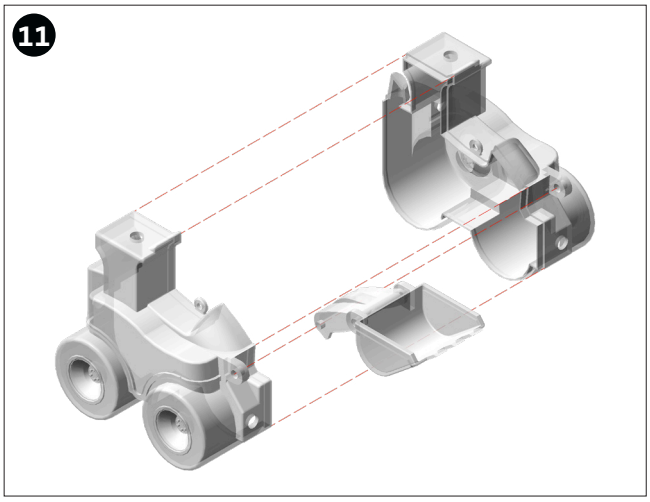
Taillights (red)



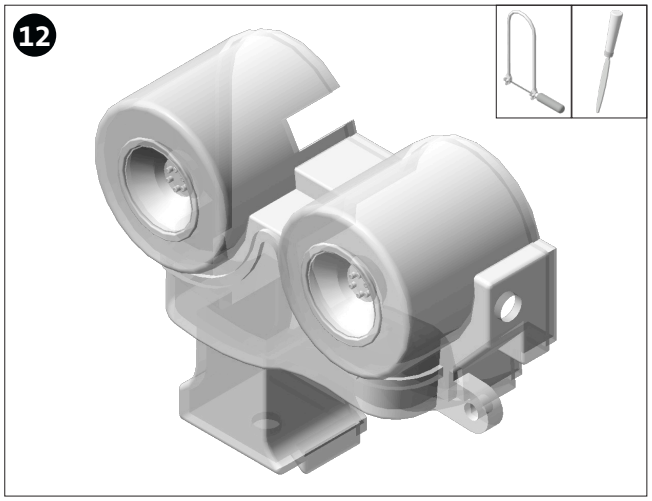
Switch cutout 6x11mm, dimension 11mm later expand to the inner collar when filing



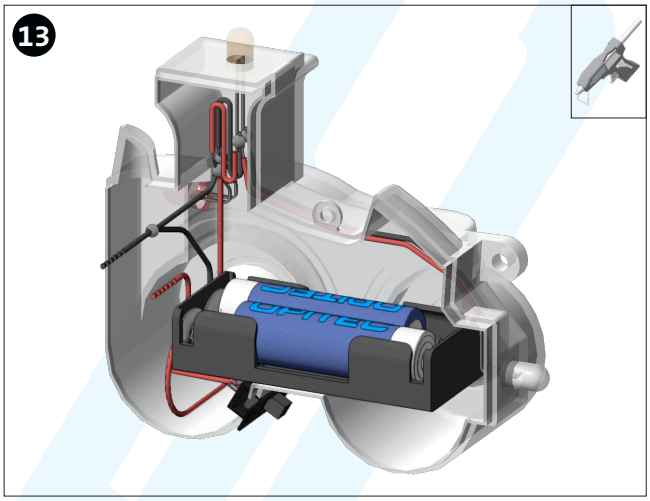
Carefully drill holes using a 5mm drill bit. Drill slowly, acrylic can crack easily, especially just before the hole is completely drilled through.



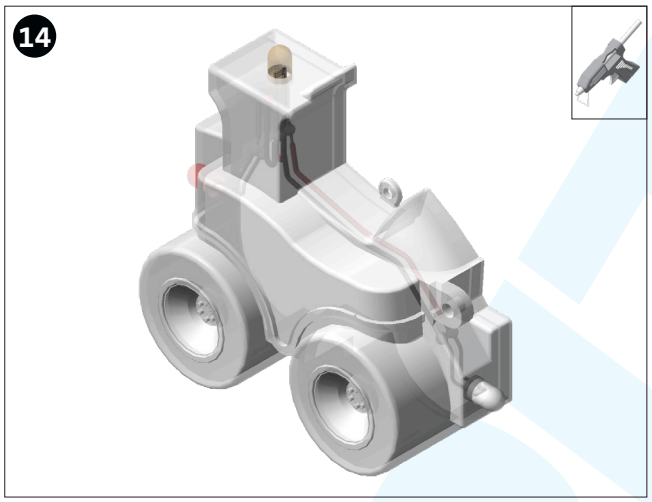
Disassemble the tractor



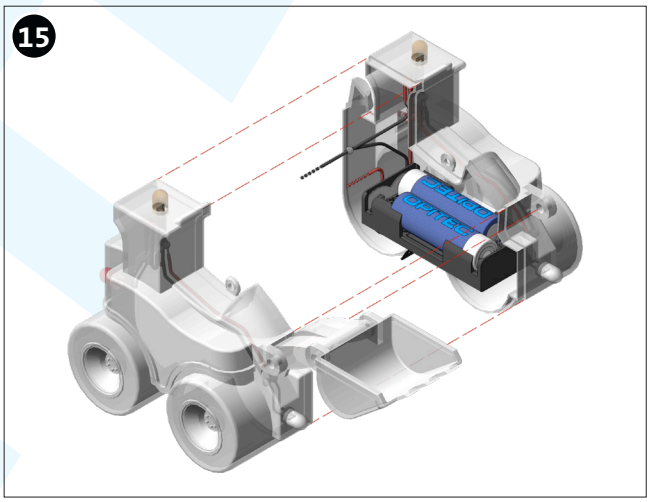
Saw out the switch cutout and rework it with a file



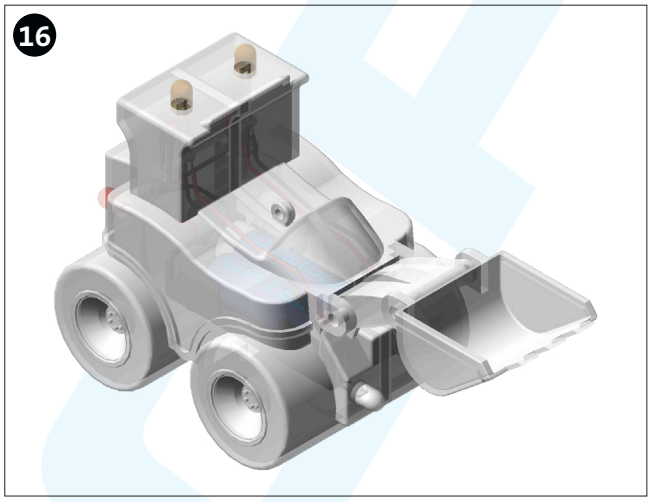
Install one side of the LED string into the left housing part, starting with the white LED. Push the switch into the cutout, lay the cable neatly. Secure the LED and switch with a little hot glue.



Repeat on the other side.



Carefully put the two halves together, don't forget the shovel! Be careful not to trap any cables.



Done!