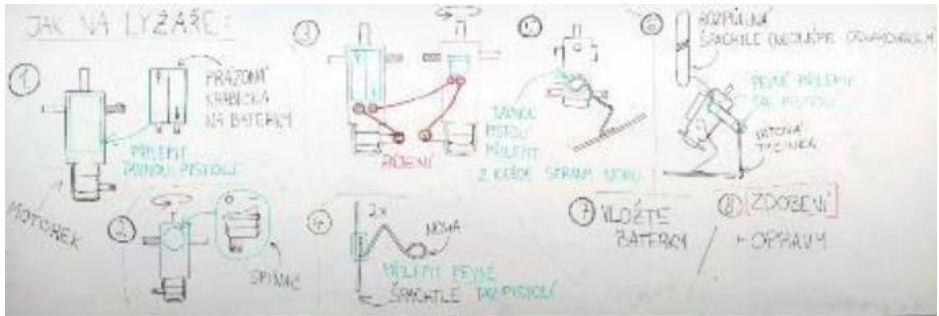


8.	Ski robot
Target group	Pupils, optional teachers
Age pupils	13–18
Duration	1.5-2 hours
Materials	• motor with gearbox [3] • 2 AA batteries • holder for 2 AA batteries [4] • rocker switch [5], or any other suitable • thin copper wire (e.g. from UTP 5) • strong wire for legs • hot melt gun with cartridge • pliers • wooden spatula (150x20 mm) • deburring knife and scissors • soldering iron and soldering tin • cotton buds • cotton ball-head • materials for decorating: markers, felt, furry wires, glue eyes, etc. • Introduction video: → https://www.youtube.com/watch?v=ZE2XlhSy_sk
Instructions	The numbering corresponds to the drawing board.  1. Use a hot glue gun to glue the holder for two AA batteries onto the motor. Compared to the video [1], we do this step first. If the battery holder and soldered switch are glued last, the laboriously glued arms or legs often break off. 2. Glue the switch to the motor from the other side. Again, unlike the video, glue first and then solder the wires. 3. As shown in figure 3, solder three wires to connect the motor, battery and switch. 4. Use pliers to shape the two legs from the solid wire. Using a hot glue gun, glue them to the spatula-skis. Compared to the video, we use wire, not a bent tube. It is easier to work with and we can form eyelets on the ends of the wire, which will guarantee a larger contact area and therefore a stronger bond. The wire has to be really strong, so it is difficult to bend. Alternatively, we can prepare the legs as a blank for smaller children. 5. Glue the legs to the motorbike using a hot glue gun. 6. Cut another spatula in half with a pry bar. This gives us two hands which we glue very firmly to the gears of the motorbike. Glue cotton sticks to the hands like ski poles. Make sure the sticks are pointing right next to the skis, not on them.



7. Insert the batteries into the battery holder.

8. Glue the cotton ball-head to the motorbike and start the final decorating.

9. And we're fine-tuning.

As with the other motorized knees, the person who worked precisely and symmetrically wins. Legs must be the same length, equally bent, poles neither too long nor too short, skier must not be leaning to the side. After all, on the first test run, all the "ailments" immediately roll out and are harmful. Fortunately, the legs can be straightened, the poles can be shortened or re-taped, the body can be tilted a little, etc. If the skier is too frantic, stick a small weight on the front of the skis.

10. We find a suitable "snow plain" and off we go!

A large slab of polystyrene or carpets provides enough friction to keep the skier comfortable. If necessary, the ends of the poles can be adjusted to the chosen base. Sometimes it's a good idea to leave the cotton end on the stick, sometimes to take it off.

Evidence

participant count; Q&A summary