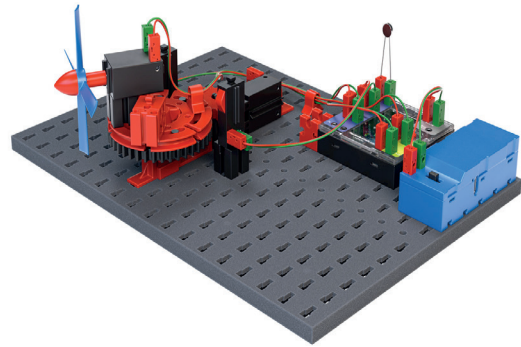# Model 6: Fan
Objectives and classification

Overview
The model introduces an analog sensor (thermistor). A step control for a fan is programmed. The rotation of the fan propeller is implemented as a parallel program.

Topics
What is an „analog sensor"? What is a „threshold value"? How can you run programs in parallel in Scratch?

New component: the heat sensor (NTC resistor)
Please refer to the separate tutorial on the heat sensor.

Learning objectives

- Evaluation of an „analog sensor" (thermistor)
- Determination of threshold values
- Programming a step control with threshold values in Scratch
- Programming parallel programs in Scratch

Time required
It should take half an hour to set up the fan. The heat measurement should also be completed in the same lesson.

The step control is challenging, so a whole lesson should be scheduled.
The programming of the fan rotation is based on the results of model 4 (barrier) and should therefore be easy to solve for the students. The Smart Fan experimental task is more time-consuming due to the temperature measurements. Here, the different measured values could be tabulated together in order to shorten the processing time of the task.

Solutions and notes
Programming tasks Model 6: Fan

Solution Measure heat:
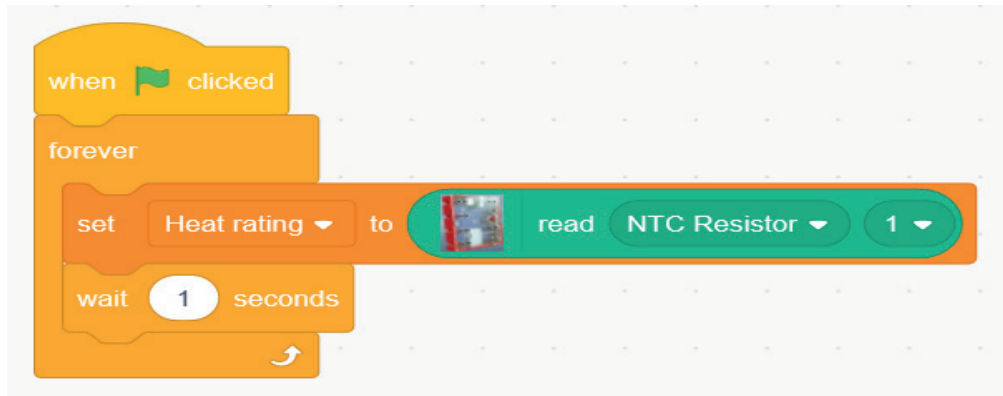
Heat measurement.sb3

Solutions and notes
Programming tasks 6 Fan

Solution Step control: Measured minimum/maximum value: approx. 1190/1510 (difference: 320) Divided into 8 steps of 40 (1190 - 1230 - 1270 - ... - 1510) Evaluation from the highest to the lowest threshold.

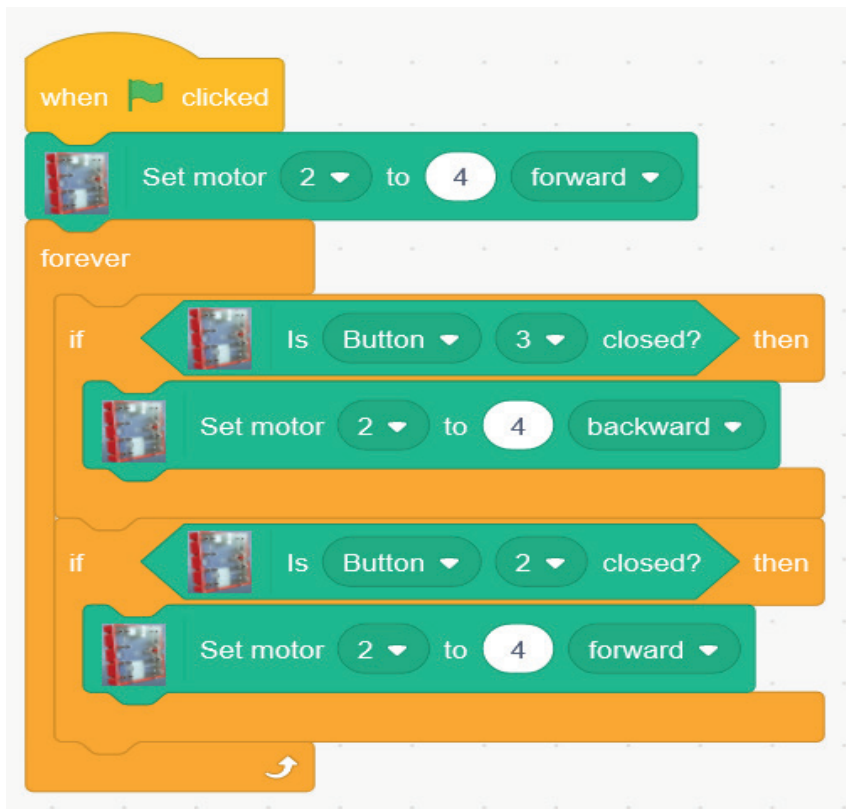fan step control.sb3

Solutions and notes
Programming tasks Model 6: Fan

Solution Fan rotation:

Fan rotation.sb3

Solutions and notes
Programming tasks Model 6: Fan

Solution for the smart fan:

Smarter fan.sb3