

Robot Layout Designed for 3D Printer

SIMONAS BOČKUS, MATAS JUŠKEVIČIUS

5TH GRADE

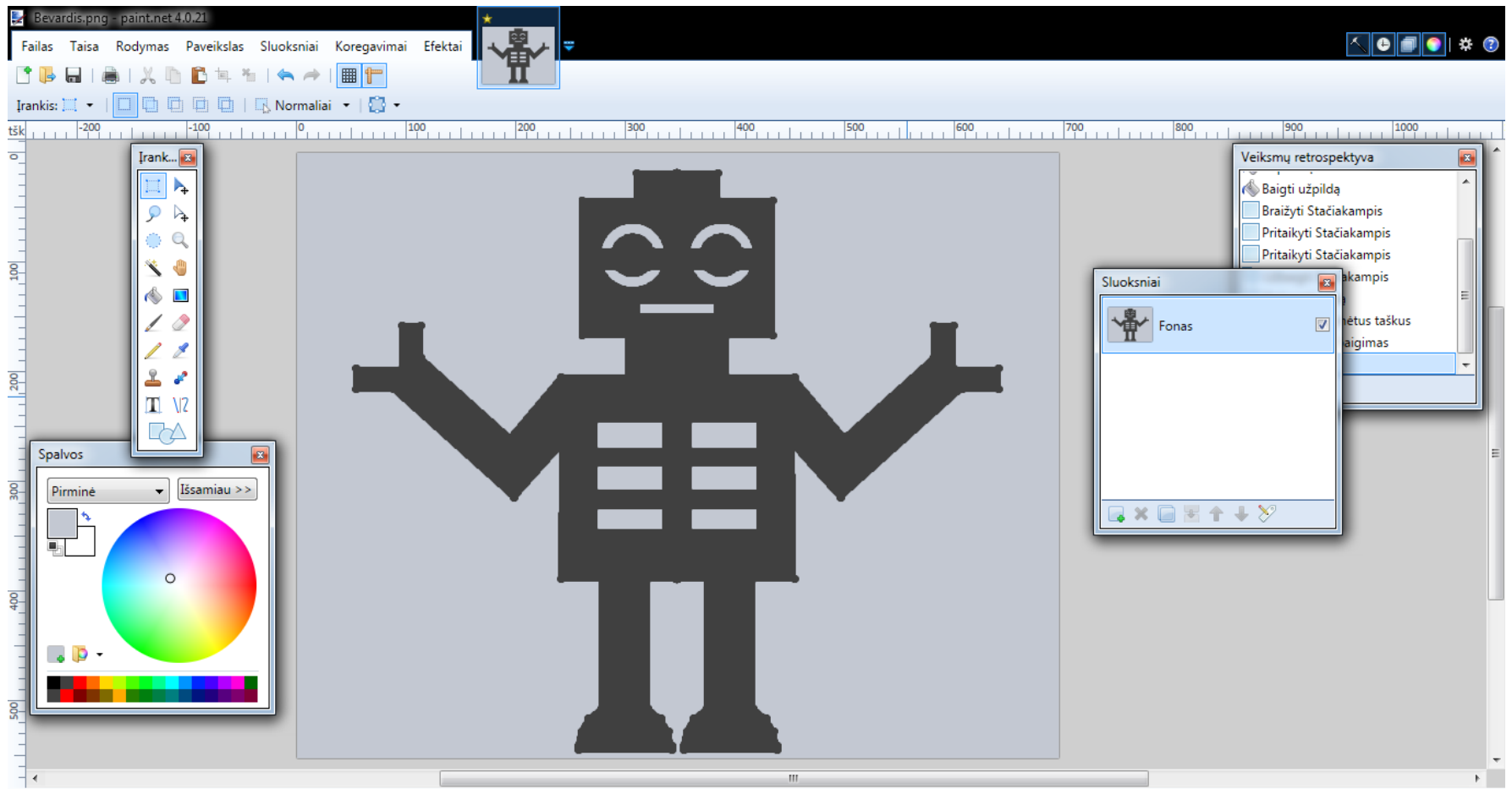
ICT teacher Raminta Birgėlienė
Gargždai "Minijos" progymnasium

MIK-11, 2018

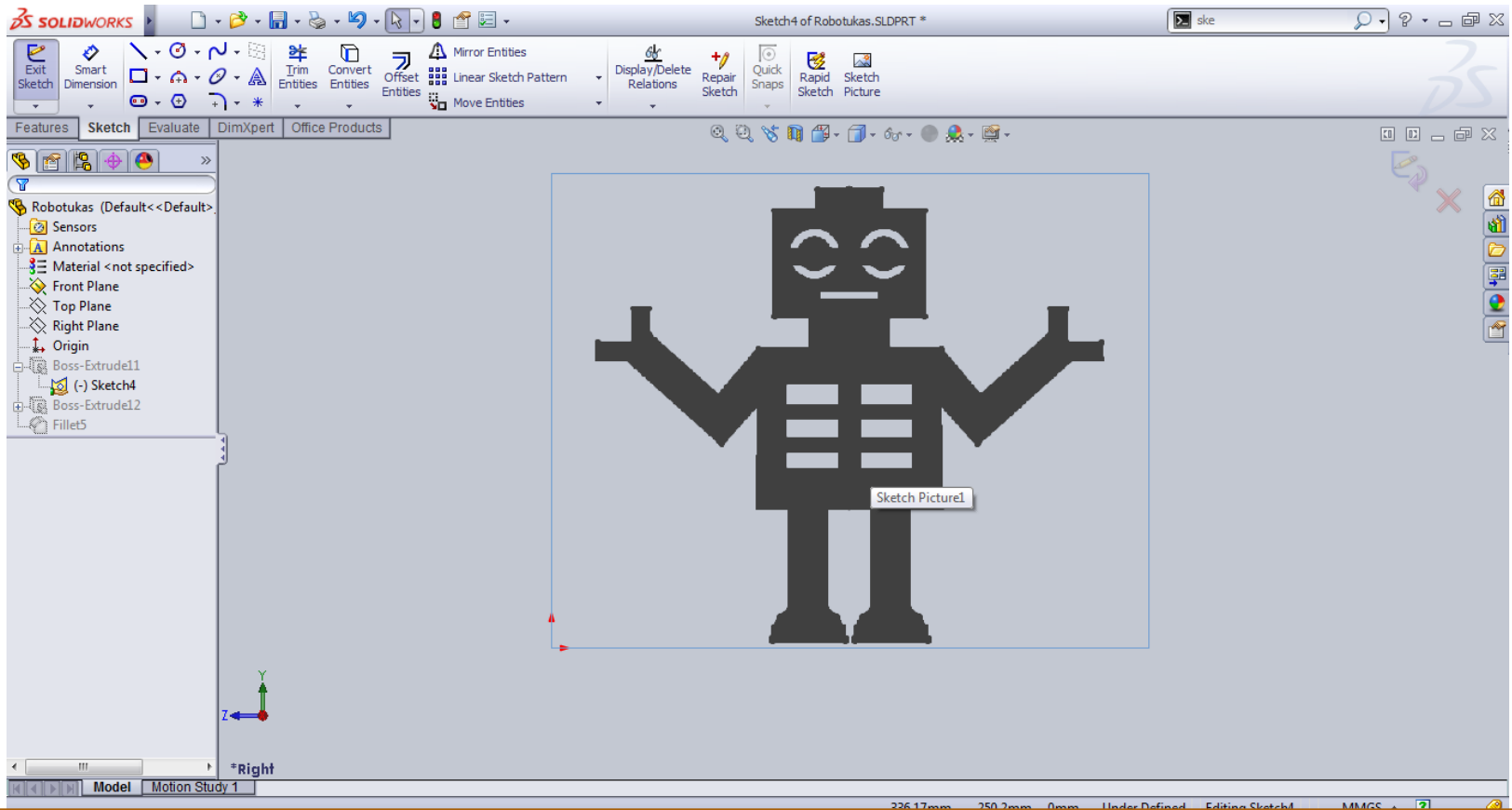
Introducing the stages of developing a Robot using software and development tools:

- I. A 2D Robot drawing is created (*Paint.net*)
- II. A 3D Robot model is made (*SolidWorks*)
- III. Laminated 3D Robot Model (*Cura*)

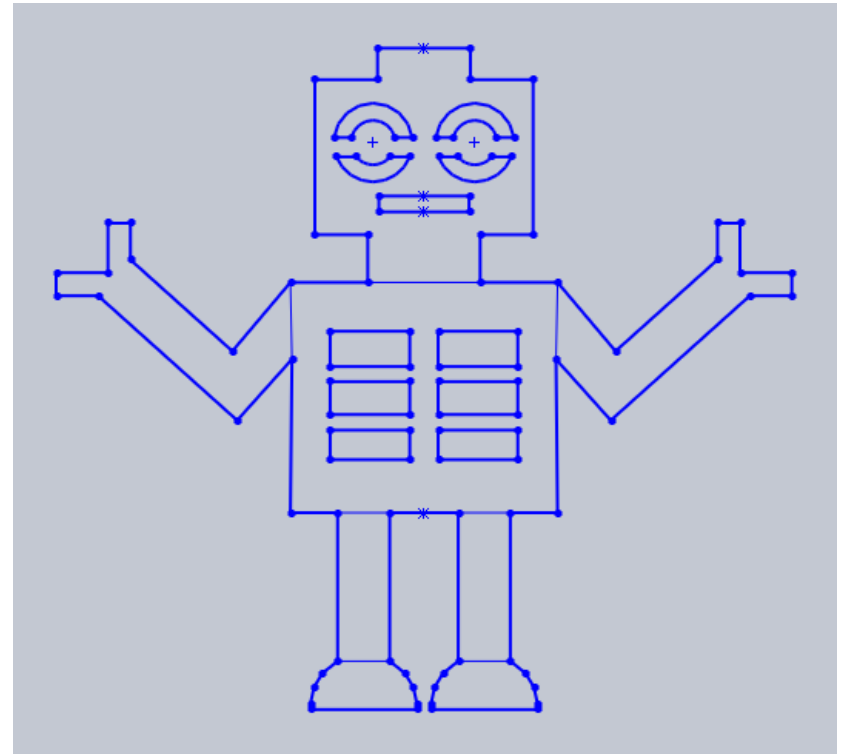
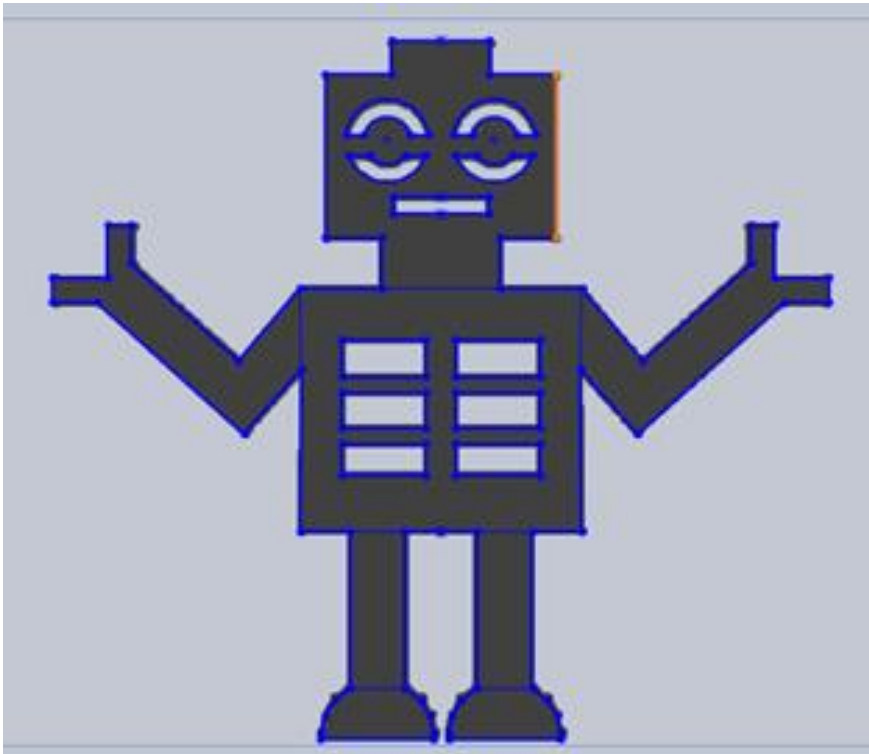
I. A 2D Robot drawing is created. (*Paint.net*)



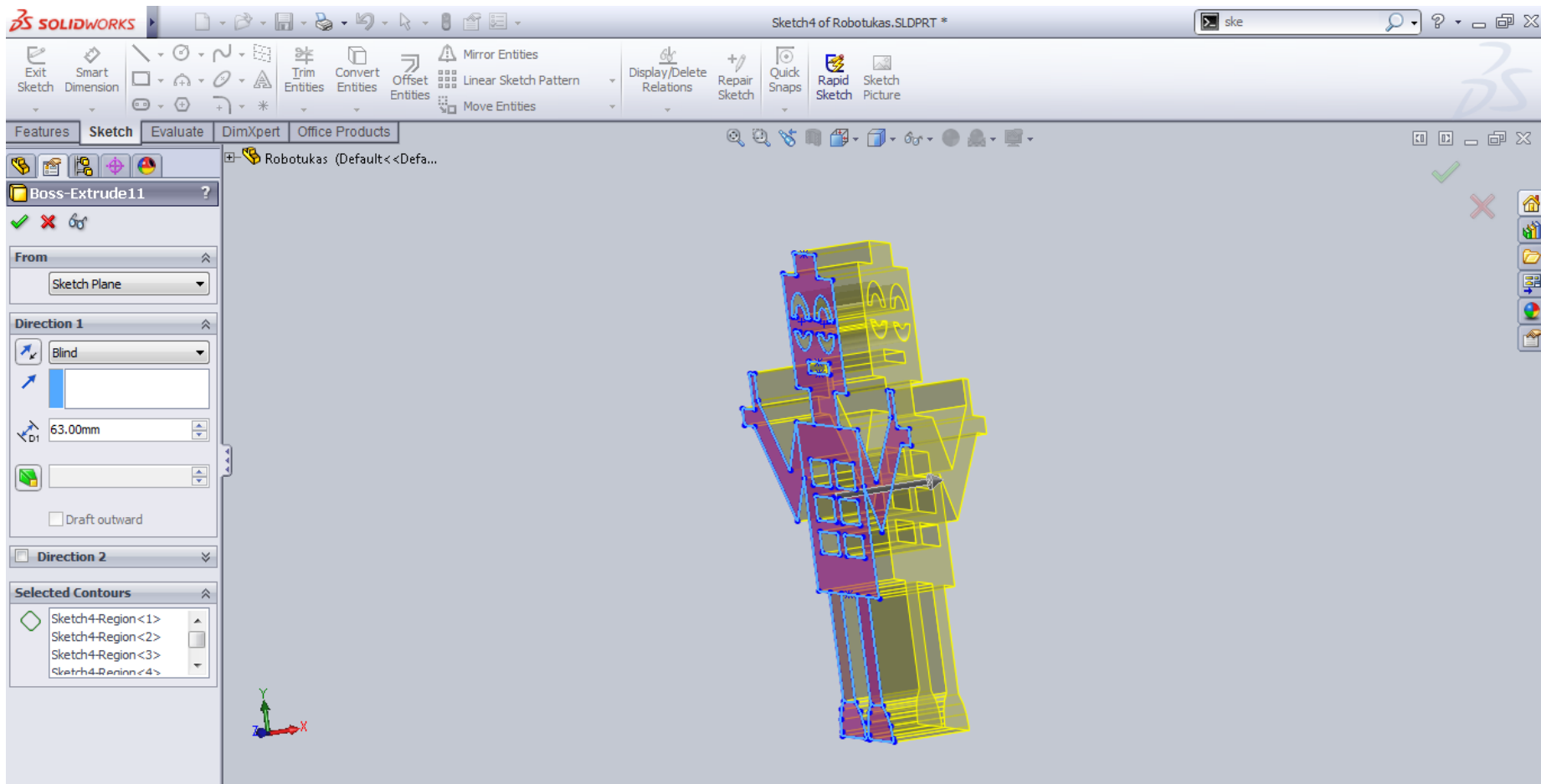
II. A 3D Robot model is drawn .
(SolidWorks). First I got a picture



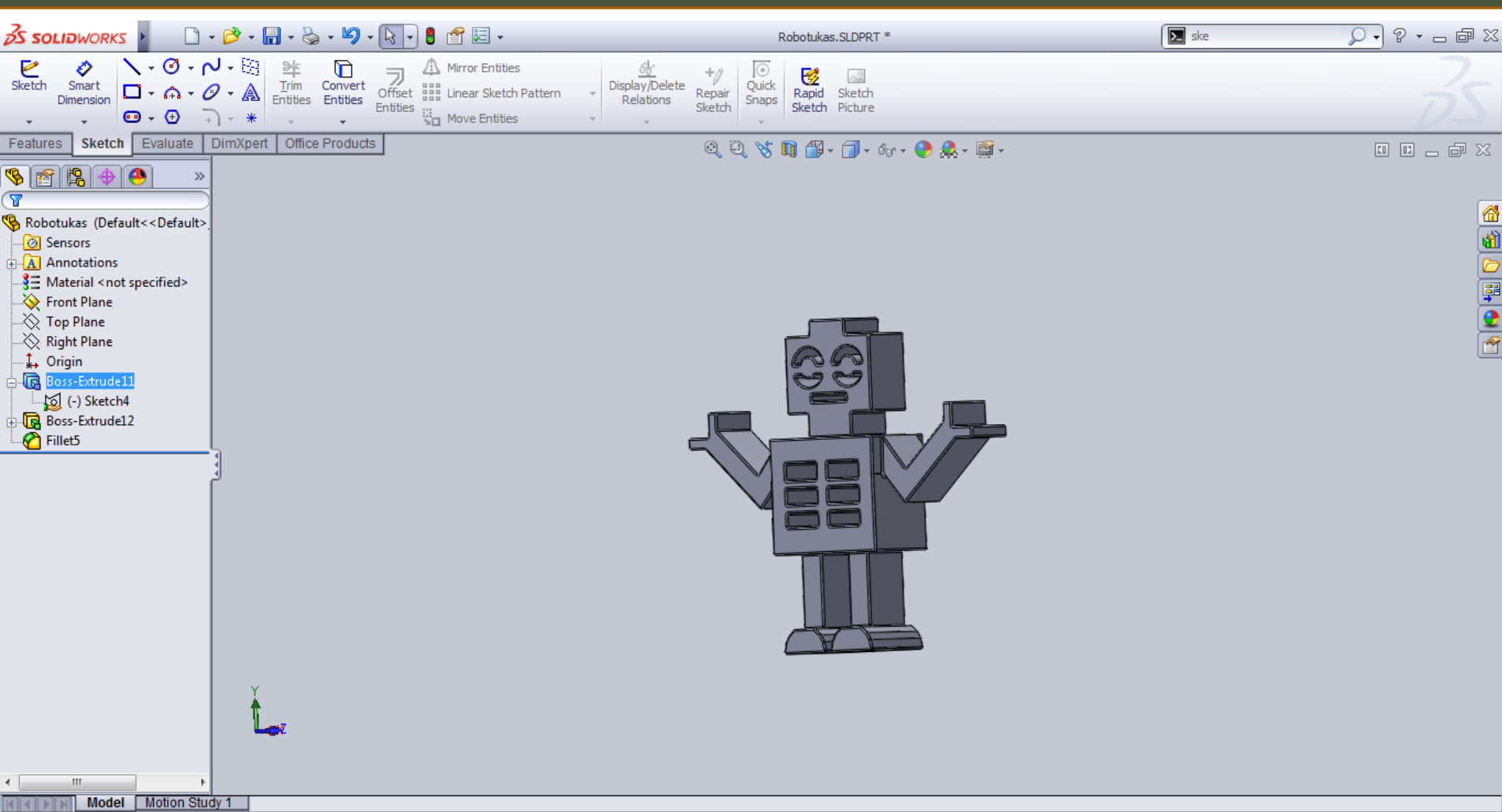
Then I outlined it and deleted it



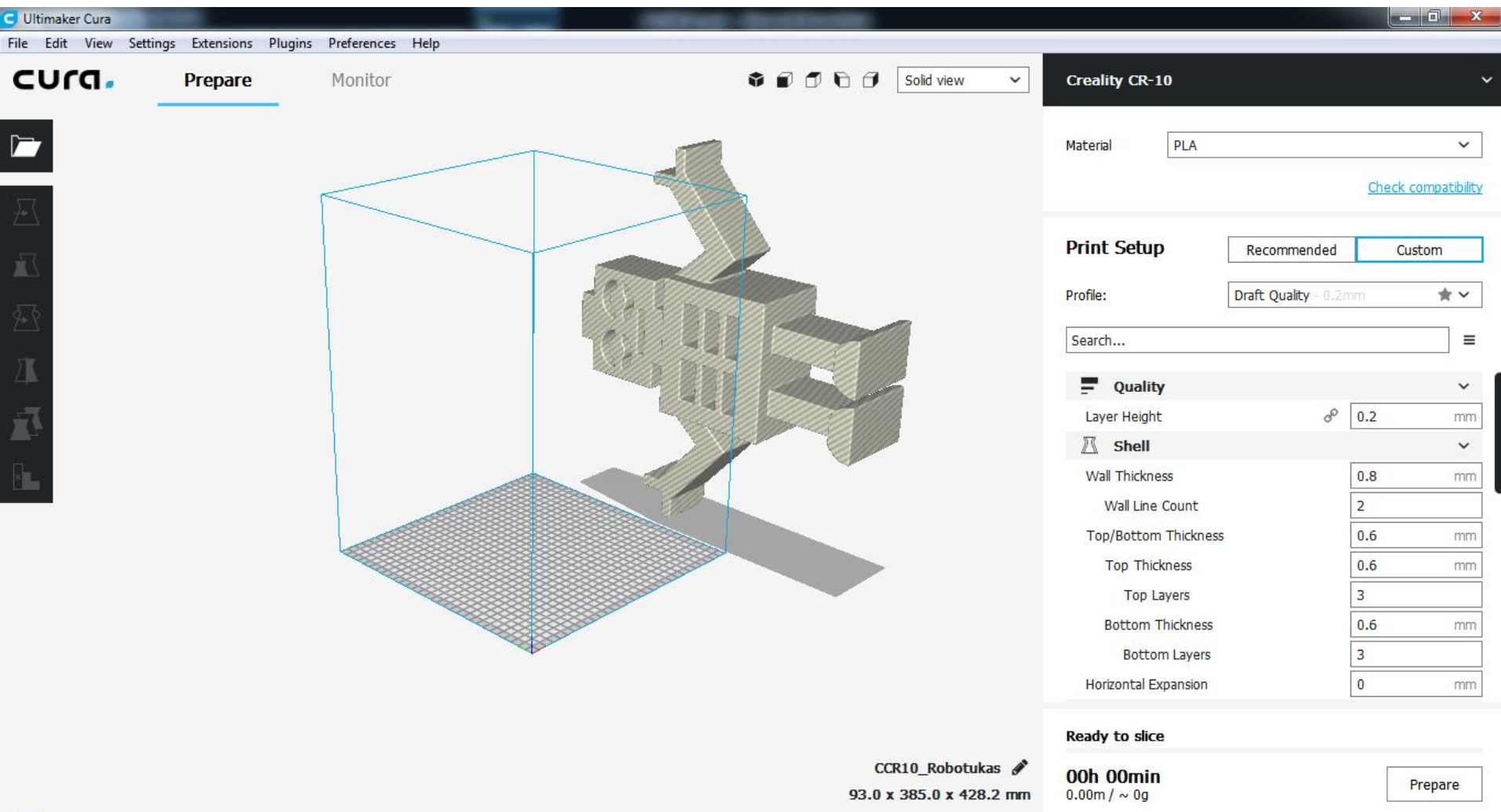
Then I extruded the drawing



RESULT



III. Laminated 3D Robot Model (*Cura*). Inserting the model file



The screenshot displays the Ultimaker Cura software interface. The main window shows a 3D model of a robot, labeled "CCR10_Robotukas", positioned on a grid within a blue wireframe bounding box. The interface includes a top menu bar with options like File, Edit, View, Settings, Extensions, Plugins, Preferences, and Help. Below the menu, there are tabs for "Prepare" and "Monitor". The right sidebar contains settings for the printer, "Creality CR-10".

Material: PLA

[Check compatibility](#)

Print Setup: Recommended | Custom

Profile: Draft Quality - 0.2mm

Search...

Quality

- Layer Height: 0.2 mm

Shell

- Wall Thickness: 0.8 mm
- Wall Line Count: 2
- Top/Bottom Thickness: 0.6 mm
- Top Thickness: 0.6 mm
- Top Layers: 3
- Bottom Thickness: 0.6 mm
- Bottom Layers: 3
- Horizontal Expansion: 0 mm

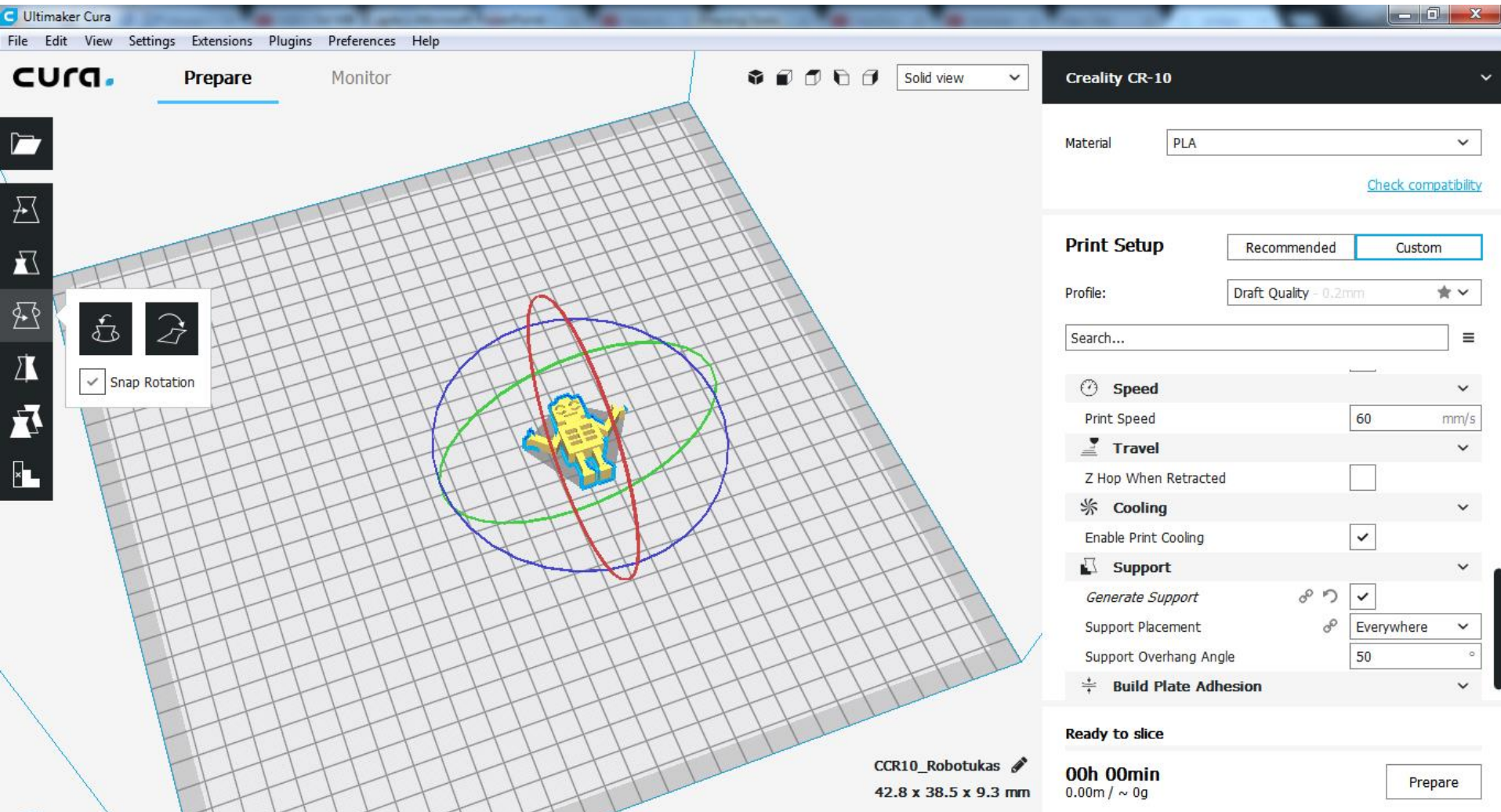
Ready to slice

00h 00min
0.00m / ~ 0g

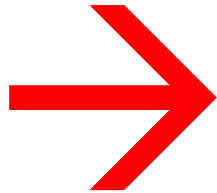
Prepare

CCR10_Robotukas
93.0 x 385.0 x 428.2 mm

Positions, dimensions, and rotation adjustments



Settings



Material:
PLA

Quality			
Layer Height		0.2	mm
Shell			
Wall Thickness		0.8	mm
Wall Line Count		2	
Top/Bottom Thickness		0.6	mm
Top Thickness		0.6	mm
Top Layers		3	
Bottom Thickness		0.6	mm
Bottom Layers		3	
Horizontal Expansion		0	mm
Infill			
Infill Density		10	%
Infill Pattern		Triangles	
Material			
Printing Temperature		200	°C
Build Plate Temperature		70	°C
Enable Retraction		<input checked="" type="checkbox"/>	
Speed			
Print Speed		60	mm/s
Travel			
Z Hop When Retracted		<input type="checkbox"/>	
Cooling			
Enable Print Cooling		<input checked="" type="checkbox"/>	
Support			
Generate Support		<input checked="" type="checkbox"/>	
Support Placement		Everywhere	
Support Overhang Angle		50	°
Build Plate Adhesion			
Build Plate Adhesion Type		Brim	

3D Robot participant

eTwinning project „ We love Lithuania and do you!“ activities „ 100 Fantastic Robots for Lithuania“.

5th grade students of Gargždai "Minija" progymnasium wrote the most fantastic robot writing paper, drew, designed a model, collected the best, worked with their parents. We told about this on the school's website, social networking site - Facebook.

We are delighted with the good practices.

Link to gallery:

<https://padlet.com/ramintabirgeliene/yf2hc2yb15z0>