Paper
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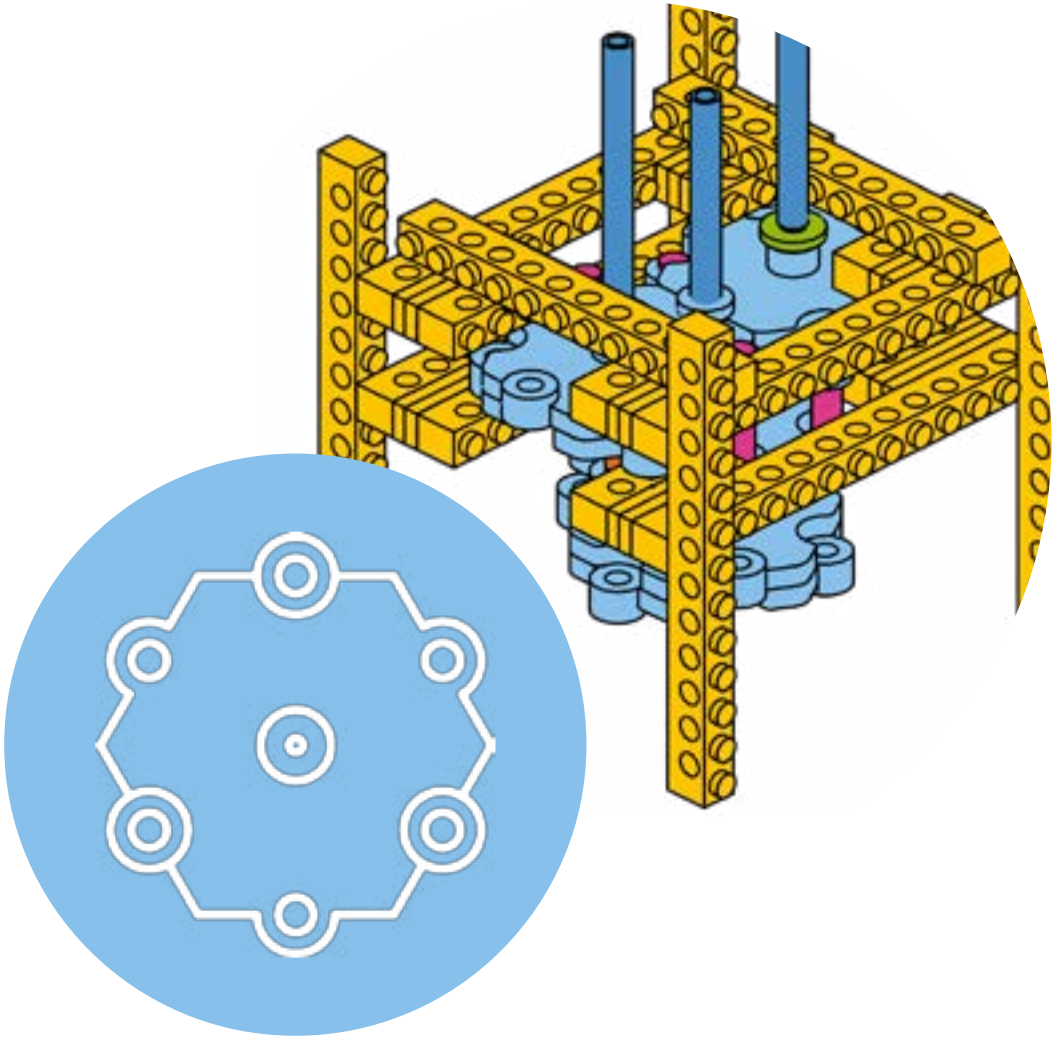
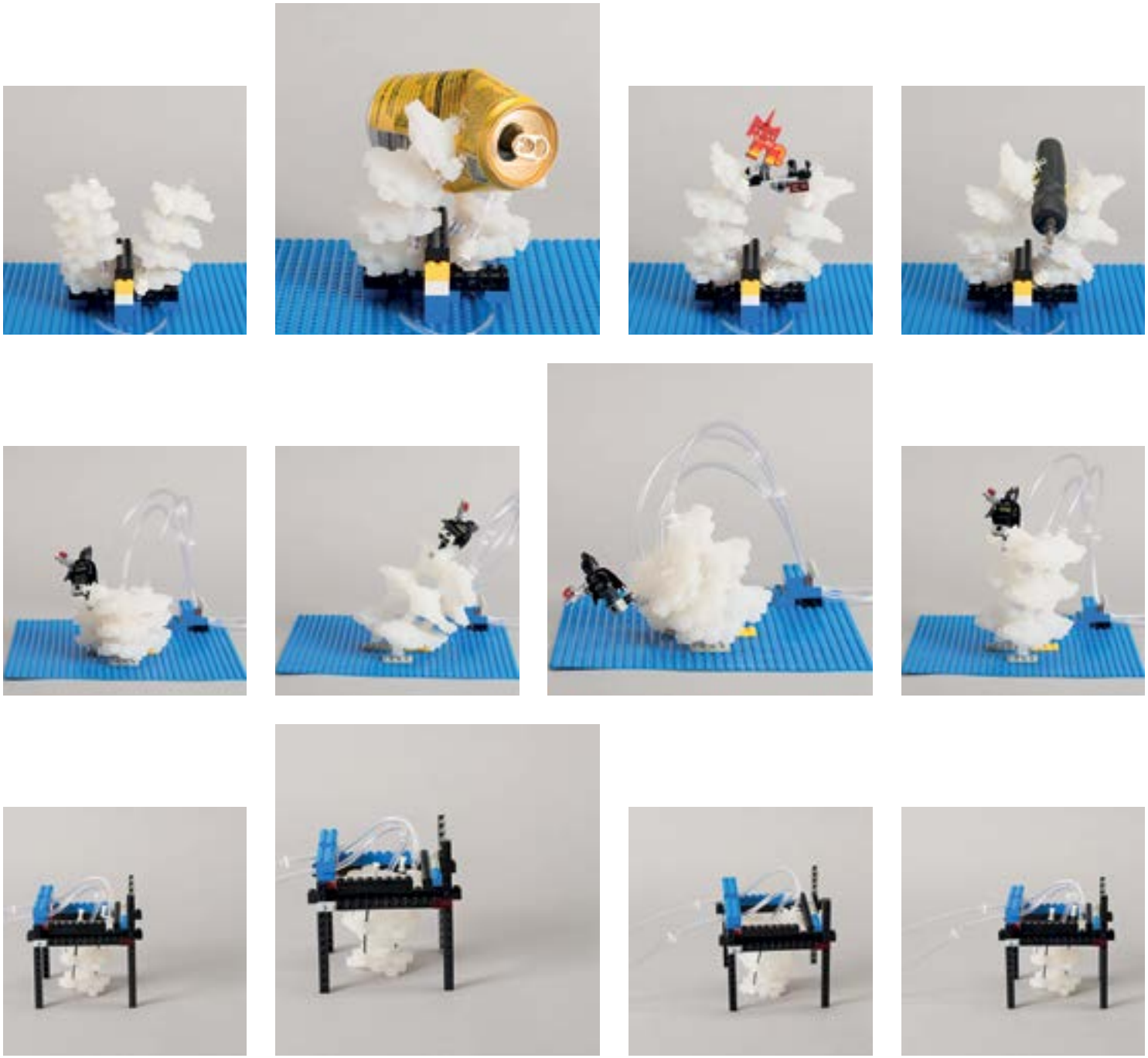
Demo Video
https://vimeo.com/144290379

Student Design Challenge Finalist

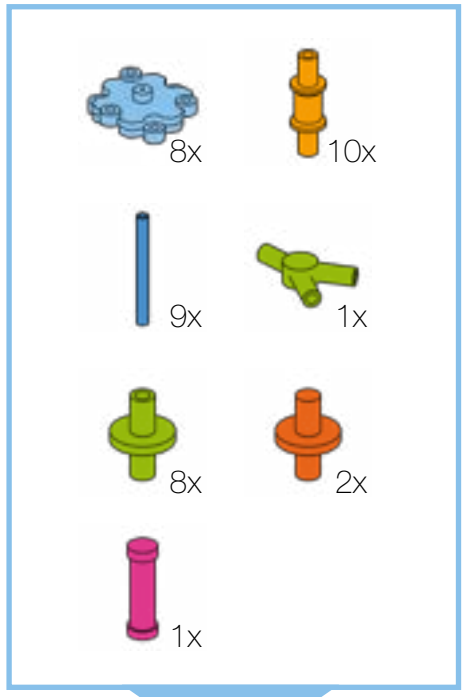


InflatiBits

Christopher Kopic, BFA & Kristian Gohlke, M.Sc. Digital Media
Bauhaus-Universität Weimar, 2015



InflatiBits is a construction kit that introduces kids into the world of soft robotics, enabling them to playfully design alien creatures, while learning the basic principles of this new academic field.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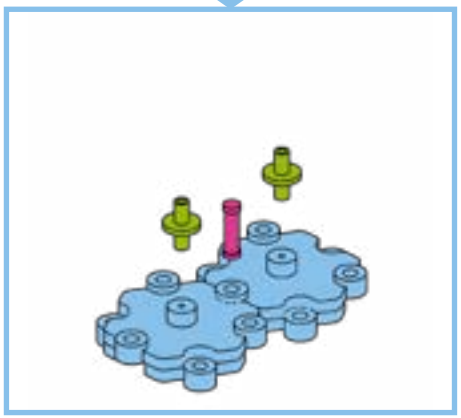
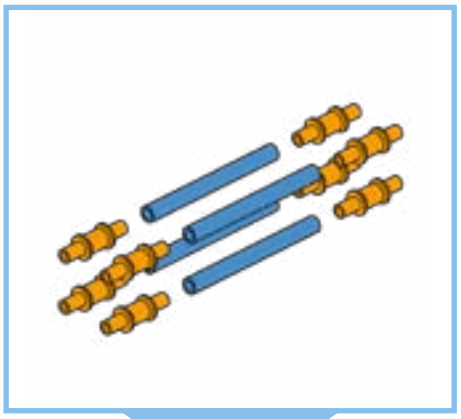
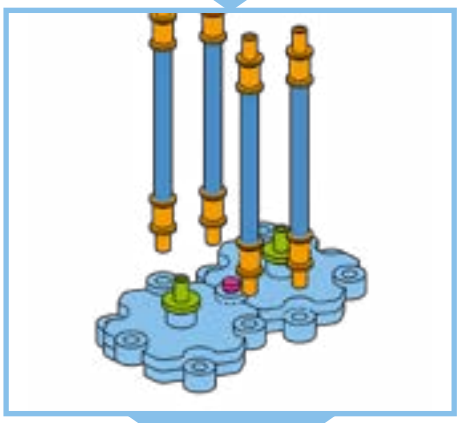
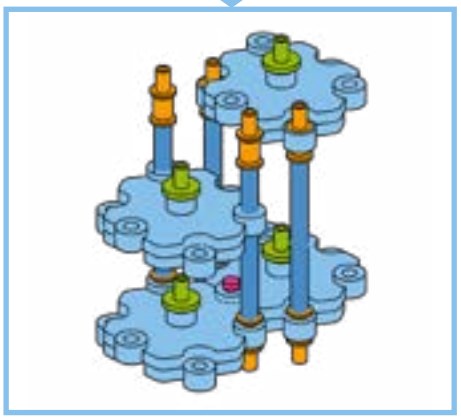
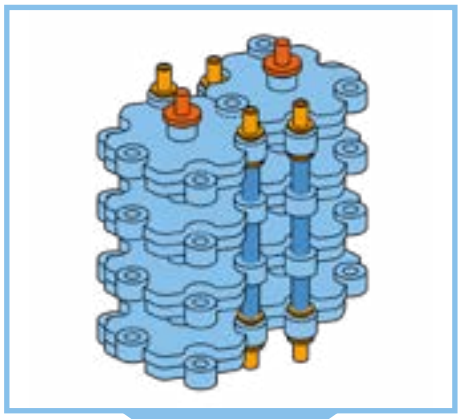
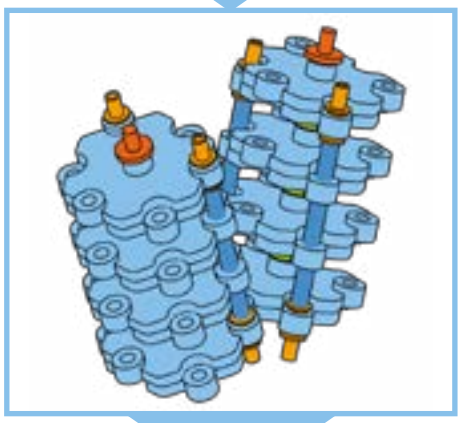


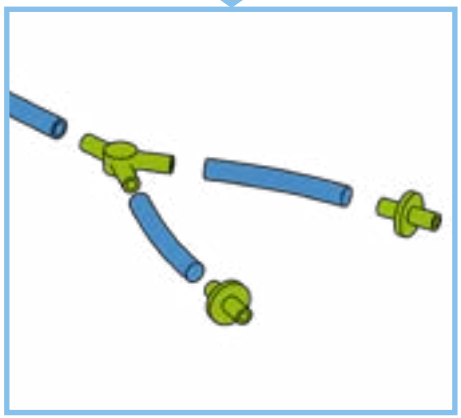


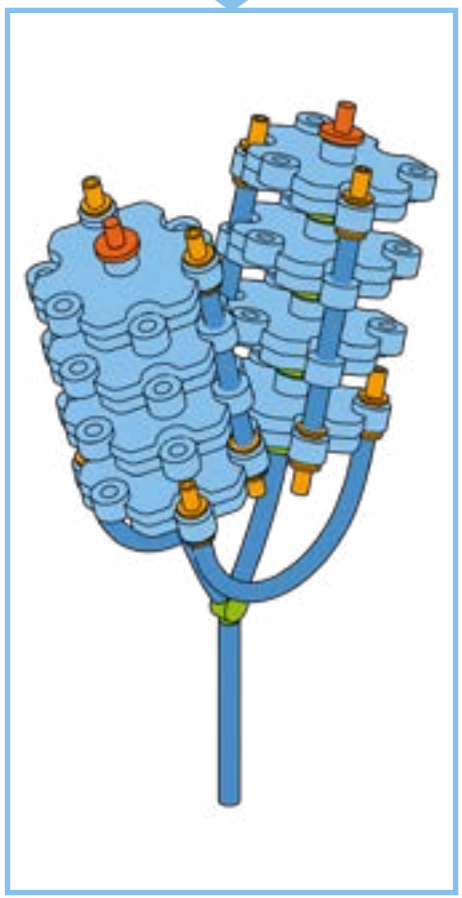


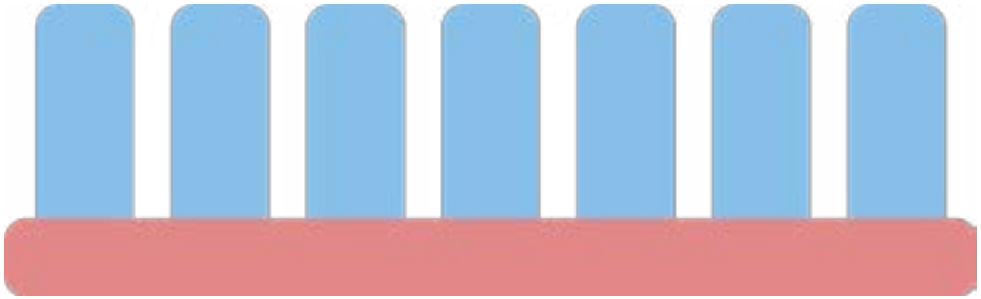










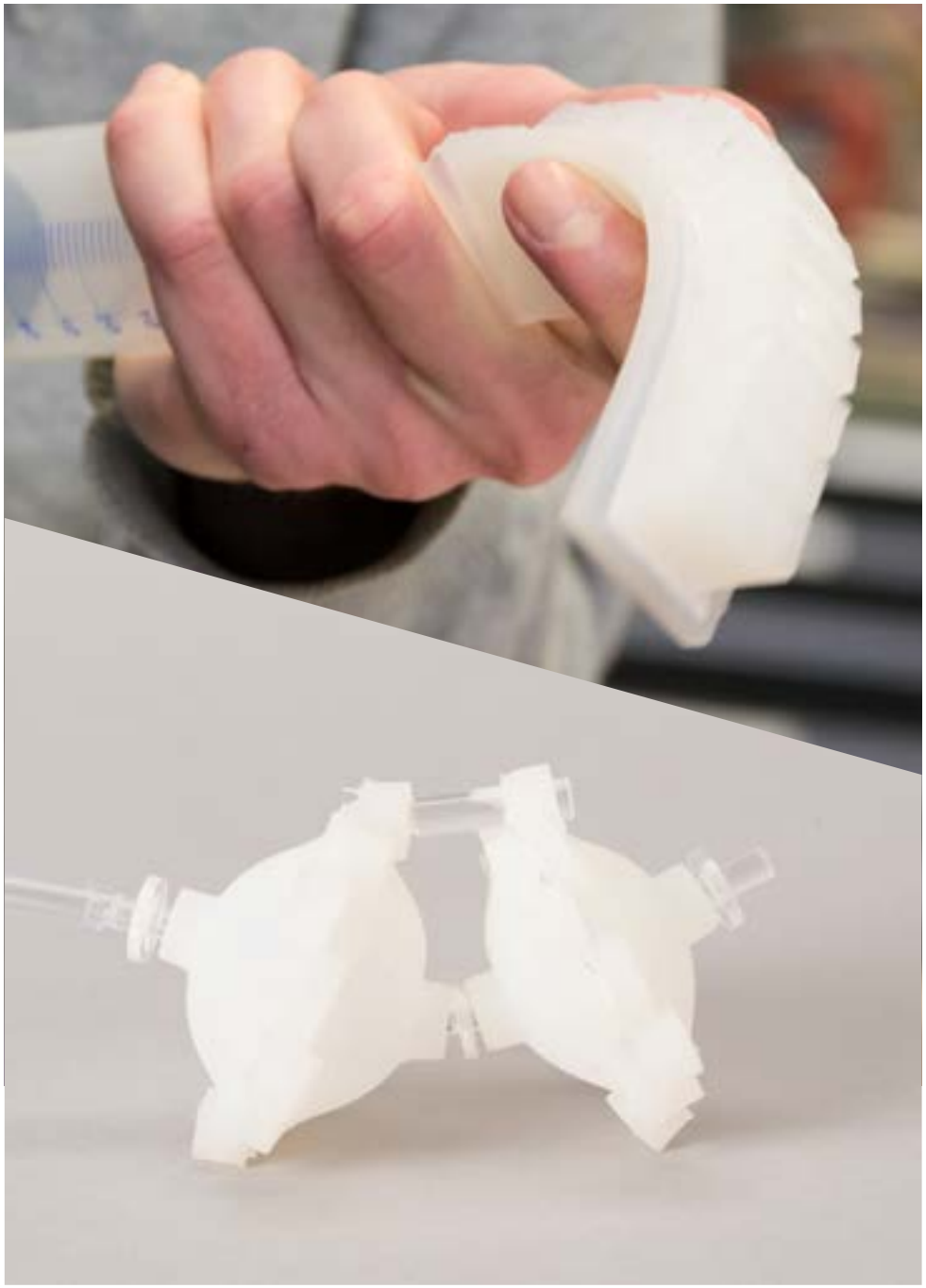


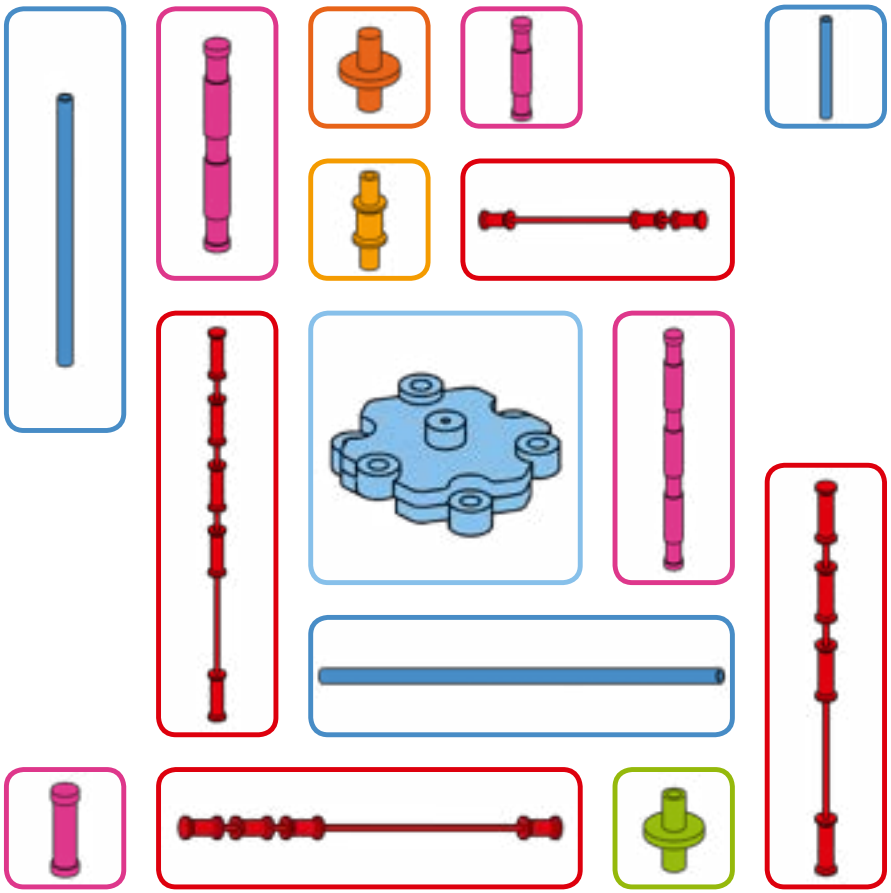
Extender / Restrictor

Soft Actuators are a trending topic in the world of engineering. Made of rubber and controlled by air pressure, they enable designers to create complex motions with simple mechanics.

This ‚Motion Design' is based on one principle: The combination of extending and restricting elements. Extenders in parallel to Restrictors transform from straight to curved, when pressurized.

InflatiBits takes those elements and divides them into separate components, which can be freely combined to create every type of soft actuated motion, you want.





Rigid Restrictor

Tube

Flexible Restrictor

Extender

Sliding Restrictor

Air Connector

Air Stop

The behaviour of inflated silicone can be extremely hard to predict. Therefore my design process was based around rapid iterative prototyping: Switching from sketching to CAD to 3d printing and testing molds usually in a matter of two weeks to create and test one prototype.
This approach enabled me to design an easily producible, yet very effective extender for the kit.