

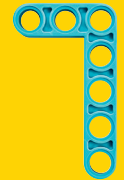
# Astronaut Tools

Develop tools that could be used by astronauts in space in order to perform typical tasks that happen on an EVA (extravehicular activity, or space walk): moving nuts between bolts or routing wires.



**Think Like an Engineer:**  
Think about your client as you build. Will the astronauts be wearing gloves? What is the visibility like through their helmets?

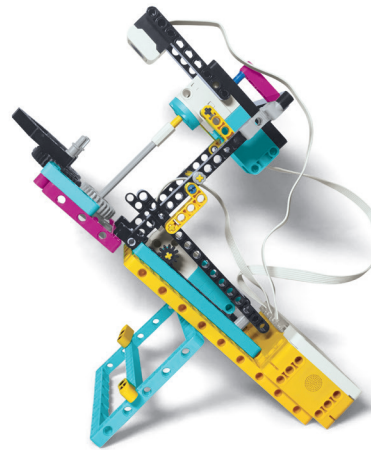
**Think Like an Astronaut:**  
What are some different features that tools need to have in space versus on Earth?



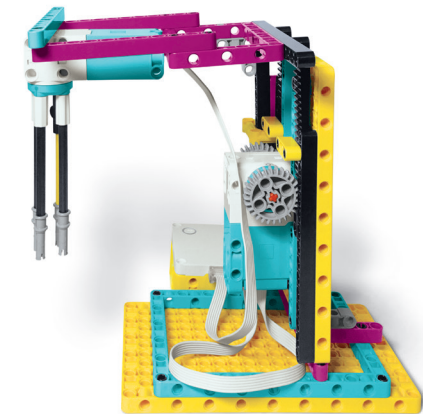
## Example Ideas



Motion Sensing Hammer



Color Sensing Object Picker-Upper



Unscrews Nuts From a Bolt



Advanced



Building Focused

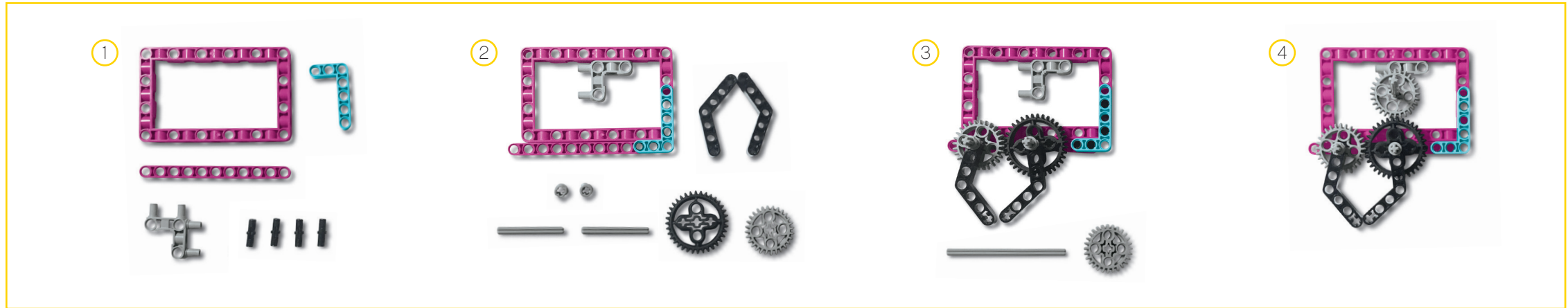


Task Helpers

Flip over for more details!

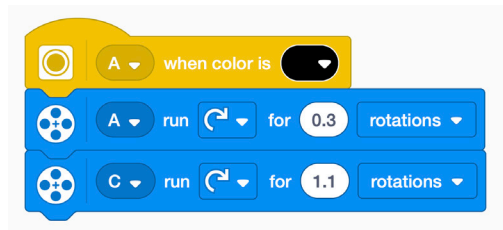
## Build It!

When using gears it's important to consider the benefits of gearing down versus gearing up: Gearing up gives you more speed but less torque and driving power compared to gearing down.



## Code It!

Code for the Object Picker-Upper:



### Modify It:

Try using a different sensor to activate the grip.  
Try having it adjust its speed depending on what you're gripping.  
Can you try to incorporate AI into your tool design?

## Challenge Yourself!

Put on snow gloves and a helmet and see if you can use your device in real life.