

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?

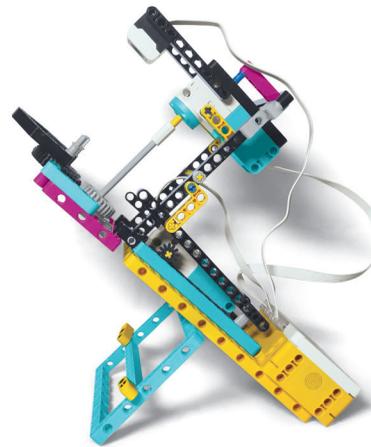
Think Like an Astronaut:
What are some different features that tools need to have in space versus on Earth?



Example Ideas



Motion Sensing Hammer



Color Sensing Object Picker-Upper



Unscrews Nuts From a Bolt



Advanced



Building Focused

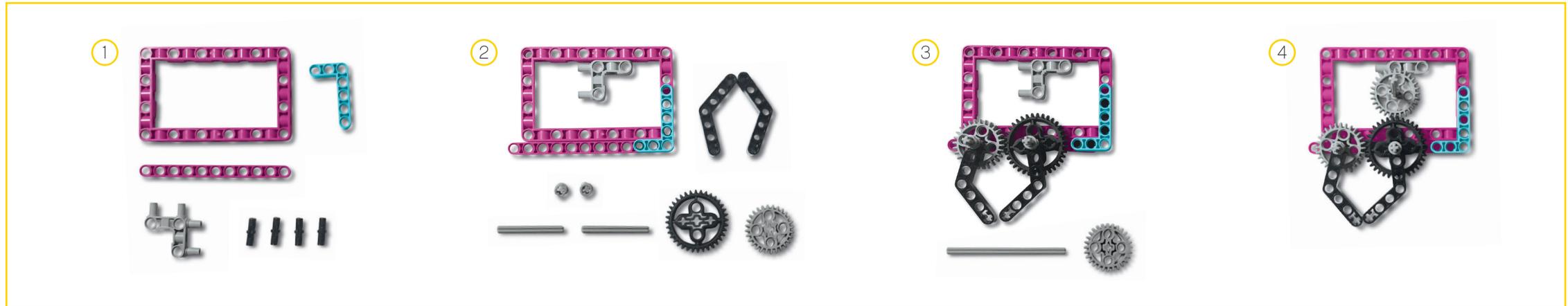


Task Helpers

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 Motion Sensing Hammer:

```
8 while True:
9     dist_cm = distance_sensor.get_distance_cm()
10
11     if dist_cm == 17:
12         motorpair.move(2,'cm',steering=0)
13         motorpair.move(2,'cm',steering=0)
14     else:
15         motorpair.stop()
```

Modify It:

Try using a different sensor to activate the hammer.
Try having it adjust its speed depending on what you're hammering.
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.