

The Woodson Project Presents: Water Propulsion Comparison

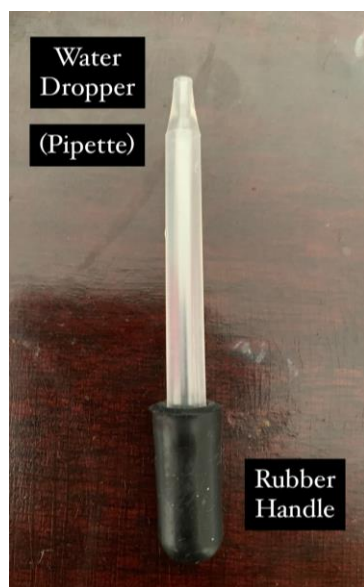
Lonnie Johnson (1949) was born in Mobile, Alabama. As a young boy, he would tinker and make all kinds of things, encouraged by his parents. He built his own robot in high school and went on to become a mechanical and nuclear engineer. While working at the Jet Propulsion Lab, he invented the Super Soaker!

Water guns work through a system of pumps that allow the water to be pushed forward in a more powerful stream. Let's compare two everyday tools in which we can see water or other liquids being pulled and pushed.

For ages 9-12.

How do these tools work?

Explain your thoughts using words like air, water, pressure, compression, propulsion, and force (some definitions at the bottom of this sheet).



What does each part of this tool do?

- Rubber handle:
- Plastic tube:

Why would you use this tool instead of the syringe?



What does each part of this tool do?

- Plunger:
- Barrel:
- Seal

Why would you use this tool instead of the dropper?

Other questions to consider:

How do you see water droppers or syringes used in everyday life?

Where in the environment do you see water used to complete work or for fun?

If you were an inventor like Lonnie Johnson, what around you would you say needs fixing or improving?

Propulsion: pushing or pulling to drive an object forward. **Force:** a push or a pull in a certain direction.

Pressure: continuous force on an object. **Compression:** a reduction in volume, which increases pressure. (Meaning, if there is less space, whatever is in that space will be packed in more tightly.)