

World of Work: Inventors

First: **Whoosh** - by Chris Barton

[Non-Fiction text] [slides 2- 6]

- **read** and/or **listen** to and **talk about**
[read at least 2 slides]

Then: **Interview With Lonnie Johnson**

[Non-fiction – watch video]

<https://www.youtube.com/watch?v=-1zAO1WkG58>

- **watch** and **discuss** [watch video]

- **make notes** [slides 7]

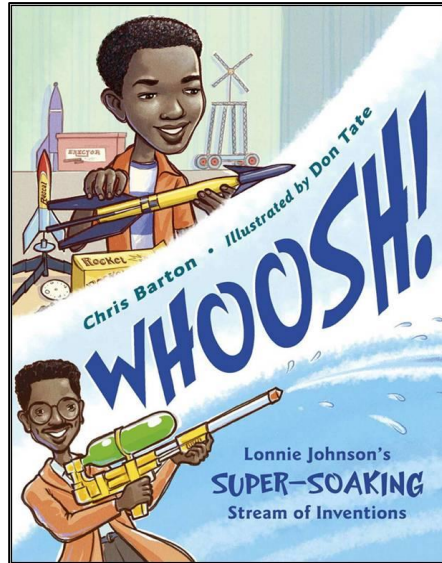
Finally: **Amazing Inventions**

- **My idea for a new invention** [slide 8-10]

OR

-**Write about an invention** someone else came up with that makes your life better.

Focus: Explain in detail



What are we learning this week?

Learning Focus: This week we are focusing on two different careers. We will be practising skills reading fiction + non-fiction texts.

First Career: **Hairdressing**

[see first powerpoint *W9 WoW Hairdressers...*]

Next Career: **Inventor**

Text 3: Non-fiction - *Whoosh!*

Video interview with Lonnie Johnson

[a range of S&L, Reading and Writing tasks]

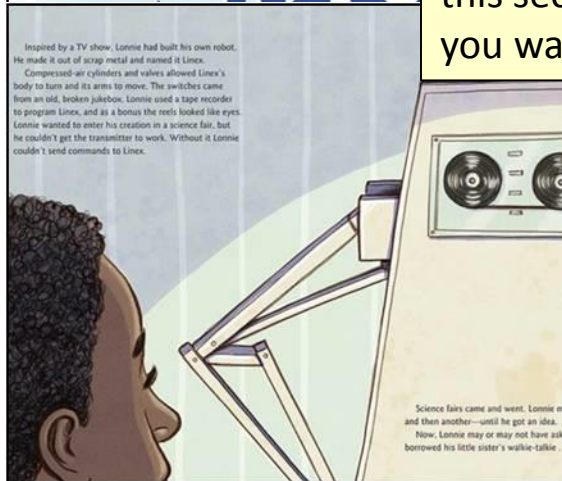
Finally: **Creative Thinking Inventors/Inventions**

Focus: Explaining an idea in detail

'Whoosh! Lonnie Johnson Story' by Chris Barton Listen to/ read then talk about this non-fiction text. Focus: What do you find out about Lonnie Johnson? How did he become successful?



Miss Barratt has recorded this section of the story if you want to read along.

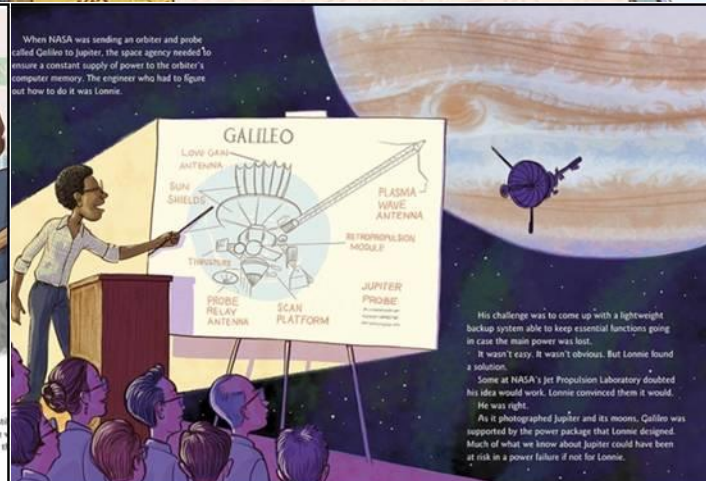


Inspired by a TV show, Lonnie had built his own robot. He made it out of scrap metal and named it Linex. Compressed-air cylinders and valves allowed Linex's body to turn and its arms to move. The switches came from an old, broken jukebox. Lonnie used a tape recorder to program Linex, and as a bonus the reels looked like eyes. Lonnie wanted to enter his creation in a science fair, but he couldn't get the transmitter to work. Without it Lonnie couldn't send commands to Linex.

Science fairs came and went. Lonnie entered Linex and then another—until he got an idea. Now, Lonnie may or may not have also borrowed his little sister's walkie-talkie...



Having to compete in a place that still welcomed him, that was a challenge. Against other schools from all over the area, his team won first place.



When NASA was sending an orbiter and probe called Galileo to Jupiter, the space agency needed to ensure a constant supply of power to the orbiter's computer memory. The engineer who had to figure out how to do it was Lonnie.

His challenge was to come up with a lightweight backup system able to keep essential functions going in case the main power was lost. It wasn't easy. It wasn't obvious. But Lonnie found a solution. Some at NASA's Jet Propulsion Laboratory doubted his idea would work. Lonnie convinced them it would. He was right. As it photographed Jupiter and its moons, Galileo was supported by the power package that Lonnie designed. Much of what we know about Jupiter could have been at risk in a power failure if not for Lonnie.

Non-fiction = writing that gives facts and information **Fiction** = writing from imagination

Setting Context: [Non-Fiction Text]

Lonnie Johnson is a real person. He was born on 6th October 1949 in Alabama, U.S.A. Growing up he was one of 6 children. He would have loved a workshop of his own to work on all the fantastic ideas he kept thinking of however the house was small and there just wasn't room.



Lonnie loved making things. He would collect spare bolts, screws, spare parts and anything he could haul back from the junkyard. He learned how to make rockets from scratch – he even learnt how to make rocket fuel – nearly setting light to his kitchen! Lonnie wanted to spend his life designing things, building things and getting them to work. He wanted to be an engineer.

At school Lonnie took a test that told him he would not make a good engineer but he didn't give up. He kept working, even managing to build his own robot out of scrap metal. He wanted to show everyone what he was capable of but he couldn't afford the final vital part it needed - a transmitter. One day he had a brilliant idea, he would borrow his sister's walkie-talkie ... *he didn't quite get around to asking first.* Linex the robot was finally finished and Lonnie was able to enter a science fair with his school. This was a very BIG deal, schools across the state entered and competed to win. Lonnie knew that as an African American 5 years ago he wouldn't even have been allowed to enter so he really felt the pressure to succeed. Due to his amazing work his school won first prize!

Lonnie continued to study hard, learning all that he could. He eventually got a job working for NASA. They needed an engineer who could work out how to make sure there was a constant supply of power to the orbiter *Galileo's* computer memory on its long 365million mile journey to Jupiter.

He also came up with lots of other very cool inventions, read on to find out more!

engineer = a person who designs, builds, or maintains engines, machines, or structures eg. buildings, bridges
orbiter = a spacecraft designed to go into space, to travel around planets but not land. Used to collect information

Ideas for other problems to solve just kept on flowing. They flowed whether Lonnie was working with hundreds of people at NASA or up late tinkering with his own inventions in – finally! – his own workshop.



Lonnie knew the world's millions of refrigerators and air conditioners needed a new cooling system - one that didn't use R-12, a chemical that was bad for the environment. He had an idea for using water and air pressure instead. To test his idea, he made a pump and nozzle ... connected them to the bathroom tap ... turned on the tap, turned on the pump, and then ...

Whoosh! The stream that blasted across the bathroom was so powerful, it created a curtain-swirling breeze. It also gave Lonnie an idea for yet another invention.



“This,” he thought, “would make a great water gun.”

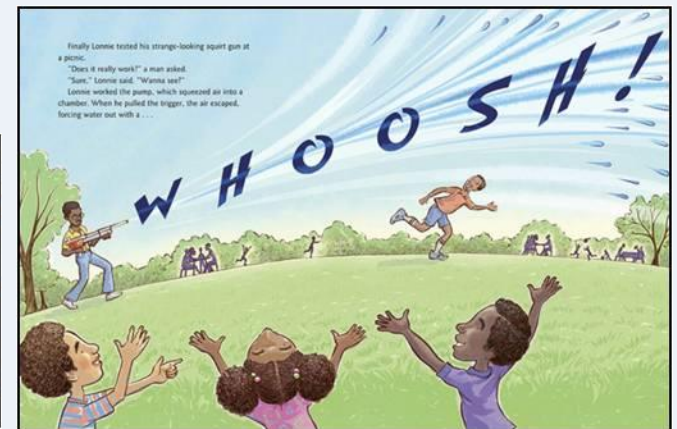
First he had to find or make the parts, including a pump small enough for a child to handle. Then he had to glue the parts together into a prototype – an early version with room for improvement.

Finally Lonnie tested his strange-looking squirt gun at a picnic.

“Does it really work?” a man asked.

“Sure,” Lonnie said. “Wanna see?”

Lonnie worked the pump, which squeezed the air into a chamber. When he pulled the trigger, the air escaped forcing water out with a ...



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For a water battle to be a fair fight, there couldn't be just one of Lonnie's water guns. He needed help making more.

So, he went to toy company ...
after toy company
after toy company...

The word "no" was said again and again.
But finally, one company said, "Yes!"



Lonnie gave up his day job and devoted himself to full-time inventing. He had so many great ideas but sadly each one of his plans fell through, including his new water gun.

Times were hard for the family and Lonnie felt angry and scared. But he had dealt with challenges all his life, he knew a lot about solving problems. And he still believed in his inventions, especially his water gun. Lonnie went looking for another toy company.



Eventually he found a toy maker who was interested in seeing the gun if Lonnie ever happened to be in Philadelphia.

"But don't make a special trip," the company said.

Lonnie made a special trip.

In his wife's suitcase, he carried a new prototype.

He unpacked it, filled the tank with water, pumped the gun until the air pressure was good and high, and ...





Kids everywhere agreed with that “Wow!” Lonnie’s water gun, called the Super Soaker, became a smash hit. In no time there were Super Soakers in gardens and beaches, in parks and on playgrounds. Each sale of a Super soaker put a little money into Lonnie’s pocket.

All those hours – all those years – that Lonnie spent in his workshop had paid off big-time. Now he could afford to do just about anything he wanted.

So what did Lonnie do?

He got a bigger workshop, which is where you’ll find him today. Because facing challenges, solving problems, and building things are what Lonnie Johnson loves to do. And his ideas just keep on flowing.

Watch this video clip to hear Lonnie tell you his story himself.

<https://www.youtube.com/watch?v=-1zAO1WkG58>



**CHOICE of TASK: Draw out and label an idea you have for an invention *OR*
Write about an invention someone else has come up with that makes your life better.**



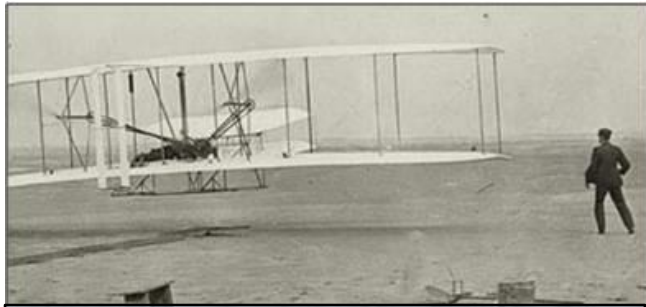
Tim Berners-Lee
inventor of the **world wide web**



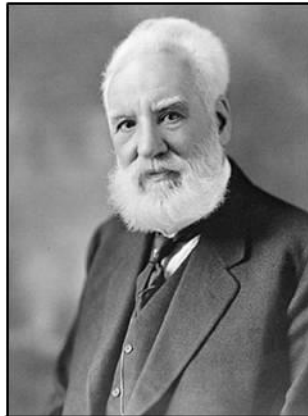
Karl Benz inventor of the **automobile - car**



Thomas Edison inventor of the **electric light bulb**



Wilbur + Orville Wright
inventors of the **airplane**



Alexander Graham Bell
inventor of the **telephone**



Johannes Gutenberg
inventor of the **printing press** – led to massive leaps in education + science



Stephanie Kwolek inventor of the **kevlar** - a super strong material used in protective vests and in boats, airplanes, ropes, cables...

There are so many more!