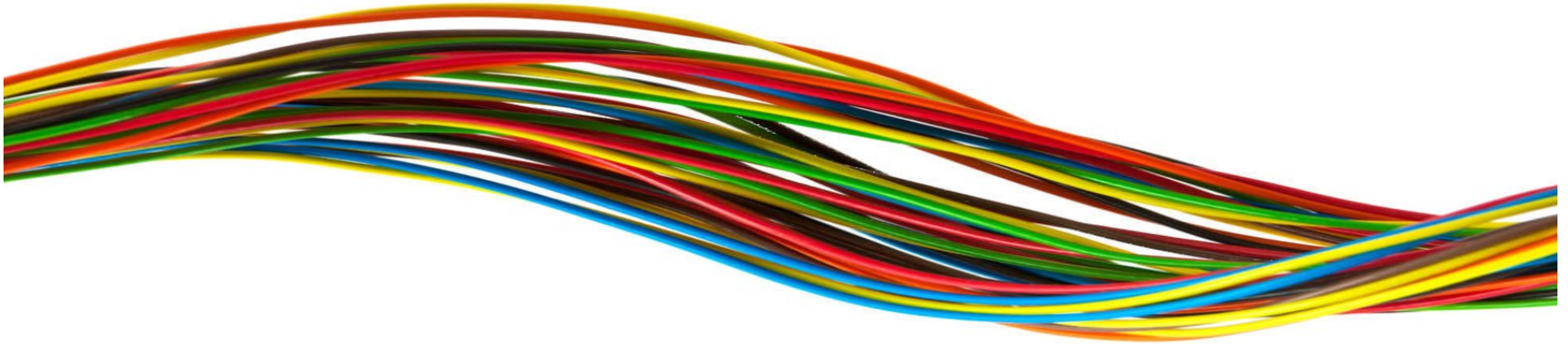L.O. Use a writer's toolkit to independently write an information report
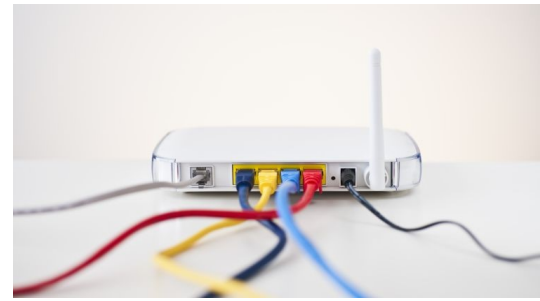
Now that we have spent some time learning how to write a non-chronological report, step-by-step, it's time to have a go at writing one independently. For this, we are going to visit the scientific world, specifically, the science of materials. This half term, we have been learning a lot about how materials can be changed, and how their properties can affect what they are used for. We are now going to find out about one particular material, and how it changed everybody's lives.

We will then use what we have learnt to write an information report. You will need to pay attention, but don't worry - you'll all get a set of notes to help you.

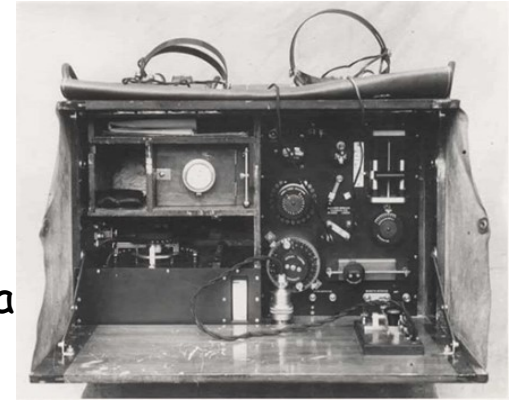How many things do you own or use, that need electrical wires or cables?

What would happen if the wires didn't last very long before they needed replacing, or what if they were made of something that could poison you? What problems would that cause in your life?

Radio operator in WWI trench

Well, in the early days of communications, that's exactly what the wires were like - they were coated in a lead-based material (lead is a flexible metal that doesn't conduct electricity), which not only cracked easily, but was actually poisonous!
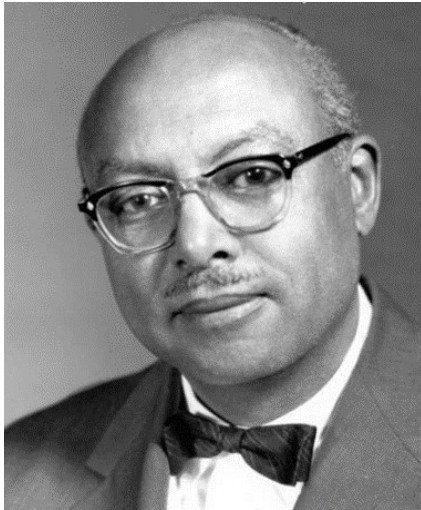

WWI field radio

By the Second World War, things had improved, with flexible woven material used. Then the British army began using an early type of plastic to cover their wires; at first, this waterproof and very flexible material seemed ideal, but it soon became obvious that exposure to sunlight made the cables brittle.
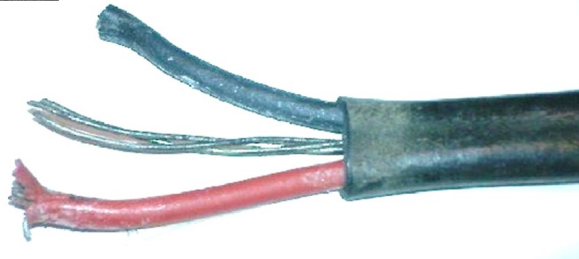
They needed replacing often, which was expensive and caused equipment to fail.

W. Lincoln Hawkins

It wasn't until 1956 that an American scientist came to the rescue: chemist **Walter Lincoln Hawkins** and his colleague **Victor Lanza** developed a plastic with a chemical added to it that protected it from the sun's damaging UV rays. Working from telecommunication company AT&T's Bell laboratories in New Jersey, the pair figured out how to coat electrical wires in the new material, and called it 'Plastic Cable Sheath'

Bell Labs headquarters, Murray Hill, New Jersey.

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- The new plastic could last up to seventy years, which meant greater reliability and fewer replacements.
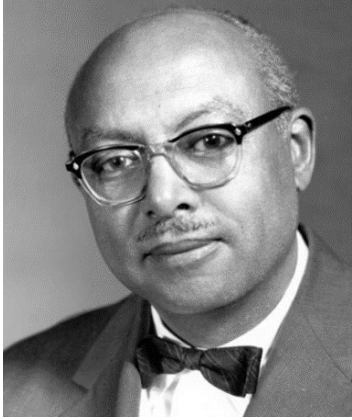
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But what kind of man was Walter Hawkins? What can we learn from his life?

Walter Lincoln Hawkins (or Linc, as his friends called him), was born on March 21st, 1911, in Washington D.C. He was the grandson of a slave, his father was a lawyer and his mother was a science teacher.

When he was young, Hawkins was fascinated with how things worked. For example, it was not unusual for him to take apart one toy and reassemble it to make another one.

He also made spring-driven toy boats to sail in the reflecting pool in front of the Lincoln Memorial.

Hawkins attended Washington's Dunbar High School, one of the first American schools for black students, at a time when racial segregation was enforced by law. While there, Hawkins noticed that his physics teacher drove an expensive new car every year. The teacher, Dr. James Cowen, who had invented a self-starter mechanism to replace automobile hand cranks, received a new car each year as partial payment from the company which had bought the mechanism. Hawkins was tremendously excited to discover that a person could make a living through mechanical tinkering.

Starting a car with a hand crank

W. Lincoln Hawkins did well at school, and after graduating, he went to Rensselaer Polytechnic Institute in Troy, New York, where he was one of only two Black students at the school.

OBSERVATORY   RANKEN HOUSE   LABORATORY   MAIN BUILDING   GYMNASIUM
RENSSELAER POLYTECHNIC INSTITUTE

In 1932 he graduated with a degree in chemical engineering, and then went to Howard University where, in 1934, he earned a master's degree in chemistry. He then went to McGill University in Montreal, Canada, where he earned his Doctorate in Chemistry in 1938. He was now Dr. Hawkins.

In the same year, 1938, Lincoln married Lilyan; they had two children, and remained married until his death in 1992.

In 1942, Hawkins became the first African-American to join the technical staff of Bell Laboratories. In 1963, he became Bell Labs' Supervisor of Applied Research, and in 1972, the head of his department. It was here at Bell Laboratories that he developed his new plastic, along with 140 other materials.
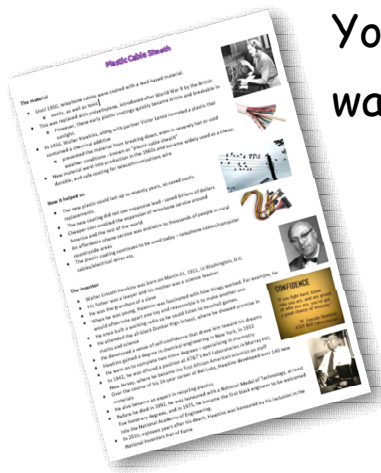
He was also concerned about the environmental impact of his inventions, and became an expert in recycling plastics.

Hawkins won many awards, not just for his work with materials, but for his work with educating black and ethnic minority young people. He was the first African-American to be elected to the National Academy of Engineering (1975), won the International Medal of the Society of Plastics, was inducted into the New Jersey Inventors Hall of Fame (1992), received the Burton C. Belden Award of the American Chemical Society, the Percy L. Julian Award of the National Organization of Black Chemists, the International Award of the Society of Plastics Engineers, the Honor Scroll of the American Institute of Chemists, and the Achievement Award of the Los Angeles Council of Black Professional Engineers. In a 1992 White House ceremony, he received the National Medal of Technology from President George H. W. Bush. Posthumously, Hawkins was inducted into the National Inventors Hall of Fame in 2010.

What can you remember about the plastic material? Why was it invented? How did it help us? Who invented it? What events from his life can you recall?

Tell a partner and share your ideas with the class.

Your notes are divided into three sections: the plastic material that was invented; how it has helped us; and the man who invented it.

We could just write a biography of W. Lincoln Hawkins, but that would be *chronological,* quite lengthy and full of dates. Instead, our challenge is to write an information report about the new plastic material. This gives us a choice about what we write about.
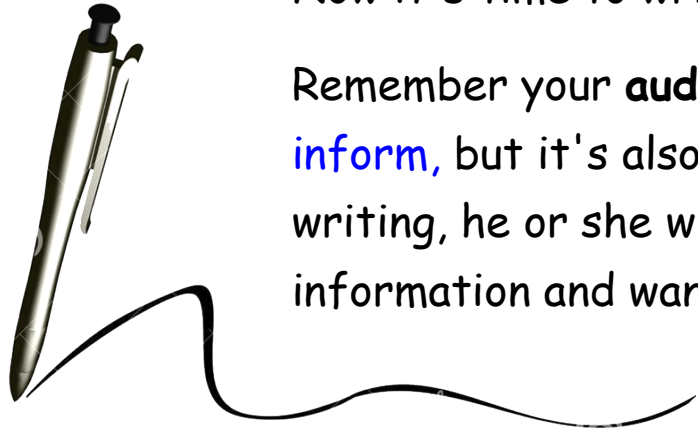
Ideally, we would include all three of the categories in our writing, but it can still be possible to produce a report that uses only two main sections.

Read through the notes and choose the information that you want to include in your report, then jot down some quick notes of your own in the main planning box. Will you include two information sections, or three?

Once you have gathered your information, think about your introduction, and finally your conclusion, then make notes in the planning boxes.

Now it's time to write!

Remember your **audience** - your purpose for this writing is to inform, but it's also to entertain. If your reader enjoys your writing, he or she will be far more likely to remember the information and want to tell others about it.