

**Curiosity Question - What material makes the best hard-shell suitcase for future travel? For my item I chose to research about an essential item when travelling, a suitcase! I want to find out the best, most durable type of suitcase for when we can travel again. The element I am going to be researching is *aluminum.***

Physical and Chemical Properties of Aluminum

Aluminum is a silver like metal that has a melting point of 660 degrees Celsius. Occurs only in a compound form, in moist air combines slowly with oxygen to form aluminum oxide, reacts with lots of hot acids, reacts quickly with hot water. It has a thin layer of oxidation that forms quickly when exposed to air.

**Research Question 1 – What are most suitcases made of?**

Today's hard-sided luggage is made up usually of ABS (Acrylonitrile Butadiene Styrene) which is lightweight and polycarbonate which is more durable or aluminum which is most durable but also heaviest.

**Research Question 2 – What are the pros and cons of getting a suitcase made of aluminum?**

Aluminum luggage is very secure, and the durability is very high. It should usually last indefinitely if treated with care but if not, it can become dented and hard to close. Aluminum suitcases are very costly, and you have to decide whether or not it’s something you want to put your money towards but if you do choose to, it can last forever. They are also extremely heavy and can make the overhead bin on planes dangerous.

**Research Question 3 – When was the first aluminum suitcase invented?**

RIMOWA is the name of the German company who first invented aluminum suitcases. In 1937 they made the first “aluminum trunk.” In the early 1930’s there was a fire in their factory leaving only aluminum which led them to creating the first suitcase made of this material.

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| **Aluminum**  | **14 neutrons** | **13 protons 14 electrons**  |
| **Al** | **Atomic mass 26.98**  | **Atomic number 13** |

**In conclusion, I have come up with that depending on your needs when travelling, Aluminum can be the best choice when purchasing a suitcase.**

**Sources**

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**Reflection Questions**

**What questions did you need to research in order to create your post?**

In order to create my post, I needed to research the following questions:

What are suitcases made of? What material is ABS plastic? Positives of aluminum luggage? Pros and cons of aluminum luggage? How much do aluminum suitcases cost? Who invented the first aluminum suitcase? What is RIMOWA? How long do aluminum suitcases last?

**What new or familiar digital tools did you try to use as you worked through this project?**

A new digital tool I tried to use for this project was creative commons. Mr. Robinson showed us this site during class, and I used it to find some images for this project. Something familiar I used was word, I have used word many times before but I tried to do some new formatting with this project.

**What was the process you used to investigate the topic?**

To investigate the topic, started off by figuring out what my curiosity question was, after that I developed 3 research question. To get answers to my research questions, I did some research and read about even smaller questions that would help me to understand. Then I was able to write about each of my research questions which would lead me to the best possible answer top my big curiosity question. Following this process, I learned lots about suitcases and aluminum.

**How did you verify and cite the information you found?**

To verify all the information I had, I checked more than one website. This way I could check if the answers and research I had matched. If I was finding the same information on multiple different sites, I knew it was accurate. To cite the sources I used, every time I found new information, I copied the link and pasted it into my bibliography at the end.

**How did the process of completing this challenge go? What could you have done better?**

Personally, I think the process of completing this challenge went very well. I think I did pretty good, and I learned a lot of new things. I also enjoyed doing it because traveling is something I enjoy and so suitcases was a good topic for me. I think maybe to improve I could have challenged myself by doing another research question or two to learn even more.