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Did you know that the state of Arizona has been the nation's leading copper producer since 1910 (resolutioncopper.com)? I want to go in depth and research the rich history of copper and how it affects Arizona in our current day. As a state we need funds to continue to be prosperous and provide for people who live here, copper is one of the resources that makes this possible. Copper is used in so many different types of technology and it's even used in things you would never have guessed, this is because copper has high ductility, malleability, thermal and electrical conductivity and resistance to corrosion (copper.org). Overall it's a very versatile element that I am excited to get into the history and current use of.

First I'd like to get into the rich history of copper which starts in 5000 BC when copper was most likely first discovered in the regions known now as Turkey, Iran, Iraq, and the Indian Subcontinent (dartmouth.edu). Originally used for weapons and tools, copper is now an integral part of our current day technology and economy. I want to first list some things that utilize copper that you can identify. These things include wiring, plumbing, sinks, bathtubs, table tops, and door handles. Copper is cheap and plentiful which is why it is used in such high amounts. Arizona's copper production is 60% of the US's entire copper production, we produce 750,000 metric tons of copper with the value being 5.54 billion dollars (wikipedia.org). Copper mines used to be extremely fatal,

having around 40 deaths in 1983, but that number has actually gone down a considerable amount since then, with around 11 deaths in 2019 ([cdc.gov](https://www.cdc.gov)). Did you know that the star in the middle of Arizona's flag is actually for copper? This shows exactly how important copper is to Arizona ([resolutioncopper.com](https://www.resolutioncopper.com)).

Next I want to talk about cotton and how it benefits Arizona, cotton is an extremely important resource that influences Arizona in many ways. This includes our clothing, sheets, tents, and even astronaut's clothing! Cotton is a prominent and popular resource, even having a rabbit named after it, the cottontail rabbit is named so because its tail looks like a fluffy cotton ball from behind! The breed of cottontail rabbit that is native to arizona is the desert cottontail rabbit, you can spot these rabbits almost everywhere in Arizona. Cotton is a major agricultural commodity and it's one of the original kharif crops farmed in Arizona ([agriculture.az.gov](https://www.agriculture.az.gov)). Other kharif crops are rice, maize, millet, ragi, pulses, soybean, groundnuts and more ([byjus.com](https://www.byjus.com))! "Kharif crops are grown with the onset of monsoon in different parts of the country and these crops are harvested in September-October" ([byjus.com](https://www.byjus.com)). Since difficult labor isn't used in the US anymore we farm cotton using machines, we use either a picker or a stripper ([cotton.org](https://www.cotton.org)). In Arizona cotton usually produces 400 to 500 million dollars of our state's income ([azfb.org](https://www.azfb.org)). Arizona produced 334,000 480 pound bales of cotton in 2021 which was a 6% increase from 2020's production amount ([nass.usda.gov](https://www.nass.usda.gov)). If you produce an acre of cotton you could make \$803, so if you got a couple acres of cotton and farmed it you could see a considerable amount of profit from it ([dtnpf.com](https://www.dtnpf.com)). Overall cotton is a versatile and popular material that is very likely to appear in your clothing, and you might even spot it on a rabbit as it runs by!

Cattle, most people have seen them and most likely consumed a product utilizing them! These cute but huge animals appear as many brand's mascots such as The Laughing Cow, Elmer's Glue, Borden Dairy Company, and many more brands that I could never have the time to list! Did you know that only cows are female and males are called bull. Did you know that cows can have friends and they're significantly happier when they are with their friends! Did you also know that cows have 330 degree vision, they don't need much sleep, they have a strong sense of smell, and they can hear low and high frequency noises better than humans (fourpawsusa.org). Cows have an average of 32 teeth, they spend around 10 hours just laying around, and they're vegetarian (wwwu.edu)! There are over 1000 breeds of cattle recognised throughout the world (wikipedia.org). There are more beef cows than dairy in the US with beef having 31,339 cows while dairy had 9,343 cows in 2020 (statista.com). Cows experience a full range of complex emotions including love, sadness, fear, and excitement (thehumaneleague.org). Cows are unique, highly sensitive, and social animals who remember people that have been cruel to them (worldanimalprotection.org.au). This is surprisingly similar to crows who can remember faces for years and even hold a strong grudge (npr.org). Cattle actually can't see the color red, they also originated in Turkey, they're good swimmers, they actually don't sleep very much, they're very sacred in the hindu culture, the keeping of livestock is actually responsible for 14.5% of all emissions, and they only have one stomach but their stomach has four compartments (treehugger.com). Your average dairy cows will produce around \$125 to \$170 per cow (dairyherd.com). The scientific name for all cattle is *bos taurus* and they belong to the

bovidae family which includes other cloven hoofed animals such as sheep, goat, bison, antelopes and water buffaloes (byjus.com).

Second to last is citrus, of which Arizona produces tangerines, lemons, oranges, and grapefruit (agriculture.az.gov). You may be wondering how in the world we manage to get citrus to grow in Arizona, well I can actually tell you the steps that we have to take to keep citrus trees happy and healthy. First we have to water the tree regularly, making sure we don't over or under water it, we also can't prune/trim the lower branches of the tree so the tree can naturally shade it's bark and soil, we need to protect the exposed bark using a tree wrap or by painting the exposed parts with a water-based latex paint (this type of paint is tree safe but it is always best to double check just in case!) it's also best to add mulch around the tree which helps maintain moisture and temperature in the soil (growinginthegarden.com). Would you believe me if I told you that Arizona's sun and soil are perfect for growing citrus plants (agriculture.az.gov)? Citrus only arrived in Arizona by the 18th century but it wasn't actually a cash crop until the early 1900's (arizonahighways.com). Arizona is famous for its lemons, pecans, and dates (agriculture.az.gov). In 2017 citrus fruit produced 55.5 million dollars which contributed greatly to the state's economy (agriculture.az.gov). There are around 8 citrus farms just in the Phoenix area (phoenixwithkids.net), isn't that cool? Arizona and California combined produce 95% of the United State's lemon crop, Arizona is one of the four (that's right only four) states that produces lemons with the others being Florida, Texas, and of course California (azfb.org). In the US most orange juice and grapefruit is produced in Florida, while fresh citrus fruits for consumption are mainly derived from farms in California, Arizona, and Texas (wikipedia.org).

Last but surely not least is Arizona's famous climate, climate plays a huge part in almost all of our previously listed subjects. If it weren't for our climate citrus would not grow, cattle would be raised differently, cotton would have to be grown differently, and the way copper was mined would also have to be different if it were any hotter or cooler here in Arizona. Around half of Arizona is semiarid, one third is arid, and the remainder is humid, our climate attracts winter visitors and new residents (britannica.com). While there may not be too many 'fun facts' about our climate it arguably plays one of the biggest and most important roles of Arizona's 5 C's.

To conclude this (as some may call it "unnecessarily long") essay, I would like to say that the 5 C's are very important to Arizona and its economy and history. From the rich history of copper to the uniquely beautiful cattle, Arizona is popular and a very famous tourist spot. I will admit that most tourists come for the beautiful and breathtaking Grand Canyon but I digress, Arizona's 5 C's are very fascinating! I hope you enjoyed this learning experience and hopefully you learned something you would have never thought was true otherwise.