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Olympic athletes strive to push their physical limits, break new records, and try the unimaginable. The most decorated

Olympians have a collection of gold, silver, and bronze medals to celebrate their success. But are Olympic medals actually made of gold, silver, or bronze as their names claim?

The International Olympic Committee (IOC) has set rules for the production and design of Olympic medals. Their raw materials are specified as:

- First place (gold medal): composed of mostly silver with a purity at least 92.5%, and plated with a least 6 grams of pure gold
- Second place (silver medal): composed of silver with a purity at least 92.5%
- Third place (bronze medal): composed of bronze, an alloy made of mostly copper and another metal (such as tin or zinc)

The medals awarded at the Tokyo 2020 Summer Olympics were made of another surprising material—recycled e-waste! Considering there's 80x as much gold in one ton of cellphones as there is in some gold mines, an impressive amount of gold can be found in old electronics at home.

For the Tokyo 2020 Summer Olympics, the Japanese Olympic Committee made a commitment to reduce the event's carbon footprint. As part of this effort, they innovated the Olympic medal production by using recycled electronics to make "green" medals.



First, they called on the people of Japan to donate their used electronic products. The initiative received widespread engagement. A total of 18,000 collection boxes were placed throughout the country. In two years, the recycling initiative collected 78,985 tons of discarded gadgets. This haul included more than 6 million used mobile phones. Other donated devices were laptops, digital cameras, and handheld gaming devices.

The devices yielded 32 kg (70.5 lb) of pure gold, 3,500 kg (7,716 lb) of pure silver, and 2,200 kg (4,850 lb) of pure copper. All 5,000 "green" medals were made entirely from the recycled materials. This achievement marked a first for the Olympic Games and a significant step in the global movement to make sports more sustainable.

By [Wendy Tan](#) - 11 October, 2022

Main ideas:

Physical limits, records, recycling, sustainable obligations, signification of championships, medals significations

Other tracks:

Textile chemistry innovations in performance apparel and sport equipment, sports venues, concussions