

Handout (Everyday Objects: Bicycle)

From the list below, fill in the blank spots with the correct mineral(s) used to make the different parts of a bicycle. (Image Credit: AI2)

**Frame**

**Cables**

**Front Brakes  
(Same as Back Brakes)**

**Spokes**

**Back Brakes**

**Tire**



Bicycle diagram-en.svg: AI2, Borb, Richardprins, Keithonearth, Belamp, Hironiemusderivative work: Grandiose / CC BY (<https://creativecommons.org/licenses/by/3.0>)

### List of minerals:

Titanium	Titanium	Aluminum	Stainless steel	Stainless steel
Rubber	Rubber	Steel	Graphite	

### Common uses for these minerals:

**Steel** is an alloy of iron and carbon and usually other elements. Due to its hardness, high tensile strength and low cost, this material is commonly used in buildings, infrastructure, tools, ships, trains, cars, machines, bicycle frames and electrical appliances.

**Aluminium** is the most widely used non-ferrous metal, often used in cans, foils, kitchen utensils, window frames, aeroplane parts, or among other lightweight objects. Since steel is cheaper, aluminium is used when lightness, corrosion resistance, or engineering features are important.

**Stainless steel** is an iron-based alloy that contains chromium, which prevents the iron from rusting. Due to its excellent corrosion resistance, stainless steel is often used in architecture, from plumbing to construction material, as well as in cookware, kitchen sinks, cutlery, surgical instruments, major appliances, vehicles, aircrafts, and jewelry. Bicycle pull-brake cables consist of an inner cable of braided stainless steel wire.

**Titanium** is used to make alloys with other metals, like aluminium, molybdenum, manganese, iron, steel and stainless steel. It is used where lightweight, high strength and withstanding extreme temperatures are needed. For example, titanium is used for aeroplane parts, ships, cars, motorcycles, bicycle wheel spokes, jewelry, surgical implements, and implants.

**Graphite**'s most familiar use is in pencil "lead", but it has many uses such as lubricants, in furnaces, batteries and brakes.

**Rubber** is very flexible, has a high elasticity, as well as a high resistance to water. It is commonly used in hoses, tires, shock absorbers, balloons, balls, diving gear, protective gloves, shoes, as well as insulating electrical instruments.