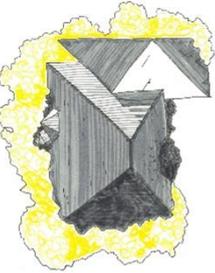


MINERAL

MAGNETITE

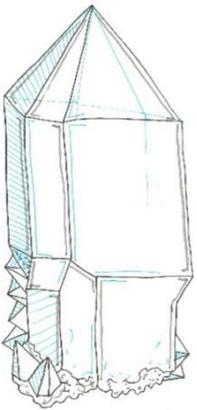


CONTAINS: IRON

Iron is the most abundant element in the crust by weight and accounts for over 90% of all metal production worldwide. It is commonly combined (alloyed) with other metals to produce steel.

MINERAL

QUARTZ



CONTAINS: SILICON

Silicon is the second most abundant element on Earth after oxygen and makes up the sand you find at the beach. It is a very incredibly good semiconductor and used in computer processors.

MINERAL

RUTILE

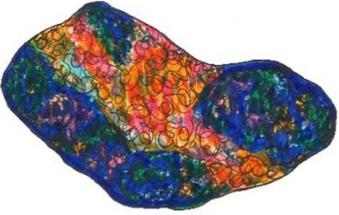


CONTAINS: TITANIUM

Titanium is strong but has a low density. It also doesn't corrode in sea water and repels UV light. Titanium is combined (alloyed) with other metals in many items including phones and computers.

MINERAL

CHALCOPYRITE

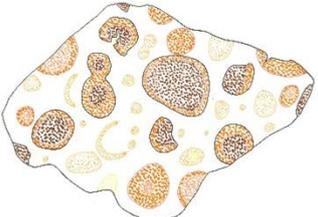


CONTAINS: COPPER

Copper is a good conductor of heat and electricity. Copper is also flexible so can be pulled out into wires, which are used to transport electricity.

MINERAL

BAUXITE



CONTAINS: ALUMINIUM

Aluminium has a very low density for a metal, making it useful in reducing the weight of metal products. It is also completely non-toxic, so commonly used in food and drinks cans.



MINERAL

MAGNETITE

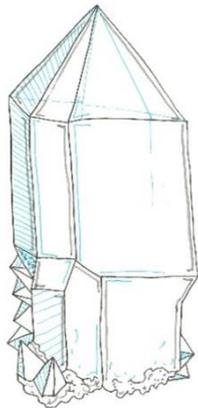


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MINERAL

QUARTZ



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MINERAL

RUTILE



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MINERAL

CHALCOPYRITE

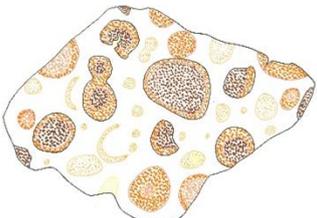


CONTAINS: COPPER

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MINERAL

BAUXITE



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MINERAL

MAGNETITE

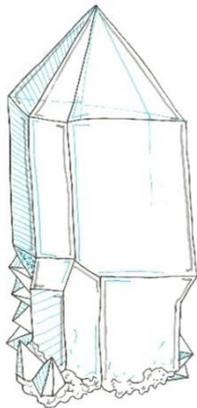


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MINERAL

QUARTZ



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MINERAL

CHALCOPYRITE

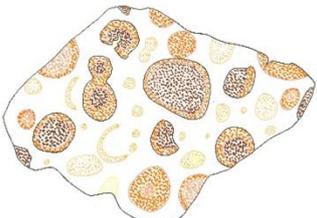


CONTAINS: COPPER

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MINERAL

BAUXITE



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MINERAL

MAGNETITE

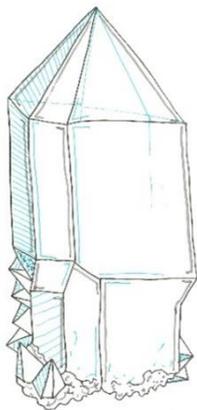


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QUARTZ



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MINERAL

CHALCOPYRITE

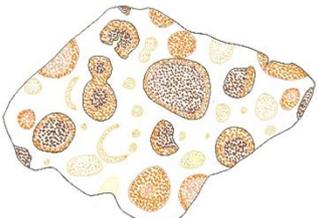


CONTAINS: COPPER

Copper is a good conductor of heat and electricity. Copper is also flexible so can be pulled out into wires, which are used to transport electricity.

MINERAL

BAUXITE



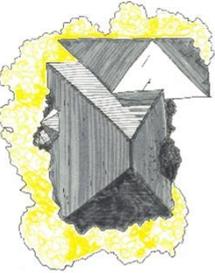
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MINERAL

MAGNETITE

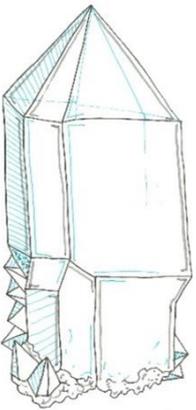


CONTAINS: IRON

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QUARTZ



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MINERAL

RUTILE

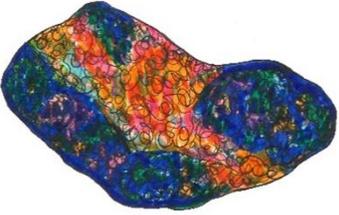


CONTAINS: TITANIUM

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MINERAL

CHALCOPYRITE

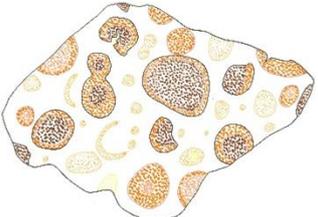


CONTAINS: COPPER

Copper is a good conductor of heat and electricity. Copper is also flexible so can be pulled out into wires, which are used to transport electricity.

MINERAL

BAUXITE



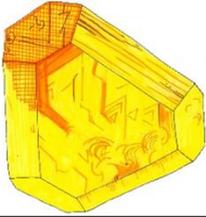
CONTAINS: ALUMINIUM

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MINERAL

SPHALERITE

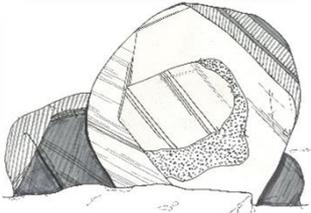


CONTAINS: INDIUM

Indium has a low melting temperature. It is very soft and ductile. Indium is often used as a superconductor - a material with no electrical resistivity - and to absorb excess heat in electronics.

MINERAL

GRAPHITE

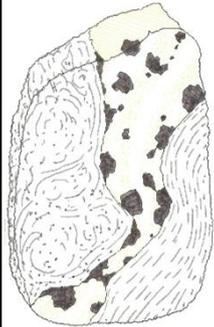


CONTAINS: CARBON

Graphite is a form of pure carbon, along with coal and diamonds. It is produced by the metamorphism of organic material in sedimentary rocks but can also be found in igneous rocks and meteorites.

MINERAL

CATTERITE

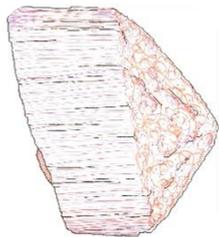


CONTAINS: COBALT

Named after the German word for goblin ('kobold'), cobalt is a hard, brittle metal. It is also magnetic and has the highest melting temperature of all magnetic metals.

MINERAL

SPODUMENE

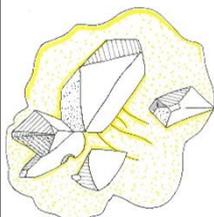


CONTAINS: LITHIUM

Lithium is soft enough to be cut with a knife and has a very low melting temperature. It is the least dense element that is solid at room temperature.

MINERAL

BORAX



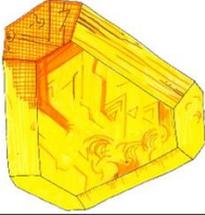
CONTAINS: BORON

Discovered in 1808, boron is very important in plants as it is used in plant cell walls. Pure boron is a dark brown powder which burns bright green.



MINERAL

SPHALERITE

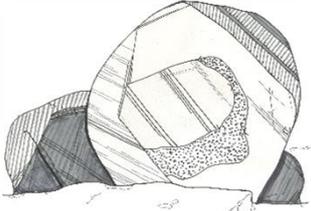


CONTAINS: INDIUM

Indium has a low melting temperature. It is very soft and ductile. Indium is often used as a superconductor - a material with no electrical resistivity - and to absorb excess heat in electronics.

MINERAL

GRAPHITE

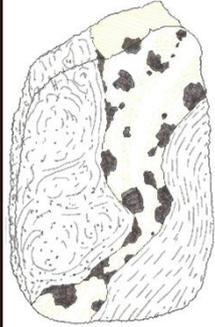


CONTAINS: CARBON

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MINERAL

GATTERITE

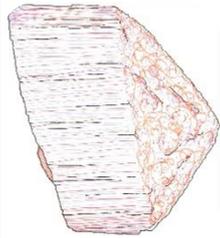


CONTAINS: COBALT

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MINERAL

SPODUMENE

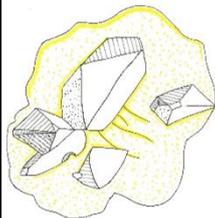


CONTAINS: LITHIUM

Lithium is soft enough to be cut with a knife and has a very low melting temperature. It is the least dense element that is solid at room temperature.

MINERAL

BORAX



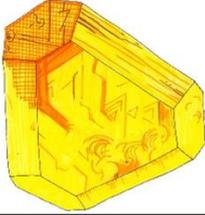
CONTAINS: BORON

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MINERAL

SPHALERITE

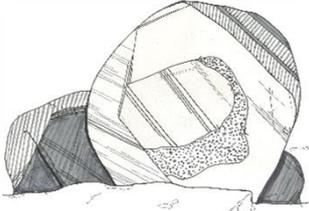


CONTAINS: INDIUM

Indium has a low melting temperature. It is very soft and ductile. Indium is often used as a superconductor - a material with no electrical resistivity - and to absorb excess heat in electronics.

MINERAL

GRAPHITE

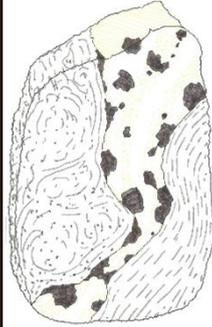


CONTAINS: CARBON

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MINERAL

GATTERITE

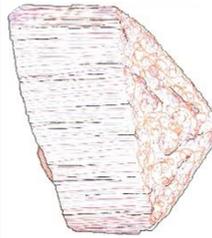


CONTAINS: COBALT

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MINERAL

SPODUMENE

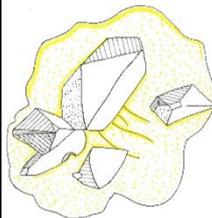


CONTAINS: LITHIUM

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MINERAL

BORAX



CONTAINS: BORON

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MINERAL

PYROCHLORE

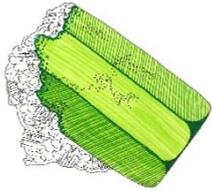


CONTAINS: NIOBIUM

In nature, niobium occurs with the element tantalum and is hard to separate. The first time niobium was discovered, it was in a mineral called columbite – named after Christopher Columbus.

MINERAL

BERYL

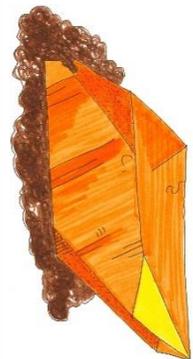


CONTAINS: BERYLLIUM

Beryllium is uncommon in the universe because it undergoes fusion in stars. Beryllium has a low density and conducts electricity. Gem forms include emerald and aquamarine.

MINERAL

MONAZITE

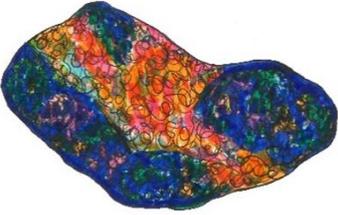


CONTAINS: NEDDYMIUM

Neodymium is used to make strong permanent magnets. Neodymium is very rare; it is part of the lanthanide series of chemical elements, most of which can also be found in the mineral monazite.

MINERAL

CHALCOPYRITE

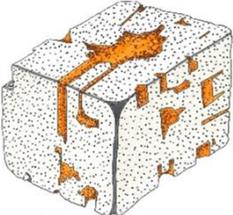


CONTAINS: COPPER

Copper is a good conductor of heat and electricity. Copper is also flexible so can be pulled out into wires, which are used to transport electricity.

MINERAL

PLATINUM



CONTAINS: PLATINUM

Commonly used in jewellery, platinum is as resistant to corrosion as gold. Platinum is used more commonly to lessen the effects of the harmful gases produced by car exhausts.



MINERAL

PYROCHLORE

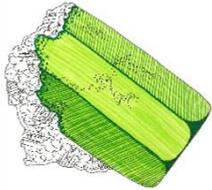


CONTAINS: NIOBIUM

In nature, niobium occurs with the element tantalum and is hard to separate. The first time niobium was discovered, it was in a mineral called columbite – named after Christopher Columbus.

MINERAL

BERYL



CONTAINS: BERYLLIUM

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MINERAL

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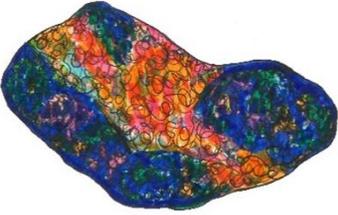


CONTAINS: NEDDYMIUM

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MINERAL

CHALCOPYRITE

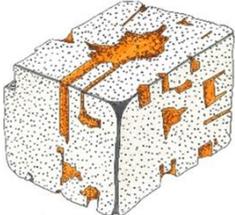


CONTAINS: COPPER

Copper is a good conductor of heat and electricity. Copper is also flexible so can be pulled out into wires, which are used to transport electricity.

MINERAL

PLATINUM



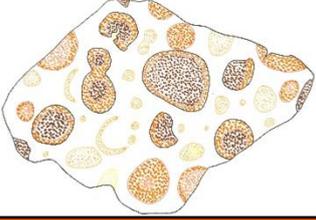
CONTAINS: PLATINUM

Commonly used in jewellery, platinum is as resistant to corrosion as gold. Platinum is used more commonly to lessen the effects of the harmful gases produced by car exhausts.



MINERAL

BAUXITE

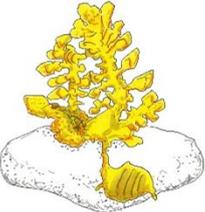


CONTAINS: ALUMINIUM

Aluminium has a very low density for a metal, making it useful in reducing the weight of metal products. It is also completely non-toxic, so commonly used in food and drinks cans.

MINERAL

GOLD



CONTAINS: GOLD

Rare and expensive, gold is a dense, soft metal, commonly used in jewellery. Many discoveries in chemistry have been made by people trying to convert metals to gold, in a study called alchemy.

MINERAL

CHALCOPYRITE

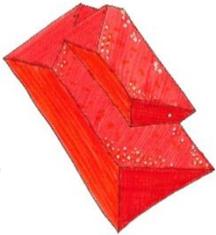


CONTAINS: COPPER

Copper is a good conductor of heat and electricity. Copper is also flexible so can be pulled out into wires, which are used to transport electricity.

MINERAL

PYROCHLORE

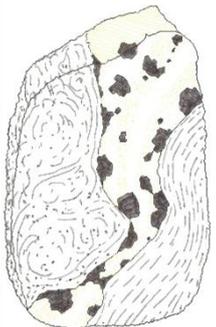


CONTAINS: NIOBIUM

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MINERAL

CATTERITE



CONTAINS: COBALT

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MINERAL

GRAPHITE

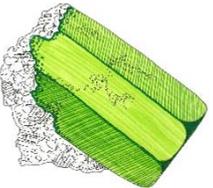


CONTAINS: CARBON

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MINERAL

BERYL

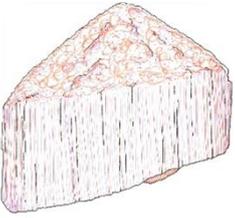


CONTAINS: BERYLLIUM

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MINERAL

SPODUMENE



CONTAINS: LITHIUM

Lithium is soft enough to be cut with a knife and has a very low melting temperature. It is the least dense element that is solid at room temperature.



ACTION

TRADE!

Play this card at the start of your turn instead of drawing from the minerals deck.

Give a card from your hand to another player, that player must also give you one of their cards! Then draw a mineral card.

Some metals can only be found in certain countries. Trade is needed so that we can all build products!

ACTION

TRADE!

Play this card at the start of your turn instead of drawing from the minerals deck.

Give a card from your hand to another player, that player must also give you one of their cards! Then draw a card.

Some metals can only be found in certain countries. Trade is needed so that we can all build products!

ACTION

EXPLORATION!

Play this card at the start of your turn instead of drawing from the minerals deck.

Search through the mineral deck and take any one card of your choosing. Shuffle the deck afterwards!

Exploration means going to look for minerals. Geologists look for minerals so that we don't run out!

ACTION

RECYCLE!

Play this card at the start of your turn instead of drawing from the minerals deck.

Search through the discarded cards, choose a mineral and add it to your hand.



Common metals like aluminium and steel are very easy to recycle and doing so saves lots of energy!

ACTION

RECYCLE!

Play this card at the start of your turn instead of drawing from the minerals deck.

Search through the discarded cards, choose a mineral and add it to your hand.



Common metals like aluminium and steel are very easy to recycle and doing so saves lots of energy!



ACTION

HIGH QUALITY ORE!

Play this card at the start of your turn instead of drawing from the minerals deck.

Draw three minerals cards, then discard two.

Some minerals have a higher quality metal than others - this means they are worth more money!

ACTION

ECONOMICS!

Play this card at the start of your turn instead of drawing from the minerals deck.

Every player must discard a product of their choice and draw a new one from the product deck. Then draw a card!

The products that people want change over time, causing some minerals to become more valuable and others less.

ACTION

HIGH QUALITY ORE!

Play this card at the start of your turn instead of drawing from the minerals deck.

Draw three minerals cards, then discard two.

Some minerals have a higher quality metal than others - this means they are worth more money!



PRODUCT

JET ENGINE



REQUIRES:

**MAGNETITE
(IRON)**



**RUTILE
(TITANIUM)**



**PYROCHLORE
(NIOBIUM)**

PRODUCT

CAMERA

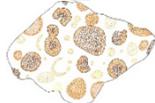


REQUIRES:

**BAUXITE
(ALUMINIUM)**



GOLD



**PYROCHLORE
(NIOBIUM)**

PRODUCT

FIREWORKS



REQUIRES:

**RUTILE
(TITANIUM)**



**CHALCOCYPRITE
(COPPER)**



**BORAX
(BORON)**

PRODUCT

ELECTRIC CAR



REQUIRES:

**CATTERITE
(COBALT)**



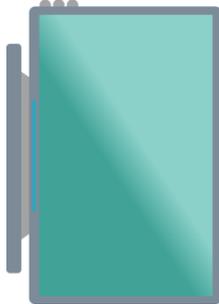
**SPODUMENE
(LITHIUM)**

**CHALCOCYPRITE
(COPPER)**



PRODUCT

TV

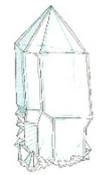


REQUIRES:

**CHALCOCYPRITE
(COPPER)**



**QUARTZ
(SILICON)**



**SPHALERITE
(ZINC)**





PRODUCT

CAR

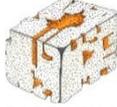


REQUIRES:

**RUTILE
(TITANIUM)**



**MAGNETITE
(IRON)**



PLATINUM

PRODUCT

PHONE

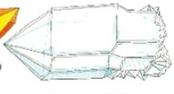


REQUIRES:

**MONAZITE
(NEODYMIUM)**



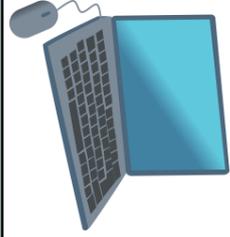
**GRAPHITE
(CARBON)**



**QUARTZ
(SILICON)**

PRODUCT

COMPUTER



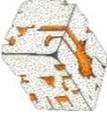
REQUIRES:



**QUARTZ
(SILICON)**



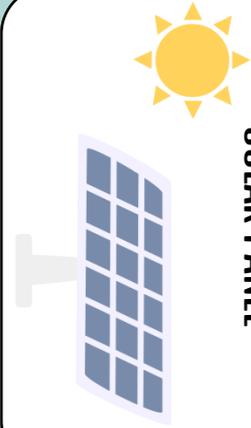
**GRAPHITE
(CARBON)**



PLATINUM

PRODUCT

SOLAR PANEL



REQUIRES:



**CHALCOPYRITE
(COPPER)**



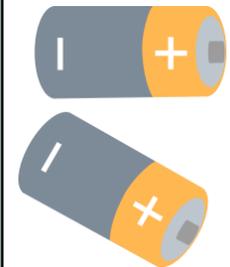
**BORAX
(BORON)**



**SPHALERITE
(INDIUM)**

PRODUCT

BATTERY



REQUIRES:



**MAGNETITE
(IRON)**



**SPODUMENE
(LITHIUM)**



**GATTIERITE
(COBALT)**

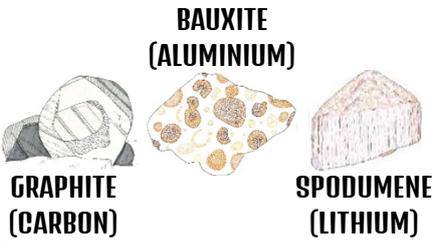


PRODUCT

SPACE SHUTTLE

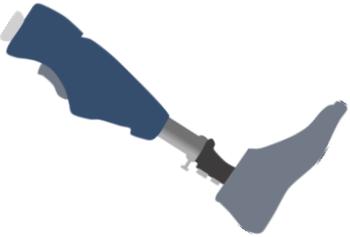


REQUIRES:

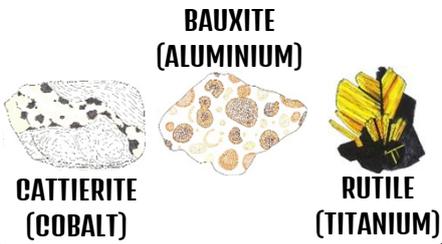


PRODUCT

PROSTHETIC



REQUIRES:

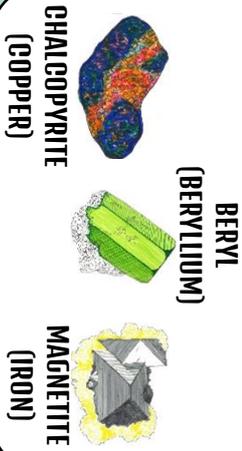


PRODUCT

TRAIN

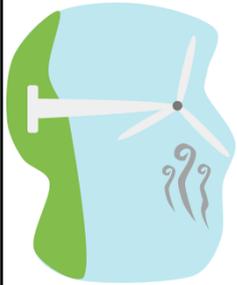


REQUIRES:



PRODUCT

WIND TURBINE



REQUIRES:



PRODUCT

SATELLITE



REQUIRES:

