

Sulphur (S)

Top Producers: U.S., Canada, China, Japan

Sulphur is soft and yellow. It comes from oil and natural gas. It is used to produce almost everything we eat, wear, and use. Sulphur, combined with rubber and heat, makes hard hockey pucks.

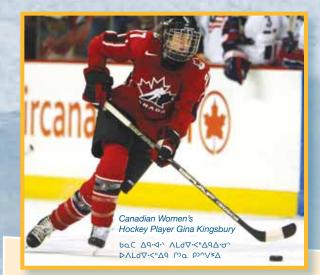
Sulphur goes into sulphuric acid, used for many things, including fertilizers and truck batteries.

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ICE HOCKEY

Hockey might have originated as Aboriginal lacrosse or Mi'kmaq field games. Modern hockey started being played in Montréal in the 1870s. From there, it spread to the U.S., and then Europe. The sport was added to the Olympic Games in 1920.

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Ld.- σ°Cc ρργΓρο ΛΓC"∇Δ·ο Φσ√σσΦιν βρΛΟCJΦι-ϤΛͻ Λσυ ΡγαΛΓΑ·<"Δρο⊲∙ς Δ·Ο Γ·ͻ៶϶∇λ≤ ⊳Πσ, 76⋅- 1870 βλαΦρουν αρορα"ρΔιο. ΓΟυ αλο ΔL δΡ5σΓ2U"6L6\ ΡΓΔdL2d"Ρ\, Γα Δ6LΡ\, Φ∇· ΠC∇·Δ·2 $\mathsf{L} \mathsf{d} \cdot \mathsf{-} \ \sigma^{\mathsf{n}} \mathsf{C}^{\mathsf{c}} \ \mathsf{P} \Delta \mathcal{J} \mathsf{d} \mathsf{\Pi} \sigma \mathsf{b} \mathsf{U}^{\mathsf{c}} \ \mathsf{L} \mathsf{L} \Delta \cdot \ \mathsf{P} \mathsf{P} \mathsf{T} \mathsf{C} \nabla \cdot \Delta \cdot \sigma^{\mathsf{c}} \ 1920$

www.MiningMatters.ca

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Metal/mineral photos courtesy of the following: Coal Association of Canada: Coal; Fabre Minerals/www.fabreminerals. com: Sulphur, Quartz; PDAC Mining Matters: Dolostone, Limestone, Granite; R.Weller/Cochise College: Magnetite, Garnierite, Chromite, Graphite, Bauxite, Rutile, Gypsum, Gold, Silver, Copper, Cassiterite, Smithsonite, Sphalerite, Galena

Other photos courtesy of the following: Skate Canada: Patrick Chan; Daktronics: General Motors Place scoreboard; Getty Images: Clara Hughes, Gina Kingsbury, Bradley Bowden and Todd Nicholson, Cindy Klassen; Kathy Bevan: Richmond Oval; Frank J. Zamboni & Co., Inc.: Zamboni® Ice Resurfacing Machine (Zamboni and the configuration of the Zamboni ice resurfacing machine are registered in the U.S. Patent and Trademark Office as the trademarks of Frank J. Zamboni & Co., Inc.).

⊳በ<ቦ**⅃**): ΛϽσϧ [^], ϶Ϥቡን, ϧυ Λ<⁵, Ϥͽυ Λϧ⁵ ΦρΔ·) bσbσ ΦΦβCJΦ·=: ₹∇Λ₹Δ "ΦγJ\$Λ, <ΛΦ \\$Δ> <\$d3

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FIGURE SKATING

Figure Skating started in the 1800s, with skaters following defined patterns. In the 1860s, skate blades changed and dance and creative moves were introduced. Toe picks, added in the 1870s, allowed skaters to jump. Gradually, moves became more complex. In 1997, Canadian Elvis Stojko completed the quadruple/triple jump. The first Olympics to feature Figure Skating were held in England, in 1908.

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7), 76. 1908 65₽

Silica (SiO₂)

Produced widely around the world

Silica comes mainly from quartz, found in white rock, veins, or beach sand. It is used to make eyeglasses, window panes, cellphones, computers, fibreglass insulation, and hockey helmets.

Amethyst is a purple quartz that is used in jewellery.

∠≤∆b (SiO₂)

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Aluminum (AI)

Top Producers: Australia, China, Brazil, India, Guinea



Aluminum is silvery white. Found in a rock called bauxite, it is the most common metal element in the Earth's crust. It is very light, easy to work with, and does not rust. It is used to make boats, hockey sticks, pop cans, foil wrap, and airplane propellers.

A 7.25 tonne block of aluminum can make a sheet of aluminum foil over 12.5 km long.

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LYC PCLDVLPON;

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nadian Speed Skater

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Clara Hughes







Graphite (C)

Top Producers: China, India, Brazil, North Korea, Canada



Graphite, a soft form of carbon, is grey or black. It easily transfers heat and electricity. Graphite is used to make pencils, fishing rods, golf clubs, bicycle frames, hockey sticks, and oils for truck engines.

Pencils, once made with lead, now use non-toxic graphite cores.

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LYC PCLDVLPAL; U²α, Δ²Π³, 1³Δ²<, α·³/ b·³Δ³, bαC

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Titanium (Ti)

Top Producers: Australia, South Africa, Canada, China



Titanium comes from the minerals rutile and ilmenite. It is lightweight, durable, and withstands very hot and cold temperatures. Titanium does not react with our bodies, so it is used to make replacement hips and knees. It also goes into many products like hockey sticks, skis, springs, and engine exhaust systems.

Titanium dioxide is used for white pigment in everything white, from paint to toothpaste.

C[†]Uσ[†]C (Ti)

LYC PCNDNLPAN

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SPEED SKATING

The first organized Speed Skating race took place in 1763 in England. The track was 24 km long. Lighter, sharper, and longer steel blades were introduced in 1850 in North America. Canada's first recorded race took place on the St. Lawrence River in 1854. In 1897. Norway, Germany, and Canada competed in the World In 1924, Speed Skating became

part of the Winter Olympics.

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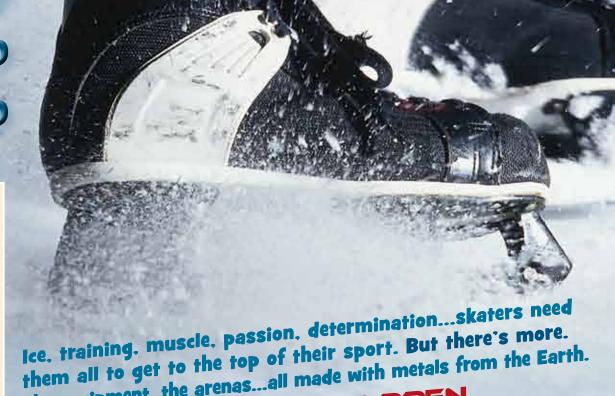
CUTTING

SKATES

The first skates used animal bones 5,000 years ago. Iron skates were made in 200 A.D. In the 1500s, Dutch people attached wood slats with blades to their shoes. Modern skates are made of steel and are used by hockey players, speed skaters, and figure skaters.

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LA- σ° CC Λ LC" Δ ba $^{\circ}$ bPDC \mathcal{D} Δ C· Δ L Δ A· \mathcal{D} \mathcal{D} b σ° 5000 ϹϟϧρΔ·Ͽ ΝϹαʹ. ΛΦ∙ΛΦ ΛΕΟ"Φβα΄ ΕΦΕ σος ΒΡΝΟ"ΔΟ• ¬Ь-¬ 200 A.D. ¬Ь·¬ ¬Ь·¬ 1500 Ь∧Гч, С¬ Ь▷᠈СЬъ/ Ог ρδητος γαρδιζα, ΔΕυταία, Δδητιώς γασταία. Δεσταρράσ ΛΦ·ΛΦ ΔΕ ΡΕΡΥσΦ. ΦΦ ΡΕΡΥσΦ. ΤΦ- $\rho\Gamma_{\rho}\rho_{\sigma}\cdot V\rho$, $V\sigma\cdot V$, $\sigma<C_{\sigma}$ $\Delta\rho$. $\rho<C_{\sigma}\Gamma_{\sigma}\sigma_{\sigma}$, ρ Ρ√ϧϹ"∇Δ·϶ ϧΛͰϹ"∇Ϥ·ϳ, Γα ͰͰͰαΔ·<σ"Ϸ ΛͰϹ"∇Δ·σ\.



The equipment, the arenas...all made with metals from the Earth. MINING MAKES IT HAPPEN

LP·c' Pd·L ∇ -3, Γ -0 ∇ -5 ∇ -4 ∇ -3, Γ -0 ∇ -5 ∇ -6, Γ -0 ∇ -6, Γ -0 ∇ -6, Γ -0 ∇ -6, Γ -0 ∇ -7 ∇ -7, Γ -0 ∇ -6, Γ -0 ∇ -6, Γ -0 ∇ -7 ∇ -7, Γ -0 ∇ -6, Γ -0 ∇ -7, Γ -0 ∇ -6, Γ -0 ∇ -7, Γ -0 Γ -0, Γ $q \rho au \rho \Gamma \Delta \Phi \Gamma \Delta \Phi$ ρρα ΔL Ρογρογρομα·ο Λα·Λαν απρρ. ρρρογραφθρο. αναθα·α, ρρα θασο βρογραφο.

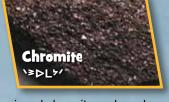
Steel is made from iron, carbon, nickel, chromium, manganese, and molybdenum. It is one of the most commonly used materials. It is used in buildings, tools, trucks, snow machines, outboard motors, axes, shotguns, snare wire, conibear traps, and sports equipment. Steel is often reused and recycled.

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Chromium (Cr)

Top Producers: South Africa, Kazakhstan, India and soon Canada



Chromium comes from the mineral chromite and can be highly polished. It is used to make kitchen sinks, skate blades, and hockey mask cages. Chromium chemicals are used in the tanning of moose and deer hide, and in coloured paints.

Chromium, found in small amounts in apples and cheese, help to keep you healthy.

bL^ubd·APP9Lb^{*} (Cr)

The PCNDNLPA:

50' 4'> Δb, b5'0C2, Δ205 7b. 46 9b' baC

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iron (Fe)

Top Producers: China, Brazil, Australia, India, Russia

Iron, the most common metal on Earth, comes from the minerals named hematite and magnetite. It is the main ingredient in steel, used in skate blades, hockey mask cages, trucks, snow machines, nails, and building supports.

Iron, as part of steel, is used 20 times more than all other metals combined.

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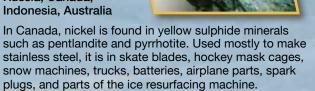
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Nickel (Ni)

Top Producers: Russia, Canada, Indonesia, Australia



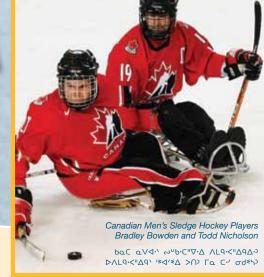
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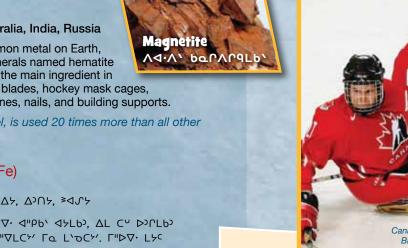


SLEDGE HOCKEY

Sledge Hockey started in the 1960s in Stockholm, Sweden, Players sit in a metal frame on two Ice Hockey skate blades. Canada started a team in 1982. In 1994, the Paralympic Winter Games in Norway introduced Sledge Hockey. Team Canada won their first Olympic gold medal in 2006. Canada, Norway, the U.S., Germany, Sweden, and Japan have the best Sledge Hockey teams.

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Bronze is made of copper mixed with tin. Over 5,000 years ago, people learned to harden copper with tin to make bronze tools, weapons, armour, and building materials. Today, bronze is used to make bells, musical instruments, medals, bearings, electrical connectors, springs, and roofing materials.

トレクマン

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Copper (Cu)

Top Producers:

Chile, U.S., Peru, China, Australia

A lot of copper comes from the mineral chalcopyrite. Natural copper found around Lake Superior was used by Aboriginal people. Copper has a pinkish colour, but air and water turn the surface a greenishblue. Copper moves heat and electricity, so it is used to make pots and the copper wire found throughout houses, cars, hospitals, and power plants. Copper is also used to make jewellery, computer parts, plumbing pipes, and roofs.

Small amounts of copper in our food keep us healthy. In our bodies, copper works with iron to make blood strong

▶5**4·∧** ' (Cu)

LYC PCNDNLPAN;

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ΓΛ' ΡΙΔ·Λά' Ρίρα· ΔΕ Δλαδ·Λά, ρέφνερί. ΤΕ Ρυδρ Πυζ" ργηριώρος τη≥δρ≥ δργησςς σουρο σουρο σουν. σουρο DYAYV AVAILUPPPY ΔPY ΔV ΔV ΡΊΦ·Λ` ω>ΡωΛΡζ Γα ΦσΓΡΔ· dUΔ·Ί, ΓC ΔL bρr ρ√rbup Γα Δυσυδικοί ολαινί Γα Δυρκοί βρυγουρί ορι αυσωί, LLC \triangleleft · \wedge d' b \triangleright r \triangleright rrbU \triangleright , \wedge L \perp b \triangle ·rb \triangleleft r b \triangleright r \triangleright rrbU \triangleright , \vdash a \triangleleft c \vdash c \triangleleft r.

 $\Delta \Lambda^- < P \ db Lb^0 \ D\nabla \cdot \ Db d \cdot \Lambda' \ \Gamma \Gamma^C \ b \Gamma \Gamma b' \ \Gamma D' \ \Gamma D' b d b'. \ Pb \Delta \cdot \sigma \Delta',$ $D\nabla \cdot D + \Delta \cdot \Lambda' \Delta \cdot CDP\Gamma \supset Lb \supset bL^{u}b \Delta \cdot \Lambda b' \Delta^{b} \Delta^{j} \Gamma \Gamma \alpha \cdot b\Gamma^{n}Q \cdot b'$

Tin (Sn)

Top Producers:

China, Indonesia, Peru, Bolivia

Tin comes from the black mineral cassiterite, but it is silvery-white. Around 3500 B.C., people discovered that mixing it with copper made a harder metal, bronze. Tin is used to coat steel containers and in solders to join pipes and wires.

Tin is used to make glass for windows and automobiles. Melted glass poured onto melted tin spreads out to form a level surface.

Lትc PC∿D∿\PO\;

υ⁵α, Δ³)σω, >≥>, >≤Δ¹

ροςργρ, γα·ν, ⊳ιδΓρι ρΓρΩ·ς- αςι ρς⊃≥αρζρι να-Φ·Λ^P2 ΓΦ Φ·Λ2. ΤΦ· Τ·Π ΡΓΒ5" 3500 B.C., ΦΡΔΥΓΒΦΦ·σ< δρσδΔ·α_ΙΦ·¯ ΡΥΦ·Λόσ ∇ΡΡΡΓ LυδΦ·ΛΡCLδσ', ΟδΡ ΡΥΦ·Λ', Ρ∇· ρογργρ, γα·ν, σιρ<ςδι ιδ<ργρδι γα·να αια·ιρσγαι Γσ Δ QQPPPPQ \cdot , PD>L QPQP·Vb\LPD> ∇ G\LPQ·LPG> LG $\Delta^{\circ}dU\Delta\cdot \lambda^{\gamma}$.

bσPZbU' <<>Δ·QΛ' ΔL bPΔS σ>PZbU' PAS NONTAPCLO'.

KEEPING SCORE

Ice Hockey is part of Canadian culture. It is played and watched in small communities and large cities. Vancouver, B.C., hosted the 2010 Olympic Ice Hockey games in an arena that has a large video scoreboard weighing more than 22,000 kg. The scoreboard uses metals to create the red, blue, and green colours of the video picture.

ΛΙΑΤΟΚ"Δ9ΔΟ ΡΡΙΕΌ ΝΙ ΒΩΟ Φ"Ρ' ΛΙΠΤΔΟ. ΛΑ ΦΌΝ ΟΛ9ΔΟΟΝ ΓΩ $\Delta \mathcal{N} \cap b_{\mathcal{D}} \triangleleft \cdot \flat \cdot \neg \quad 2010 \quad b \land \gt \backprime \quad \Lambda L d \nabla \cdot < \neg \Delta Q \Delta \cdot \flat \vdash d \backprime \quad \nabla b \cdot \quad \Delta L$ ΡϤϤΒΡΡΟ ΡΓΓΥΦΠΥΓΡΟ ΓΡΓ Φ·<ΓΡΟΥ Ch Βλσ ΛΦ"ΔΡΦΦ·, ΔΡ· ΔΦ·∿.] 22,000 kg P Δ ለቦਰਟਿ॰ን. $D\nabla$ · DPC $47\sigma b' \Gamma \Gamma^n b \cdot ', \Gamma D \cdot s 4 \cdot '' b', \Gamma a \Gamma \Phi \sigma \Lambda \Phi \cdot ' \Delta L b \Phi \Delta a U < \sigma '' D L b'.$



WINNING MEDALS

Athletes compete to win medals. Olympic medals are special and say something about the country where the Games are held. The Vancouver 2010 medals featured Aboriginal art on discs shaped to represent rolling waves, drifting snow, and Canadian mountains. The gold and silver medals must be made from almost pure silver metal. The gold medal is covered by a thin coating of pure gold.

bαbΓα·- LΔ·σ"▷Πα·\ ∇Δ·<ρα9α·- <ρα9Δ· ρραα·Γ"▷Δ·α). ρCΡ) Γ b Δ Δ "P' b P D Γ < P α 9 - Δ Δ· + . ¬b· - 2010 < γ d>> ¬C ∇ · Δ· γ Γα bac 4·ቦን. 76· ΔΔ·σσ• Δλα·οσ Γα 4·Ληροσ <ραθδ• $\triangle P = A \cdot P$ Ρ5Δ·∾σ5αΛα'.

Gold (Au)

Top Producers:

China, South Africa, U.S., Australia

Gold is very rare. It is soft, conducts heat and electricity, and is not damaged by the weather. Gold occurs as a pure metal and also within other minerals. It is used mostly to make coins, jewellery, and ornaments. It is also used in medical equipment and the electronic components in computers, cellphones, and ice resurfacing machines.

Gold coatings on windows help keep buildings warm in the winter and cool in the summer.

▷\Δ・∾σ> (Au)

1 75 PC LD LLPIN

U²a, 5D' d'³Δb, PPJdL²dP', d⁰/³d³Δ²

 $\nabla_{\alpha}q \cap \Delta_{\gamma} < \|\nabla d \cap D_{\gamma} - \nabla_{\alpha} \nabla_{\gamma} - \nabla_{\gamma} \nabla_{\gamma$ $db \cdot \Gamma'$, $D \cdot \Delta \cdot \sim \sigma \tau$ $D \cdot \Gamma'' D L \cdot \Delta \tau$ $D \cdot \Gamma \Delta \tau$ νσγαλα, αρακ, τα Γιαιραί. Δρ. Γα ΔΓ διυριιρηση $L^{\circ}PP\Delta \cdot d < \Gamma \Gamma b \Delta \Gamma \Gamma \Delta P P \Gamma LLC d \cdot Ad$, $b < < L \Gamma b U P$ ΡΟΔ·α). Γα 6~64"Δ69αΔα· Δ·ΡΓΥ6.

 $D5\Delta \cdot \omega \sigma \sigma \sigma' bD\Gamma dq \cdot C\Delta \cdot \int \omega \Lambda \rho \sigma bU' <<>\Delta \cdot \sigma' D\Gamma \rho \omega d \cdot \sigma d \sigma'$ $4 \cdot b'' \Delta b a^{3} b \Lambda > \Gamma a CP + 7b^{-} b \sigma \Lambda$.

Silver (Ag)

Top Producers: Peru, Mexico, China, Chile



Silver occurs as a pure metal and also within other minerals. It is soft, conducts heat and electricity, and can be highly polished. Silver is used to make coins, medals, jewellery, silver spoons, batteries, catalytic converters in vehicles, electronic components, mirrors, and solar cells, which make electricity from the sun.

Silver kills germs. It is used in antiseptic bandages, bacteriareducing cellphone covers, odour-reducing clothing, and water purifiers.

ປ·Λ^**P⊘σታ** (Aa)

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 $\Gamma\Gamma ab \cdot P^{3} PP^{\nu}Pba^{3}$, $\Gamma a \sigma \Lambda < bb \Gamma \sigma b \sigma'$.

In the Arena ... MINING MAKES IT HAPPEN

Top Producers: China, U.S., Australia, India, South Africa, Russia

Coal

Coal is made of carbon (C) that formed from plants that grew in great swamps long ago. Over many years, dead plants formed layers that got squeezed together, heated, and changed into coal. Coal is burned to make heat and electricity. In parts of Canada, Aboriginal people collected coal for their fires. Some coal is very soft and some is very hard. A hard coal, called coking coal, is added to iron to make carbon steel. That steel is used to make buildings, bridges, ships, and cars.

Coal is used to make many items such as soap, aspirins, solvents, dyes, and plastics and fibres like rayon and nylon.

Δ"ΡΔ·ΛΓU

LYC PCNDNLPAN; U¹α, PPJdL¹dP', d⁰/\$d€Δ¹, Δ¹D, 5D/ d¹\$Δ¹, δ¹D, δ¹

 $b\sigma C\Delta \cdot PLbP$ $bP\Delta \mathcal{J}$ $P\Gamma L^{\nu}Pd \Delta \cdot P<$ $P\Gamma \nabla \cdot ^{\nu}b^{-}$. $\neg b \cdot ^{-}$ $b\Lambda \Gamma \not P \Delta \cdot ^{\prime}$, bσ>Lbρ bσCΔ·ρLbρ ργσσγοισων Σργσσγουσιουν. ΦΡͻσ Ρ∾чdCΠLbPን, Φb· ΦΛὶ ΦΡͻσΦͿ"ΦLb՝ Φ"ΡΔ·ΛΓU. ₽
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ΓΓΟ 900 ΡΟΓΡΟΓΙΟΝΟΟ ΔΙΙΡΔΟΛΓΙΙΒΟ ΟΝΑ, ΙΙΔΟΠΙΒΟ $L^{\nu}PP^{\nu}$, $\sigma^{\nu}PP^{\nu}ba^{\nu}$, $AAP^{\nu}ba^{\nu}$, $AAP^{\nu}ba^{\nu}$, $AAP^{\nu}ba^{\nu}$ bΔ s a b·ρ > b a b ρ > ≥ ∇ d· > Γ a a > ≤ d >.

Aggregates

Produced widely

around the world

Crushed stone, sand, and gravel are very common geological materials. Dolomite, limestone, and granite are often mined for aggregate. Aggregate is used to make roads, airport runways, house foundations, sewers, and mixed with cement, fertilizer, and construction materials.

It takes about 50,000 tonnes, or seven dump truckloads, of aggregate to build one km of Trans-Canada Highway.

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 $L \wedge \Delta \cdot \rho L \wedge D \wedge L \wedge \nabla \cdot \Delta \cdot \rho \Delta \cdot \phi = 0$

 $PV (A\Delta \cdot C_{\text{ID}} \cup C \cdot A \cdot C_{\text{ID}})$, $\Delta \cdot C_{\text{ID}} \cup C_{\text{ID}} \cup C_{\text{ID}}$ Δ \mathcal{L} $\mathcal{L$ $P\sigma b \Delta \cdot \sigma b U' \ d r \sigma b$, $P \Gamma b \sigma \ \sigma C \Delta \cdot P \Gamma b \sigma'$, $\Gamma \alpha \ d \rho P \Delta \cdot \ d r \Gamma b \sigma'$.

 ΔL a)C 50.000 D)^ C/d/b). a)C Γ a σ 5.5. ∇ . $\Lambda \sigma$ 6 σ ρ C<? \≥<D^n baC b6<\-J\ DC<σΓba.

Gallium (Ga)

Top Producers: Kazakhstan, Ukraine



Gallium is not common in the Earth. It occurs mixed within other minerals such as the zinc mineral sphalerite. Most mined gallium is mixed with arsenic to form gallium arsenide, which is used to make light-emitting diodes (LEDs), laser diodes, and solar cells.

Solid gallium melts in the human hand. It becomes liquid near room temperature and can be used to make high temperature thermometers.

b≤△♭c (Ga)

Lትc PC∿▷∿\PO\;

^ل¢a, ULσ, b5\°C2, ₹\≥∇2

ρσοΔιγμορο αςργο <Βο Λαιλαο Οδο μον ι<>▷>ανί. 96/ 6ρα ρЬΤσ"∇ΡΠЬ> ρ≼∇λς Ь∇Ն ∢\СРLФРП ∨\-><\> \Ь\\..\ЬГР, b<Δγc d≥γαγ, ∇b· ΔL ΔΛγ<C> bd· Oσqlb, Dp (LEDs), Δp $\rho \nabla_{\alpha} \rho \cap \alpha \rho = 0$, Le VLT, $\rho \rho \cap \alpha \rho \rho \rho \rho = 0$, $\rho \nabla_{\alpha} \rho \cap \alpha \rho \rho \rho = 0$.

ΙΓΙ΄ ΕΕΔΗ ΕΡΘΊΡΟ ΔΔΗ ΕΘΙΓΊ. ΕΡΗ ΘΑΛΗ ΕΙ

Gypsum (Caso₄2H₂0)

Top Producers: China, U.S., Iran, Spain, Canada

Gypsum formed long ago when ancient ocean waters evaporated, leaving it behind on dry ocean beds. It is soft and has many colours: white, grey, red, brown, and yellow. Gypsum is used to make construction drywall, caulking, paint, and Portland cement,

Teachers use coloured chalk to write on blackboards. That coloured chalk is a type of gypsum.

(CaSO₄2H₂O)

an ingredient in concrete.

LYC PCLDLLPOT.

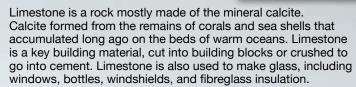
Uta, PrJdLodp', dt≥do, ovto, bac

bPን $\sigma\Delta^{n}bUP$ ን, $d\Lambda^{2}$ C^{u} ∇P ን σ < $^{2}dCLbP$ 3 $bP\Delta^{u}$ PበbΓ 4 P< 2 . Γ 2 ΡΊΑ. ΓΊΑς ΔΥΡΚΓΡΟΝ ΡΟΓ ΡΥΓΡΟΝ ΑΙΛΡΟ ΔΊΑΙΝ ΕΔΙΒΟΓΟ. $P > \Gamma^{\nu} P + \sigma \cdot b^{\mu} \Delta b^{\nu}$, $\sigma \wedge \delta^{\mu} \Delta b^$ PD'LLPIT, PV'LQ5Q4C I,

DN°do"Δ∇· DC<P)αΔ· <
bΔαλαUσ' υ· VLλα"Δb9Δ·-PASTPAN, PARTS APPOSIT PART PART PROPERTY

Limestone (CaCO₂)

Top Producers: China, U.S., Russia, Japan, Germany



The Great Pyramid of Giza, one of the Seven Wonders of the Ancient World, is made entirely from limestone.

₹⟨\$C^) (CaCO₃)

Lትር የርጊኮሊሁበ/:

υ⁵α, ΡΓΙσΕΡΑΡ', ≥συς, υ<ο, υΕσ

extstyle extD $D^ D^ D^-$ Γα ΤΡΛυΡΤΚΊΡ)- ΡΑΙΛΟΦΟΚΙ. ΤΟ ΓΑ ΔΙ ΡΊΓ ΡΥΓΟΟΙΑΊ $<<>\Delta\cdot \Delta \cdot \Delta \wedge d$), $<\sigma^- <<>\Delta\cdot \Delta \cdot \Delta$), $> \Delta \wedge d$), $> C < \sigma^- <<>\Delta\cdot \Delta \cdot \Delta \cdot d$), $> \Delta \wedge d$ 6~50pg2

Pr r>4.6" Δ 6 σ 9 Δ 0 Δ L P"5, Γ " ∇ ∇ ∇ ∇ ∇ ∇ ∇ ∇ ΔΓΓΔ. ΡΓ∇. " ΕΙΣ. ΕΔ. ΕΛΣ. ΕΔ. ΕΛΕ. ΣΑΣ ΕΡΕΣΓΕυ.

Zinc (Zn)

Top Producers:

China, Australia, Peru, U.S., Canada

In Canada, zinc comes from a zinc mineral named sphalerite. Zinc minerals usually occur with copper or lead minerals. A lot of zinc is used for galvanizing, a process that puts a thin layer of zinc on iron and steel to prevent rusting. These zinccovered metals are used in vehicles, bridges, and building construction. Zinc minerals go into glowing dials, X-ray and TV screens, paints, and fluorescent lights.

Humans, animals, plants, and even tiny organisms need zinc to function. Zinc helps us taste and smell and keeps our hair and

ソン、(Zn)

U⁵a, ⟨α⁰/≥⟨α δ⟩, >>⟩, βραβιοίς, βαβ

DL PGC, DA. 43, PQLPA, VQ·V, D3LP3 44QP, U<SD>42. $\Lambda \text{d} \cdot \Lambda \text{d} \cdot \Gamma \text{d} \cdot \Gamma$ $\nabla \lambda$ Lo $\Delta \Delta \cdot \lambda$, $\Delta \Gamma \rightarrow \Delta \Delta$ Lo $\rho \Gamma_{\rho} \Phi \cdot V \rho$, $\Delta \rho \cup \Phi \cdot \Phi \Lambda \Phi \cdot \Phi$. Partial Part $4 \cdot 6 \cdot \Delta P + \Delta V \cdot \Delta$ Γα Φ∙ΛΟσοσ ΣΛο∙Ρ.

PALN5', $A\Delta \cdot b S \circ s'$, $Ada^3 b \sigma C \Delta \cdot PL b P^3$, $Fa Ad L A \cdot b A b P P^3$ 9da) DaCV.)Cad. t), LDL LDVTU54. DA. t), bV.L.,QqL) Γσισλίνος Γα Γιαρονίνος Γα Ρημοισλίδας Γα Ρυβιας ΓΓ_ΟΡLЬΡ).



BUILDING DREAMS

Hockey is a popular activity in many Aboriginal communities. Playing hockey on outdoor ice rinks is common, but indoor rinks let people skate anytime, rain or shine. The first artificial ice rink was built in 1876 in London, England and named the Glaciarium. In 2010, modern building technology and design went into the Winter Olympics Speed Skating arena in Richmond, B.C. The Richmond Oval has space for two hockey rinks or eight tennis courts when the Speed Skating track is not in use. It could seat 8,000 people at the 2010 Winter Olympics. To prepare the construction site, builders used 170,000 cubic metres of sand. The building's roof is made from trees killed by the mountain pine beetle. The building incorporates 5,600,000 kg of steel rebar and is supported by 2,200 stone columns.

 $d\sigma \mathcal{J} \sigma \sigma \Delta \cdot C \mathcal{J} \Theta \Delta \cdot \Delta^{2}.$ $db \cdot \Gamma^{\prime} \Lambda L \Theta \cdot C \mathcal{J} \Theta \Delta \cdot b \Gamma^{\prime} D C \mathcal{J} \Delta \Theta \cdot \nabla C \mathcal{J} \Lambda L \Theta \cdot C \mathcal{J} \Delta \Theta \Delta^{-},$ \circ d- $d \cdot b$ " $\Delta b \sigma'$ $\Lambda^{3} \cap b \Gamma'$ $b d > \rho^{3}$ $\Lambda L q \cdot c$ " $\Delta q \Delta \cdot b \Gamma d^{3}$ $b d > d \cdot d \wedge \Lambda d$ Λ L9·<" Δ 9·4·\, P>° bPF·4· σ \ Δ 9°C b·4· Λ b· σ \. L4· σ ^°C° b·1°P σ "·4b σ -ΓЬ∙ς ΓС√ ΛΙ9∙<"ΔЬ⊅Φ∙ν ΡΡ√ΓЬU<> 1876 ΒΣΡΦ•ν ∇∙Π ΦΒΙΡν ≤ΦΣΠΣ, ∇^{3} ∇^{5} ∇^{5 $\Lambda LC''\nabla\Delta \cdot b\Gamma' \Delta L > \Delta^-L''$, $\Lambda \wedge A \Delta \wedge \Delta^-L'' \Lambda LC''\nabla\Delta \cdot b\Gamma' P \Delta A \Delta \wedge b L'$ $\sigma\mathcal{N}^{\flat} \cap \mathcal{N}^{\flat} \wedge \mathcal{N}^{\flat}$ $P \mathcal{J} + C \vee \nabla \Delta \cdot \partial \quad b + C \cap b \cup V$. $\nabla b \cdot 8,000 \quad d \Delta \cdot b \cdot C \cap U < \Lambda d \cdot V$ $\Delta L \quad d \cdot \nabla b \cdot C \cap D \cup V = 0$ 170.000 C4669F2' 54.0dg. 76. Fa 4.PC<\ PP) P DSCHU SAN\ δρσιαιαι"Δααι- Lσυων. ∇ρι Γσ δαςυμριών 2,600,000 kg Cζαλρών Λ**ປ·**Λ**ປ**³ Γα Ρ**ປጎ·"**Δ**b9**α**•▷ປ**³ 2,200 **ປ/**σ³.

Lead (Pb)

Top Producers: China, Australia, U.S., Peru

Lead, found in the mineral galena, is heavy and resists corrosion. Today, lead is used mostly in lead-acid batteries like those found in cars and trucks.

Lead can be recycled almost forever without changing its physical qualities. Most old lead-acid batteries are recycled-more than any other consumer product.

4いり・44い (Pb)

Lac pardren;

U²a, d⁰/≥d≤Δ²b, PPJdL²dP¹, >≥D

 $DV \cdot d^{u}Pb \cdot dd^{2}$, $\Delta \mathcal{L}db \cdot D^{2} \cdot$ Ͻϧ϶ ϧϪͿϭϤ<Ϲ"ϪϹ· ϷϹϤϭϧϞ Γα ϧϪϤϤΛϤ· ϷϹϤαλ

 $D\nabla \cdot Db^{3}$ dr) CP $P\nabla \cdot d$ CCPbU bP9 $\Gamma a b \Delta \cdot b P \nabla \cdot d$ PC aPC aPC bPC $\Delta P \nabla \cdot \sigma A \cdot ^{\prime}$ 9U $A \sigma \Gamma P S ^{\prime}$ $C P P \nabla \cdot D S \Gamma ^{\prime \prime} \Delta A \cdot ^{\prime} - \Delta A - \Delta \cdot ^{\prime} \Delta C P + ^{\prime} \Delta A \cdot ^{\prime}$ bDSC6UP)

CLEANING UP!

An important part of making good ice is the ice resurfacing machine. People love watching the machine give scratched ice a shining new surface. Frank Zamboni invented the first seit-propelled ice resurfacing machine in 1949, in California.

In 1967, his company started



a second manufacturing plant in Brantford, Ontario. Since the creation of the first machine, more than 9,000 have been made. How does the Zamboni® ice resurfacing machine work? First, it uses a sharp steel blade to shave a thin layer from the ice. Augers collect the shavings and put them into a snow tank. It then cleans the ice surface with wash water before using a cloth towel to spread clean water over it. Along with steel parts and lead-acid batteries, the Zamboni® ice resurfacing machine is made with many metals and minerals from the Earth.

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