



Said snake to the big polar bear
“Why is it you have so much hair?”

Replied bear, “My deduction?
It reduces conduction,
Because hair retains lots of trapped air!”



Example

Poetry prompts



Temperature

Temperature is a measure of how hot something is. It is measured in **degrees centigrade** (or Celsius, Fahrenheit or Kelvin!) using a **thermometer**.



Heat

Heat is a measure of the amount of **thermal energy** a material contains. Bigger, hotter objects contain more heat energy than smaller, cooler ones.

Convection

Convection only happens in hot **fluids** (liquids and gases). When areas of the fluid get hot they **expand** and **float** upwards. Cold areas of fluid **sink**. If you heat a fluid at the bottom this sets up a **convection current**.

This is why hot air balloons rise, why you get drafts near radiators and why you get sea breezes.

Radiation



All hot objects emit **heat radiation** (which isn't the same as the radioactive kind!). Also known as **infra-red radiation**, this doesn't need any particles to travel. Which is good because that is how energy reaches us from the Sun through the empty **vacuum of space**.

Radiation explains how a grill or a toaster works, and why dark coloured clothing makes you hotter on a sunny day. Shiny, light coloured materials take in **and** give out less heat radiation than dull, dark ones do.

Conduction

In **conduction** heat energy is transferred from hotter to cooler areas when neighbouring particles collide. It works really well in solids, particularly metals. Gases, like air, are really bad conductors because the particles are far apart.

A **bad conductor** is also called a **good insulator**.

Materials that contain lots of **trapped air** (like wool, fur and double glazing!) are really good insulators. They stop heat energy moving through them and so they keep hot things hot and cold things

Ideas

Could you write about...

- ...the snowman's coat?
- ...a hot air balloon?
- ...an animal that uses heat transfer ideas to keep warm or cool?
- ...a sparkler?
- ...a sunny day?
- ...sea breezes?
- ...vibrating and colliding particles?
- ...your experiments in Science?
- ...your water bottle?



Rhyming Dictionary 1

Conduction

- **2 syllables:** suction
- **3 syllables:** abduction, construction, deduction, destruction, instruction, obstruction, production, reduction
- **4 syllables:** deconstruction, introduction, reconstruction, reproduction

Heat

beat, bleat, breet, cheat, eat, feat, feet, fleet, greet, meat, meet, neat, seat, sheet, sleet, street, sweet, treat, tweet, wheat

Hot

blot, clot, cot, dot, got, jot, knot, lot, not, plot, pot, rot, shot, slot, spot, squat, swat, trot, what, yacht

Infra-red

- **1 syllable:** bed, bled, bread, dead, dread, fed, fled, Fred, head, lead, led, Ned, read, said, shed, shred, sled, sped, spread, Ted, thread, tread, wed, zed
- **2 syllables:** bedspread, bloodshed, bobsled, embed, instead, misled, misread, screw thread, seabed
- **3 syllables:** arrowhead, flowerbed, gingerbread, riverbed

Degrees

- **1 syllable:** bees, breeze, cheese, ease, fees, fleas, freeze, he's, keys, peas, please, sees, seize, she's, skis, sneeze, teas, tease, these, threes, trees, wheeze
- **2 syllables:** agrees, chickpeas, Chinese, decrees, disease, displease, tepees, TVs, unease, unfreeze, whoopees

Cold

bold, fold, gold, hold, mould, old, olde, scold, sold, soled, told

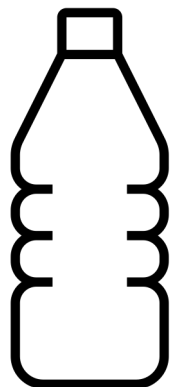
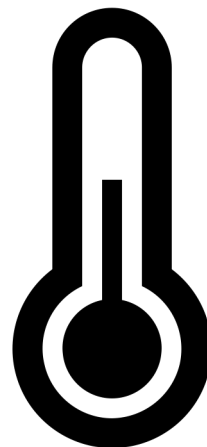
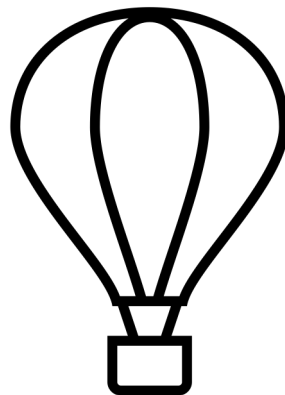
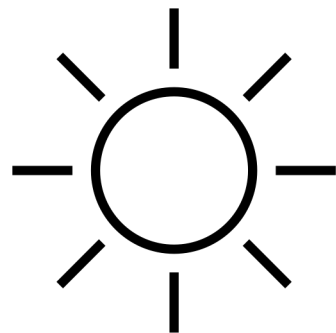
Convection

- **2 syllables:** section
- **3 syllables:** affection, collection, complexion, confection, connection, correction, cross-section, deflection, dejection, detection, direction, ejection, infection, injection, inspection, midsection, neglectation, objection, perfection, projection, protection, refection, rejection, selection
- **4 syllables:** circumspection, disconnection, imperfection, insurrection, interjection, intersection, misdirection, recollection, reconnection, redirection, reinfection, reselection, resurrection

Air

- **1 syllable:** bare, bear, care, chair, dare, fair, faire, fare, flair, flare, glare, hair, lair, mare, pair, pear, prayer, scare, share, snare, spare, square, stair, stare, tear, their, there, they're, wear, where
- **2 syllables:** Affair, armchair, aware, beware, bugbear, compare, despair, elsewhere, knitwear, mohair, nightwear, nowhere, threadbare

Shapes for concrete poems. Can you think of others?



Rhyming Dictionary 2

Radiate OR Insulate

- **1 syllable:** bait, crate, date, eight, fate, fete, freight, gate, grate, great, hate, mate, plate, rate, skate, slate, state, straight, strait, wait, weight
- **2 syllables:** await, cheapskate, checkmate, classmate, create, donate, elate, frustrate, hotplate, hydrate, ice-skate, inflate, lightweight, mandate, migrate, narrate, negate, playmate, primate, pulsate, relate, stagnate, stalemate, translate, truncate, update
- **3 syllables:** aggravate, agitate, allocate, animate, automate, body weight, calibrate, captivate, change of state, compensate, complicate, concentrate, confiscate, cooperate, cultivate, decimate, dedicate, delegate, demonstrate, devastate, dominate, duplicate, educate, elevate, estimate, fascinate, featherweight, generate, heavyweight, hesitate, hibernate, illustrate, incubate, indicate, innovate, integrate, irritate, isolate, liberate, motivate, numberplate, oscillate, perforate, regulate, simulate, terminate, ventilate

Radiation OR Insulation

- **2 syllables:** nation, ration, station
- **3 syllables:** Alsatian, carnation, creation, crustacean, Dalmatian, deflation, dictation, donation, duration, elation, fixation, floatation, formation, foundation, frustration, inflation, location, migration, mutation, narration, oration, Play station, pulsation, rotation, salvation, sensation, space station, stagnation, starvation, staycation, taxation, temptation, train station, translation, truncation, vacation, vexation, vibration, vocation, workstation
- **4 syllables:** adaptation, admiration, adoration, aggravation, agitation, allocation, alteration, altercation, animation, annihilation, application, aspiration, augmentation, automation, aviation, calculation, calibration, cancellation, captivation, celebration, combination, commendation, compensation, compilation, complication, computation, concentration, condemnation, condensation, confirmation, confiscation, conflagration, congregation, conservation, consolation, constellation, consternation, consultation, contemplation, conversation, cooperation, coronation, corporation, correlation, culmination, cultivation, declaration, decoration, dedication, deformation, dehydration, demonstration, deprivation, desiccation, designation, desperation, destination, detonation, devastation, deviation, domination, duplication, education, elevation, elongation, emanation, escalation, estimation, excavation, exclamation, exhortation, expectation, explanation, exploitation, exploration, exultation, fabrication, fascination, federation, fragmentation, generation, habitation, hesitation, hibernation, illustration, immigration, inclination, incubation, indentation, indication, indignation, infestation, inflammation, information, innovation, inspiration, installation, insulation, integration, invitation, irritation, isolation, iteration, jubilation, jugulation, lamentation, levitation, liberation, limitation, medication, mitigation, moderation, motivation, navigation, nomination, obligation, occupation, operation, oscillation, penetration, perforation, perspiration, preparation, presentation, preservation, proclamation, publication, realisation, recitation, reclamation, recreation, regulation, rehydration, relaxation, relocation, reputation, reservation, resignation, restoration, retardation, revelation, segregation, separation, simulation, speculation, stimulation, suffocation, termination, transformation, variation, vegetation.

Insulator OR Radiator

- **2 syllables:** crater, freighter, greater, hater, later, straighter, traitor, waiter
- **3 syllables:** creator, curator, debater, deflater, dictator, equator, hydrator, ice-skater, inflater, locator, narrator, translator
- **4 syllables:** activator, administrator, agitator, alligator, animator, annotator, applicator, aviator, celebrater, commentator, decorator, demonstrator, duplicator, educator, elevator, escalator, excavator, generator, hesitater, indicator, innovator, navigator, separator, simulator