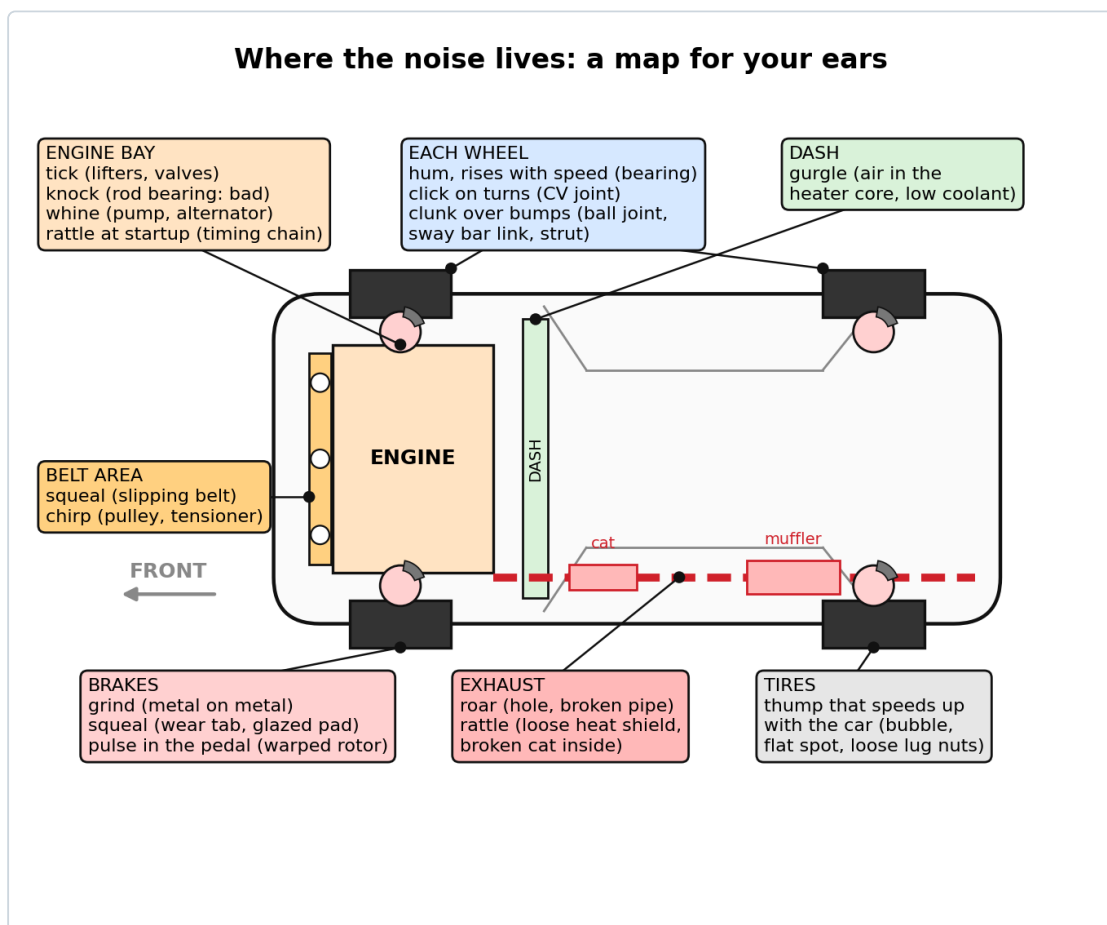


Sounds a broken car makes and what they mean

YES Electric • a plain-language course for shop helpers and car buyers

First edition (October 2026). Prices and hours in this course are rough numbers for a 2008–2016 sedan and will change by car and by year. Treat them as a guide for deciding, not a quote.

Mechanics diagnose by ear more than people think. Each part fails with its own noise, and the two questions that narrow it down are when it happens (starting, idling, driving, braking, turning) and whether it changes with engine speed or with road speed. Here are the common ones.



A top view of a car with callouts for where each noise lives: ticks and knocks in the engine bay, squeals from the belt, hums and clicks at the wheels, grinds from the brakes, roars and rattles from the exhaust, gurgles in the dash, thumps from the tires.

Drawing made for this course.

Click, click, click when you turn the key, and nothing else. The starter is trying to engage but there is not enough electricity to spin it. Almost always a dead or weak battery or a corroded cable. One single loud click and nothing, with a good battery, is usually the starter itself.

Grinding when you turn the key, like metal teeth scraping. The starter's little gear is not meshing with the big gear on the engine's flywheel. Either the starter is worn or the flywheel teeth are chewed up. Stop cranking, because every try chews more teeth.



A flywheel and clutch cut open. The teeth around the outside edge are the ring gear the starter's small gear grabs. When those teeth get chewed up, the starter grinds.

Photo: File:Zweimassenschwungrad und kupplung aufgeschnitten.jpg by Cschirp, CC BY-SA 3.0.

Whirring or spinning fast when you turn the key, but the engine does not turn. The starter motor is spinning but its gear is not shooting out to catch the engine. Bad starter.

Loud squeal when you first start it, especially on cold or wet mornings. The serpentine belt is slipping on its pulleys. Either the belt is glazed and old, or the tensioner that keeps it tight is weak. Cheap fix. If the squeal gets louder when you turn the steering wheel all the way, the power steering pump is low on fluid or dying.

Ticking from the top of the engine that speeds up when you rev it. Usually low oil. The valves up top are the last thing the oil reaches, so when the level drops they start tapping. Check the dipstick first. If the oil is full and it still ticks, a lifter or an exhaust leak at the manifold, which ticks when cold and quiets as the metal expands.

Deep knock from down low in the engine that gets faster when you rev it. This is the bad one. A rod bearing, which is the joint where the piston's rod grabs the crankshaft, has worn

loose and the rod is hammering the crank on every turn. The engine is dying. On a car you are looking at buying, this noise means used-engine price only.

Rattle from the engine at startup for one or two seconds, then quiet. Timing chain stretched and slapping until oil pressure builds. On some engines this is routine. On others, Equinox 2.4 and some Hyundais, it means the chain is about to jump and the engine is on borrowed time.

Grinding or scraping when you press the brakes. The brake pads are worn all the way down and the metal backing plate is now rubbing the rotor. Pads and rotors both need replacing now. A high-pitched squeal when braking, before the grind, is the little metal wear tab built into the pad telling you it is almost gone.



A worn-out brake rotor. The surface is grooved and cracked from heat and metal rubbing on it. A rotor like this needs replacing, not resurfacing.

Photo: File:Bremsscheibe PKW innenbelüftet, defekt wegen Rissen (Teelicht zum Größenvergleich).jpg by Johann H. Addicks, CC BY-SA 3.0.

Pulsing or shaking in the pedal or steering wheel when braking. The rotor is warped, meaning it is no longer perfectly flat, so the pads grab and release as it spins. New rotors.

Humming or droning that gets louder the faster you drive and changes when you swerve. A wheel bearing. The steel balls are worn and the wheel is rumbling on them. Swerve

left and the noise changes because you shifted the weight onto a different bearing. The side that gets louder when you swerve away from it is the bad one.

Clicking or popping when you turn, especially in a tight slow turn like a parking lot. A CV joint, the flexible joint on the axle that drives the front wheel. Its rubber boot split, the grease flung out, and the joint is dry and worn. Replace the axle.

Clunk over bumps, like something loose knocking under the car. A worn suspension joint. Ball joint, sway bar link, or control arm bushing. The joint has slop in it, so every bump lets the parts bang together. Sway bar links are the cheapest and most common. A clunk when you first hit the brakes or gas is often a worn engine mount letting the whole engine shift.



A broken sway bar end link under the car. This small rod with a joint at each end is the cheapest and most common cause of a clunk over bumps.

Photo: Sway bar end link broken by dave_7, CC BY 2.0.

Groaning or creaking when you turn the steering wheel at a stop. Low power steering fluid or a dying pump. If the steering also feels heavy, the pump is going. Check the fluid first.

Roar or rumble from underneath that gets louder when you give it gas. An exhaust leak. A hole in the muffler, a rusted pipe, or a cracked flex joint. Louder equals bigger hole. Mostly harmless, except that a leak before the O2 sensors confuses the computer and a leak under the cabin can let fumes in.



A rusted-out exhaust part with a hole eaten through the metal. A hole like this lets exhaust gas out before the muffler, so the car sounds loud and rumbly underneath.

Photo: rusty muffler by jmegjmeg, CC BY 2.0.

Rattle from under the car at idle, like a can of rocks. The catalytic converter's honeycomb has broken apart inside and the chunks are rattling around in the can. The converter is done. Or a loose heat shield, which is just a thin piece of sheet metal buzzing and costs nothing to fix.

Whine that rises and falls with engine speed, from the front of the engine. A bearing in one of the belt-driven parts: alternator, idler pulley, water pump, or power steering pump. A mechanic finds which one by pulling the belt off, spinning each pulley by hand, and feeling for the rough one, or by touching a long screwdriver to each part and listening through the handle.

Whine or hum that rises with road speed, not engine speed, and changes when you shift. Transmission or differential. If it only hums in one gear, or the car shudders when it shifts, the transmission is wearing out. On a CVT, a shudder or a drone that never changes pitch while the car speeds up is the CVT failing. The plan says to walk away from those.

Hissing under the hood after you shut it off. Coolant or steam escaping from a hose, the radiator, or the overflow cap. Look for a wet spot or white crust. Hissing while running at idle can be a vacuum hose with a split in it, which also causes a rough idle and a lean code.

Gurgling from the dash when you start it. Air trapped in the cooling system, sloshing through the heater core behind the dash. Usually means the coolant is low, and that means it is leaking somewhere.

Backfire or pop from the exhaust. Unburned gas igniting in the exhaust pipe. The spark or the timing is off, or the engine is getting too much fuel. On an older car, a pop through the intake instead of the exhaust means the timing belt has jumped a tooth.

Rhythmic thump that speeds up with the car. Usually a tire. A bubble in the sidewall, a flat spot, or a wheel weight that fell off. Spin each tire by hand and look. A steady vibration that shows up at 60 and goes away at 70 is almost always an out-of-balance tire.



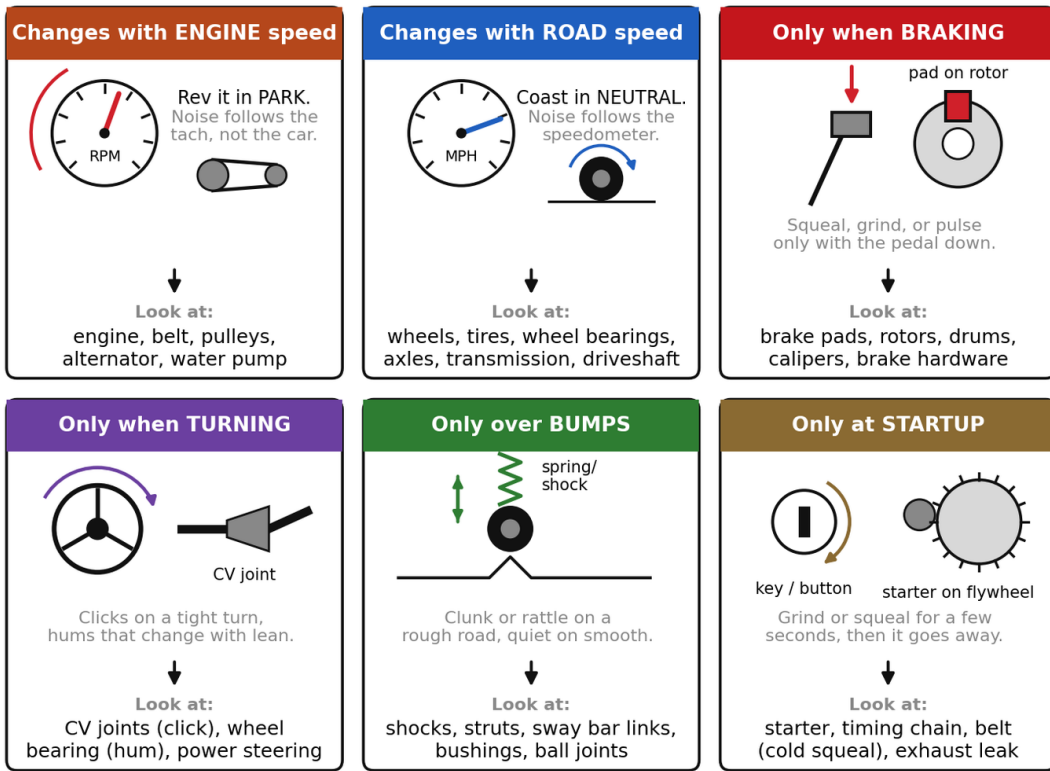
A tire sidewall with a bubble bulging out just above the rim. The inner cords have broken and only the rubber is holding the air, so this tire can blow out at any time and must be replaced.

Photo: File:Tire bubble.jpg by Osnetwork, CC BY-SA 3.0.

The quick sort a mechanic does in his head: changes with engine speed, it is on the engine or the belt. Changes with road speed, it is wheels, tires, bearings, axles, or transmission. Happens only when braking, it is brakes. Happens only when turning, it is steering, CV joints, or a bearing. Happens only over bumps, it is suspension. Then he goes to that corner of the car and starts touching things.

The quick sort: WHEN does the noise or shake change?

Match the symptom to the row, then look in the parts on the right.



Six cards sort a noise or shake by WHEN it happens: with engine speed, with road speed, only when braking, only when turning, only over bumps, or only at startup. Each card names the parts to check first.

Drawing made for this course.

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