

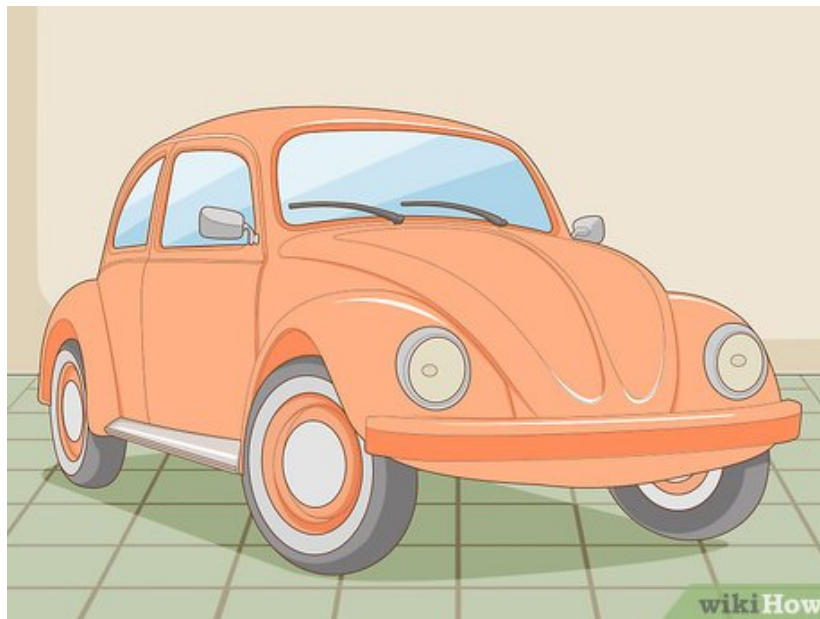
How to Build a Dune Buggy

Dune buggies are roofless vehicles with big wheels and wide tires for going off-roading on sand. It is a fun way to cruise around, but building your own vehicle from scratch is challenging unless you have mechanical experience. Most people...

Part 1 of 3:

Choosing Building Material

1.



Buy a Type 1 Volkswagen Beetle for a pre-made dune buggy. The Type 1 is the perfect size and shape for a dune buggy. If you get a good car, most of the important parts are reusable, so you don't have to purchase or assemble them yourself. In addition to the chassis, you could save the seats, brakes, engine, and other parts.^[1]

1. These cars become tougher to find as time goes on. Even if you are able to track one down, it may not be in great condition and could still require a lot of work. Later Beetle models aren't as easy to convert into a dune buggy..
2. If you need to spruce up a used car, replacing each individual part is still easier and cheaper than starting from scratch. You could work one part at a time if you have the knowledge or take it to a mechanic.

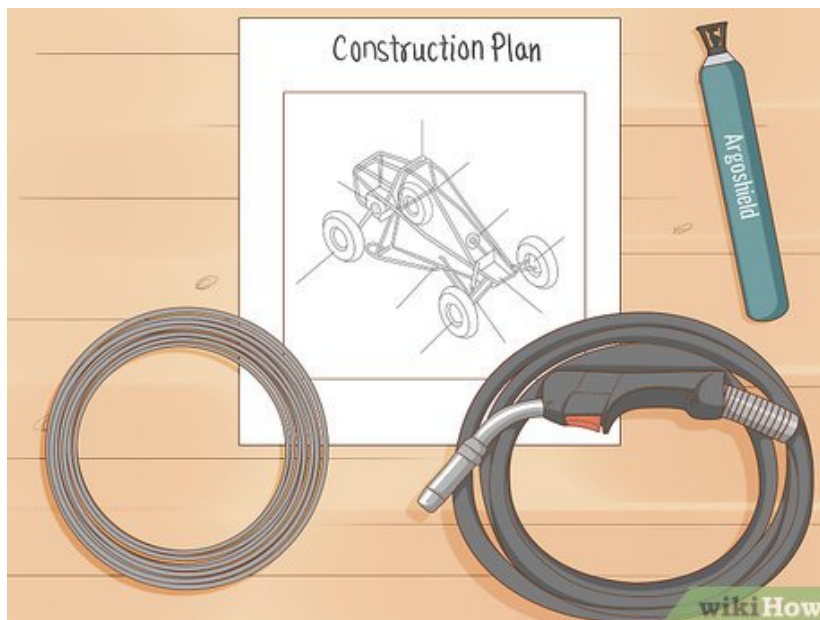
2.



Purchase a buggy kit to reduce the amount of assembly required. Some companies sell pre-made dune buggies. Pay for a chassis, then fit the fiberglass frame over it to prepare your buggy for the road. The only problem is you still need to hook up parts like the engine and transmission that you buy separately. Despite that, it saves you the hassle of stripping an old car or building a new frame.^[2]

1. Search online for dune buggy kits. There are a few companies that sell them. The finished dune buggies are considered street legal in most areas, which makes them much easier to transport.
2. Kits are pretty expensive. You're going to end up paying at least \$2,000 USD apiece for the chassis and the body frame. You also have to consider the cost of shipping and your ability to trick the buggy out with the equipment it needs to run.

3.



Buy a construction plan if you intend on building a buggy from scratch. The plan is your blueprint showing you how to construct the buggy. However, you still get to devote plenty of time to creating the chassis, selecting and assembling the mechanical parts, and so on. It's an option that could save you money

and give you a sense of pride if you're skilled at working with cars.^[3]

1. Plans will run you about \$25 unless you stumble upon free ones. Search online for dune buggy plans or blueprints.
2. To build a custom chassis, you will need to know how to weld. Most builders use MIG welding with a MIG electrical torch, a shielding gas, and a metal wire used to solder steel pipes together.
3. Also, check out dune buggy community forums. Get advice from people familiar with dune buggies. They can point you in the right direction when you're looking for plans and parts.



Pay for individual parts separately to complete your buggy. No matter how you get your frame, you are still going to need an engine and other parts. The easiest way to do this is by visiting a site that sells buggy parts. Many companies that sell kits also sell rebuilt Beetle parts, which are very difficult to find new. You then need to figure out how to install each part in your buggy unless you have a mechanic do it.^[4]

1. Search online for parts stores or, if you're really handy, go to a scrapyard.
2. Another way to get parts is by taking old ones from other vehicles. Ask other dune buggy owners where they get their parts. Many people repurpose parts from old cars or appliances like snowmobiles.

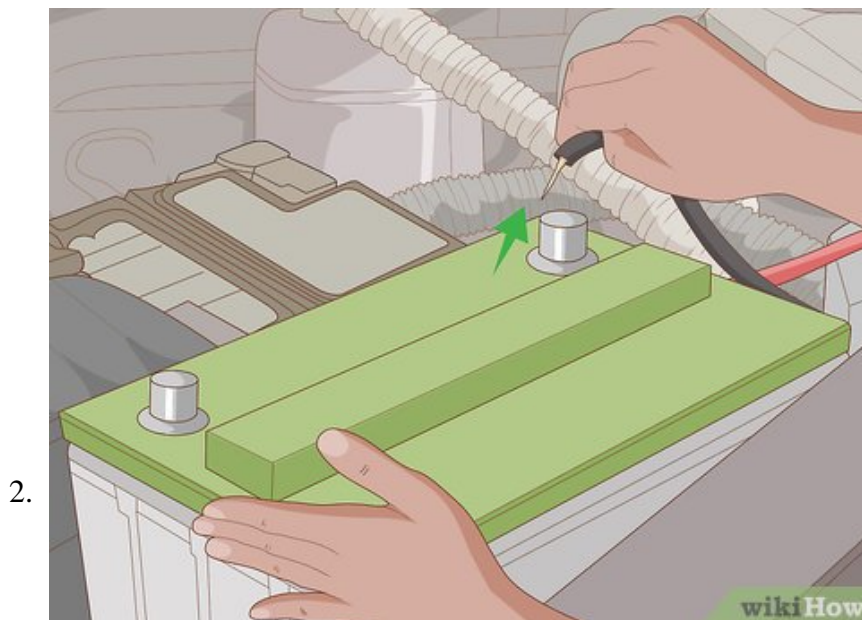
Part 2 of 3:

Taking Apart a Volkswagen Beetle



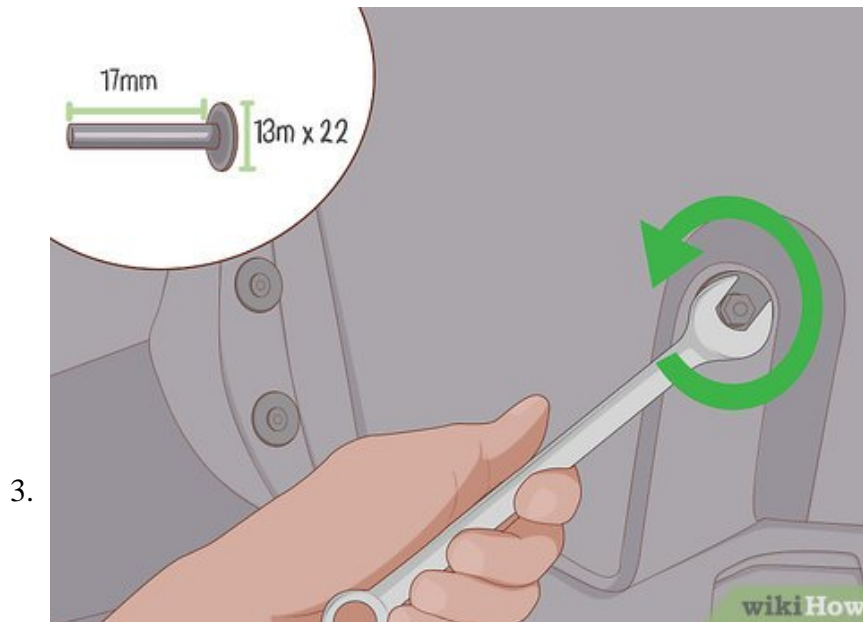
Lift the Beetle up on jack stands placed behind the wheels. Park the Beetle on a flat, level surface, then locate the jack spots behind each wheel. Raise the car up with a jack, then slip the jack stands underneath it to hold it up. You will need to get underneath the car in order to detach the frame. Make sure the car feels stable and doesn't move when you touch it.^[5]

1. Crawling under a car is dangerous. Take plenty of time inspecting the car, making sure the jacks are well-positioned and stable.



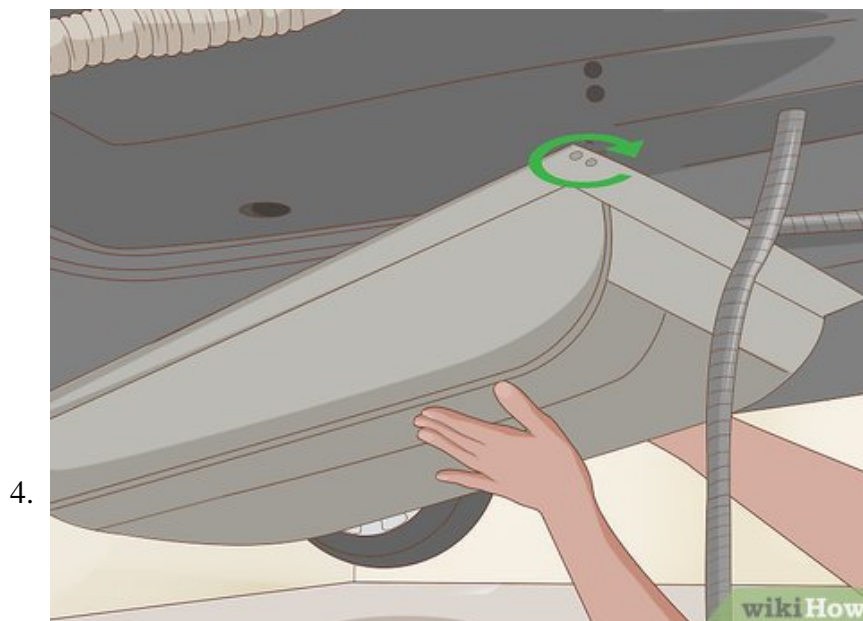
Detach the battery and other electrical wires by hand. Start with the car's engine compartment, which is in the back on a classic Beetle. The battery is underneath the back seat and held down by a bracket you can turn counterclockwise with a socket wrench. Do the same thing with the nuts on the battery terminals to remove the red and black wires connected to them. Also, squeeze the plastic connectors on any additional wires you are able to reach nearby in order to detach them..^[6]

1. Every electrical component needs to be detached. That includes the brake lights, the oil pressure switch, and the motor. Some of them are hard to spot at first, but you will get another chance at them as you remove each component.
2. You could cut the wires to remove the parts from the car, but you will then need to replace them if you plan on using the parts again.



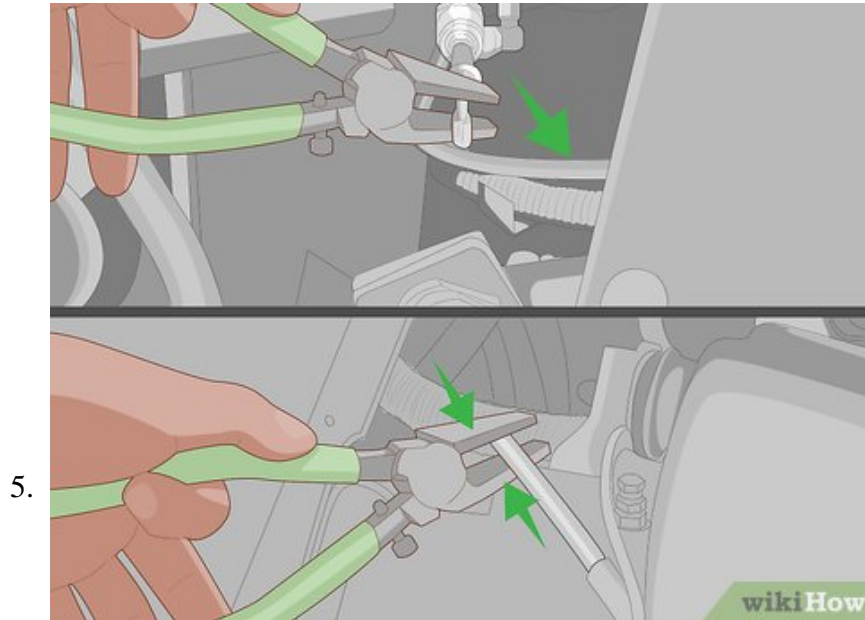
Remove the bolts holding the body panels to the chassis. Crawl under the car with a box-end wrench in hand. A classic Beetle has about 22 bolts with 17 mm (0.67 in) and 13 mm (0.51 in) heads around its edges. Twist these counterclockwise with wrenches of the same size until you are able to pull them off.^[7]

1. There are also bolts on the axles near the wheel, so make sure you get those as well if they are there.
2. Sometimes bolts are missing in older cars. If someone removed them without replacing them, that makes your job a little easier. Be sure to get new bolts if you need them when you begin putting the dune buggy back together.



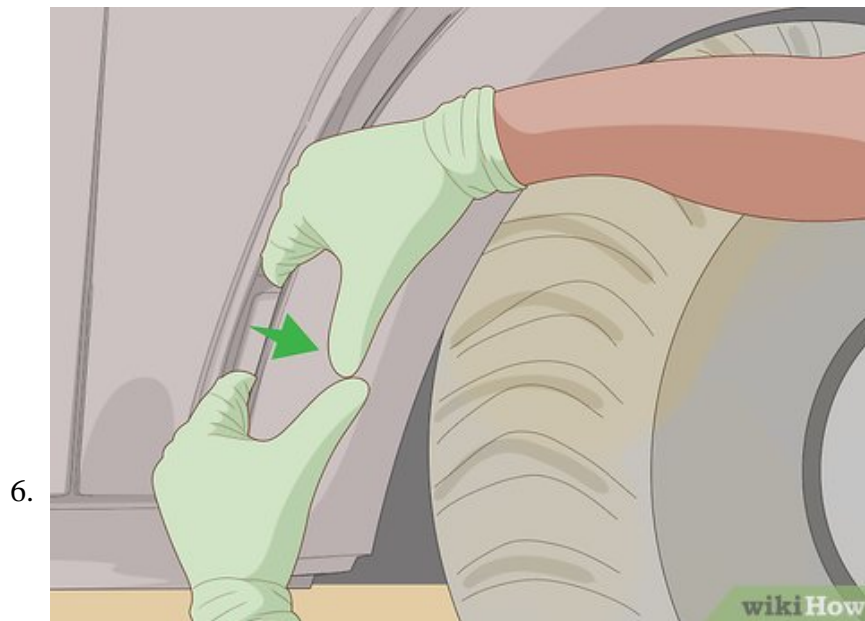
Unscrew the fuel tank and any other bolts under the hood. Check back inside the car for any bolts holding the components in place. There are usually 4 of them around the fuel tank in the front end, but you may find other ones to take care of. Use your box-end wrench again to remove them. If you're able to move the fuel tank, you're on the right track.^[8]

1. Moving the fuel tank will help you access some of the wires, including the steering column and brake lights.



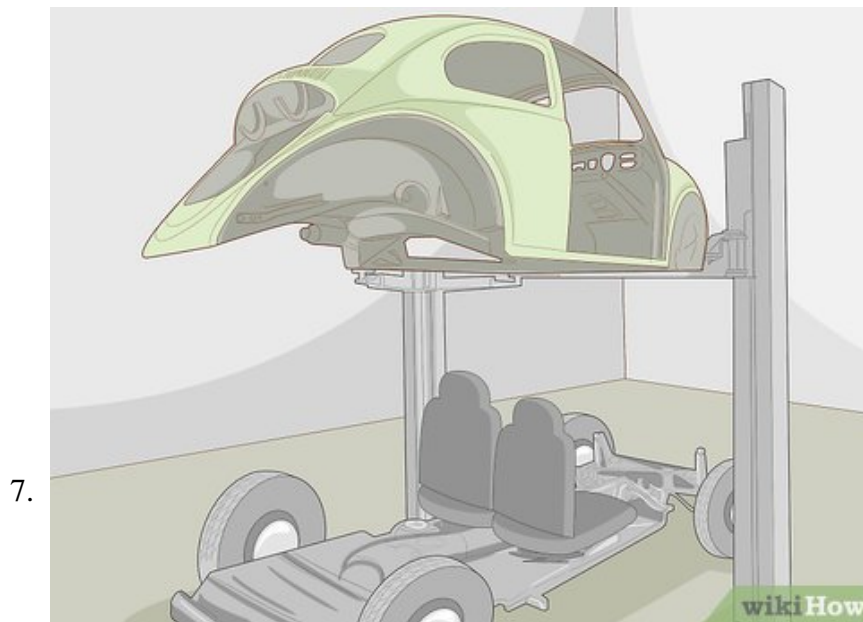
Detach the fuel and brake fluid lines with pliers. This part gets a little messy, so have some clean storage containers available. Find the fuel line first as it runs from the fuel tank to the chassis. Using a pair of locking pliers, pull the hose free and catch the draining fuel in a container. Then, do the same thing for the brake fluid chamber near the engine and brake lights.^[9]

1. Keep the fuel and brake fluid separate. If you can't reuse it, take it up to a car repair shop and ask them if they can recycle it for you.



Remove as many components out of the car as you can. Now you get to start the fun part of pulling all the guts out of the car. Try to remove the engine, the fuel tank, and other parts sitting inside the trunk and hood. Lift them up slowly in case you missed any wires that need to be disconnected first. Set them all aside, since most of them can be reused in your buggy.

1. Leave the frame in place for now. It's usually too heavy to move right away, although you could try taking off the doors and hoods by unscrewing them with a Phillips-head screwdriver.
2. If you plan on reusing the wires and hoses still in the car, consider labeling them so you know what parts they attach to.



Lift the top part of the frame off of the chassis. Once you have all the internal parts out, detach any remaining body panels. The frame is like the car's metal skeleton that all the parts attach to, while the chassis is the base part that rests over the wheels. The framework is too heavy for a single person to lift, so gather 4 of your strongest friends. Have everyone lift the frame up, and if you have an extra set of hands, have them push the chassis out from under it.^[10]

1. Try to remove the body panels by using a socket wrench on the bolts connecting them to the frame. Many times, you can save both the frame and chassis to form the base structure of the buggy. If the panels won't come off, lift the frame off the chassis.
2. If the chassis is intact, you can easily reinstall the engine and other components needed to cruise around in your new buggy.
3. Sell the leftover parts if you're looking for a little extra spending money. Otherwise, repurpose the scrap metal for another project.

Part 3 of 3:

Assembling the Dune Buggy



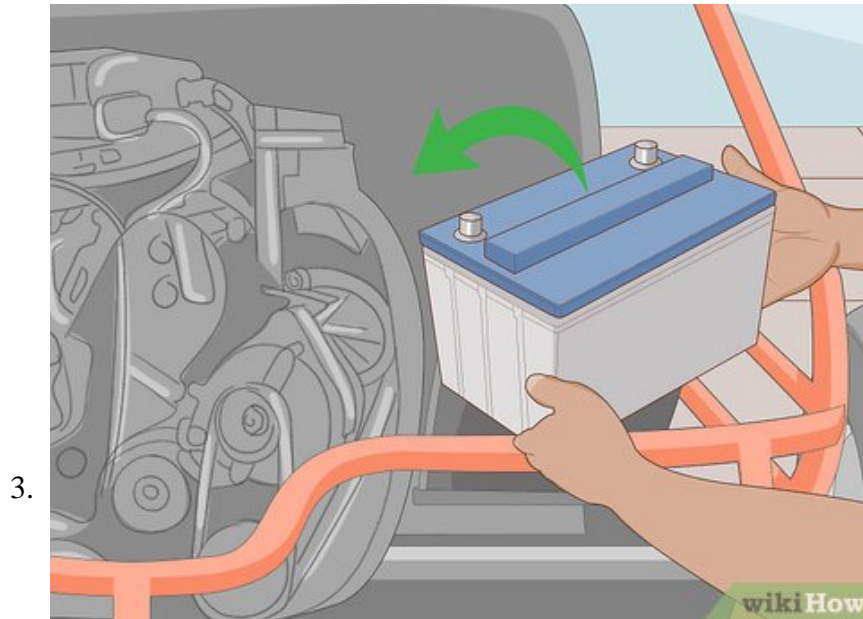
Inspect the parts for any sign of damage. If you're using an old VW, you're probably working with a lot of rusted parts. Replace anything in bad condition so you can enjoy plenty of safe rides later. Try to get parts that are as similar as possible to the old ones to make the building process simpler. Shop online or take the old parts with you when you go shopping at an auto parts store.

1. Some parts may be stuck. Soak them in a penetrating oil like WD-40 to loosen them for removal.
2. The replacement part doesn't have to be exact, and you're free to get shiny new parts or repurposed parts from other vehicles. Freestyle customizing is possible if you know how to build cars.



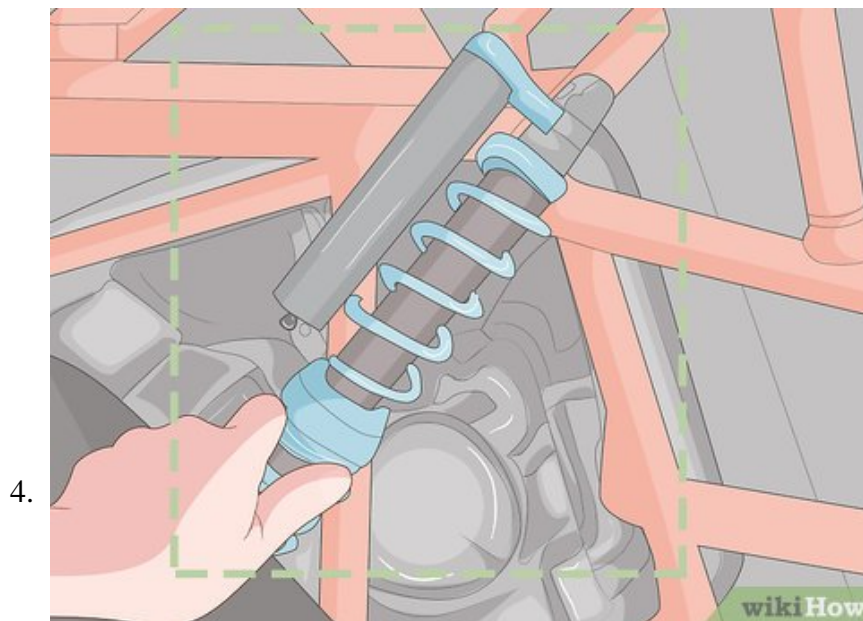
Place the engine on the back part of the frame behind the seats. The VW Beetle 4-cylinder, air-cooled engine works well in a dune buggy. It is relatively light, inexpensive, and easy to maintain. Secure it to the frame using a box-end wrench and some bolts, then begin twisting the air hoses onto the ventilation spouts with the wrench.^[11]

1. Air-cooled engines are much easier to set up than water-cooled engines. You don't need to worry about cooling fluid or much of anything else that complicates things. The engine stays cool by taking in air as you drive.



Install a new battery in the car. Find some space in the battery bracket near the engine. Generally, a dune buggy does well with a 12 or 24-volt battery. Use the old battery in the vehicle for comparison if you still have it. Once you have the new battery, cover it with the battery bracket and hold them together using 4 mm (0.16 in) hex bolts and Phillips screws as needed.^[12]

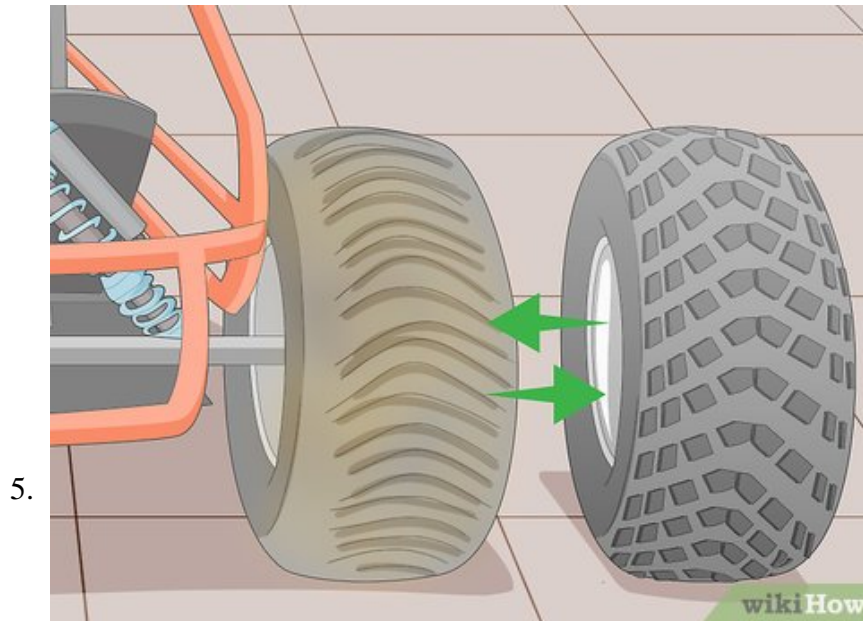
1. The battery powers the buggy's starter along with any other electrical parts. Dune buggies don't require the strongest batteries, but if you have a choice, get a larger battery to ensure your vehicle has enough power.



Install shocks so the buggy doesn't bounce as much on the road. A good suspension system gives you that smooth, relaxing ride even when you're driving over some bumpy hills. The old shocks are the coiled

spring-like pieces underneath your buggy. Use a socket wrench set and penetrating oil to remove them. Replace them with similar shock absorbers to keep your buggy stable as it moves.^[13]

1. A good suspension system keeps a buggy stable and off the pavement. Consider using a basic system from a VW Beetle and then replacing the individual components as they wear out.



Replace worn-out tires with new ones. Keep your car jacked up and start removing the lug nuts with an appropriately-sized socket wrench. Hang onto the lug nuts unless they're in bad condition. Then, get some VW Beetle tires as replacements. Look for tires that are the same size and use the same number of lug nuts as the old ones.^[14]

1. If your tires are really worn out, you could remove the entire wheel and either clean it or replace it.



Fit a new fiberglass body to fit over the buggy's frame. The easiest way to do this is by purchasing a pre-made fiberglass frame. The underside of the body attaches to the chassis through metal bolts. That allows you to snap the fiberglass panels together and then add any extra bolts needed to secure them.^[15]

1. Pre-made frames and kits come with all the bolts you need. This is handy since the bolt size you need to use could vary depending on the manufacturer.
2. Once you finish installing the body, you can give your buggy a fresh coat of paint before taking it out for a drive.

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