How To Build A Bicycle Generator by saullopez52 (/member/saullopez52/)

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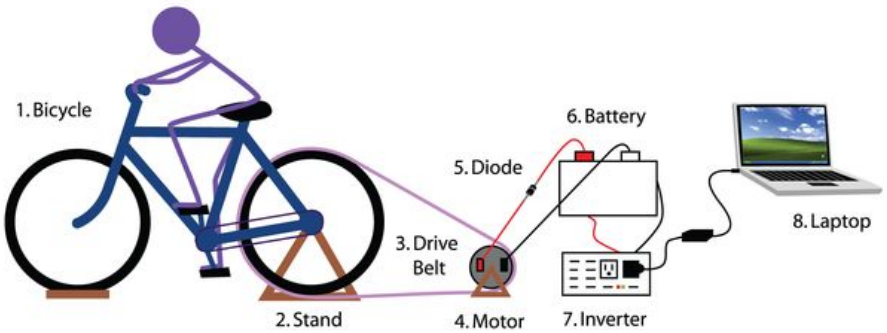

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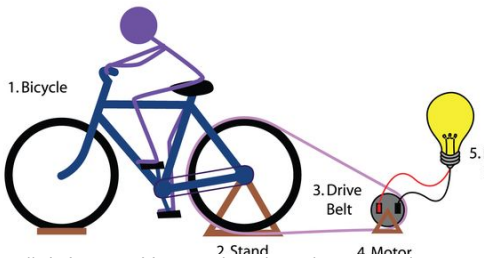

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The intentic ıan powered generator from a use ers, cell phones, laptops, an e develop engineering skills while ty.

The project was created as part of Infrastructure Academy's environmental technology curriculum for high school students, so it is intended to be both achievable and affordable.

Before continuing with the actual bicycle generator, one should understand how it works, and the components that make it up. View the PowerPoint presentation before moving on to the next step.

Parts Tools

- 2" X 4" Wood
- Wrench

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- V-belt
- Saw
- Diode
- Wood screws or nails
- Battery
- Hammer or Screwdriver
- Inverter
- Tape Measure
- Wire
- Screwdriver
- Motor (12-V or higher)
- Perforated plumbers steel

(if motor does not have mounting bracket)

Note: The bicycle generator could be accomplished by skipping steps 5, 6, 7, and 8, to save money, but connecting anything other than a halogen lamp directly to the motor is not recommended due to the varying voltages.

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'No-welding' pedal generator stand (/id/No-welding-pedal-generator-


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homage to duchamp's bicycle wheel - a dual mode led lamp (DC hub generator or AC plugin)

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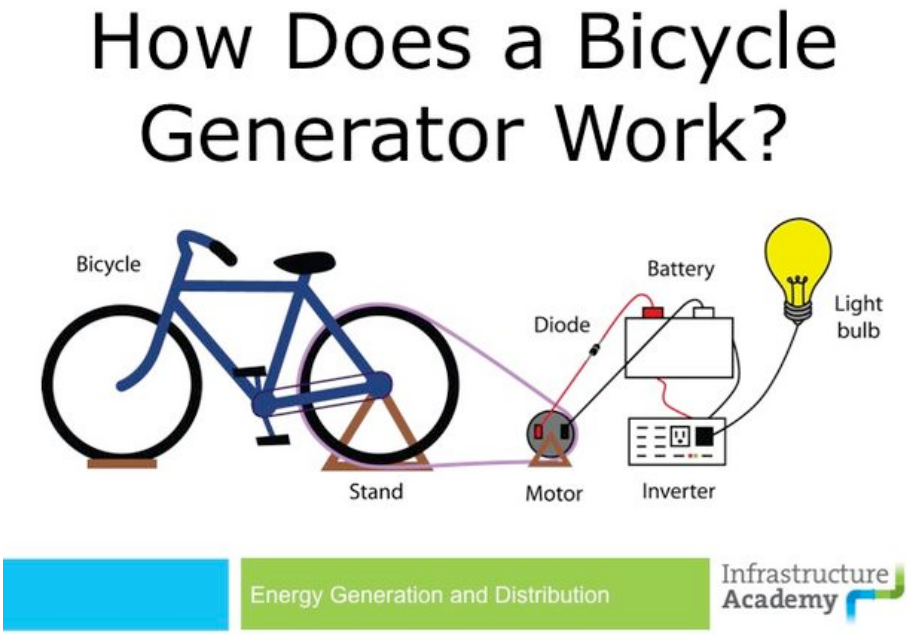
Step 1: PowerPoint Presentation



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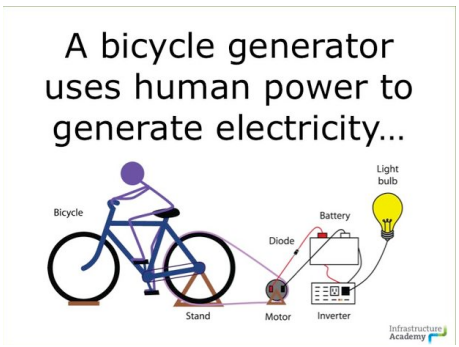

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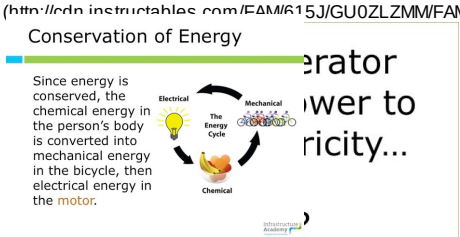

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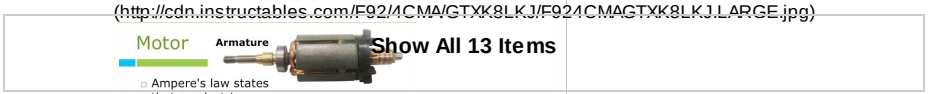

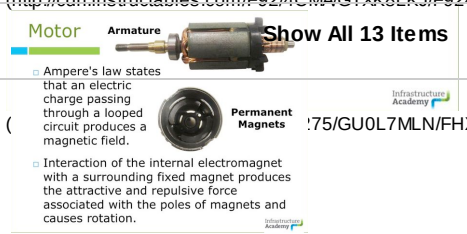

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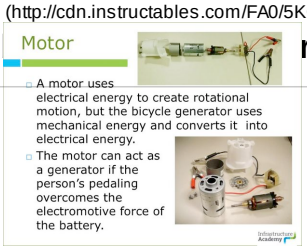
Step 2: O remove the back tire.



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You will need to unscrew the back rim to remove the tire and tube. Since the only part of the bicycle that needs to work is the chain and pedals, a junk bike or an old used bike would work just fine.

Step 3: Build a stand to elevate the bicycle off the ground.

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Show All 8 Items

The design ... few examples are shown below. Just be su... and secure. If your bike has pegs attac... dates that feature.

(http://cdn.instructables.com/FTG/CLAP/GBVJGTNB/FTGCLAPGBVJGTNB.LARGE.jpg)

The stand ... he bike is about 5-7 inches off the ground ... pecific to your bike.

(http://cdn.instructables.com/FDD/2V4Y/GBVJGTND/FDD2V4YGBVJGTND.LARGE.jpg)

Before beg... stand, be sure to draft a design with appropriat... paper will save time and prevent mistakes.

(http://cdn.instructables.com/FN7/32NP/GBVJGTNA/FN732NPGBVJGTNA.LARGE.jpg)

Step 4: Attach the drive belt along the back rim.

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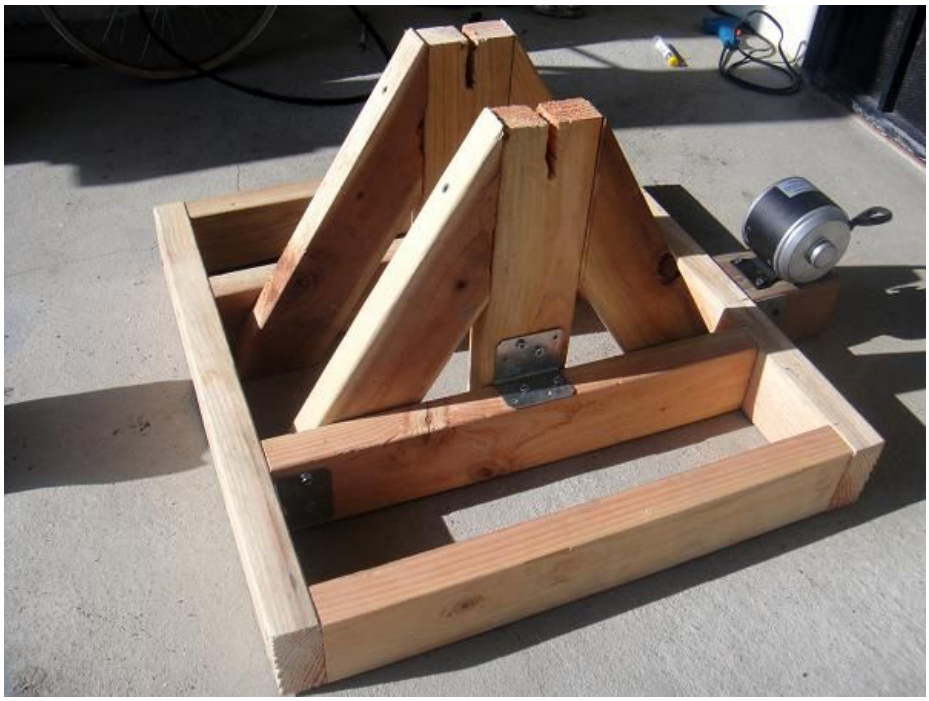
(http://cdn.instructables.com/F6M/38HB/GBVJBSXH/F6M38HBGBVJBSXH.LARGE.jpg)

A drive belt can be purchased at any auto parts store. You will need to remove the back rim to attach it. Make sure to measure the distance from the motor to the rim so you obtain the appropriate size.

Step 5: Attach the motor to the stand.



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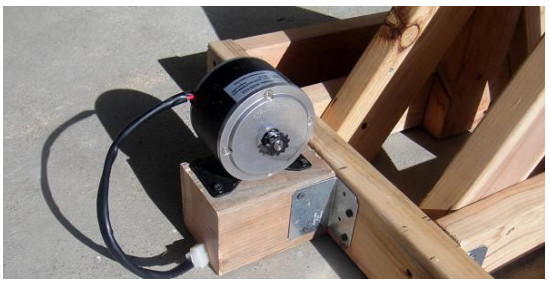

(http://cdn.instructables.com/FXU/ULYP/GBVJBQ6B/FXUULYPGBVJBQ6B.LARGE.jpg)

A 12-volt D led. The wattage of the motor depends on what yo ld be securely mounted to the stand. Mount the y secure the drive belt on the motor shaft. The concurrently – make sure there is no slipping be

(http://cdn.instructables.com/F0Y/3VSP/GBVJBQ3S/F0Y3VSPGBVJBQ3S.LARGE.jpg)

Step 6: Place a diode in series with the motor and battery.

(http://cdn.instructables.com/F5U/3OTD/GBVJ7XVS/F5U3OTDGBVJ7XVS.LARGE.jpg)

Make sure the diode is only allowing current to flow from the motor to the battery.

The cathode should be pointing towards the positive terminal of the battery.

Step 7: Connect battery to the diode.

(http://cdn.instructables.com/FJQ/PHIL/GBVJ7XW0/FJQPHILGBVJ7XW0.LARGE.jpg)

The battery should be connected in series with the motor and diode. The negative lead form the motor should attach to the negative terminal of the battery. The positive lead from the motor should be attached to the diode, and the diode to the positive terminal of the battery.

Step 8: Connect the battery leads to the inverter.

(http://cdn.instructables.com/FBE/8N5J/GBVJ7XW9/FBE8N5JGBVJ7XW9.LARGE.jpg)

You could use an adapter to connect the battery to the inverter, or you will need to solder or tape the battery's leads to the inverter so the circuit is secure. Be sure to correctly connect the positive and negative terminals of the battery to the inverter or you will blow the fuse in the inverter.

Step 9: Plug the appliance of your choice into the inverter.

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Once the motor is secured to the belt, you will need to use a multimeter to measure how much voltage is being exerted while you pedal. Depending on how much you exert, you will be able to power small appliances. With the knowledge you've gained, try to make changes that will make your generator better and more efficient.

Fun Ideas

Here are just a few suggestions to what you can do using your new bicycle generator.

Charge your phone and exercise: Ever charged your phone and just waited until it was done charging? Why not get a workout and charge it at the same time! See how much time it takes to charge your phone. Try to set a time and try to beat it in the future.

Human-Powered Smoothie: Think you can make a smoothie without wasting energy in your home? See if you can generate enough energy in your bicycle generator to run a blender. Then, see if the blender has enough power to make a smoothie.

Eco-Breakfast: If you are the type of person who wakes up in the morning wanting to exercise, then try this. Use the bicycle generator to make some waffles and toast. There's nothing like building up an appetite, exercising, and cooking at the same time.

Think about some more fun ideas you can execute using the generator and test them out!

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hnadeem2 (/member/hnadeem2/) 1 month ago Reply (CTET7TJHV9FW9VT)

can i use a 12v 7 ampere battery

(/member/hnadeem2/)

lan11487 (/member/lan11487/) 1 month ago Reply (CX76F9CHV3ZQPOO)

you should put this in the green design contest

(/member/lan11487/)

kalyanaprasadh (/member/kalyanaprasadh/) 1 month ago Reply (CVSC1BGHUI7FSA9)

i made it

(/member/kalyanaprasadh/)

dmeyer13 (/member/dmeyer13/) 2 months ago Reply (C02W5VZHTK2JC0X)

what if i hook the motor straight up to the chain instead of using a v belt and back rim

(/member/dmeyer13/)

alert aadhavan (/member/alert+aadhavan/) 2 months ago Reply (C9YWZPVHTHC590O)

cool!!!!!!!!!

(/member/alert+aadhavan/)

johnsv6 (/member/johnsv6/) 2 months ago Reply (CYOWRZOHTDDSS15)

(/member/johnsv6/)

I'm thinking mountain bike for the gears to get a flywheel going. Also, there is a double chain ring (the thingie thats connected to the cranks) Why not run another rear wheel on the front with another chain connected to the second chain ring and be able to turn 2 alternators at the same time?

svdkisore (/member/svdkisore/) 4 months ago Reply (CS0YY6CHRBNBFKH)

what is the voltage that is poduced during cycling??

(/member/svdkisore/)

Franco caca (/member/Franco+caca/)

do u have a video for the second picture?

5 months ago Reply (CZFU1WYHQCC22DA)

(/member/Franco+caca/)

Franco caca (/member/Franco+caca/) 5 months ago Reply (CRW8DP0HQCC22CQ)

how do i make the second one do u have a vide?

(/member/Franco+caca/)

ddemille (/member/ddemille/) 5 months ago Reply (CVNLT5THQ72ZGL4)

Can you just use a altenator instead of a motor? Or are they the same thing...

(/member/ddemille/)

dsweid (/member/dsweid/) 5 months ago Reply (CR874ZYHQ6P0TB0)

can i by any chance get a bicycle generator to store energy in order to produce electricity to run a builiding??

(/member/dsweid/)

cyfekt (/member/cyfekt/) 2 years ago Reply (CR0Z2WRGRTHQ215)

Could you possibly use a larger motor, and 6 batteries??

(/member/cyfekt/)

And if you did what kind of inverter would you need??

astral_mage (/member/astral_mage/) cyfekt 5 months ago Reply (CAL37E4HPKAU38I)

(/member/astral_mage/)

depending on wat u like to power up. small fridge, lamp, net work gear. 4000k would do nicely. then yr talking batteries. wat type do u plan to use seald lead acid, universal, or golf cart. golf cart types are the best but expensive. go universal cheaper plus u can get them from harbor freight for roughly 75 bucks or so.

viciousz0rz (/member/viciousz0rz/) 2 years ago Reply (CG67RH9GV4BPIN4)

What is the overall price of a project like this (if I already have a bicycle, anyway)?

(/member/viciousz0rz/)

astral_mage (/member/astral_mage/) viciousz0rz 5 months ago Reply (C4GJCF7HPKAU37S)

(/member/astral_mage/)

from 100 too 200 dollars depending on the route u take.

ExxoShock (/member/ExxoShock/) 1 year ago Reply (C2X10AUH91LKUHP)

I was wondering. What affects of a larger than 12V motor on the amount of electricity produced? Because I would like it as efficient as possible, without it being overkill.

(/member/ExxoShock/)

astral_mage (/member/astral_mage/) ExxoShock 5 months ago Reply (C19OC9DHPKAU37J)

(/member/astral_mage/)

go with a geo metro alternator abut 50 bucks +/- at a local auto scrap yard.

Aron313 (/member/Aron313/) 2 years ago Reply (CZ27JTOGXA6XPA9)

Where did you get the motor?????

(/member/Aron313/)

Daniel Deacon (/member/Daniel+Deacon/) Aron313 2 years ago Reply (CIZOJAVH1JUDXH4)

correct me if im wrong but it looks like a 24 volt 250 watt electric scooter motor

(/member/Daniel+Deacon/)

---

wozzz (/member/wozzz/) Daniel Deacon 2 years ago Reply (CIFE3N6H1ZU9PDZ)

Is it ok to charge a 12 v battery with a 24v motor?

(/member/wozzz/)

Daniel Deacon (/member/Daniel+Deacon/) wozzz 2 years ago Reply (CK1MSCWH2073H0S)

Sure In fact you need at least 15 volts to efficiently charge a 12 volt battery this is because of the internal resistance. I wouldn't risk going over 30 thou :D

(/member/Daniel+Deacon/)

---

dhemanth01 (/member/dhemanth01/) Daniel Deacon 6 months ago Reply (CHV7PQCHO7XK06Z)

but take care of the current and make sure the current given to battery remains lower than the capacity of the battery if it exceeds the battery will be drained instead of being charged

(/member/dhemanth01/)

---

wagman45 (/member/wagman45/) 1 year ago Reply (CMPT23JH7HY7Q6P)

is it possible to run an inverter straight from the generator without a battery? or do i need one for any excess energy produced? could i just use a capacitor?

(/member/wagman45/)

---

dhemanth01 (/member/dhemanth01/) wagman45 6 months ago Reply (CLMGW4ZHO7XK06P)

yes of course you can ... but the voltage will surely vary on the speed you pedal. if the voltage goes high the inverter will take care but on low voltage nothing can be done..

(/member/dhemanth01/)

ExxoShock (/member/ExxoShock/) wagman45 1 year ago Reply (CYYU1N4H8RVLICZ)

Im not an expert, but you probably can, Yet if you dont have a battery, you wont have any power if you stop, yet if you have a battery, it can charge the battery, so you can stop if you want.

(/member/ExxoShock/)

---

wagman45 (/member/wagman45/) wagman45 1 year ago Reply (C94MHJFH7HY7Q6S)

note: i'll be using a charge controller

(/member/wagman45/)

LiftAndLove (/member/LiftAndLove/) 1 year ago Reply (CUMC53FH9T4SF1U)

How much do you think this would cost? Minus the bicycle.

(/member/LiftAndLove/)

dhemanth01 (/member/dhemanth01/) LiftAndLove 6 months ago Reply (C29553BHO7XJZWW)

40 to 50 USD...and some hard work for the wooden frame...

(/member/dhemanth01/)

vgamesx1 (/member/vgamesx1/) 9 months ago Reply (CLZ7ZUCHLA27H0W)

I have a slightly more practical idea.. why not instead get an even larger motor and a Grid Tie inverter? then feed power right back into your house, why not? it would be heck of a lot simpler than the idea of setting up a battery and an inverter and plugging different appliances into it and best of all you could just do it whenever you want rather than preparing a device beforehand and save some electricity.

(/member/vgamesx1/)

dhemanth01 (/member/dhemanth01/) vgamesx1 6 months ago Reply (C39XKT3HO7XJZTZ)

i think in the above instructables you can also connect your device directly to appliances while pedaling... but connecting to the main line power supply will not be advised. if there occur a back current flow from main line your generator will burn up...

(/member/dhemanth01/)

rmandalaa (/member/rmandalaa/) 10 months ago Reply (C12UM4WHJKC0KHF)

wow

(/member/rmandalaa/)

JCG5 (/member/JCG5/) 1 year ago Reply (CLU2Z8WHGH6XGZ5)

Does the diode control the direction of the electricity?

(/member/JCG5/)

dmetcalf2 (/member/dmetcalf2/) 1 year ago Reply (CONYAWYHCB8L1CI)

here is a great way to go green and get some much needed exercise

(/member/dmetcalf2/)

gpdas (/member/gpdas/) 1 year ago Reply (CQAEMK3HAQ321J6)

Very good.

(/member/gpdas/)

ExxoShock (/member/ExxoShock/) 1 year ago Reply (CZM9S9VH8RVLIE0)

Good job, could have been more detailed, but other than that, I applaud you.

(/member/ExxoShock/)

wozzz (/member/wozzz/) 2 years ago Reply (C2BDVMWH1ERNE6R)

Has the base RPM of a 12v DC motor, to be taken in consideration?

(/member/wozzz/)

wozzz (/member/wozzz/)

What should be the minimum specifications of the diode?

2 years ago Reply (C6DSKNYH1ERNE4F)

(/member/wozzz/)

Tabbytha (/member/Tabbytha/) 2 years ago Reply (C4TZ4SLH05NP69Q)

What kind of motor? A stepper motor or another kind?

(/member/Tabbytha/)

bradpitcher (/member/bradpitcher/) Tabbytha 2 years ago Reply (CIS6JEIH0OJ17WK)

In step 5 the author explains to use a 12 V DC motor

(/member/bradpitcher/)

windigoking (/member/windigoking/) 3 years ago Reply (CJ584RYGNBERIJ2)

would it make a difference if you used a mountain bike and added a fly wheel? That way you can start on low gear to get the fly wheel spining and slowly build speed so you can have a higher rpm, and keep it with a smaller effort?

(/member/windigoking/)

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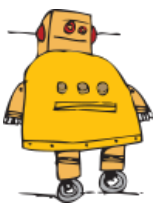

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