

Verb to be

Affirmative / short form

I am I'm
 You are You're
 We are We're
 They are They're
 He is He's
 She is She's
 It is It's

Negative / short form

I am not I'm not
 You are not You aren't
 We are not We aren't
 They are not They aren't
 He is not He isn't
 She is not She isn't
 It is not It isn't

Interrogative

Am I?
 Are you?
 Are we?
 Are they?
 Is he?
 Is she?
 Is it?

Write the Verb to be and change to short form.

- I _____ / _____
- you _____ / _____
- We _____ / _____
- They _____ / _____
- He _____ / _____
- She _____ / _____
- It _____ / _____

Write in the correct Verb to be

- Cindy _____ my best friend.
- Peter and Kate _____ classmates.
- Johnny _____ my brother.
- You _____ a good student.
- They _____ in the classroom.
- It _____ an apple.
- Felicia and I _____ sisters.
- I _____ her teacher.
- It _____ a book bag.
- You _____ a doctor.

Re-arrange the sentence.

- I / not / a teacher. / am _____
- She / my mother. / is _____
- The boys / playful. / are _____
- The girl / in the room. / is _____
- We / not / are / at home. _____
- My dad / smart. / is _____
- My mother / a housewife. / is _____
- She / not / my sister. / is _____
- The teacher / angry. / is _____
- The dog / in the kennel. / is _____

Look at the pictures and answer the question

- Is he a teacher? No, he is not. _____
- Is it an elephant? _____
- Is it a pencil? _____
- Are they twins? _____
- Is he in the park? _____
- Is he a painter? _____
- Is Ricky in the living room? _____
- Is mom in the kitchen? _____
- Is your dad a postman? _____
- Are the books on desk? _____
- Are you Mrs. Perkins? _____
- Is the broom behind the door? _____

1 2 3 4



5

6

7

8



9

10

11

12



Greetings and Introductions

	Sample sentence	Sample response	Good to know
Informal greetings	<p>Hi Katie, how are you? Hi, how is it going? Hi there, what's up? Hey James, long time no see! How've you been? Hi, what's new?</p>	<p>Hi, I'm good. How're you? Hi. Great! And you? Hi! Not much, How about you? Hi, I'm doing all right. And you? I'm fine, thanks. And you? Terrible. I have a bad cold.</p>	<p>'How are you?' is usually NOT a question about your health, it is JUST a part of the greeting. So you should just say 'Good', or 'Fine', or 'All right'. You may also say that things are 'terrible' (see last example), and offer a brief explanation in INFORMAL situations.</p>
Formal greetings	<p>Hello. How are you? (rarely: How do you do?) Hello, Mr Richards. Hello, Ms. Richards. Hello, Professor Richards. Hi, Professor. Hi, Dr. Richards / Hello Doctor.</p>	<p>Hello, how are you? Very well, thank you. And you? Fine thank you. How are you?</p>	<p>'How are you?' is ALWAYS a part of the greeting and NEVER a question about your health.</p> <p>When using titles (e.g., Dr, Professor), you don't also use Mr and Ms.</p> <p>Handshakes are accepted, but not necessary when greeting people.</p>

	Sample sentence	Sample answers	Good to know
Informal self-introductions (You introduce yourself)	Hi, I'm Kate. I'm in your yoga class.	Hi, I'm John. Nice/Glad to meet you. Hi, I'm John, how are you?	Handshakes aren't necessary, but possible.
Informal introductions (You introduce someone else)	<p>Sarah, this is John from my yoga class. Sarah, meet John. He is in my yoga class. Sarah, have you met John? He is in my yoga class.</p>	<p>Hi, John, nice/Glad to meet you. Hi John, great to finally meet you. I've heard so much about you! Hi John, how are you?</p>	Handshakes aren't necessary, but possible. In informal situations, we use first names only.
Formal self-introductions (You introduce yourself)	<p>Let me introduce myself. My name is Dora Donner. I'm in your history class, Professor Baines. May I introduce myself. I'm Dora Donner.</p>	<p>Pleased to meet you. How are you? It's a pleasure to meet you. How do you do?</p>	Handshakes are common in formal situations.
Formal introductions (You introduce someone else)	<p>Professor Gerald, may I introduce you to Kate Johnson. She is the new head of HR. Kate, I'd like you to meet Jack Carter. He is our new department assistant.</p>	<p>Pleased to meet you. How are you? It's a pleasure to meet you. How do you do?</p>	Use titles (Dr, Professor). Handshakes are also common in these formal situations.

There is - There are

Meaning: To say that something exists (or doesn't exist)

A
F
F
I
R
M
A
T
I
V
E

There **is** + **singular noun**

There **is** a **book** on the desk.

There **are** + **plural noun**

There **are** **books** on the desk.

There **is** + **uncountable noun**

There **is** some **milk** in the fridge.

N
E
G
A
T
I
V
E

There **isn't** + **singular noun**

There **isn't** a **pen** on the table.

There **aren't** + **plural noun**

There **aren't** any **pens** here.

There **isn't** + **uncountable noun**

There **isn't** any **juice** in the fridge.

Q
U
E
S
T
I
O
N
S

There **is** a cat on the chair.

There **are** cats on the sofa.

Is there a cat on the chair ?

Are there cats on the sofa ?

How many + **plural noun** + **are there** ... ?

How many **students** **are there** in your class?

How many **days** **are there** in February?

CONTRACTIONS

There's = There is

There's not = There is not

There isn't = There is not

There aren't = There are not

NAME: _____

DATE: _____

GRAMMAR WORKSHEET

THERE IS / THERE ARE



There is	a	pen on the table.
There are	(two)	pens on the table

There aren't <u>any</u> pens on the table.
OR
There aren't (two) pens on the table. There are (three) pens on the table.

Is there	a	pen on the table?
Are there	(two)	pens on the table?

Yes, there is . / No, there isn't .
Yes, there are . / No, there aren't .

There is = There's

There are → "There are" does not have a contraction form

- Fill in the blanks below to complete the sentences.

1. There is a library next to the park.
2. All the students went home. There aren't any students in the classroom.
3. _____ 50 states in the United States.
4. No, _____ polar bears at the South Pole.
5. A: _____ message for me? B: No, _____.
6. Why _____ so many cars in the parking lot?
7. A: I'm hungry. B: _____ restaurant across the street.
8. How many days _____ in March, thirty or thirty-one?
9. _____ a few things I have to do this afternoon.
10. A: _____ a post office nearby? B: I'm sorry, I don't know.
11. _____ something I can help you with?
12. _____ public holidays next month.
13. How many countries _____ in the world?
14. _____ a woman in the picture. She is smiling.
15. _____ only three more days before the exam. Let's study!



Apprentice Job Description

Online Electrician Apprenticeship Training and Career Center

Welcome to Electrician Apprenticeship Headquarters! The information you find here will help you learn how to become an electrician. The IBEW, IEC, and ABC apprenticeships are the major education providers to today's electrician.

Our goal is to help you answer questions about electrician pay, apprenticeships, tools, job site atmosphere, and more!

Definitions of Electrical Terms You Should Know

As you progress in the electrical trade you'll hear a bunch of electrical terms being tossed around like their common knowledge. It takes years to get firm understanding of what they all mean.

Fortunately for you I've grouped them together to help you become a better electrician. Below you'll find over XX definitions of electrical terms.

If it's slang terms you're looking for, than look no further: American Job Site Slang

Electrical Terms For Circuits

AC (Alternating Current) — An electric current that reverses its direction many times a second at regular intervals.

DC (Direct Current) — An electric current that flows in only one direction.

Feeder — All circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device.

Fuse — A circuit interrupting device consisting of a strip of wire that melts and breaks an electric circuit if the current exceeds a safe level. To restore service, the fuse must be replaced using a similar fuse with the same size and rating after correcting the cause of failure.

Ground or Earth — The reference point in an electrical circuit from which voltages are measured, a common return path for electric current, or a direct physical connection to the Earth.

Ground Fault — An unintentional, electrically conductive connection between an ungrounded conductor of an electrical circuit and the normally non-current-carrying conductors, metallic enclosures, metallic raceways, metallic equipment, or earth.

Grounded Conductor — A system or circuit conductor that is intentionally grounded.

Grounded (Grounding) – Connected (connecting) to ground or to a conductive body that extends the ground connection.

Ground-Fault Current Path – An electrically conductive path from the point of a ground fault on a wiring system through normally non-current-carrying conductors, equipment, or the earth to the electrical supply source.

Load — Anything which consumes electrical energy, such as lights, transformers, heaters and electric motors.

Neutral Conductor – The conductor connected to the neutral point of a system that is intended to carry current under normal conditions.

Overload – Operation of equipment in excess of normal, full-load rating, or of a conductor in excess of rated ampacity that, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload.

Parallel Circuit — A circuit in which there are multiple paths for electricity to flow. Each load connected in a separate path receives the full circuit voltage, and the total circuit current is equal to the sum of the individual branch currents.

Rectifier — An electrical device that converts an alternating current into a direct one by allowing a current to flow through it in one direction only.

Series Circuit — A circuit in which there is only one path for electricity to flow. All of the current in the circuit must flow through all of the loads completing its path to the source of supply.

Series Parallel Circuit — An electric circuit containing groups of parallel connected receptive devices, the groups being arranged in the circuit in series; a series multiple circuit.

Short Circuit — A fault in an electric circuit or apparatus due usually to imperfect insulation, such that the current follows a by-path and inflicts damage or is wasted.

Electrical Terms for Components

Ammeter — Measures the current flow in amperes in a circuit. An ammeter is connected in series in the circuit (unless using a clamp-on ammeter)

AFCI (Arc Fault Circuit Interrupter) – An arc fault circuit interrupter is a special type of receptacle or circuit breaker that opens the circuit when it detects a dangerous electrical arc. It's used to prevent electrical fires.

Capacitor – A passive two-terminal electrical component used to store electrical energy temporarily in an electric field.

Circuit — A closed path in which electrons from a voltage or current source flow. Circuits can be in series, parallel, or in any combination of the two.

Circuit Breaker — An automatic device for stopping the flow of current in an electric circuit. To restore service, the circuit breaker must be reset (closed) after correcting the cause of the overload or failure.

Conductor — Any material where electric current can flow freely. Conductive materials, such as metals, have a relatively low resistance. Copper and aluminum wire are the most common conductors used in the electrical trade.

DMM (Digital Multimeter) — A DMM is an electronic measurement tool that can measure voltage, current, resistance, capacitance, temperature, frequency

Diode — A semiconductor device with two terminals, typically allowing the flow of current in one direction only.

Generator — A device that converts mechanical energy to electrical energy for use in an external circuit. The source of mechanical energy may vary widely from a hand crank to an internal combustion engine. Generators provide nearly all of the power for electric power grids.

GFCI (Ground Fault Circuit Interrupters) — A device intended for the protection of personnel that functions to de-energize a circuit or portion thereof within an established period of time when a current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

Inverter — An apparatus that converts direct current into alternating current.

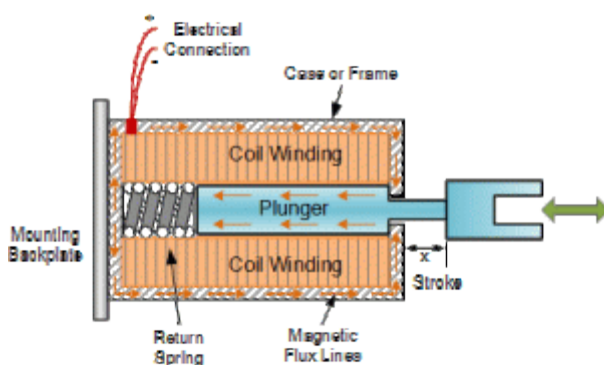
Insulator — Any material where electric current does not flow freely. Insulating materials, such as glass, rubber, air, and many plastics have a relatively high resistance. Insulators protect equipment and life from electric shock.

Service — The conductors and equipment used to deliver energy from the electrical supply system to the system being served.

Service Lateral — The underground service conductors between the street main — including risers — and the first point of connection to the service-entrance conductors in a terminal box, meter, or other enclosure.

Semiconductor — A solid substance that has a conductivity between that of an insulator and that of most metals, either due to the addition of an impurity or because of temperature effects. Devices made of semiconductors, notably silicon, are essential components of most electronic circuits.

SCR (Solid State Relay) — An electronic switching device that switches on or off when a small external voltage is applied across its control terminals. The switching action happens extremely fast.



Solenoid and how it works.

Solenoid — A spiral of conducting wire, wound so that when an electric current passes through it, its turns are nearly equivalent to a succession of parallel circuits, and it acquires magnetic properties similar to those of a bar magnet.

Switch — A device for making, breaking, or changing the connections in an electric current.

Switchgear — The combination of electrical disconnect switches, fuses or circuit breakers used to control, protect and isolate electrical equipment. Switchgear is used both to de-energize equipment to allow work to be done and to clear faults downstream.

Transistor — A semiconductor device with three connections, capable of amplification in addition to rectification.

Electrical Terms for Mathematical Calculations

Apparent Power — Measured in volt-amperes (VA). Apparent power is the product of the rms voltage and the rms current.

Ampere (A) — A unit of measure for the intensity of an electric current flowing in a circuit. One ampere is equal to a current flow of one coulomb per second.

Capacitance — The ability of a body to store an electrical charge. Measured in farads as the ratio of the electric charge of the object (Q, measured in coulombs) to the voltage across the object (V, measured in volts).

Current (I) — The flow of an electric charge through a conductor. An electric current can be compared to the flow of water in a pipe. Measured in amperes.

Demand — The average value of power or related quantity over a specified period of time.

Farad — A unit of measure for capacitance. One farad is equal to one coulomb per volt.

Frequency — The number of cycles per second. Measured in Hertz. If a current completes one cycle per second, then the frequency is 1 Hz; 60 cycles per second equals 60 Hz.

Henry — A unit of measure for inductance. If the rate of change of current in a circuit is one ampere per second and the resulting electromotive force is one volt, then the inductance of the circuit is one henry.

Hertz — A unit of measure for frequency. Replacing the earlier term of cycle per second (cps).

Impedance (Z) — The effective resistance of an electric circuit or component to alternating current (AC), arising from the combined effects of ohmic resistance and reactance.

Inductance (H) — The property of a conductor by which a change in current flowing through it induces (creates) a voltage (electromotive force) in both the conductor itself (self-inductance) and in any nearby conductors (mutual inductance). Measured in henry (H).

Kilowatt-hour (kWh) — The product of power in kW and time in hours. Equal to 1000 Watt-hours. For example, if a 100W light bulb is used for 4 hours, 0.4kWhs of energy will be used (100W x 1kW / 1000 Watts x 4 hours). Electrical energy is sold in units of kWh.

Kilowatt-hour Meter — A device used to measure electrical energy use.

Kilowatt (kW) — Equal to 1000 watts.

Ohm — (Ω) A unit of measure of resistance. One ohm is equivalent to the resistance in a circuit transmitting a current of one ampere when subjected to a potential difference of one volt.

Ohm's Law — The mathematical equation that explains the relationship between current, voltage, and resistance ($V=IR$).

Power — The rate at which electrical energy is transferred by an electric circuit. Measured in Watts.

Reactive Power — The portion of electricity that establishes and sustains the electric and magnetic fields of AC equipment. Exists in an AC circuit when the current and voltage are not in phase. Measured in VARS.

Resistance (Ω Ohms) — The opposition to the passage of an electric current. Electrical resistance can be compared to the friction experienced by water when flowing through a pipe. Measured in ohms.

True Power — Measured in Watts. The power manifested in tangible form such as electromagnetic radiation, acoustic waves, or mechanical phenomena. In a direct current (DC) circuit, or in an alternating current (AC) circuit whose impedance is a pure resistance, the voltage and current are in phase.

VARS — A unit of measure of reactive power. Vars may be considered as either the imaginary part of apparent power, or the power flowing into a reactive load, where voltage and current are specified in volts and amperes.

Volt-Ampere (VA) — A unit of measure of apparent power. It is the product of the rms voltage and the rms current.

Volt (V) — A unit measure of voltage. One volt is equal to the difference of potential that would drive one ampere of current against one ohm resistance.

Voltage (E) — An electromotive force or "pressure" that causes electrons to flow and can be compared to water pressure which causes water to flow in a pipe. Measured in volts.

Watt-hour (Wh) — A unit of electrical energy equivalent to a power consumption of one watt for one hour.

Watt (W) — A unit of electrical power. One watt is equivalent to one joule per second, corresponding to the power in an electric circuit in which the potential difference is one volt and the current one ampere.

Electrical Terms For Conduit Bending

Hand Bender — A tool used for bending EMT (electrical metal tubing), IMC (intermediate metal conduit), and RMC (rigid metal conduit). Hand benders come in sizes: 1/2", 3/4", 1", and 1-1/4"

Four Bend Saddle — Four bends in a piece of conduit that clear an obstacle by saddling it.

Offset — A bend in conduit to clear an obstacle. Typically only two bends.

Three Bend Saddle — Three bends in a piece of conduit — one in the center and two side bends that clear an obstacle by "saddling" it.

Gain – The difference between the sum of the straight distances and the actual length of conduit (how much the conduit will grow after being bent).

Shrink – The amount the conduit will “shrink” because of bending around an obstruction – picture an inch worm and how it shrinks when it moves. Shrink is added to the over all distance to the obstruction to compensate before bending.

Multiplier – Used to calculate the distance between bends using “multiplier X offset”

Random Electrical Terms That You Should Be Familiar With

Arc Flash – An arc flash is light and heat and is a type of electrical explosion or discharge that results from a low-impedance connection through air to ground or another voltage phase in an electrical system. Arc flash temperatures can reach or exceed 35,000 °F

Arc Blast – The intense heat from an arc causes sudden expansion of air resulting in a blast. Copper expands during an arc flash event at a factor of 67000 times within a few milliseconds.

Calorie — The French heat unit. Used to measure energy levels for Arc Flash boundaries and proper PPE when working on energized electrical equipment.

CE (Construction Electrician) – Construction electricians can perform those basic tasks with little or no supervision, though they can't act as a foreman or supervise other workers.

BASIC ELECTRICAL TOOLS, EQUIPMENT, AND THEIR USES

Pliers

Pliers are available in different types, shape, and sizes. They are also available in both insulated and uninsulated handles. An insulated handle should be used when working on or near hot wires. It is also used for cutting big and small wires.



Screw Drivers

A screwdriver comes in various sizes and with several tip shapes. Screwdrivers used by electricians should have insulated handles. Using a screwdriver for a particular job, the width of the screwdriver tip should match the width of the screw slot.



Drilling Equipment

Drilling equipment is needed to make holes in building structure passages of conduits and wires.



Sawing and Cutting Tools

Saws commonly used by electricians include the crosscut, keyhole, and hacksaw.



Soldering Equipment

In doing electric wiring, splices and taps (connections made to wire) should be soldered, unless you use solderless connectors. Typical equipments available for soldering are shown below.



Hammers

Hammers are used with chisels and for nailing and fitting. Below are examples of carpenter's claw hammer, lineman's hammer, and machinist's ball-peen hammer.



Measuring Tools

To measure wire length and other items, the electrician finds considerable use for measuring tools such as the extension or zigzag rule, push-pull rule and a steel tape as shown below.



Frequent Questions And Answers

1. Any screwdriver can be used on any screw?
2. An uninsulated handle can be used when working on hot wires?
3. Name 3 types of measure tools
4. Is there only one size of pliers?
5. Why do we need a drilling equipment?
6. What do we use the hammer for?
7. In which case we do not use the soldering equipment?