



Portland General Electric

## Electrical Safety World Video

### *Episode 1 – Electricity Basics*

Study Sheet
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Directions: Fill in the blank or circle the correct answer for each question.

1. Which of these carries electricity from power plants to substations?

- |                       |              |
|-----------------------|--------------|
| a) steel pipes        | c) outlets   |
| b) transmission lines | d) windmills |

2. What does a substation do?

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3. Unless it's interrupted, electricity flows in a closed path called

- |            |              |                        |              |
|------------|--------------|------------------------|--------------|
| a) a route | b) a circuit | c) an electrical panel | d) an outlet |
|------------|--------------|------------------------|--------------|

4. Electricity is always looking for the easiest path to the

- |        |         |          |           |
|--------|---------|----------|-----------|
| a) sky | b) plug | c) house | d) ground |
|--------|---------|----------|-----------|

5. What could happen if you touch a circuit in which electricity is flowing?

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# Electrical Safety World Video

## Episode 2 – Conductors & Insulators

### Study Sheet

Directions: Fill in the blank or circle the correct answer for each question.

1. Why are bare electrical wires so dangerous?

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2. An example of an insulator that does *not* allow electricity to flow through it easily is

- a) the plastic-like coating on power cords      c) an aluminum ladder  
b) metal wires      d) a metal fork

3. An example of a good conductor that allows electricity to flow through it easily is

- a) rubber      b) glass      c) water      d) plastic

4. Why is the human body a good conductor of electricity?

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5. What could happen if you overload an outlet with too many plugs?

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# Electrical Safety World Video

## *Episode 3 – Outdoor Electrical Safety*

### Study Sheet

Directions: Fill in the blank or circle the correct answer for each question.

1. If a kite you are flying gets caught on a power line, why is it unsafe to touch the string?

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2. What should you do before climbing any tree?

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3. Why is it unsafe to climb into an electrical substation?

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4. What number should you call before you dig?

- a) 911
- b) 411
- c) 811
- d) 611

5. Ladders and long tools should be kept at least how far away from power lines?

- a) 10 feet
- b) 5 feet
- c) 3 feet
- d) 2 feet

# Electrical Safety World Video

## *Episode 4 – Indoor Electrical Safety*

### Study Sheet

Directions: Fill in the blank or circle the correct answer for each question.

1. True or False: If you contact electricity in your home you could be killed.

2. Why is it dangerous to remove stuck toast from a plugged-in toaster with a metal fork?

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3. Why is it dangerous to balance a plugged-in blow dryer on the edge of a full bathtub?

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4. Why is it dangerous to run a power cord under a rug?

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5. Which of the following is *not* an electrical hazard?

- a) a plugged-in curling iron on the edge of a sink full of water
- b) running the cord to your computer under the rug to the nearest outlet
- c) removing stuck toast from an unplugged toaster
- d) two power strips full of plugs that are both plugged into the same outlet

# Electrical Safety World Video

## Episode 5 – Fallen Power Lines

### Study Sheet

Directions: Fill in the blank or circle the correct answer for each question.

1. If a power line falls on your car, you are safe in the car and you should stay there until you are told to get out by

- a) your mom or dad
- b) utility workers
- c) anyone inside the car
- d) anyone outside the car

2. What is the safest way to exit a car with a power line on it if you must get out due to fire or other danger?

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3. Why should you land with your feet together and shuffle away when you are leaving a car with a power line on it?

- a) it takes less of your energy
- b) you can travel farther that way
- c) you might create a spark
- d) if your feet remain together your legs cannot form a circuit with the electricity in the ground

4. True or False: When leaving a car with a power line on it, it is safe to touch the car and the ground at the same time.

5. If you see a fallen power line anywhere, do NOT

- a) stay far away
- b) touch it
- c) call 911 to report the fallen line
- d) warn others to stay away

# Electrical Safety World Video

## Study Sheet Answer Key

### *Episode 1 – Electricity Basics*

1. b) transmission lines.
2. A substation reduces the strength of high-voltage electricity.
3. b) a circuit.
4. d) ground.
5. If you touch a circuit in which electricity is flowing, electricity will travel through you to the ground and give you a serious or fatal shock.

### *Episode 2 – Conductors & Insulators*

1. Bare electrical wires are dangerous because there is no insulating material protecting you from the electricity in the circuit. If you touch a bare wire, you could be shocked.
2. a) the plastic-like coating on power cords.
3. c) water.
4. The human body is a good conductor of electricity because the body is 70% water and water is an excellent conductor.
5. If you overload an outlet with too many plugs it could cause a fire.

### *Episode 3 – Outdoor Electrical Safety*

1. It is unsafe to touch the string of a kite that is caught on a power line because the electricity in the line could use the string, the kite, and you as its path to the ground, and you could get shocked.
2. Before climbing any tree, look all around the tree to make sure there are no power lines running near it.
3. It is unsafe to climb into a substation because contacting the equipment inside could shock or kill you.
4. c) 811.
5. a) 10 feet.

### *Episode 4 – Indoor Electrical Safety*

1. True.
2. Removing stuck toast from a plugged-in toaster with a metal fork is dangerous because the fork could act as a conductor for the electricity in the toaster, and you could be shocked.
3. Balancing a plugged-in blow dryer on the edge of a full bathtub is dangerous because if the dryer falls in, it will energize the water and create a major shock hazard.
4. A power cord that is under a rug could get stepped on a lot. This would damage the cord insulation and cause a shock or fire hazard.
5. c) removing stuck toast from an unplugged toaster.

# Electrical Safety World Video

## Study Sheet Answer Key

### *Episode 5 – Fallen Power Lines*

1. b) utility workers.
2. The safest way to exit a car with a power line on it is to jump as far away from the car and the power line as you can. Do not touch the car and the ground at the same time. Land with your feet together and shuffle at least 20 yards away.
3. d) if your feet remain together your legs cannot form a circuit with the electricity in the ground
4. False.
5. b) touch it.