

Slide 1

ELECTRICITY IN YOUR HOME

SESSION 2

- Volts, Ohms, Amps, & Watts
- Areas of concerns
- Upgrading/installing

Slide 2

E = Voltage (Pressure)
I = Amperage (Flow)
R = Ohms (Resistance)

$E = I \cdot R$

Slide 3

$E = I \cdot R$


VOLTAGE = CURRENT
X RESISTANCE

FLOW=PRESSURE ÷
RESISTANCE

Flow (current)
Resistance
Pressure (voltage)
GPM

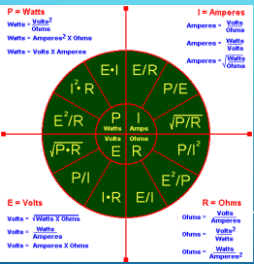
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VOLUME = PRESSURE X
FLOW
WATTS = VOLTS X AMPS



Slide 5

THE CHART



P = Watts
Watts = Volts² / Ohms
Watts = Amperes² X Ohms
Watts = Volts X Amperes

I = Amperes
Amperes = Volts / Ohms
Amperes = Watts / Ohms
Amperes = Watts / Volts

E = Volts
Volts = (Watts X Ohms)
Volts = Watts / Amperes
Volts = Amperes X Ohms

R = Ohms
Ohms = Volts / Amperes
Ohms = Volts² / Watts
Ohms = Watts / Amperes²

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Clothes Dryer	6000-9000	Oven	4000-8000
Hot Water heater	4000-6000	Central A/C	5000
Dishwasher	1000-1800	Coffee maker	750-1000
Refrigerator	750-1000	Toaster	800-1600
Hair dryer	250-1500	Blender	400-1000
Garbage disposal	400-900	TV	300-800
Vacuum cleaner	300-800	Attic fan	400
Shaver	10	Clock	2

TYPICAL POWER CONSUMPTIONS

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Appliance	Wattage rating
Coffee maker	1,000 watts
Toaster	1,500 watts
Blender	1,000 watts
TOTAL	3,500 watts

Amps = watts/voltage
 $3,500 \text{ w} / 120 \text{ V} = 29.2 \text{ amps}$

Breaker is 15 amps

POOF!

HOW TO BLOW A 15A CIRCUIT BREAKER

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Incandescent lamp	Bright start CFL	CREE std. LED
60 watt	15 watt	9 watt
820 lumens	800 lumens	800 lumens
13.7 lumens/watt	740 lumens/watt	84 lumens/watt
Life= 1.4 years	7.3 years	22.8 years

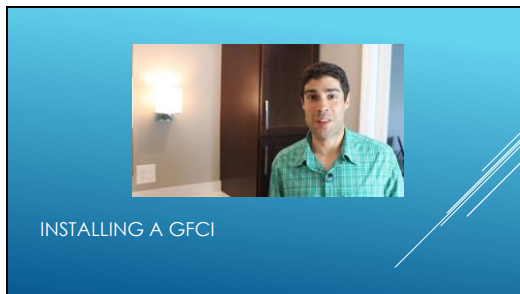
UPGRADING LIGHTS

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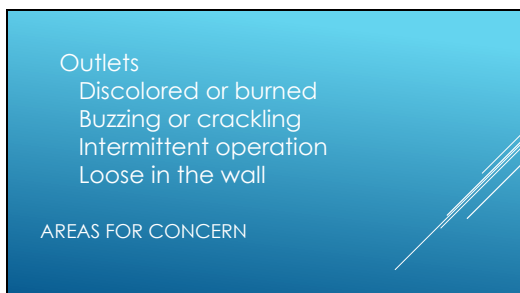
Download site:
<https://www.thespruce.com/common-electrical-codes-by-room-1152276>

WORKING WITH ELECTRICITY

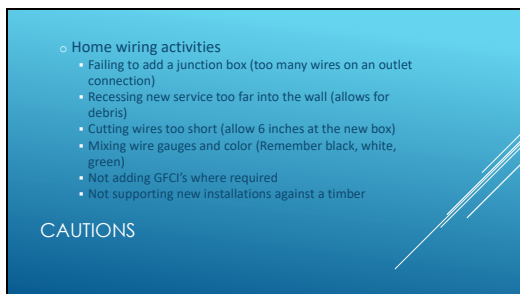
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Slide 15



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