

CONDUCTORS — *and* — INSULATORS



ESP

It's Science Time!

Sasha, Darrell, and Maria were at Maria's house. Sasha and Darrell wanted to meet Maria's new dog. They were playing with the dog on the floor.

"Now I see why you named him Volt!" said Darrell. "He has more energy than a power plant."

"Darrell, your sense of humor is shocking!" said Sasha. "I have a funny joke, Darrell. How many gorillas does it take to change a light bulb?"

"Just one, but it takes a lot of light bulbs!" said Darrell.

"Okay you two. No more bad jokes," said Maria. "But you are right, Darrell. We named him Volt because he was so full of energy."

The three friends went outside with Volt.



"I am sorry about all the energy jokes, Maria. I'm still thinking about that dream," Darrell said.

"It's okay," said Maria. "I think your jokes are funny. That was a crazy dream."

"What dream?" asked Sasha. "I don't think you told me about it."

"I had a dream that I was moving through high voltage wires. I started out at the power plant. I followed the same path as the electricity all the way back to my house," said Darrell. "There was a man in a hard hat. His name was Mr. Charge. He told me all about electricity."

"That is a crazy dream," said Sasha.

"It seemed so real. That dream helped me learn a lot about electricity," said Darrell.



Volt began to bark. He pulled at the leash Maria was holding. Volt saw a squirrel in a tree. Volt's barking scared the squirrel. It jumped onto a power line. It crossed the street.

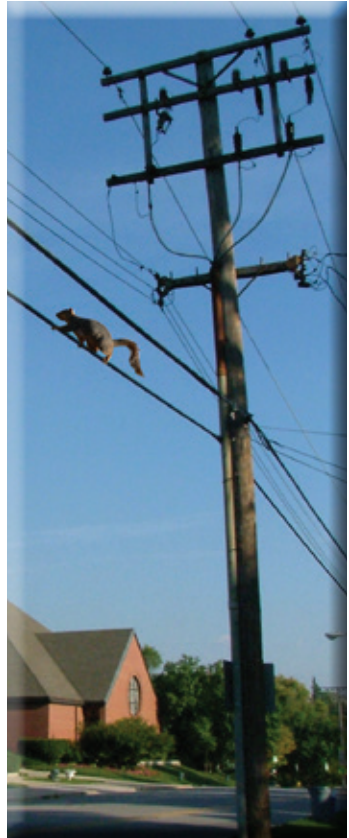
"How can squirrels safely walk on those wires up there? Don't those wires contain very powerful electricity?" asked Maria.

"Yes, Maria, they do," said Darrell. "That squirrel was lucky. That wire must be well insulated."

"What does that mean?" asked Sasha.

"It means that the wires are covered with material that electricity cannot pass through," said Maria.

"That's right," Darrell said. "Glass, plastic and rubber are all insulators. They are used to cover wire. They keep the flow of electricity from going where we don't want it to go."



"Some poles have glass bell shaped things on them," Sasha said. "Are those the insulators?"

"You are right," Maria said. "If the wires were not insulated where they are attached to the poles, the electricity might come down the pole to the sidewalk."

"That would be unsafe," Darrell said.



"I was driving with my mom in a bad storm," Sasha said. "A pole had been struck by lightning. It was lying in the road. The police closed the street. Cars had to go another way."



"That was dangerous!" Darrell said. "The road was wet from the rain. Water conducts electricity. Water and electricity together is not safe."

"What other materials are good conductors?" asked Maria.

"Most electrical wires are made from metals like copper," Darrell said. "Copper is a good conductor of electricity."

The three friends had walked around the block. They were now back at Maria's house. It was near dinnertime.

"I have to go home now," Sasha said. "My mom is making macaroni and cheese for supper tonight. Thanks for letting me play with your new puppy, Maria."

"I had a good time, too," said Darrell. "Before I go I have a question to ask you both."

"What?" asked Maria and Sasha.

"How many girls does it take to change a light bulb?" grinned Darrell.

Sasha thought of a good answer.


"None!" said Sasha. "They are smart enough to use fluorescent bulbs. They hardly ever need changing!"

Darrell just smiled. He waved to his two friends.



Electrical Circuits
Conductors and Insulators

Correlation

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