

# Energy Transformations



**ESP**

It's Science Time!

Maria and Darrell went to Sasha's house. They were invited for dinner. Sasha's mom was making her famous macaroni and cheese. When they arrived at the house, they saw Mr. Brown, Sasha's dad, lying on the kitchen floor with his head under the sink.

"Uh-oh, Mr. Brown!" exclaimed Maria. "What is wrong? Is the garbage disposal not working?"

"You hit the nail right on the head, Maria," answered Mr. Brown. "I think I see the problem. But I need more light under here so I can see a little better."

"Where do you keep your flashlight?" asked Maria. "I'll go get it."

"That is really nice of you, Maria. It should be downstairs in the storeroom. It is next to my toolbox," said Mr. Brown. "I think Sasha is downstairs watching television with her mother. Go on down and let her know you are here. Then I could use your help."

"I'll be back in a minute," said Maria.



Darrell and Maria went downstairs and found Sasha and her mom watching television together.

"Hi Sasha and Mrs. Brown," said Maria. "That macaroni and cheese sure smells good. I wasn't hungry until I got here. Now I am starving!"

"Me too," said Darrell.

"It should be ready in about thirty minutes," said Mrs. Brown. "Come sit down and watch television with us."

"I'll sit down with you, but Maria is going to go back upstairs to help Mr. Brown," said Darrell.

"I told him I would hold the flashlight for him," said Maria.

"That is very nice of you to help," said Mrs. Brown. "The flashlight is right here. I just changed the batteries."



Maria took the flashlight from Mrs. Brown. She went back upstairs to the kitchen.

"Here is the flashlight, Mr. Brown. Do you want me to hold it for you?" asked Maria.

"Yes," answered Mr. Brown. "I think I know what is wrong. I just need to tighten this final screw."

As Maria held the flashlight, Mr. Brown made a few last minute repairs to the garbage disposal. He got up from under the sink and turned on the water. Then he flipped the switch. The garbage disposal whirled into action.

"Well, I guess that did the trick, Maria," said Mr. Brown. "Thanks for your help."



Just then the oven timer buzzed. The macaroni and cheese was done.

"It sounds like dinner is ready, Maria," said Mr. Brown. "Would you please let Mrs. Brown know I am taking her dish out of the oven?"

"Sure thing, Mr. Brown," said Maria. "I have been looking forward to this all day!"

Everyone took their seats at the kitchen table. Mrs. Brown's macaroni and cheese was hot and crispy brown on the top.



"Mom, you really are the best cook in the world," said Sasha.

"Thank you so much for inviting Maria and me for dinner," said Darrell.

"You are welcome, Darrell," said Mr. Brown. "And Maria, thank you for helping me fix the garbage disposal."

"What was wrong with it?" asked Mrs. Brown.

"I needed to tighten up a few things and push the reset button," said Mr. Brown. "Once I did that, it worked great."

"We have been learning about changing energy forms in science class," said Sasha. "The garbage disposal is a great example."

"You are right, Sasha," said Mr. Brown. "The garbage disposal is an example of electrical energy changing to mechanical energy. What other energy transformations can you kids think of?"

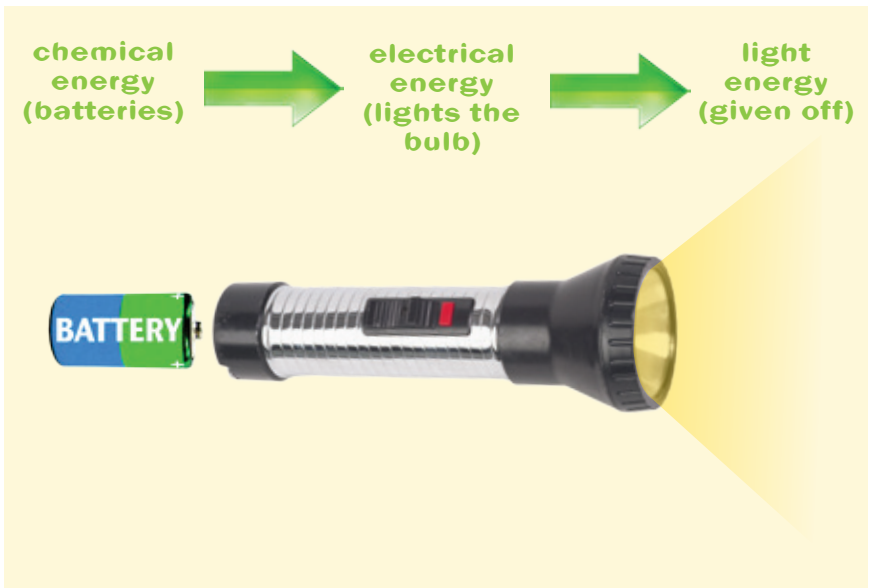
electrical energy



mechanical energy  
(garbage disposal)



“Well, Mrs. Brown put new batteries in the flashlight,” said Maria. “That is an example of an energy change. The chemical energy in the batteries changes to electrical energy. The electrical energy lights the light bulb in the flashlight. The bulb in the flashlight gives off light energy.”



"I can think of another change," said Darrell. "Mrs. Brown cooked this great dinner in the oven. The oven used the chemical energy from the natural gas to make heat energy to cook the food."

chemical energy  
(natural gas)

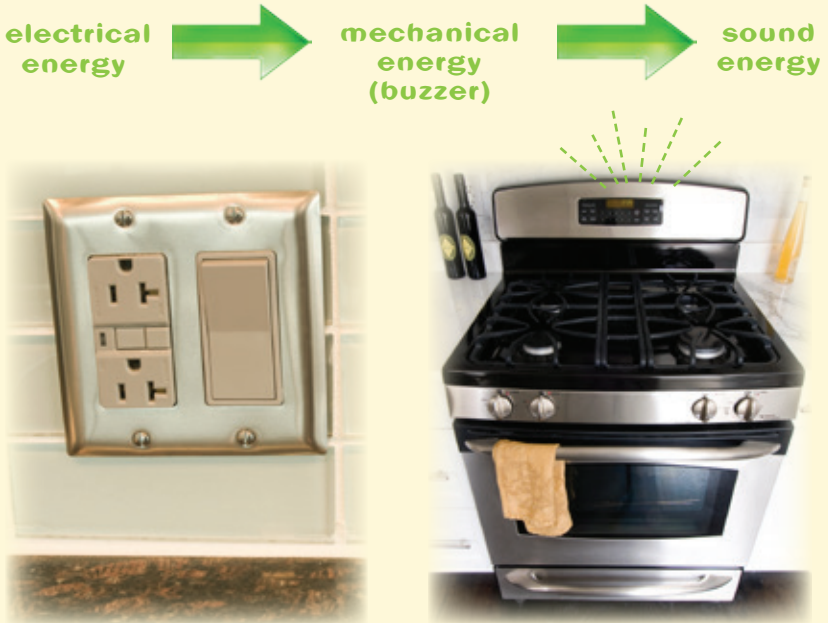


heat energy  
(oven)





“What about when the buzzer on the oven went off?” added Sasha. “Electrical energy was changed to mechanical energy, then to sound energy.”



"I can think of the tastiest energy change of all!" exclaimed Darrell. "It is the macaroni and cheese! Our bodies use the chemical energy in food. It keeps us warm and gives us the energy to do all kinds of things like walking and growing. It even helps us do the dishes. Speaking of doing dishes, do you need some help, Mrs. Brown?"

**chemical  
energy  
(in the food)**



**mechanical energy  
(movement of the body)**



"We will help too," said Maria and Sasha. "We would not want to waste any of that energy!"

"Sasha, your friends can visit our house anytime," said Mrs. Brown.


"I second that opinion," said Mr. Brown.

The three friends smiled at each other as they cleared the dishes from the table.



**Electrical Circuits**  
**Energy Transformations**

**Correlation**

<b>Fountas &amp; Pinnell</b>	<b>Q</b>	
<b>DRA</b>	<b>40</b>	
<b>Estimated Lexile Measure</b>	<b>700</b>	

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