



Transformations and Transfers

Engage

Materials: snack provided by teacher

What To Do:

1. What type of energy is in the snack provided by your teacher?

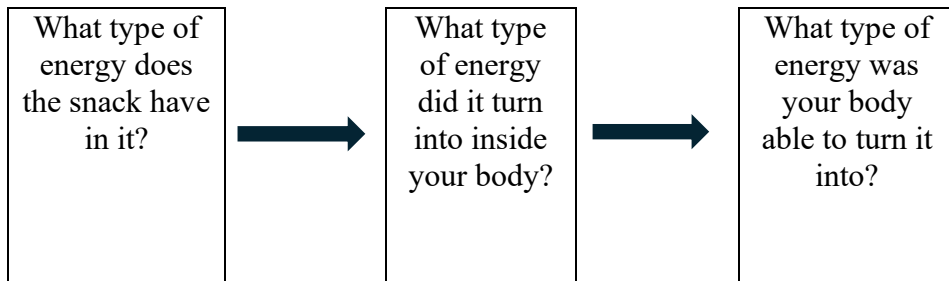
2. Work with a partner or the people at your table to try to predict what types of energy in the snack provided will turn into when it gets into your body.

3. Begin to eat the snack. What do you have to do to eat it?

4. What type of energy is this? _____
5. What happens to the snack after you have swallowed it?

6. What type of energy will be produced when you are digesting the snack? _____
7. What will your body be able to do with the energy from the snack?

8. What type of energy allows you to move around? _____
9. Write the changes in energy from the snack in the boxes below.

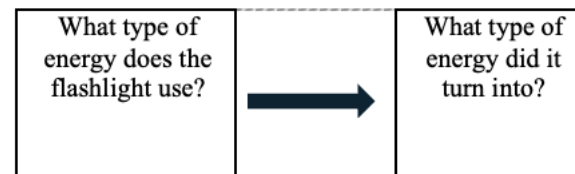


Explore

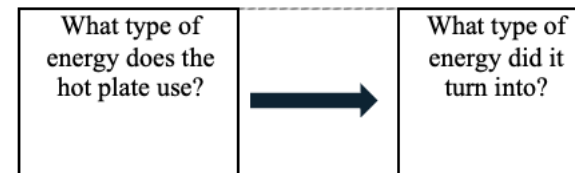
Materials: flashlight, hot plate, beaker of water, dancing toy, picture of plant under glow light or in a sunny window, glow stick, CD player, radio or computer

What To Do:

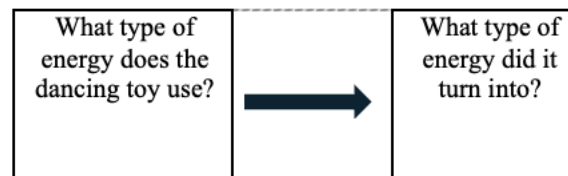
1. Your teacher will show you a flashlight and the batteries inside.
2. Your teacher will turn the flashlight on.
3. Fill in the chart below.



4. Your teacher will plug in and turn on the hot plate.
5. There is a beaker of water on the hot plate.
6. Fill in the chart below.



7. Your teacher will give each table a dancing toy.
8. Place it on the table and observe.
9. Cover up the panel and observe what happens.
10. Fill in the chart below.





11. Your teacher will show you a plant under a grow lamp or in a sunny window.
12. Fill in the chart below.

What type of energy does the plant use to grow?	→	What type of energy did it turn into?
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13. Your teacher will show you a glow stick.
14. Then your teacher will turn off the classroom lights and break the glow stick.
15. Fill in the chart below.

What type of energy does the glow stick have inside?	→	What type of energy did it turn into?
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16. Your teacher will plug in a computer, radio or CD player.
17. Then your teacher will play some music.
18. Fill in the chart below.

What type of energy does the computer, radio, or CD player use?	→	What type of energy did it turn into?
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19. On the right side you will see a picture of a power plant.
20. Fill in the chart below.

What type of energy does the power plant use to run?	→	What type of energy did it turn into?
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Don't glue in until your teacher tells you to.

Explain



Law of Conservation of Energy

ENERGY CHANGES

Transformation of Energy

Transfer of Energy



Elaborate

What To Do:

- 1. Watch the video “Energy Transfers and Transformations” at <https://www.youtube.com/watch?v=gEzvfE8xxNI>
- 2. Read the following scenarios and determine if they are energy transfers or energy transformations. Circle the correct answer.
- 3. Write your thinking on the line below your answer.

Scenarios

1. A toaster is plugged in at the wall outlet and bread is placed in the toaster. The electricity travels from the transmission lines outside to the house, out the outlet and down the wire to the toaster.

Energy transfer Energy transformation

The elements in the toaster turn bright red.

Energy transfer Energy transformation

2. The Sun’s rays reach the Earth and fall on the leaves of a crop of corn plants.

Energy transfer Energy transformation

The corn plants use the Sun’s energy to grow and produce the ears of corn.

Energy transfer Energy transformation

The mouse that lives in the field of corn eats some seeds from the corn and runs up and down the rows of the field.

Energy transfer Energy transformation

The snake that lives in the corn field eats the mouse and is in turn eaten by a hawk.

Energy transfer Energy transformation

3. The rollercoaster in an amusement park uses an electric motor to pull the car up the first hill.

Energy transfer Energy transformation

The rollercoaster cars reach the top of the hill and begin the trip down the hill.

Energy transfer Energy transformation

4. A rose bush beside a building is in shadow until 2:00pm. When the sun hits the leaves of the rose bush they begin the process of photosynthesis.

Energy transfer Energy transformation

During the process of photosynthesis, the leaves of the rose bush make food in the form of glucose so the bush can grow.

Energy transfer Energy transformation



Energy Changes

X R P J V S W L E D M B B N M A K I U Y
C E H C X U P J B W W B K E Y H R E G X
J T O U H G W M Y F X D H T W X T R G M
B S T F F E W O X H V P P G O D E H T M
W A O M P N M K A F I W N T K N O V Q E
G O S R B M G I D N K U X R E M Q O F C
V C Y A B X O N C V K E K F Z W X D F H
Z R N T I B Y O G A V S O L H G A M P A
A E T Y X T H E I P L N Q E L C O E T N
R L H G T R A N S F O R M A T I O N M I
L L E Z T O B U E I H I T Q Q P Z W I C
T O S B D A D D T O C L T C O V L K L A
T R I R F N N A U X D J J T Q H R J V L
B R S T U K V H M A G N E T I C C T T F
S Q A O L R M M M S K A Z D K F D C C A
W Q S N E Z I B L V P I D A J Q S U J X
R T C S S C A B T T B I K Z W N D R M H
N F N J J F W J T P D N L A M T G X O F
Q O N C L L E F B U L T Z C U T C X F O
C H J T I U C R I C L A C I R T C E L E

Conservation of Energy
Transformation
Transfer
Photosynthesis
Food Web
Electrical Circuit

Sound
Magnetic
Chemical
Rollercoaster
Mechanical

Evaluate



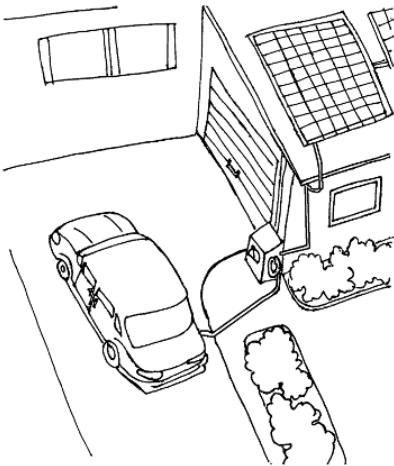
Name _____

period _____

EXIT TICKET

Transformation and Transfers

Determine if each of the statements below is an energy transformation or an energy transfer.



1. The rays of the Sun fall on the solar panel and make electricity.

2. The electricity from the solar panel goes into the storage battery.

3. The energy from the storage battery goes into the car’s battery.

4. The battery starts the car and the engine gets hot.

5. The car is put in gear and backs out of the driveway.
