2020

9th–10th Grade: English Level 2, Learning Packet #5 • Theme: Full of Energy

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ICMEE
cehs.unl.edu/icmee

9th – 10th grade • English Level 2

LEARNING PACKET#5

Theme: Full of Energy

University of Nebraska Lincoln

International Consortium for Multilingual Excellence in Education

August 15th, 2020

Dear District/School Personnel:

We are a consortium of researchers, teacher educators, and teachers who believe in and strive to foster multilingual excellence. Therefore, during this time of crisis and difficulty, we are eager to put our expertise and passions to use to try to be of assistance. We initially designed 21 immediate-response packets for K-5, as soon as the pandemic forced schools to shut down. We then applied for and received a grant that has allowed us to create more than 100 full activity packets, ranging from Levels 1-3 of English proficiency, and grades K-12.

The breakdown of packets is as follows:

Level 1 – Entry into English

Emphasis on developmentally appropriate interesting/challenging tasks

- K-2
- 3-5
- 6-8 with a literacy background
- 9-12 with a literacy background
- 6-8 without literacy background
- 9-12 without literacy background

Level 2 – Building Background

- K-1
- 2-3
- 4-5
- 6 -8
- 9-10
- 11-12

Level 3 – Interdisciplinary Inquiry

- K-1
- 2-3
- 4-5
- 6
- 7-8
- 9-10
- 11-12

With this letter, is an "Activity Packet" that can be used freely with any group of students or families as you see fit. Each packet includes interdisciplinary activities designed to be completed within a week. Teachers from around the country have designed, developed, and created these packets, each focusing on the topics of their choice. Because learning academic content can happen within any thematic context, these packets are designed to be diverse, dynamic, and engaging for students of all backgrounds. The topics covered in these units range from cultures, animals, natural disasters, inventions, and much more. You will see each teacher's personality reflected strongly in these packets, and our hope is that this will capture students in a way similar to that of a rich and immersive classroom environment.

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Our hope is that these materials can provide some meaningful learning supports to students and families who may not have access to online learning opportunities. However, we can also imagine a variety of ways that these packets can provide learning opportunities outside of our original intent and purpose. Please use these activity packets in any way you see fit for your students and families. We will be so pleased to learn of how they might be useful, particularly for your multilingual students and their families. We think it might be particularly helpful for you to print packets and mail them to families, but we also see opportunities to work with local agencies, leave printed-out packets for pick-ups at schools, etc.

We designed these activities based around several big ideas:

- Productive play and inquiry
- Grade level and English Language Development standards/curriculum
- Fostering multilingual language development
- Providing opportunity for all four language domains (reading, writing, speaking and listening)

These packets are self-contained. Everything a child will need to be successful with the activities is provided in the packet. Students will only need a writing utensil. Additional tools like crayons or scissors are optional.

We have also included a letter to parents. We hope this will help parents understand what students will be doing with the packet and that we encourage the use of all language resources available to the student. The packets are in English for the students, but the students can write, talk and engage with family members regarding the packet activities in any language they would like. We have translated the parent letter into Spanish, and we encourage districts to translate the letter into any other language that would be helpful for your local families.

Designing Activity Packets is a new initiative for us, though we have been designing professional learning opportunities (eWorkshops) for teachers of multilingual learners since 2011. Like our Activity Packets, those learning opportunities for teachers are free. To learn more about them and us, please visit our website at: https://cehs.unl.edu/icmee/

We are eager to be a helpful, collaborative partner in all learning needs related to multilingual students and their teachers, so please, do not hesitate to reach out to us with questions, ideas, concerns, feedback, etc. We are available at icmee@unl.edu.

Sincerely,

Kara Viesca

Kara Mitchell Viesca, PhD
Associate Professor of Language Education
University of Nebraska Lincoln
Teaching, Learning and Teacher Education
PI: International Consortium for Multilingual Excellence in Education

This packet was designed and created by **Morgan Spanel**
in collaboration with Aaron Johnson and Alexa Yunes.

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College of Education and Human Sciences
Teaching, Learning and Teacher Education

The Standards that Informed the Development of this Packet are:

Common Core Math:

- HSA-SSE.A.1
- HSA-REI.B.3
- HSF.LE.A.3

Common Core Social Studies:

- RH.9-10.3
- RH.9-10.6

Common Core English Language Arts:

- CCW.9-10.1
- CCW.9-10.7
- CCW.9-10.9
- CCRI.9-10.9

Common Core Science & Technical Subjects:

- RST.9-10.7
- WHST.9-10.9

Art

- Anchor Standard 1
- Anchor Standard 4
- Anchor Standard 6

Physical Education

- National Standard 1
- National Standard 5

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9th – 10th grade • English Level 2

LEARNING PACKET#5

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University of Nebraska Lincoln

International Consortium for Multilingual Excellence in Education

August 15th, 2020

Dear Families:

During the COVID-19 pandemic, it became necessary for students to learn at home. Many students have limited access to technology, others struggle with online learning, and some simply want more to do while they are at home. With these things in mind, we have created an extensive resource of learning materials that we hope will be helpful for your children to engage with. These Activity Packets were designed with your students in mind and are aligned with each of their grade level content. Each activity in the packets will help students continue with their schooling as well as continue to grow their multilingualism. We encourage you to talk to your student about what they are doing and let your child ask you about the topics they are learning about. The packet is in English, but we encourage you and your children to speak and think together in any language you would like to. We strongly encourage you to use the language you feel most comfortable using with your student. Supporting their learning in all the languages they know is helpful—even for developing their English! So, please encourage your student to do the work in the packet in any language they would like.

We know that families are dealing with a lot of stress and uncertainty right now, so we encourage you to play the role you would like to play with your student and their Activity Packet based on what works best for you. We recommend reading the information about the packet and activities and then discussing with your student how the packet works and how they can work through it. We believe that with that introduction, your student can do a lot, if not all, of the work themselves. However, if you are available to work more closely with your student (or for a sibling or other family member to do so), we encourage that as well. Please know, this is not intended to be something that adds stress and work to your family during this demanding time. We hope that this is a helpful resource so your student can continue growing academically while in unusual situations.

We also hope you will find these packets interesting and fun. We have integrated activities from all of the grade level content standards: English Language Arts, Mathematics, Social Studies, Science, Physical Education and Art. We have also developed different packets for the different levels of English proficiency, so your child should feel challenged but also capable of largely understanding the content in front of them.

6th-12th grade students are encouraged to talk about their learning as much as possible, even if it is not to one person in particular. Some packets will include activities where students can "use a cell phone" to record voice messages and post on social media, which we hope might be ways in which they can be encouraged to speak in English or in any language they prefer.

In these packets, we have also included the following activities:

- Dictionary. Each day we hope that your student will engage with words they find interesting and want to keep track of. We encourage students to use the dictionary activities to keep track of words they learn and find interesting. We also encourage students to use any language they would like as well as pictures to help them remember what the words mean.

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- Journal. Students should be encouraged to write in any language (or combination of languages) that they feel most inclined to. They can also use pictures as appropriate. We hope these journal spaces will also be points of conversation for your child with someone in their home.

- Packet: "Full of Energy!" In this packet, students will be learning about different types of energy. They will learn about energy, the history of cars, as well as renewable and nonrenewable energy. This packet includes physical activities as well as opportunities for your student to share their artistic abilities.

We hope that these activities will enhance your child's learning while we work through these very unusual circumstances. We also hope that they will give your child opportunities for productive play. If you have any questions or concerns about these packets, feel free to reach out to our project at icmee@unl.edu or by calling the Teaching, Learning and Teacher Education department at 402-472-2231.

Sincerely,

Kara Viesca

Kara Mitchell Viesca, PhD
Associate Professor of Language Education
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Teaching, Learning and Teacher Education
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Answer Keys

Activity 2:

1. Ex. I was outside playing and **my mom yelled my name** to come home. **Sound Energy**
2. My phone died so **I plugged it into the outlet** in the wall. **Electrical Energy**
3. My friend's car **ran out of gas so it stopped working. Chemical Energy**
4. During the thunderstorm yesterday, the thunder **made our windows shake. Sound Energy**
5. I like the movies *Brave* and *Robin Hood* because they use **a bow to shoot arrows. Elastic Energy**
6. My sister was riding her bike yesterday and **fell off** and scraped her knee. **Gravitational Energy**

Activity 5:

D. -> E. **Chemical Energy**

H. -> I. **Gravitational Energy**

Activity 7:

History of Cars Reading: Kinetic or chemical energy; kinetic or heat energy; kinetic or chemical; kinetic or electrical

Activity 8:

1. Jose has 1 (one) hour to get to work. His office is 45 miles away. How fast does he need to drive to get to work on time? **45 miles per hour**
2. If Bareshna drives for 4 hours at 30 miles per hour, how many miles will she drive? **120 miles**
3. Tee Reh is riding a train that is going 95 miles per hour. He is travelling to Chicago which is 300 miles away. How long will the train ride be? **3.16 hours**
4. Today is Susana's first day driving. She is nervous so is only driving 35 miles per hour. It took her 90 minutes to drive home. How far away is her house? **23.3 miles**
5. My best friend Mohammed moved 30 miles away. If I ride my bike 5 miles per hour, how long will it take me to get to his new house? **6 hours**
6. Dante and Juan live in the same apartment building. They live 7 miles from school. How many minutes faster is Dante if he rides his bike at 4 miles per hour and Juan rides his skateboard at 2 miles per hour? **Dante will be 105 minutes faster. It will take Dante 1 hour and 45 minutes to get to school and Juan 3 hours to get to school.**

Activity 10 and 11:

Quote from the text	Type of energy
Ex. "he fell down the stairs"	Gravitational Energy
"made himself a bowl of cereal and ate an apple for breakfast"	Chemical Energy
"plug in his phone"	Electrical Energy
"power outage at their house"	Electrical Energy
"warm sitting in the sun"	Heat Energy
"They yelled in excitement"	Sound Energy
"play with Raul's bow and arrow"	Elastic Energy

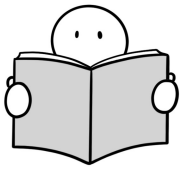
Share your learning!

Share a picture of any of your work by using **#MultilingualProud** on social media.

We'd love to see what you've done with this packet!

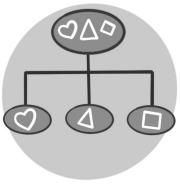
Instructions Key

- Share with someone else
- Comparte con alguien más
- مشاركتها مع شخص آخر
- La wadaag qof
- Chia sẻ với ai đó



- Read
- Lee
- اقرأ
- Akhriso
- Đọc

- Write
- Escribe
- اكتب
- Qor
- Viết

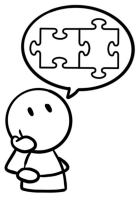


- Sort
- Ordena
- رتب
- Kala sooc
- lựa chọn

- Move your body
- Mueve tu cuerpo
- حرك جسمك
- Dhaqdhaqaaqa jirkaaga
- Di chuyển cơ thể của bạn

- Cut
- Corta
- قص الورقة
- Waraaqda jar
- Cắt giấy

- Read out loud
- Lee en voz alta
- قراءة بصوت عال
- Kor u aqri
- Đọc to



- Make a connection
- Hacer una conexión
- إجراء اتصال
- Xiriir samee
- Tạo kết nối

- Count
- Cuenta
- العد
- Tiri
- đếm

- Draw
- Dibuja
- رسم
- Sawir
- Vẽ tranh

- Find
- Encuentra
- وجد
- Soo hel
- Tìm thấy

- Color
- Colorea
- لون
- Midab gudaha
- làm cho hoa mỹ

- Share with your Buddy
- Comparte con tu Buddy
- شارك مع صديقك
- La wadaag asxaabtaada
- Chia sẻ với bạn bè của bạn

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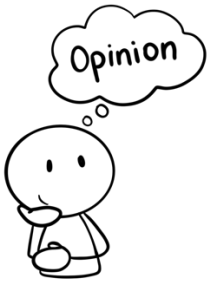
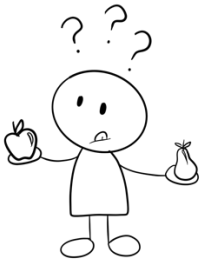
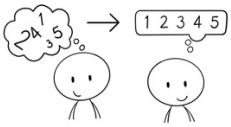
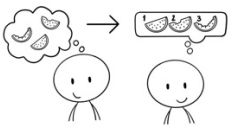
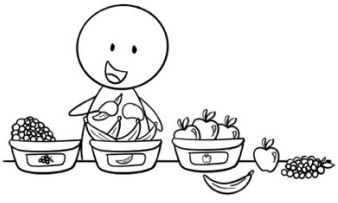
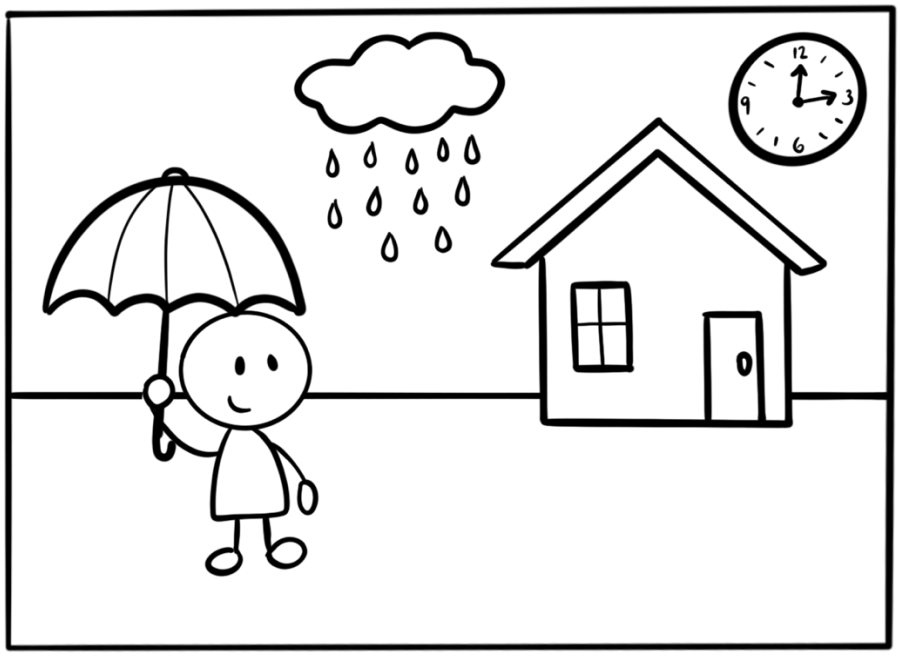
Thinking Skills Glossary

Word	Definition	Picture
Fact 事实 Hecho	something we know, without question 我们知道的毫无疑问 Algo que podemos comprobar	
Opinion 意见 Opinión	something we think or believe 我们认为或相信的事情 Algo que pensamos	
Compare 相比 Comparar	think about how two or more things are the same or different 考虑一下两个或多个事物是相同还是不同 Pensar en qué se parecen y en qué son diferentes dos o más cosas	
Sequence 序列 Secuencia	to put things in the right order from first to last 从头到尾正确地安排事情 Poner las cosas en orden , del primero al último	 
Classify Sort Categorize 分类 Clasificar Organizar	to put things into groups by how they are the same 通过相同的方式将事物分组 Agrupar cosas por cómo se parecen	

Question Words



Who?

When?

Where?

What?

Why?

iPhone Instruction Icons

Write a text message
写短信
Escribe un mensaje

Tweet: write one sentence
推特：写一句话
Tweet: escribe una oración

Post on Facebook: write a few sentences
在Facebook上发布：写几句话
Publica en Facebook: escribe algunas oraciones

Post on Instagram: write a sentence and draw a picture
在Instagram上发布：写一个句子并画一幅画
Publica en Instagram: escribe una oración y dibuja

Write an email: write a paragraph
写一封电子邮件：写一个段落
Escribe un correo electrónico: escribe un párrafo

Record a voice message
录制语音留言
Graba un mensaje de voz

Make a phone call
打个电话
Haz una llamada

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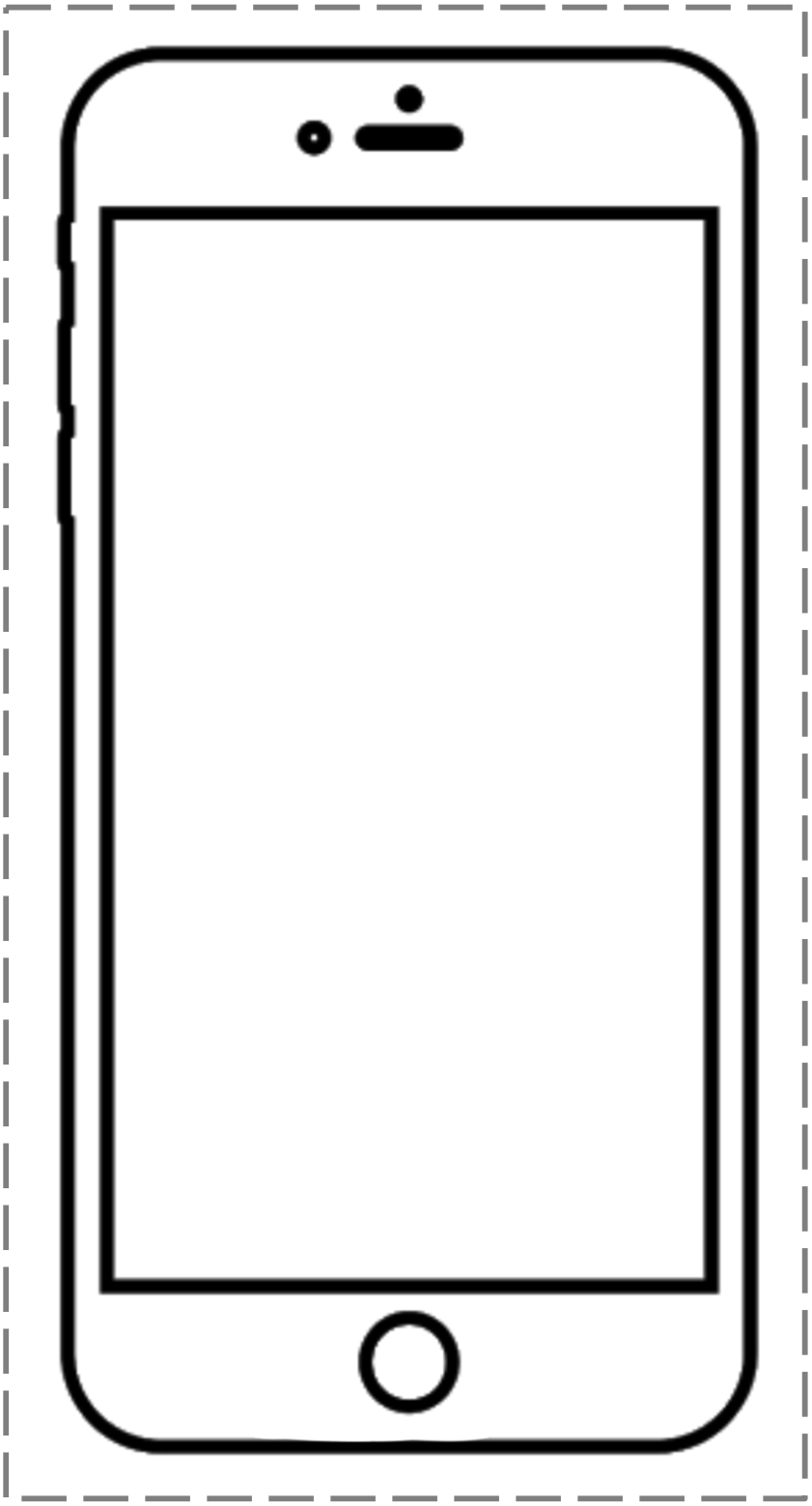


ICMEE

Day 1

Full of Energy!

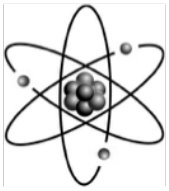
What is Energy?

Have you heard people talking about they have a lot of energy? Or talking about they are trying to conserve energy? Energy is a commonly used word. We use it to describe ourselves, our houses, and even our cars. At the most basic sense all of these types of energy are the same.

Energy is the ability to do work or to do something. Energy cannot be created or destroyed. There are two types of energy: kinetic and potential. Kinetic energy is energy that is moving. Potential energy is stored energy. Potential energy transforms into kinetic energy. This transformation allows the work to be done.

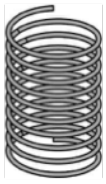
As the kinetic energy is being used, it can be seen in many different forms. Read below about the different forms of energy.

Chemical Energy – This type of energy is stored in atoms and molecules. Some examples are: food, gas, and propane.



Heat (Thermal) Energy – This type of energy is created when the atoms and molecules move faster or slower. For example, when the atoms move faster, the temperature is warmer. Rub your hands together quickly, they are going to warm up!

Elastic Energy – This type of energy is potential energy or stored energy in an elastic object. For example, a rubber band or a spring.

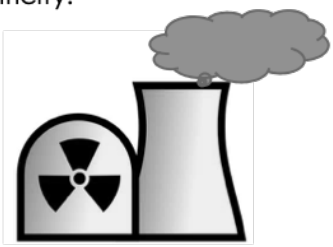


Electrical Energy – This type of energy is the movement of electrons. Electrons are smaller than atoms or molecules. Some examples of electrical energy are lightning and the electricity that runs through the wires in your house.

Gravitational Energy – This type of energy is a type of potential energy or stored energy. It is the energy that pulls something to the ground. For example, when you drop your phone, gravitational energy is pulling it to the ground.

Light Energy – This type of energy is similar to heat energy. As the atoms and molecules move faster and heat up, they also release light waves. Many of these light waves can be seen. For example, a light bulb gives off light but also gives off heat.

Nuclear Energy – This type of energy is very rare and is only found at nuclear power plants. Scientists combine and break apart atoms and molecules to release their stored energy. For example, nuclear power plants use Uranium to create electricity.



Sound Energy - This type of energy is a type of kinetic energy or moving energy. Sound energy is released as an object moves. For example, if you put your hand over a speaker, you can feel the vibrations of the sound as the music plays.

Look around your house. Choose three different types of energy and find an example in your house.

Type of Energy	Example in my house
Ex. Chemical Energy	When I eat breakfast, I have energy for the day.

Full of Energy!

Identifying Types of Energy

Read through the following examples of energy. Identify the type of energy that is being described.

1. Ex. I was outside playing and **my mom yelled my name** to come home. Sound Energy
2. My phone died so **I plugged it into the outlet** in the wall. _____
3. My friend's car **ran out of gas so it stopped working.** _____
4. During the thunderstorm yesterday, the thunder **made our windows shake.** _____
5. I like the movies *Brave* and *Robin Hood* because they use **a bow to shoot arrows.** _____
6. My sister was riding her bike yesterday and **fell off** and scraped her knee. _____

Full of Energy!

Word Search

Types of Energy

G I C O K F Z T X Z E F K X I

J R O I H E A T W E L T Z E V

K K A D T N V A S V E E I X V

L D C V Z S D R V U C A K P C

K L J K I D A D W O T O L U K

M R A B N T T L C L R R S G T

H F R U V D A H E M I Q W Q W

M X O C U A E T N V C X U D L

B S L W G M Y J I T A A Q M Y

C S N I I R H K I O L D O S C

A P U C R A E L C U N R Z T A

V Q A Y O E B T F A I A Y H D

H L R O M V R S P T D X L G R

B B U D O D H W Z D T I K I W

P V Y G Y P L O S K W B X L W

CHEMICAL
GRAVITATIONAL
NUCLEAR

ELASTIC
HEAT
SOUND

ELECTRICAL
LIGHT

Day 2

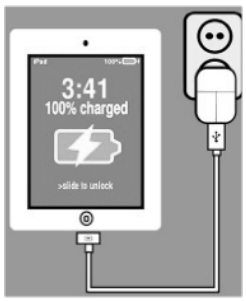
Full of Energy!

Transfer versus Transform

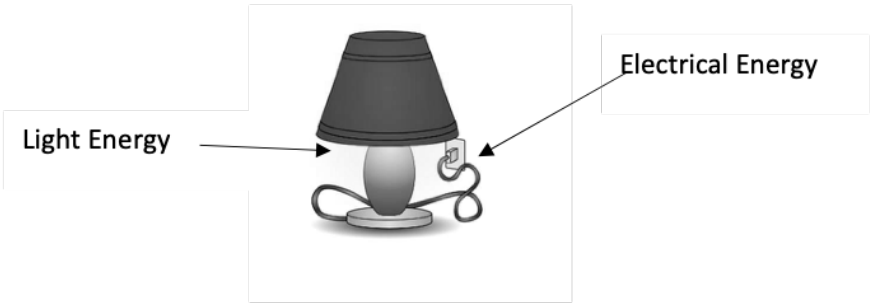
You learned yesterday that energy cannot be created or destroyed. This means that energy is recycled and reused. It may seem like energy is being destroyed when we use it. But, it is not. It is either being **transferred** or **transformed.**

Energy can be **transferred** or moved from one thing to the next. This happens when the same type of energy is moved from one thing to another. For example, when you knock over one domino, the gravitational energy will pass from one to the next. This knocks over all of the dominoes.

Another example of energy **transfer** is when you plug something into the outlet. The cord **transfers** the electrical energy from the wall outlet to the thing you plugged in.



Energy can also be **transformed** or changed from one type of energy to another. This happens when one type of energy is changed into a different type of energy. For example, when you turn on a light in your house, electrical energy is turned into light energy and also heat energy.

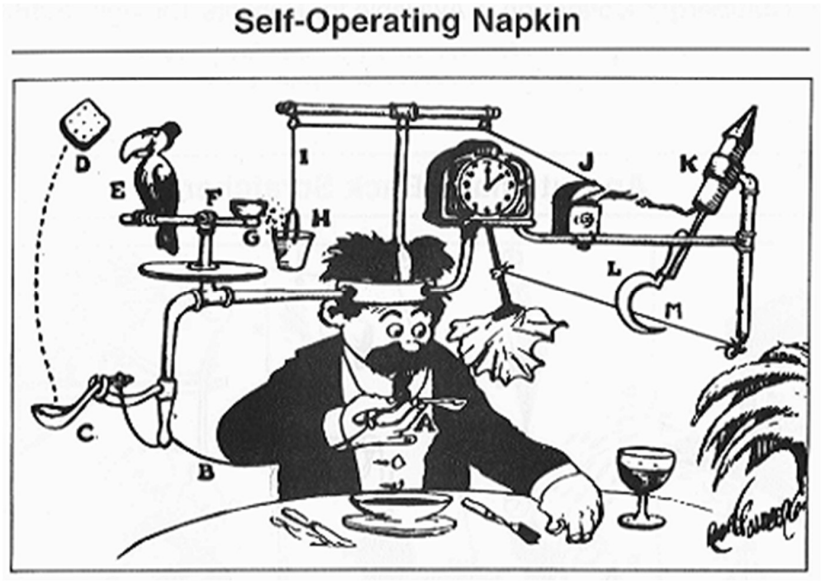


Full of Energy!

Energy Transformation

Energy transformation is the most common type of energy that we can see! A man named Rube Goldberg enjoyed designing complicated machines to do easy things! His machines are known as a Rube Goldberg Machine. These machines demonstrate energy transfer. But, more importantly, they demonstrate energy transformation!

Look at the picture below. Someone designed a self-operating napkin! It cleans the man's face while he eats! Let's see if we can figure out what type of energy is being transformed at each step.



A. -> B. Ex.The man is putting the spoon to his mouth. This **transfers** kinetic energy to the string (B) _____.

D. -> E. _____

_____

H. -> I. _____

_____

Your Choice: _____

Full of Energy!

Draw your own Rube Goldberg Machine

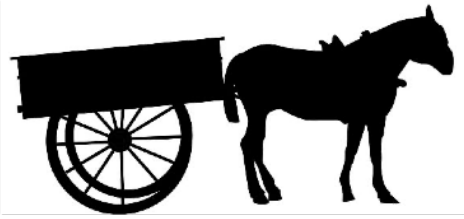
Use the space below to draw your own Rube Goldberg Machine. How can you use energy transfer and energy transformation to show how energy moves from one thing to another?

Day 3

Full of Energy!

History of Cars

A car is a machine that depends on both the transfer and transformation of energy. As car designers and mechanics have learned more about how to effectively and efficiently use energy, cars have become more advanced. Read about the history of cars. Think about how the understanding of energy has made cars better!



Some of the first types of transportation used animals. Even though there was not a way to turn this transportation on, it still used energy.

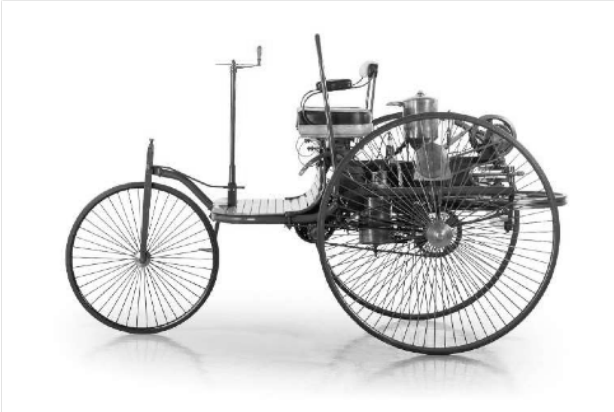
What types of energy did this form of transportation use? _____

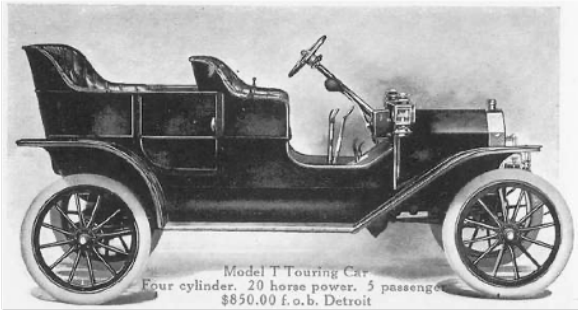
_____

In 1886, the first motorized car was invented. It was called the Benz Patent-Motorwagon. It depended on heating water to create steam. The steam helped turn the wheels in the engine.

What types of energy did this form of transportation use? _____

_____





From 1905 to 1920 gas powered cars became more popular. These cars would use gasoline to power their engine. There were three main car manufacturers: Ford, General Motors, and Chrysler. This technology was also used during World War II.

What types of energy did this form of transportation use? _____

_____

Today, there are more than 30 different car companies in the United States. Each year, there are more than 17 million cars mad and sold. One of the newest inventions in the car industry came from Tesla. They have invented self-driving cars that do not use gas. They are either solar powered or are electric.

What types of energy do the new Tesla cars use? _____

_____

Full of Energy!

Calculating gas mileage and speed

Please answer the following math questions about gas mileage and speed. You will need to use this formula to answer the questions:

$$speed = \frac{mi}{hr}$$

Ex. We drove to my grandparents' house this weekend. They live 125 miles away. We got there in 2 hours. How fast were we driving?

$$speed = \frac{125\ mi}{2\ hr}$$

Speed = 62.5 miles/hour

1. Jose has 1 (one) hour to get to work. His office is 45 miles away. How fast does he need to drive to get to work on time?

2. If Bareshna drives for 4 hours at 30 miles per hour, how many miles will she drive?

3. Tee Reh is riding a train that is going 95 miles per hour. He is travelling to Chicago which is 300 miles away. How long will the train ride be?

4. Today is Susana's first day driving. She is nervous so is only driving 35 miles per hour. It took her 90 minutes to drive home. How far away is her house?

5. My best friend Mohammed moved 30 miles away. If I ride my bike 5 miles per hour, how long will it take me to get to his new house?

6. Dante and Juan live in the same apartment building. They live 7 miles from school. How many minutes faster is Dante if he rides his bike at 4 miles per hour and Juan rides his skateboard at 2 miles per hour?

Full of Energy!

Design Your Own Car

Use the space below to design and color your own car. You can use inspiration from cars you have seen or be creative and design something completely unique!

Day 4

Full of Energy!

Raul's Day

Read through the story about Raul's day. As you read, underline parts of the story where a type of energy is being used. You will need these underlined parts to complete the next activity.

This morning Raul woke up early. He is excited because cousins are coming over to play. He was so excited he fell down the stairs when he was going to the kitchen. He made himself a bowl of cereal and ate an apple for breakfast.

When he was done eating breakfast, Raul sat outside to wait for his family. His cousins were late. He looked at his phone to call them but realized it wasn't charged. He went inside to plug in his phone. When it was charged, he called his cousins.

Raul's cousins were late. There was power outage at their house. Their alarm clock did not wake them up. They told Raul they would be at his house in 30 minutes. Raul decided to continue to wait outside for them. He was warm sitting in the sun.

When Raul's cousins arrived at his house, they were all excited! They yelled in excitement when they saw each other. They decided to play with Raul's bow and arrow. They practiced shooting arrows at a target all afternoon. It was a great day.

Full of Energy!

Raul's Day – Identifying Energy Types

Now that you have read about Raul's day, let's identify the types of energy that Raul used. Write the underlined sentences in the box on the left. On the right, identify what type of energy was used.

Quote from the text	**Type of energy**
Ex. "he fell down the stairs"	Gravitational Energy

Full of Energy

Measuring your energy

You are going to calculate your own walking and running speed. You will need a way to time yourself and a way to measure one mile. A city block is usually one mile around. If you do not live in the city, have an adult help you measure one mile.

1. Walk the one mile. How long did it take you? What was your speed (miles per hour)?

2. Run the one mile. How long did it take you? What was your speed (miles per hour)?

3. Have someone in your family walk or run with you! Are they faster or slower than you?

4. What do you think you can do to run faster?

Day 5

Full of Energy

Renewable vs. Nonrenewable Energy

Electrical energy has become an important part of our life. Some people may believe that we need to have electrical energy in order to live. Have you ever wondered where electricity comes from?

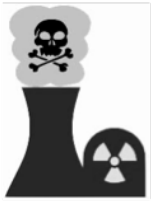
Getting electricity to your house depends on the transformation of many other types of energy. Some energy is **renewable** and can be used over and over again. Some energy is **nonrenewable** and cannot be used again.

Nonrenewable energy is the oldest form of energy that humans have been using. There are four types of **nonrenewable** energy.

Coal has been used for hundreds of years. It is a rock that is dug out of mountains. People burn coal for heat and light. In the early days, coal was also used to give trains energy to move. Coal is not used as commonly because burning it causes air pollution.

Oil is commonly used across the world. Oil is found deep in the layers of the Earth. Oil goes through a process that turns it into gasoline. Gasoline is used to power the millions of cars on Earth. The Earth will eventually run out of oil and then gasoline. This is why car manufacturers are making electric cars.

Natural gas is used in many households in the United States. Natural gas is found deep in the layers of the Earth. We use natural gas as it is. It is used to heat our homes, cook our food, and sometimes even to light houses. Natural gas is widely used because it is very inexpensive. You may have a propane (natural gas) tank attached to your BBQ grill.



Uranium is a natural element found within the Earth. It is used to create nuclear energy. Uranium is broken apart and put back together to release the energy stored in the atoms. The nuclear energy is used to power factories. If it is not used properly, uranium and nuclear energy can be very dangerous and cause death.

What do you think the benefits of using **nonrenewable** energy are?

What items in or around your house use **nonrenewable** energy?

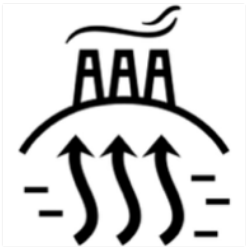
Renewable energy is becoming more and more important. It is becoming more important because we will not run out and it is often better for the environment. Only about 8% of all energy used in the United States comes from **renewable** sources. There are four main types of **renewable** energy.

Hydropower or power that comes from water is used to create electrical energy. Dams and water wheels collect the gravitational energy from water falling to create electrical energy. Hydropower is a **renewable** resource because there will always be moving water on Earth. The dams and water wheels are expensive to build and maintain but do not create any pollution.

Wind power is energy that is collected from wind. A machine called a turbine spins with the wind and collects the kinetic energy as it spins. This energy is turned into electrical energy that is sent to homes. Many of the states in the Western part of the United States have wind farms with a lot of wind turbines. Wind turbines are also expensive to build but do not create any pollution.

Solar power is energy that is collected from the sun. Solar panel cells collect the light from the sun. This energy is turned into electrical energy. There are small solar panels that you can use to charge your phone and large solar panels that power entire buildings. Some people have solar panels on their houses. Similar to the other **renewable** energies, solar panels are expensive to build but do not create any pollution.

Geothermal energy is energy that is collected from deep within the Earth. As you dig deeper to the center of the Earth, the temperature increases. This increased heat is collected in the form of hot water or steam and then turned into electrical energy. Some geothermal energy is used to naturally heat buildings. Geothermal energy is expensive to build but does not create pollution.



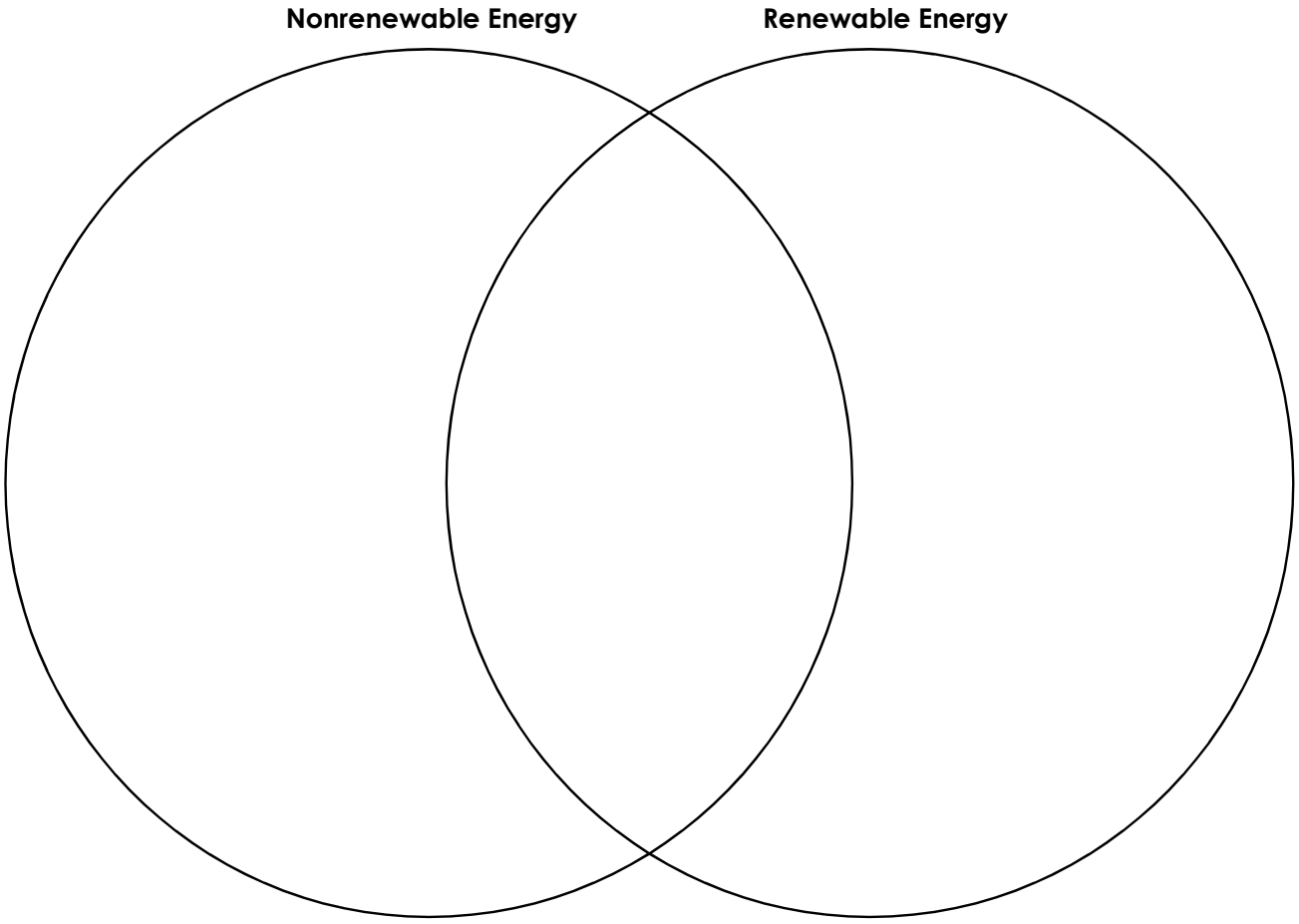
What do you think the benefits of using **renewable** energy are?

What items in or around your house use **renewable** energy?

Full of Energy!

Compare and Contrast renewable and nonrenewable energy.

Use the Venn Diagram below to compare and contrast renewable and nonrenewable energy. Then, write three compare and contrast sentences using the information in the diagram.



Write 3 sentences comparing and contrasting renewable and nonrenewable energy.

_____

_____

_____

_____

Full of Energy!

Energy is all around us

Walk through your house and through your neighborhood. What types of energy do you see? Is it renewable or nonrenewable? Complete the chart below with the discoveries you make.

Example of Energy	Type of Energy	Renewable or Nonrenewable?
Ex. Car driving	Chemical	nonrenewable

My Packet Journal

In this packet I learned _____

_____

_____

_____

_____

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Reference Sheet

LENGTH

Metric	Customary
1 kilometer = 1000 meters	1 mile = 1760 yards
1 meter = 100 centimeters	1 mile = 5280 feet
1 centimeter = 10 millimeters	1 yard = 3 feet
	1 foot = 12 inches

CAPACITY AND VOLUME

Metric	Customary
1 liter = 1000 milliliters	1 gallon = 4 quarts
	1 gallon = 128 ounces
	1 quart = 2 pints
	1 pint = 2 cups
	1 cup = 8 ounces

MASS AND WEIGHT

Metric	Customary
1 kilogram = 1000 grams	1 ton = 2000 pounds
1 gram = 1000 milligrams	1 pound = 16 ounces

TIME

1 year = 365 days
1 year = 12 months
1 year = 52 weeks
1 week = 7 days
1 day = 24 hours
1 hour = 60 minutes
1 minute = 60 seconds