⚡ Lesson Plan: All About Energy

Grade Level: 3
Subject: Physical Science
Duration: 45–60 min
NGSS 3-PS2-3: Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

🎯 Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the different forms of energy, including kinetic, potential, chemical, thermal, light, sound, and electrical.
- **Distinguish** between potential energy (stored) and kinetic energy (motion).

- **Sound Energy:** Energy produced by vibrations that travel through a medium like air or water.

💼 Materials Needed

- Printed copies of the Study Guide (https://newpathworksheets.com/api/guide/study-guide-science-grade-3-energy.pdf)

- Vocabulary Worksheet Set 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-all-about-energy-2062-1.pdf)
- Vocabulary Worksheet Set 2 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-all-about-energy-2062-2.pdf)
- Practice Worksheet: Light and Motion (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-all-about-energy-2062-0.pdf)
- Assessment Worksheet: Energy Quiz (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-all-about-energy-2062-1.pdf)

Lesson Procedure

Step 1: Introduction (10 minutes)

and 'Kinetic energy' to their definitions. (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-all-about-energy-2062-2.pdf)

- Review the answers as a class, ensuring students understand the difference between living/nonliving things in the context of energy flow.

Step 4: Independent Practice (15 minutes)

- Have students complete the Practice Worksheet focusing on Light and Kinetic Energy questions. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-all-about-energy-2062-0.pdf)
- Students will identify examples of reflection, absorption, and opaque materials.

Step 5: Assessment (10 minutes)

- Administer the Energy Quiz to assess understanding of kinetic energy, heat flow, and renewable resources. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-all-about-energy-2062-1.pdf)
- Review the 'Lesson Checkpoint' questions from the Study Guide as a closing exit ticket.

Differentiation Strategies

For advanced learners:

Additional Resources

- NewPathWorksheets: All About Energy (https://newpathworksheets.com/science/grade-3/all-about-energy-2062)
- Vocabulary Set 3: Renewable Resources (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-3-all-about-energy-2062-3.pdf)

- Worksheet: Chemical & Mechanical Energy
  (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-3-energy-1.pdf)

PREVIEW

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ENERGY

Two Types of Energy

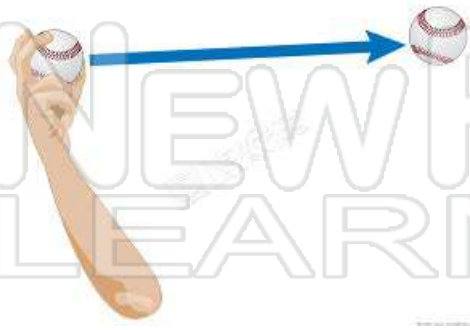
Energy is the ability to do work. There are two types of energy.

- One type of energy is energy that is waiting to happen but has not happened yet. This is called potential energy.
- Another type of energy is called kinetic energy. This type of energy is energy that is happening now.

electrical power to the toy or appliance that is running on battery power.

The foods that we eat have chemical energy. Chemical energy in food gets changed into mechanical energy which is what helps us move our arms, legs, and our other body parts.

Mechanical energy is energy that is happening or waiting to happen, so it includes both the potential and the kinetic energy of an object.



Electrical energy is the movement of electrical charges, which creates

Lesson Checkpoint: What is an electrical charge?

When energy changes form, heat is given off. For example, when you rub your hands together quickly back and forth, you are creating heat energy. You can feel the heat energy in your hands.

Matter is made up of tiny particles. The particles that make up matter move because they energy. Heat causes the particles that make up matter to move faster.

Thermal energy moves from warmer matter to cooler matter. If you place a cool object in a warm liquid, thermal energy will move from the warm liquid to the cool object. When the object and the liquid become the same temperature, the flow of heat energy will stop.

PREVIEW

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Light is also a form of energy. Light is energy that travels at very high speeds. Light can be reflected which means it bounces off an object. Light can also be absorbed, which means light is taken in by an object. Light travels in a straight line. When an object blocks light, a shadow is created.

Lesson Checkpoint: Look around you…can you see three materials that are opaque?

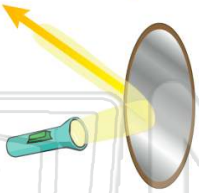
All About Energy

Sci C

Name_____ Class_____ Date_____

1 **Light** can be _____, which means it bounces off an object.

A reflected
B absorbed
C bright
D dim



2 **Light** can be _____, which means light is taken in by an object.

A reflected
B absorbed
C a different color
D hot

3 **Light** travels in a straight line. What is created when an object **blocks** light?

A a glare
B a bright spot

4 Some materials are _____, which means it allows light to **pass through** clearly without any effects.

A murky
B translucent

5

7

B The object is passing on its energy.
C The object is in motion.
D The object has used all its energy.

9 Which of the following objects has **kinetic energy**?

A a tennis ball rolling across the court
B a sunny windowsill
C a coffee mug sitting on a counter
D a basketball on the top of a hill

10 **Heat flows** from _____.

A hot matter to boiling matter
B cooler matter to warmer matter
C cold matter to boiling matter
D warmer matter to cooler matter

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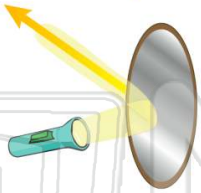

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3 Explain **renewable** and **nonrenewable energy sources** and list an example of each.

4 A _____ is an example of a **potential energy source**.

A waterfall
B piece of wood
C flowing river

5

7

D water

on Earth

vibrations

D. a series of living things that depend on each other for food energy

9 Which **type of energy** is caused by a **vibration**?

A light
B wind power
C sound
D heat

10 _____ is the ability to do **work**.

A Friction
B Energy
C Force
D Gravity

All About Energy

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Look Closely

Sci C

Name _____ Class _____ Date _____

Purpose

PREVIEW

Please Sign In or Sign Up to download the printable version of this worksheet

Look Closely

Sci C

Name _____ Class _____ Date _____

Primary Examples

omnivore	eats both plants and animals	• turtles • humans • bears
herbivore	eats only plants	• cows • elephants • grasshoppers

dogs	mammals	vertebrates
class	phylum	kingdom

All About Energy

Sci C

Name_____ Class_____ Date_____

1 _____ is the ability to do **work**.

A Friction
B Energy
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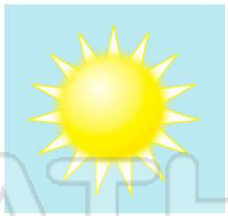
2 What is the earth's main source of **energy**?

A the sun
B the stars
C light bulbs
D the planets



3 The **sun's energy** is used in many ways, such as when plants use the sun's energy to make their own _____and to grow.

A homes
B food

4 There are two types of energy. One type of energy is **energy that is waiting to be used**. What is this type of energy called?

A wild energy
B kinetic energy

5

7

C cat walking on sidewalk
D boy sitting on top of slide → going down slide

C Sound energy
D Electrical energy

9 Which is an example of **chemical energy**?

A a leaf falling
B batteries
C raising your hand
D writing your name

10 The chemicals in the batteries interact together and release **chemical energy** as _____, which sends power to the toy or appliance that is running on battery power.

A sound energy
B electrical energy
C light energy
D cold energy

All About Energy

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Name_____ Class_____ Date_____

1 _____ is the ability to do **work**.

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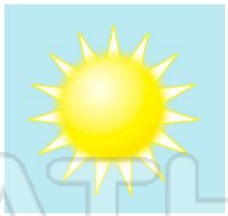

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A mechanical energy
B light energy

4 _____ is the energy of motion used to do **work**.

A Energy
B Light energy
C Heat energy

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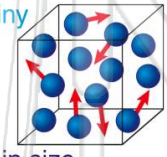
C electrical diagram
D electrical wire

B cold air
C electricity
D oxygen

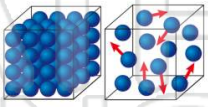
9 **Matter** is made up of tiny particles. Why do the particles that make up matter move?

A because they grow in size
B because they are cold
C because they have energy
D because they are frozen



10 What does **heat** do to the particles that make up matter?

A causes them to disappear
B causes them to stop moving
C causes them to slow down
D causes them to move faster



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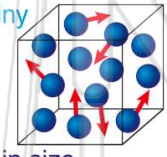

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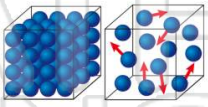

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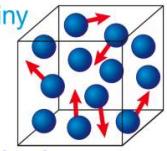

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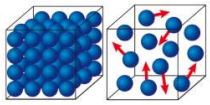

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3 How does **thermal energy** move?

A from hot matter to boiling matter
B from boiling matter to frozen matter

4 If you place a cool object in a warm liquid, **thermal energy** will move from the warm liquid to the cool object. What will happen when the object and the liquid become the **same** temperature?

A The flow of heat energy will go faster.

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C gas
D poison

D through all matter

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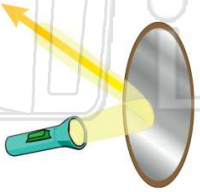

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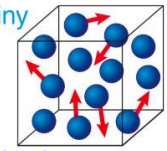

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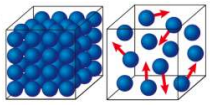

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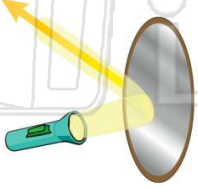

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All About Energy

Sci C

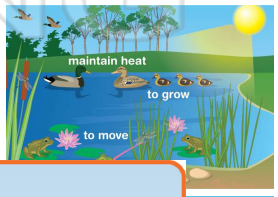
Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Energy	Fossil Fuel	Food chain	Gravity
Electrical energy	Kinetic energy	Heat	Environment

1. - type of energy that comes from electric current

2. - the ability to make an object move or cause a change in matter; the ability to do work



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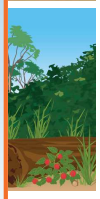

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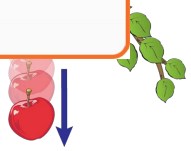

7. - the thermal energy transferred from an object at a higher temperature to an object at a lower temperature

8. - the energy of motion, such as a skier moving down a hill

All About Energy

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Match each of the following terms to its definition:

Energy	Fossil Fuel	Food chain	Gravity
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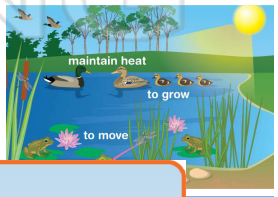
2. Energy - the ability to make an object move or cause a change in matter; the ability to do work



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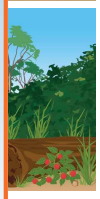

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7. Heat - the thermal energy transferred from an object at a higher temperature to an object at a lower temperature

8. Kinetic energy - the energy of motion, such as a skier moving down a hill

All About Energy

Sci C

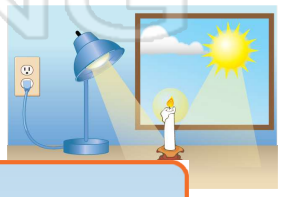
Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Nonrenewable energy source	Kinetic energy	Prehistoric	Nonliving thing
Living thing	Potential energy	Motion	Light

1. - the energy of motion, such as a skier moving down a hill

2. - a form of energy that makes it possible to see things



3. reproc

4.

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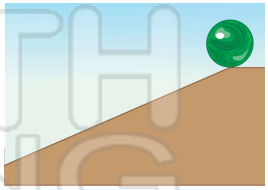
6. that is such as oil, coal and natural gas.

7. - the stored energy of an object at rest.



8. - something that is very old

All About Energy

Sci C

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Match each of the following terms to its definition:

Nonrenewable energy source	Kinetic energy	Prehistoric	Nonliving thing
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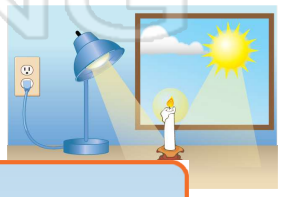
1. Kinetic energy - the energy of motion, such as a skier moving down a hill

2. Light - a form of energy that makes it possible to see things



3. Liv

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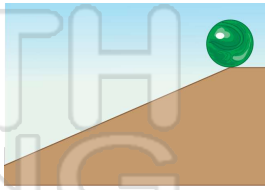
6. No
that is
such as oil, coal and natural gas.

7. Potential energy - the stored energy of an object at rest.



8. Prehistoric - something that is very old

PREVIEW

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All About Energy

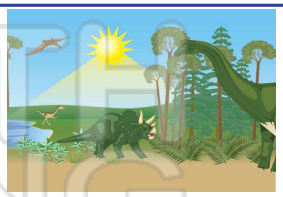
Sci C

Name_____ Class_____ Date_____

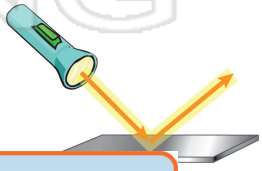
Match each of the following terms to its definition:

Solar power	Vibration	Renewable energy source	Sound
Wave	Reflect	Prehistoric	Thermal energy

1. - something that is very old



2. - the process of sound waves or light rays bouncing off a surface



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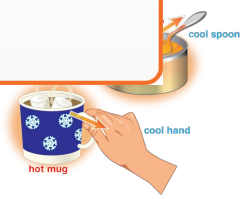


7. - a back and forth motion of an object; when an object vibrates, it can make sound, like strumming a guitar string

8. - the way that certain energy, such as sound and light, travels

All About Energy

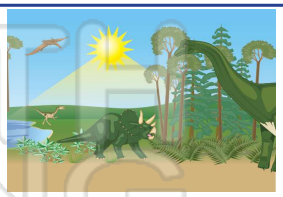
Sci C

Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Solar power	Vibration	Renewable energy source	Sound
Wave	Reflect	Prehistoric	Thermal energy

1. Prehistoric - something that is very old



2. Reflect - the process of sound waves or light rays bouncing off a surface

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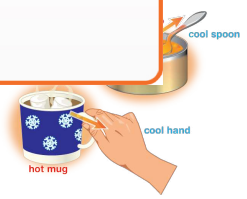


7. Vibration - a back and forth motion of an object; when an object vibrates, it can make sound, like strumming a guitar string

8. Wave - the way that certain energy, such as sound and light, travels

All About Energy

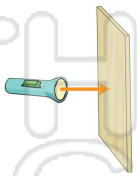
Sci C

Name_____ Class_____ Date_____

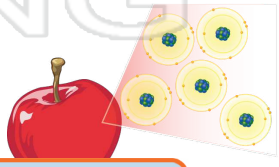
Match each of the following terms to its definition:

Ecosystem	Atom	Digest	Absorb
Chemical energy	Describe	Electrical energy	Electric current

1. - The process of taking in or soaking up something, such as energy or a liquid.



2. - the building blocks of all matter



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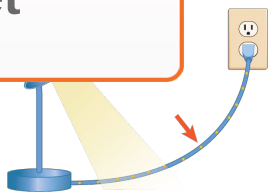
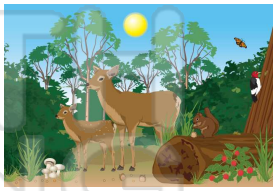


7. - a community of all living and nonliving things in an environment that work together.



8. - type of energy that comes from electric current

All About Energy

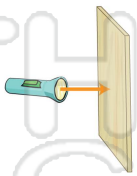
Sci C

Name_____ Class_____ Date_____

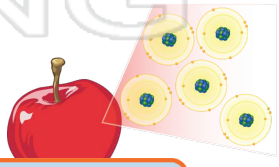
Match each of the following terms to its definition:

Ecosystem	Atom	Digest	Absorb
Chemical energy	Describe	Electrical energy	Electric current

1. Absorb - The process of taking in or soaking up something, such as energy or a liquid.



2. Atom - the building blocks of all matter



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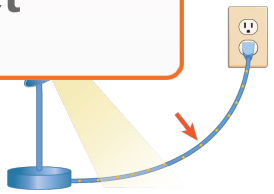
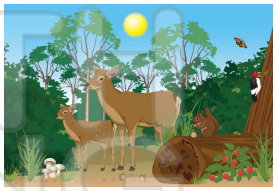


7. Ecosystem - a community of all living and nonliving things in an environment that work together.



8. Electrical energy - type of energy that comes from electric current