All life depends on energy. The Earth and our solar system get most of their energy from the sun. Without the sun, life on Earth would not exist. The sun shines on plants, giving them the energy they need to grow and thrive. Animals then eat the plants, which gives them energy, too. Energy is everywhere. It is all around us.

Energy comes from nature. Wind, sun, water, fire, and lightning are all sources of energy. In the United States, the most used sources of energy are fossil fuels such as coal and oil. The energy from fossil fuels gives us most of the electricity that lights and heats our homes. Oil also gives us the gasoline that runs our cars. Unfortunately, the burning of fossil fuels pollutes the air.

Scientists are working to develop new ways of providing energy without harming the Earth. Through advances in research of alternative energy sources, the world is slowly changing from using fossil fuels to using wind power, water power, and solar energy. Windmills are used to capture wind power. Dams help to harness the energy from water. Solar panels collect energy from the sun's rays and keep it stored for future use.
advance  ad·vance

Definition

verb
1. to come or move forward.

_The car advanced ten feet._

Advanced Definition

transitive verb
1. to move or send forward.

_The commander advanced the troops._

_The quarterback advanced the ball ten yards._

2. to propose or put forth; suggest.

_He is always nervous about advancing his proposals to his colleagues._

_Isaac Newton advanced that light is made up of bands of color._

_She advanced an idea for improving the city center._

3. to raise in rank or position.

_They will advance him to captain soon._

4. to increase the degree or rate of.

_The manufacturer advanced the price of the goods._

_The mass demonstrations advanced the pressure on the government to bring about reform._

intransitive verb
1. to move or come forward.

_The army advanced only three miles before it was pushed back._

2. to make progress or grow.

_His piano teacher says he is advancing nicely._
I hope to advance in wisdom as I get older.

noun
1. a forward movement in space.

   The runner made a quick advance to the finish line.

2. progress or improvement.

   Great advances have been made in the field of medicine.

3. a raising in rank or position.

   His advance to the rank of captain was cause for celebration.

4. a monetary payment beforehand, esp. before work is finished.

   She asked for an advance on her salary.

adjective
1. going in front of.

   They sent in the advance guard.

2. provided beforehand.

   It was good to get advance notice of his visit this time.

Spanish cognate

avance: The Spanish word avance means advance.

These are some examples of how the word or forms of the word are used:

1. He would not let the Union army advance on his Confederate troops.

2. I stake out the neighborhood in advance and observe the patterns of movement.

3. At the National Wind Technology Center in Colorado, scientists are working to advance wind-power technology.

4. Work out in advance that you will call your parents or another trusted adult for a ride if any situation makes you uncomfortable.

5. So, first of all, let me assert my firm belief that the only thing we have to fear is fear itself - nameless, unreasoning, unjustified terror which paralyzes needed efforts to convert retreat into advance.
alternative  al·ter·na·tive

Definition

noun
1. one of two or more choices.

Our two alternatives are walking or taking a taxi.

adjective
1. different in a way that gives you a choice.

Paying by credit card and paying in cash are alternative ways to pay for something.

Advanced Definition

noun
1. one of two or more possibilities; option.

What do you think is the best alternative?

2. the choice of one or more options.

I'm sorry to do this, but I have no alternative.

The store gives customers the alternative of paying with a credit card or in cash.

adjective
1. being one of two or more possibilities.

Scientists in India offer an alternative explanation for this phenomenon.

2. offering or allowing a choice.

The store offers alternative payment methods.

3. nontraditional or unconventional.

He expresses his unique views in an alternative newspaper.

The hippies of the 1960s were not the first Americans to have an alternative lifestyle.

Spanish cognate

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alternativo: The Spanish word *alternativo* means alternative.

These are some examples of how the word or forms of the word are used:

1. Almonds’ soft texture and mild flavor makes them ideal for blending into a dairy-free milk *alternative*.

2. Horticulturalists took note of this development and began experimenting with *alternative* methods of growing rhubarb plants.

3. We have always said that in our war with the Arabs we had a secret weapon - no *alternative*.

4. There are a number of ways to treat "trich," including therapy, medicines such as antidepressants, and *alternative* methods such as yoga and vitamins.

5. Through advances in research of *alternative* energy sources, the world is slowly changing from using fossil fuels to using wind power, water power, and solar energy.

6. He knew only the basics about his mom's profession, but was becoming more and more interested in *alternative* energy after living in Los Angeles for so long and experiencing the pollution and smog in the air.
1. Energy on Earth comes from
   A. other planets.
   B. the sun.
   C. plants.
   D. the moon.

2. The passage describes the problem of fossil fuels causing pollution. What is a solution in the passage for this problem?
   A. using gasoline in cars
   B. using alternative energy sources
   C. making oil illegal
   D. promoting bicycle programs

3. All of the following have to do with new advances in energy except:
   A. wind power.
   B. water power.
   C. solar energy.
   D. lightning.

4. Read the following sentence: "The sun shines on plants, giving them the energy they need to grow and thrive."

   The word **thrive** means
   A. wilt
   B. be born
   C. live well
   D. plant seeds.
5. This passage is mostly about

A. where energy comes from and how it is used.
B. how wind energy is different from fossil fuels.
C. how plants use the sun’s energy.
D. how animals use energy from plants.

6. What sources of energy does the passage describe besides fossil fuels?

7. Based on the passage, why would the world be "slowly changing" from fossil fuels to other energy sources, rather than quickly changing?

8. The question below is an incomplete sentence. Choose the answer that best completes the sentence.

Scientists want to develop new ways of providing energy without harming the earth, __________ they are researching alternative energy sources.

A. then
B. but
C. meanwhile
D. so
9. **Vocabulary Word**: alternative: other possibility; option.

Use the vocabulary word in a sentence
1. What is a meaning of the word **advance**?
   A. a movement forward
   B. a business company
   C. a measuring device

2. What is another meaning of the word **advance**?
   A. a change for the better
   B. goods of poorer quality
   C. greatest amount allowed

Please use each answer choice only once. Choose the one word that best completes the sentence.

3. The rate at which glaciers _____ and retreat depends on Earth’s climate.
   A. advanced
   B. advancements
   C. advances
   D. advance
   E. advancement

4. After all, I wasn’t the one making the _____.
   A. advanced
   B. advancements
   C. advances
   D. advance
   E. advancement
5. An _____ or promotion usually means more responsibility.
   A. advanced  
   B. advancements  
   C. advances  
   D. advance  
   E. advancement

6. _____ in the fields of science and technology during the 19th and 20th centuries were reflected in crafts as well.
   A. advanced  
   B. advancements  
   C. advances  
   D. advance  
   E. advancement

7. As the glaciers _____, they dug large valleys in Earth's surface.
   A. advanced  
   B. advancements  
   C. advances  
   D. advance  
   E. advancement

8. Please write your own sentence using the word **advance**.

   ____________________________________________
   ____________________________________________
   ____________________________________________
   ____________________________________________
9. What would you like to remember about the meaning of the word **advance** so that you can use it when you write or speak?
1. What is a meaning of the word alternative?
   A. guts
   B. other
   C. a baby

2. What is another meaning of the word alternative?
   A. the relationship between two numbers
   B. pertaining to unconventional choices
   C. a building where plays are performed

Please use each answer choice only once. Choose the one word that best completes the sentence.

3. She wondered how many times she had suggested an ____.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering

4. My mother _____ clothes to earn money.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering
5. He understands what a college education means, what the _____ are.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering

6. See if she can _____ her behavior a little.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering

7. A chess board looks like a checkerboard, with two different colors of _____ squares.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering
8. At this point, instead of turning back to find an _____ route, he began to move in circles, squeaking like a phonograph needle scratched across the grooves.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering

9. Of course, the cost of renewing, repairing, and _____ the Statue of Liberty in the 1980s was high.
   A. alternating
   B. alternate
   C. alternative
   D. alter
   E. altered
   F. alternatives
   G. altering

10. Please write your own sentence using the word alternative.
11. What would you like to remember about the meaning of the word alternative so that you can use it when you write or speak?
How many seats are there for a basketball game in Madison Square Garden in New York City?
Use the digits from the box and the clues below to make the number that answers the question.

\[ 9 \quad 6 \quad 7 \quad 3 \quad 1 \]

Rounded to the nearest thousand, the number rounds to 20,000.
The digit in the tens place is two times the digit in the ones place.

How many seats are there in the Rose Bowl in Pasadena, California?
Use the digits from the box and the clues below to make the number that answers the question.

\[ 2 \quad 4 \quad 2 \quad 5 \quad 9 \]

Rounded to the nearest ten thousand, the number rounds to 90,000.
The digit in the thousands place is equal to the digit in the ones place.
The digit in the tens place is two times the digit in the ones place.

How many seats are there in Ohio Stadium at The Ohio State University?
Use the digits from the box and the clues below to make the number that answers the question.

\[ 3 \quad 2 \quad 0 \quad 9 \quad 1 \quad 2 \]

Rounded to the nearest hundred thousand, the number rounds to 100,000.
The digit in the thousands place is equal to the digit in the tens place.
The digit in the ones place is three times the digit in the hundreds place.
Student Response Form

Problem:

(glue your problem here)

My Work and Illustrations:
(picture, table, list, graph)

My Solution:

My Explanation:
What Is Lightning?
by Rachelle Kreisman

Rain is falling. Suddenly, you see a flash. Zap! Lightning hits a tree. Next you hear a loud sound. What is happening?

Lightning is electricity. It forms in clouds during a storm. Lightning can go from cloud to cloud. It can also strike the ground. When that happens, lightning takes the shortest path. It hits tall objects. It may hit buildings or trees. It may also hit people.

Lightning is really hot. When it travels, it heats up the air. The very hot air makes a loud noise. That is the thunder you hear. People see lightning before they hear thunder. Why? Light travels more quickly than sound.
electricity  

e·lec·tric·i·ty

Definition

noun

1. a kind of energy that is used for light and heat and for making things operate.

   Lightning is a natural form of electricity.

   This small heater uses a lot of electricity.

2. electrical current.

   The television needs electricity in order to work.

3. a state of tension or excitement.

   When the game became tied you could feel the electricity in the crowd.

4. the science concerned with such a phenomenon and its effects.

These are some examples of how the word or forms of the word are used:

1. Solar energy can be harnessed to produce many things, including electricity and heat. Some believe that solar energy can eliminate the more harmful pollutants on our earth resulting from energy powered by gas or coal.

2. Matt Nelsen is a Mechanical Engineer for PG&E, which stands for Pacific Gas & Electric. PG&E is a company in Northern California that provides electricity and natural gas. Matt, as an engineer, designs the pipes that carry natural gas.

3. Her guide explained they were deep enough in the desert that no manmade light could interfere with the natural light in the sky. Compared to New York City's skyline, there was absolutely no electricity around her for miles. As a result, it looked like millions of people were taking pictures from the sky—each star a camera flash. Some stars blinked more brightly than others, and the guide told her they were planets.

4. Electricity is what we use to power things at home or at school. You can probably look around right now and see an electrical outlet or two. Everything that we plug into one of these outlets uses electricity. But where does this electricity come from? Right now we have a few ways to make electricity. Some are better than others. There are some scientists who are trying to find new ways to get electricity that are better for the planet Earth.
lightning  light · ning

Definition

noun
1. natural electricity produced in clouds and appearing as a bright flash of light in the sky.

   *Lightning usually occurs during summer thunderstorms.*

adjective
1. like lightning, especially in regard to movement.

   *Kyle moves with lightning speed on the tennis court.*

intransitive verb
1. to discharge lightning.

   *It's lightning outside tonight.*

---

These are some examples of how the word or forms of the word are used:

1. Today, many houses are protected from lightning thanks to Ben's invention.

2. A thunderstorm comes with thunder and lightning. It can bring a lot of wind and rain, too.

3. Those are storms with heavy rain, lightning, and thunder. As lightning strikes, it heats the air around it.

4. During those storms, heavy rain and lightning are common. Large hail, or ball-shaped pieces of ice, may also fall.

5. Think of a fire that starts when lightning strikes a tree. Other events occur slowly, such as when rocks are worn down over hundreds of years.

6. Puffy gray clouds may mean that thunder and lightning are coming. Clouds that look like a big gray blanket mean that rain or snow is on the way.
1. What is lightning?
   A. Lightning is fire.
   B. Lightning is electricity.
   C. Lightning is really bright light.

2. How does the text describe lightning?
   A. Lightning is really loud.
   B. Lightning is really scary.
   C. Lightning is really hot.

3. Lightning might hit a person standing in a field during a lightning storm. What part of the text tells us that this is true?
   A. People see lightning before they hear thunder.
   B. Lightning may hit buildings or trees.
   C. Lightning takes the shortest path. It hits tall objects.

4. What is "What Is Lightning?" mainly about?
   A. characteristics of lightning
   B. characteristics of thunderstorms
   C. how thunder is formed
5. Where does lightning form during a storm?

Lightning forms

6. What did you learn from "What Is Lightning"?

7. **Class Discussion Question**: Use information from the text to explain how lightning makes thunder.

8. Draw a picture that shows where lightning can strike. Be sure to draw the lightning strike.
These pictures show things with electricity:

1. Please say the word **electricity** out loud.

2. Please write the word **electricity**.
3. Look at the pictures below. Which picture shows something with electricity?

4. Draw a picture of something with electricity.

5. Create a sentence that uses the word electricity. Say the sentence out loud with a partner or write it down.
These pictures show lightning:

1. Please say the word **lightning** out loud.

2. Please write the word **lightning**.

3. Look at the pictures below. Which picture shows lightning?
4. Draw a picture of **lightning**.

5. Create a sentence that uses the word **lightning**. Say the sentence out loud with a partner or write it down.
Write a text that compares and contrasts a day at school with a snow day at home.

Compare - How are they similar?
Contrast - How are they different?

You will need to plan, draft, revise and edit your writing.

In your story make sure you:

- Write a beginning or introduction.
- Use transition words and phrases.
  (therefore, however, also, as well as, on the other hand)
- Elaborate to help readers picture your day.
- Write an ending or conclusion.