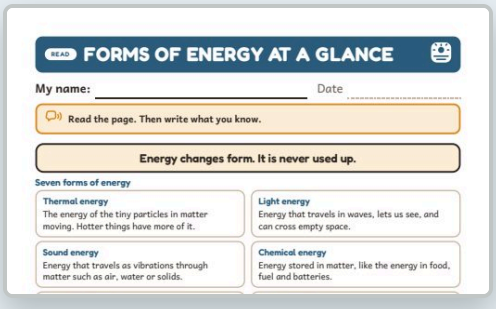
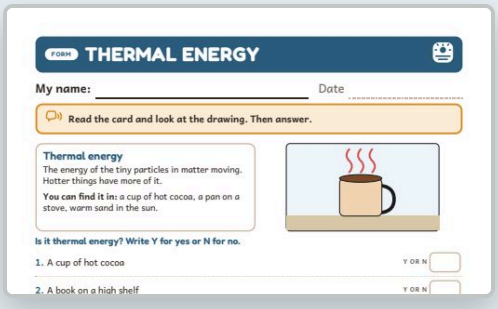
6TH–8TH GRADE · PHYSICAL SCIENCE

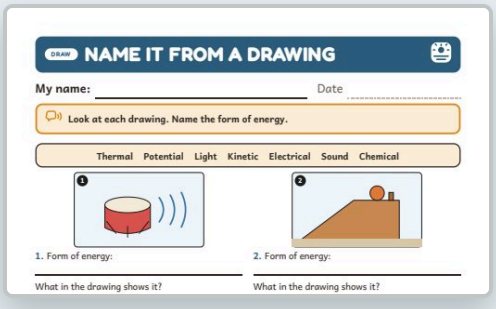
SORT + CHAINS

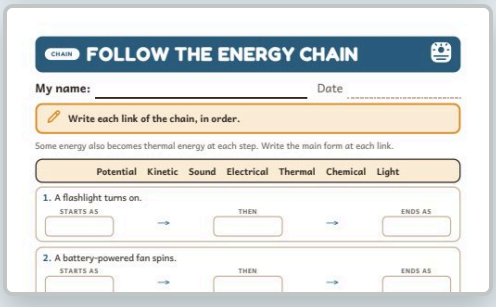
FORMS OF ENERGY

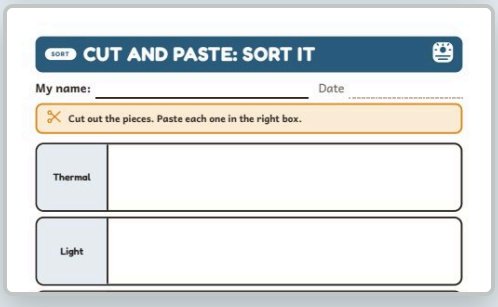
One page for each of seven forms, drawings to name, energy-change chains to follow, a match, a fill-in, a Venn diagram, find-the-mistake, a cut-and-paste sort and short answers. Answer keys, a tracker and a family page. Print, or type your answers. PDF.

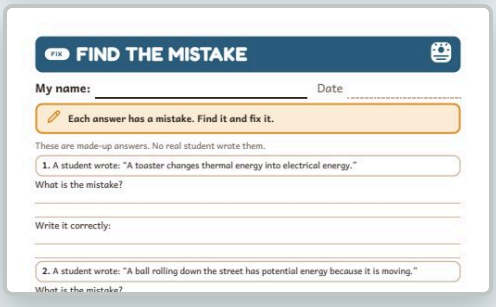












37 Pages | **22 Page Types** | **137 Items** | **3 Answer Keys**

BRIGHT PATH SPED

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PREVIEW

READ FORMS OF ENERGY AT A GLANCE

My name: _____ Date .....

Read the page. Then write what you know.

Energy changes form. It is never used up.

Seven forms of energy

Thermal energy
The energy of the tiny particles in matter moving. Hotter things have more of it.

Light energy
Energy that travels in waves, lets us see, and can cross empty space.

Sound energy
Energy that travels as vibrations through matter such as air, water or solids.

Chemical energy
Energy stored in matter, like the energy in food, fuel and batteries.

Electrical energy
Energy carried by charges moving through a wire or another path.

Kinetic energy
The energy of motion. Anything that is moving has it.

Potential energy
Stored energy an object has because of its position or its shape.

Three big ideas

Energy changes form
A lamp changes electrical energy into light. A fan changes electrical energy into motion.

Energy is not used up
When energy changes form, the total amount stays the same. Some of it often becomes thermal energy.

Mechanical energy
An object's kinetic energy plus its potential energy is its mechanical energy.

Your turn. Write what you know.

One form of energy I used or saw today was _____ because

One way kinetic energy is different from potential energy is

PREVIEW

FORM LIGHT ENERGY

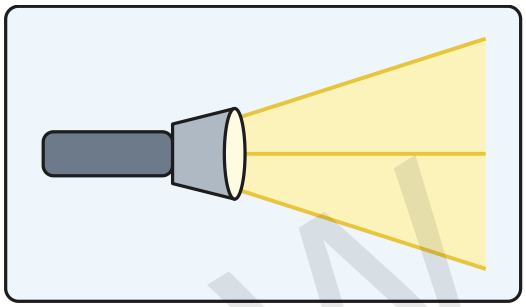
My name: _____ Date .....

Read the card and look at the drawing. Then answer.

Light energy

Energy that travels in waves, lets us see, and can cross empty space.

You can find it in: sunlight, a lamp, a flashlight beam.



Is it light energy? Write Y for yes or N for no.

1. A stretched rubber band — Y OR N
2. A cup of hot cocoa — Y OR N
3. Sunlight coming through a window — Y OR N
4. A friend shouting across the gym — Y OR N
5. A screen shining in a dark room — Y OR N
6. The beam of a flashlight — Y OR N

A. Name two more examples of light energy that you could see, hear or feel in a day.

B. Explain what light energy is. Give one example and say how you know it is light energy.

PREVIEW

FORM CHEMICAL ENERGY

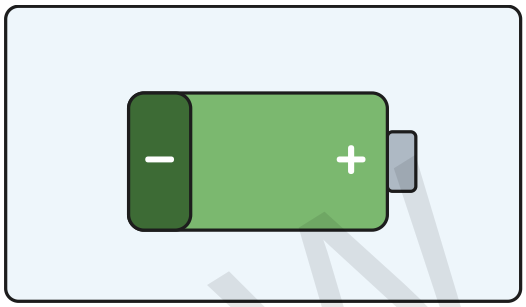
My name: _____ Date .....

Read the card and look at the drawing. Then answer.

Chemical energy

Energy stored in matter, like the energy in food, fuel and batteries.

You can find it in: food, gasoline, a battery.



Is it chemical energy? Write Y for yes or N for no.

1. Gasoline in a car's gas tank — Y OR N
2. A banana before you eat it — Y OR N
3. A pan heating on a stove — Y OR N
4. Thunder after a flash of lightning — Y OR N
5. A battery waiting inside a flashlight — Y OR N
6. A ball held at the top of a ramp — Y OR N

A. Name two more examples of chemical energy that you could see, hear or feel in a day.

B. Explain what chemical energy is. Give one example and say how you know it is chemical energy.

PREVIEW

FORM KINETIC ENERGY

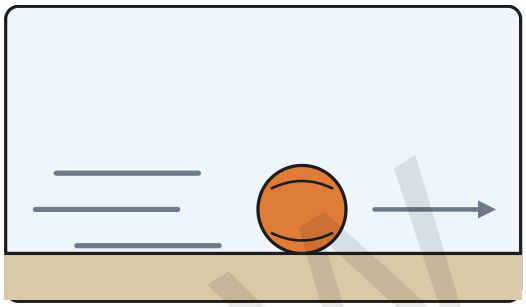
My name: _____ Date .....

Read the card and look at the drawing. Then answer.

Kinetic energy

The energy of motion. Anything that is moving has it.

You can find it in: *a* rolling ball, *a* runner, *a* flowing river.



Is it kinetic energy? Write Y for yes or N for no.

1. A ball rolling across the floor — Y OR N
2. Current moving through a lamp cord — Y OR N
3. A runner sprinting down the track — Y OR N
4. A banana before you eat it — Y OR N
5. A bike coasting down a hill — Y OR N
6. The beam of a flashlight — Y OR N

A. Name two more examples of kinetic energy that you could see, hear or feel in a day.

B. Explain what kinetic energy is. Give one example and say how you know it is kinetic energy.

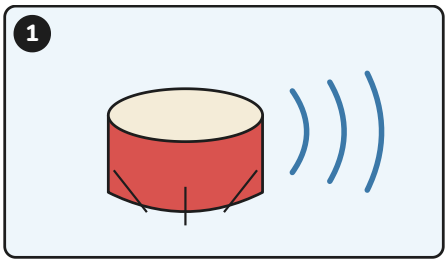
PREVIEW

DRAW NAME IT FROM A DRAWING

My name: _____ Date .....

Look at each drawing. Name the form of energy.

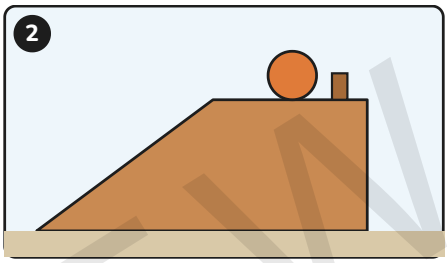
Thermal Potential Light Kinetic Electrical Sound Chemical



1. Form of energy:

What in the drawing shows it?

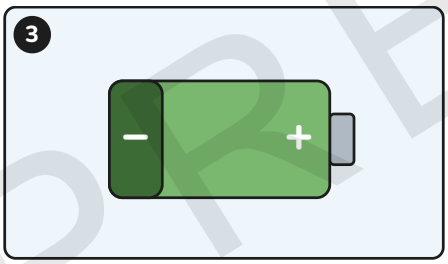
Name one more example in real life.



2. Form of energy:

What in the drawing shows it?

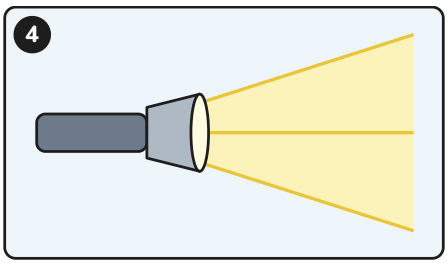
Name one more example in real life.



3. Form of energy:

What in the drawing shows it?

Name one more example in real life.



4. Form of energy:

What in the drawing shows it?

Name one more example in real life.

A. Pick one drawing. Explain how you know which form of energy it shows.

PREVIEW

CHANGE ENERGY CHANGES FORM

My name: _____ Date .....

Write the form it starts as and the form it ends as.

Potential Kinetic Sound Electrical Thermal Chemical Light

1. A runner uses energy from breakfast to sprint.

STARTS AS → ENDS AS

2. A stretched rubber band is let go and flies across the room.

STARTS AS → ENDS AS

3. A solar panel powers a calculator.

STARTS AS → ENDS AS

4. Wood burns in a campfire and warms your hands.

STARTS AS → ENDS AS

5. A toaster toasts a slice of bread.

STARTS AS → ENDS AS

6. A speaker plays music.

STARTS AS → ENDS AS

A. Pick one change from this page. Explain what the energy was before and what it became.

PREVIEW

MATCH MATCH THE FORM TO ITS MEANING

My name: _____ Date .....

Write the letter of the meaning next to each form.

1. **Thermal** ☐
2. **Light** ☐
3. **Sound** ☐
4. **Chemical** ☐
5. **Electrical** ☐
6. **Kinetic** ☐
7. **Potential** ☐

A. Energy stored in matter, like the energy in food, fuel and batteries.

B. Energy that travels as vibrations through matter such as air, water or solids.

C. The energy of motion. Anything that is moving has it.

D. Energy that travels in waves, lets us see, and can cross empty space.

E. Stored energy an object has because of its position or its shape.

F. Energy carried by charges moving through a wire or another path.

G. The energy of the tiny particles in matter moving. Hotter things have more of it.

A. Which two forms are hardest to tell apart? Write one clue that helps you tell them apart.

PREVIEW

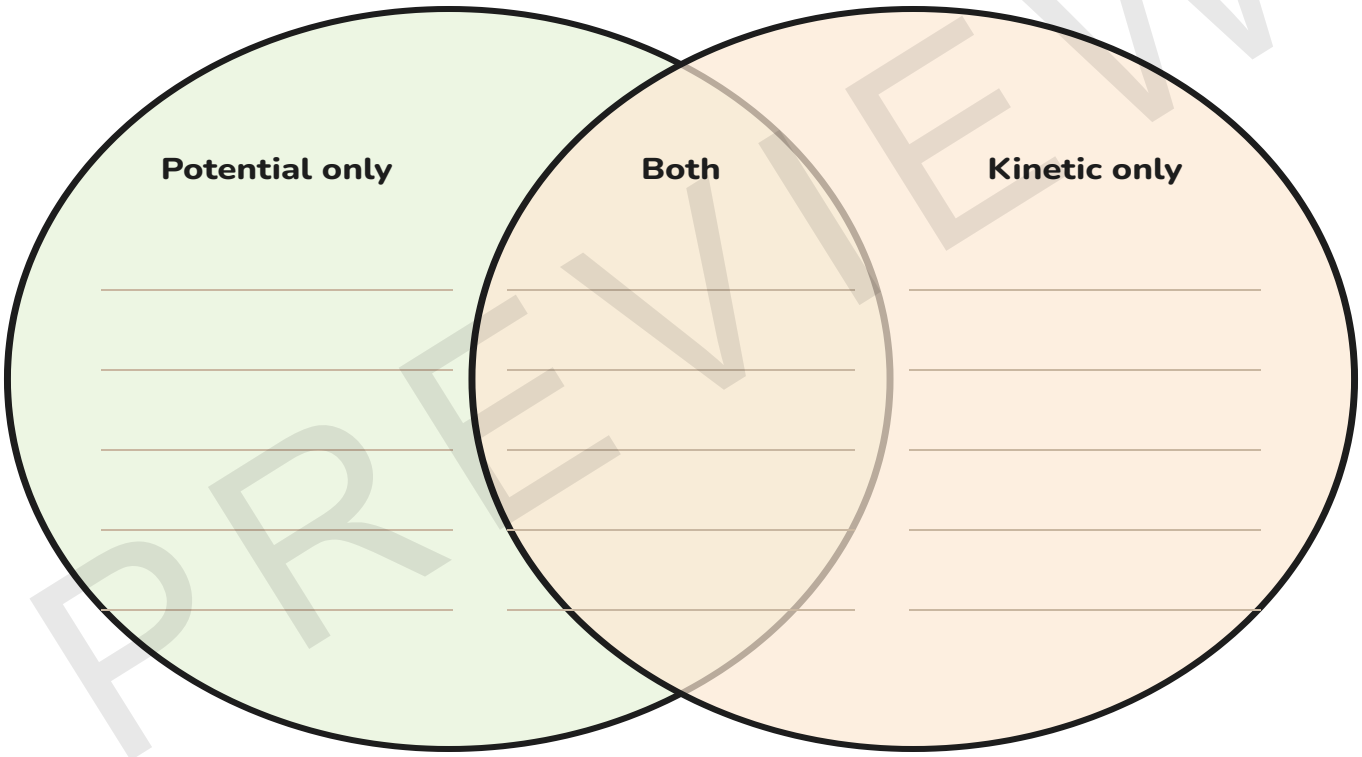
COMPARE

COMPARE IN A VENN DIAGRAM

My name: _____ Date .....

Write each phrase from the box where it belongs.

a stretched rubber band | a runner sprinting | a car driving down a road
found in a roller coaster | can change into the other kind | a ball held at the top of a ramp
a book on a high shelf | a ball rolling down a hill | the energy of an object
a kind of mechanical energy



PREVIEW

A. Write one sentence that tells how kinetic energy and potential energy are different.

CHOOSE MULTIPLE CHOICE

My name: _____ Date .....

Read each question. Write the letter of the best answer.

1. What is energy?

A. Anything that takes up space
B. A kind of matter
C. A push or a pull
D. The ability to cause change

LETTER ☐

2. Which form of energy is stored in food and batteries?

A. Chemical
B. Kinetic
C. Sound
D. Light

LETTER ☐

3. Which form of energy is the energy of motion?

A. Potential
B. Chemical
C. Kinetic
D. Thermal

LETTER ☐

4. A book sits on a high shelf. What form of energy does it have?

A. Sound energy
B. Electrical energy
C. Potential energy
D. Thermal energy

LETTER ☐

5. Which form of energy moves through the wire of a lamp cord?

A. Chemical
B. Electrical
C. Kinetic
D. Sound

LETTER ☐

6. A drum is hit. Which form of energy do you hear?

A. Thermal
B. Light
C. Sound
D. Chemical

LETTER ☐

7. In a toaster, electrical energy changes mostly into which form?

A. Thermal energy
B. Chemical energy
C. Potential energy
D. Sound energy

LETTER ☐

8. Which statement about energy is true?

A. Energy is used up when a lamp is turned on
B. Energy can be made from nothing
C. Energy disappears when an object stops moving
D. Energy can change from one form to another

LETTER ☐

PREVIEW

FIX FIND THE MISTAKE

My name: _____ Date .....

Each answer has a mistake. Find it and fix it.

These are made-up answers. No real student wrote them.

1. A student wrote: "A toaster changes thermal energy into electrical energy."

What is the mistake?

Write it correctly:

2. A student wrote: "A ball rolling down the street has potential energy because it is moving."

What is the mistake?

Write it correctly:

3. A student wrote: "When a lamp is on, the energy is used up and is gone."

What is the mistake?

Write it correctly:

4. A student wrote: "Sound travels from a drum to your ear through empty space."

What is the mistake?

Write it correctly:

PREVIEW

WRITE SHORT ANSWERS

My name: _____ Date .....

Answer each question in complete sentences.

1. What is energy?

2. What is the difference between kinetic energy and potential energy?

3. Name three forms of energy and give an example of each.

4. What is mechanical energy?

5. What does it mean to say that energy changes form? Give one example.

PREVIEW

ANSWER KEY KEY: PAGES 5-15

Pages 5-15: the seven form pages, the drawings, naming the form and both energy-change pages. Every row is read from the same lists that draw the student pages.

The seven form pages pages 5-11

FORM	ANSWERS (Y = YES, N = NO)
Thermal	1 Y 2 N 3 N 4 Y 5 Y 6 N
Light	1 N 2 N 3 Y 4 N 5 Y 6 Y
Sound	1 Y 2 N 3 Y 4 Y 5 N 6 N
Chemical	1 Y 2 Y 3 N 4 N 5 Y 6 N
Electrical	1 N 2 Y 3 Y 4 N 5 Y 6 N
Kinetic	1 Y 2 N 3 Y 4 N 5 Y 6 N
Potential	1 N 2 Y 3 N 4 Y 5 Y 6 N

Question A on each form page: Any two accurate examples of that form (the form pages list three each; accept others that fit).

Name It from a Drawing page 12

NO.	FORM	WHAT SHOWS IT
1	Sound	the waves coming off the drum
2	Potential	the ball is high up and not moving, so its energy is stored
3	Chemical	the battery stores energy in matter
4	Light	the beam spreading out from the flashlight

Question A: Flashlight: light travels out in a beam. Drum: sound is vibrations spreading out. Battery: it stores chemical energy. Ball at the top: potential energy is stored because of its height.

Name the Form of Energy page 13

NO.	ANSWER
1	Sound (S)
2	Electrical (E)
3	Thermal (T)
4	Potential (P)
5	Kinetic (K)
6	Kinetic (K)
7	Light (L)
8	Chemical (C)

Question A: Any item, with the clue that fits: moving is kinetic, stored from height or shape is potential, stored in food or fuel is chemical, and so on.

Energy Changes Form page 14

NO.	STARTS AS	ENDS AS
1	Chemical	Kinetic
2	Potential	Kinetic
3	Light	Electrical
4	Chemical	Thermal
5	Electrical	Thermal
6	Electrical	Sound

Question A: Any one change, saying the starting form and the ending form (for example a toaster: electrical energy becomes thermal energy).

Follow the Energy Chain page 15

NO.	STARTS AS	THEN	ENDS AS
1	Chemical	Electrical	Light
2	Chemical	Electrical	Kinetic
3	Potential	Kinetic	Electrical
4	Chemical	Thermal	Kinetic

Question A: Any one chain, in order (for example a flashlight: chemical energy in the battery becomes electrical energy, which becomes light).

PREVIEW

ANSWER KEY

KEY: WRITTEN ANSWERS AND SORT

Written answers, error analysis and the cut-and-paste sort. Written answers are in the words a student might use; accept any answer that makes the same points.

Form pages, Question B pages 5–11

FORM	A FULL ANSWER INCLUDES (MODEL)
Thermal	Thermal energy is the energy of the particles in matter as they move. Hot cocoa has a lot of it, because its particles move fast, so it feels hot.
Light	Light is energy that travels in waves and lets us see. A flashlight beam is light; it spreads out from the lamp, and it can travel through empty space.
Sound	Sound is energy that travels as vibrations through matter. A drum shakes the air around it, and the vibrations carry the sound to your ear.
Chemical	Chemical energy is energy stored in matter. A banana stores chemical energy, and your body can release it when you eat it.
Electrical	Electrical energy is energy carried by moving charges. Current moving through a lamp cord is electrical energy, because the charges flow along the wire.
Kinetic	Kinetic energy is the energy of motion. A runner sprinting down the track has kinetic energy, because she is moving; a faster runner has more.
Potential	Potential energy is stored energy. A book on a high shelf has it because of its height; if it falls, the stored energy becomes motion.

Find the Mistake page 22

NO.	THE MISTAKE AND THE FIX
1	It is backwards: a toaster changes electrical energy into thermal energy.
2	A moving ball has kinetic energy; potential energy is stored energy.
3	Energy is not used up; electrical energy changes into light and thermal energy.
4	Sound needs matter such as air to travel through; it cannot cross empty space.

Cut and Paste page 23

BOX	PIECES THAT GO IN IT
Thermal	A cup of hot tea; A pot of boiling water; A warm sunlit sidewalk; A hot iron
Light	A glowing lamp; A flashlight beam; A lit TV screen; A lighthouse beam
Sound	A ringing bell; A plucked guitar string; A shout across a gym; Thunder

Short Answers page 24

NO.	A FULL ANSWER INCLUDES
1	The ability to cause change.
2	Kinetic energy is the energy of motion; potential energy is stored energy from position or shape.
3	Any three of: thermal, light, sound, chemical, electrical, kinetic, potential, each with a fitting example.
4	An object's kinetic energy plus its potential energy.
5	Energy can become a different form (for example electrical energy becomes light in a lamp) but it is not used up.

Explain It page 25

NO.	A FULL ANSWER INCLUDES
1	The battery stores chemical energy. When the flashlight is switched on, the chemical energy changes into electrical energy, which flows to the bulb. The bulb changes the electrical energy into light (and some thermal energy).
2	At the top of the hill the car is high up, so it has a lot of potential energy. As it rolls down, it loses height and gains speed, so the potential energy becomes kinetic energy.
3	A toaster changes electrical energy into thermal energy (and some light), which toasts the bread. The energy has changed form; it has not disappeared.

PREVIEW

CLASS GRID

CLASS PROGRESS GRID

CLASS OR GROUP

UNIT DATES

STUDENT	FORMS (OF 42)	EXAMPLES (OF 12)	CHANGES (OF 10)	TERMS (OF 17)	COMPARE (OF 22)	CHOOSE / T-F (OF 22)	FIX / WRITE (OF 12)

PREVIEW

How to fill this in

For each column, write how many items the student has right (add up the tracker rows). One look across a row shows which kind of page is easiest and which one needs another turn.

Grouping for small-group time

Start with the Terms column. Students low there can reread the reference page (4) and redo Match the Form (16) before the energy-change pages; students near the top of every column can go straight to Explain It (25).

FAMILY PAGE

FORMS OF ENERGY AT HOME

STUDENT

WEEK OF

How to help at home, in four steps

- Walk through the kitchen or living room and point to energy: a toaster, a lamp, a speaker, a sunny window.
- Ask: "What form of energy goes in? What form comes out?"
- Talk about why a ball at the top of a hill has potential energy and the same ball rolling has kinetic energy.
- Stop while it is still going well. Ten minutes is plenty.

My forms of energy notes from home

1. Something at home that changes electrical energy into another form, and the form it becomes

2. A time I saw kinetic energy turn into something else, or potential energy turn into motion

3. One way kinetic energy is different from potential energy

Say it out loud

- "Energy changes form. It is never used up."
- "Kinetic energy is the energy of motion. Potential energy is stored energy."
- "A toaster changes electrical energy into thermal energy."

NOTE FROM THE TEACHER

NOTE FROM HOME

PREVIEW

PHRASE BANK

SENTENCE STARTERS AND NOTES

Starters a student can use in a written answer, plus starters for a progress note and a note home. Each one is an observation with a blank for the number or the word — the count comes off the tracker or the page itself, never from memory. Copy a starter onto the writing lines on pages 24, 25 and 15.

Sentence starters for explaining a form of energy

> ___ energy is the energy of ___.

> I know it is ___ energy because the ___ is moving / stored / glowing / vibrating.

> This is an example of ___ energy because ___.

Sentence starters for energy changes

> The energy starts as ___ energy and changes into ___ energy.

> First the ___ energy becomes ___ energy, and then it becomes ___ energy.

> The energy is not used up. It changes form, and some of it becomes ___ energy.

Sentence starters for comparing

> Both kinetic energy and potential energy ___, but only ___ energy ___.

> They are different because one ___ and the other ___.

> A ball at the top of a hill has more ___ energy because ___.

Progress note starters

> Named ___ of ___ forms of energy correctly without a prompt, on ___ (date).

> Used the word ___ correctly in a written answer on ___ of ___ items.

> Needed a word bank / a sentence starter / a model on ___ of ___ items.

Family note starters

> This week we studied the forms of energy and how energy changes form.

> At home, ask your child to name the form of energy that goes into a lamp and the form that comes out.

> The family page for this week is in the folder; please send it back on ___.

PREVIEW

ORGANIZER

DIVIDER TABS

Six divider tabs and a spine label. The pieces touch edge to edge, so the cutting is a few straight lines.

REFERENCE	FORMS	EXAMPLES
CHANGES	PRACTICE	WRITING
FORMS OF ENERGY · BRIGHT PATH SPED		

PREVIEW

1. Cut along the dashed lines. Every line is straight: 7 pieces.

2. Fold each tab on its top edge and slide a paper tab into a sleeve, or tape it to a folder edge.

3. The spine label fits a one-inch binder. Trim it to fit a wider one.