

Unleashing Earth's Power!

4TH GRADE

NATURAL RESOURCES HANDS-ON ACTIVITIES & POSTERS

4th Grade Science Curriculum NGSS

KEEP SCROLLING TO SEE WHAT'S INSIDE!

YOU WILL LOVE THIS BECAUSE



Concept Mastery

Each station is designed to captivate students with interactive challenges like building windmills, making solar ovens, and exploring water wheels.



Aligned with NGSS

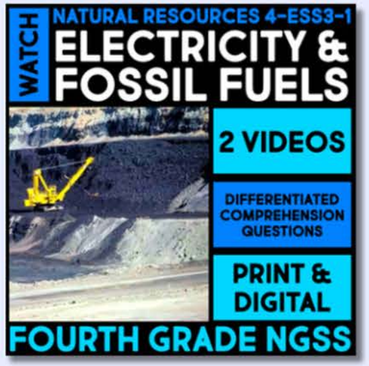
These lesson plans aren't just random; they're laser-focused on Next Generation Science Standards. No more curriculum guesswork!

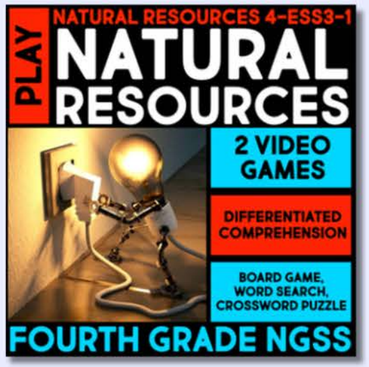


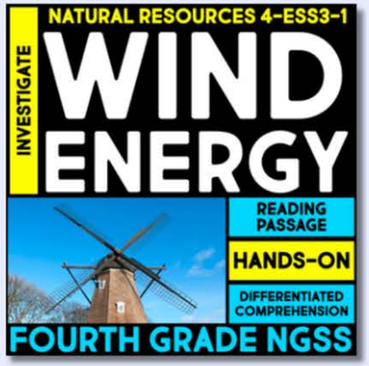
Student Engagement

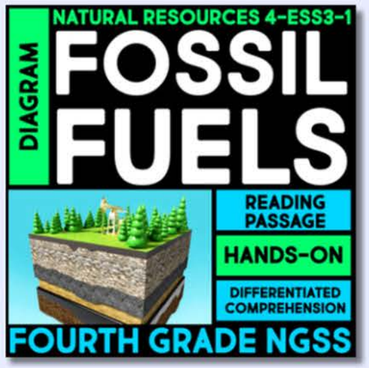
With a variety of activities including videos, games, models, and hands-on investigations, this resource caters to diverse learning preferences, keeping all students engaged.

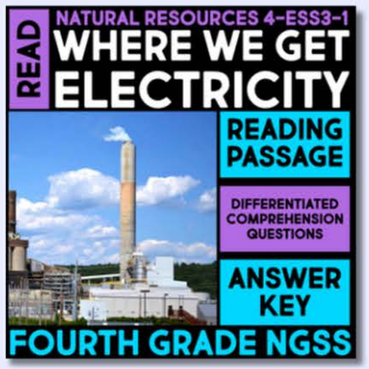
WHAT'S INCLUDED IN THE BUNDLE?

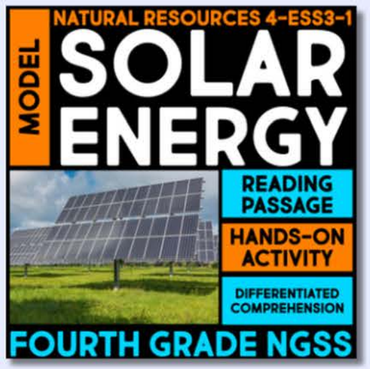


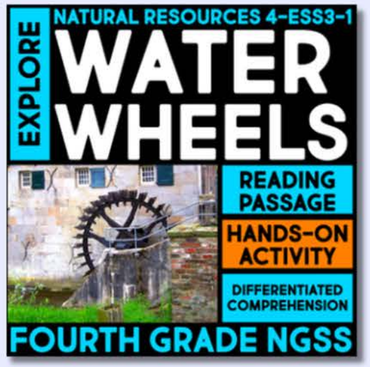


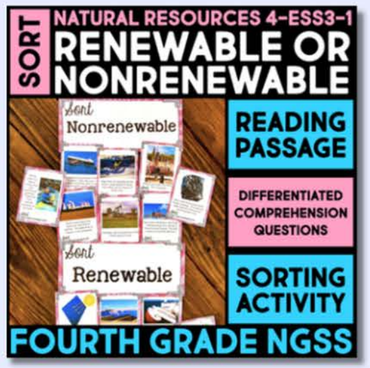












- 8 Science Stations aligned with the NGSS for 4th grade
- 6 Reading passages
- Hands-on activities
- Differentiated comprehension questions
- Digital Videos & Video Games
- Digital Google Slides & Forms

WATCH • PLAY • INVESTIGATE • DIAGRAM • READ • MODEL • EXPLORE • SORT

NATURAL RESOURCES STATION ACTIVITIES

SUGGESTED USES

Learning Stations

Use all eight stations or just a few as learning stations that students complete at their own pace.

Science Centers

Set up a rotation where students visit each center to complete the activities.

Whole Class

Use the activities in a whole class format.

Small Group

Use the activities with a small group who need extra help.

6 READING PASSAGE



6 Reading Passages that provide scientific background knowledge for each station

Available in two formats + Digital

Includes pictures and visuals

PAGE OVERVIEW



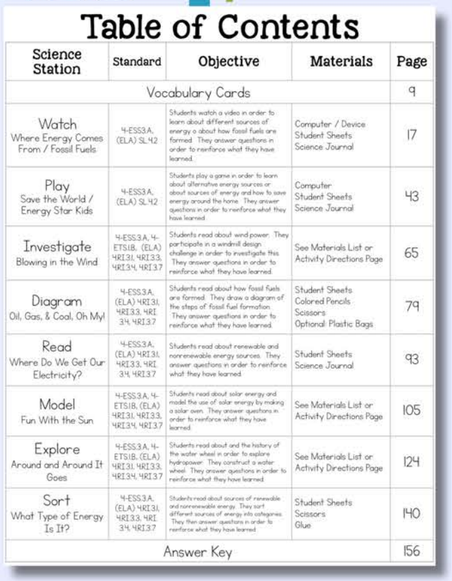


Table of Contents

Science Station	Standard	Objective	Materials	Page
Vocabulary Cards				9
Watch Where Energy Comes From / Fossil Fuels	4-ESS3.A, (ELA) SL.4.2	Students watch a video in order to learn about different sources of energy a about how fossil fuels are formed. They answer questions in order to reinforce what they have learned.	Computer / Device Student Sheets Science Journal	17
Play Save the World / Energy Star Kids	4-ESS3.A, (ELA) SL.4.2	Students play a game in order to learn about alternative energy sources or about sources of energy and how to save energy around the home. They answer questions in order to reinforce what they have learned.	Computer Student Sheets Science Journal	43
Investigate Blowing in the Wind	4-ESS3.A, 4-ETS1.B, (ELA) 4.RI.3.1, 4.RI.3.3, 4.RI.3.4, 4.RI.3.7	Students read about wind power. They participate in a windmill design challenge in order to investigate this. They answer questions in order to reinforce what they have learned.	See Materials List or Activity Directions Page	65
Diagram Oil, Gas, & Coal, Oh My!	4-ESS3.A, (ELA) 4.RI.3.1, 4.RI.3.3, 4.RI.3.4, 4.RI.3.7	Students read about how fossil fuels are formed. They draw a diagram of the steps of fossil fuel formation. They answer questions in order to reinforce what they have learned.	Student Sheets Colored Pencils Scissors Optional: Plastic Bags	79
Read Where Do We Get Our Electricity?	4-ESS3.A, (ELA) 4.RI.3.1, 4.RI.3.3, 4.RI.3.4, 4.RI.3.7	Students read about renewable and nonrenewable energy sources. They answer questions in order to reinforce what they have learned.	Student Sheets Science Journal	93
Model Fun With the Sun	4-ESS3.A, 4-ETS1.B, (ELA) 4.RI.3.1, 4.RI.3.3, 4.RI.3.4, 4.RI.3.7	Students read about solar energy and model the use of solar energy by making a solar oven. They answer questions in order to reinforce what they have learned.	See Materials List or Activity Directions Page	105
Explore Around and Around It Goes	4-ESS3.A, 4-ETS1.B, (ELA) 4.RI.3.1, 4.RI.3.3, 4.RI.3.4, 4.RI.3.7	Students read about and the history of the water wheel in order to explore hydropower. They construct a water wheel. They answer questions in order to reinforce what they have learned.	See Materials List or Activity Directions Page	124
Sort What Type of Energy Is It?	4-ESS3.A, (ELA) 4.RI.3.1, 4.RI.3.3, 4.RI.3.4, 4.RI.3.7	Students read about sources of renewable and nonrenewable energy. They sort different sources of energy into categories. They then answer questions in order to reinforce what they have learned.	Student Sheets Scissors Glue	140
Answer Key				156



Science Stations Overview

Watch a Video
At this station, students will watch a video relevant to the topic and answer questions. You have the option of the included worksheet with the questions or use task cards and have students respond in their science journals.

Play a Video Game
Students play an online video game and answer questions about the experience. You have the option of the included worksheet with the questions or use task cards and have students respond in their science journals.

Investigate
Students use materials to investigate the science topic by following directions and recording results. Students answer questions about the investigation.

Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

Read a Passage
Students read a short passage about the topic and answer questions about the information in the passage. You have the option of the included worksheet with the questions or use task cards and have students respond in their science journals.

Create a Model
Students use materials to illustrate the science concept and answer questions. You have the option of the included worksheet with the questions or use task cards and have students respond in their science journals.

Explore
Students create a sample and manipulate it using the new science concepts they have learned. Students answer question based on the effects.

Sort
Students sort cards into groups or put them in a specific order. Students record the sort and then describe their reasoning.



Natural Resources

Science Stations

These Science Stations have several different ways students can display their understanding. Most of the variations are similar to each other, but differentiated for various classrooms and learning styles. Included are worksheets for both short-answer and fill-in-the-blank and task cards for both short-answer and multiple choice responses. To provide even more support, give students a word list for the fill-in-the-blank options. Also included are vocabulary cards in two formats which could become a ninth station if needed.

Students are encouraged to use their Science Journals with the task cards, but worksheets are provided as well. Use the checklist to monitor student progress through the stations. The Science Stations are designed to last about 20 minutes each. Students may do one a day for 8 days or 2 a day for four days. The following checklists will help you organize the stations.

Every Station in this set meets the Crosscutting Concept: Cause and Effect. "Cause and effect relationships are routinely identified and used to explain change." Each Station addresses how renewable and nonrenewable resources affect the environment and the available natural resources.

In Fourth Grade, students are expected to "obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment" (4-ESS3-1). This correlates with the DCI 4-ESS3.A, which states, "Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not." All stations in this set meet the DCI, helping students gain an understanding of natural resources, how they make fuels, and how they affect the environment. The Engineering Practice of "Obtaining, evaluating, and communicating information" is part of each of the stations.

The Engineering DCI associated with this standard strand is ETS1.B, "Designing Solutions to Engineering Problems." This DCI states, "Testing a solution involves investigating how well it performs under a range of likely conditions." The Investigate station specifically addresses this standard, as students test different designs of windmills. The Model and Explore stations have options for STEM challenge that meets this Engineering DCI.

Video & Game links are included in three formats: the original full link, a bitly link and a Google Shortlink. YouTube Videos are also available via SafeShare links in the three formats.

Watch a Video
Students watch a video in order to learn about different sources of energy a about how fossil fuels are formed. They answer questions in order to reinforce what they have learned.

Play a Video Game
Students play a game in order to learn about alternative energy sources or about sources of energy and how to save energy around the home. They answer questions in order to reinforce what they have learned.

Investigate
Students read about wind power. They participate in a windmill design challenge in order to investigate this. They answer questions in order to reinforce what they have learned.

Draw a Diagram
Students read about how fossil fuels are formed. They draw a diagram of the steps of fossil fuel formation. They answer questions in order to reinforce what they have learned.

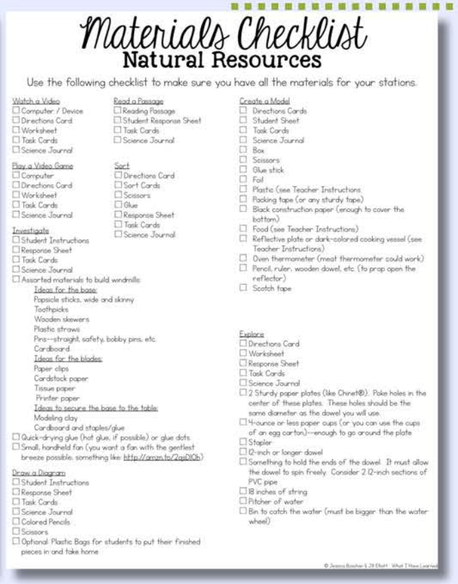
Read a Passage
Students read about renewable and nonrenewable energy sources. They answer questions in order to reinforce what they have learned.

Create a Model
Students read about solar energy and model the use of solar energy by making a solar oven. They answer questions in order to reinforce what they have learned.

Explore
Students read about and the history of the water wheel in order to explore hydropower. They construct a water wheel. They answer questions in order to reinforce what they have learned.

Sort
Students read about sources of renewable and nonrenewable energy. They sort different sources of energy into categories. They then answer questions in order to reinforce what they have learned.

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Materials Checklist

Natural Resources

Use the following checklist to make sure you have all the materials for your stations.

Watch a Video
- ☐ Computer / Device
- ☐ Directions Card
- ☐ Worksheet
- ☐ Task Cards
- ☐ Science Journal

Play a Video Game
- ☐ Computer
- ☐ Directions Card
- ☐ Worksheet
- ☐ Task Cards
- ☐ Science Journal

Investigate
- ☐ Student Instructions
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Assorted materials to build windmills:

Ideas for the base:
Popsicle sticks, wide and skinny
Toothpicks
Wooden skewers
Plastic straws
Pins—straight, safety, bobby pins, etc.
Cardboard

Ideas for the blades:
Paper clips
Cardstock paper
Tissue paper
Printer paper

Ideas to secure the base to the table:
Modeling clay
Cardboard and staples/glue

- ☐ Quick-drying glue (hot glue, if possible) or glue dots
- ☐ Small, handheld fan (you want a fan with the gentlest breeze possible, something like: http://amzn.to/2qsDlOb)

Draw a Diagram
- ☐ Student Instructions
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Colored Pencils
- ☐ Scissors
- ☐ Optional: Plastic Bags for students to put their finished pieces in and take home

Read a Passage
- ☐ Reading Passage
- ☐ Student Response Sheet
- ☐ Task Cards
- ☐ Science Journal

Sort
- ☐ Directions Card
- ☐ Sort Cards
- ☐ Scissors
- ☐ Glue
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal

Create a Model
- ☐ Directions Cards
- ☐ Student Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Box
- ☐ Scissors
- ☐ Glue stick
- ☐ Foil
- ☐ Plastic (see Teacher Instructions)
- ☐ Packing tape (or any sturdy tape)
- ☐ Black construction paper (enough to cover the bottom)
- ☐ Food (see Teacher Instructions)
- ☐ Reflective plate or dark-colored cooking vessel (see Teacher Instructions)
- ☐ Oven thermometer (meat thermometer could work)
- ☐ Pencil, ruler, wooden dowel, etc. (to prop open the reflector)
- ☐ Scotch tape

Explore
- ☐ Directions Card
- ☐ Worksheet
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ 2 Sturdy paper plates (like Chinet®). Poke holes in the center of these plates. These holes should be the same diameter as the dowel you will use.
- ☐ 9-ounce or less paper cups (or you can use the cups of an egg carton)—enough to go around the plate
- ☐ Stapler
- ☐ 12-inch or longer dowel
- ☐ Something to hold the ends of the dowel. It must allow the dowel to spin freely. Consider 2 12-inch sections of PVC pipe.
- ☐ 18 inches of string
- ☐ Pitcher of water
- ☐ Bin to catch the water (must be bigger than the water wheel)

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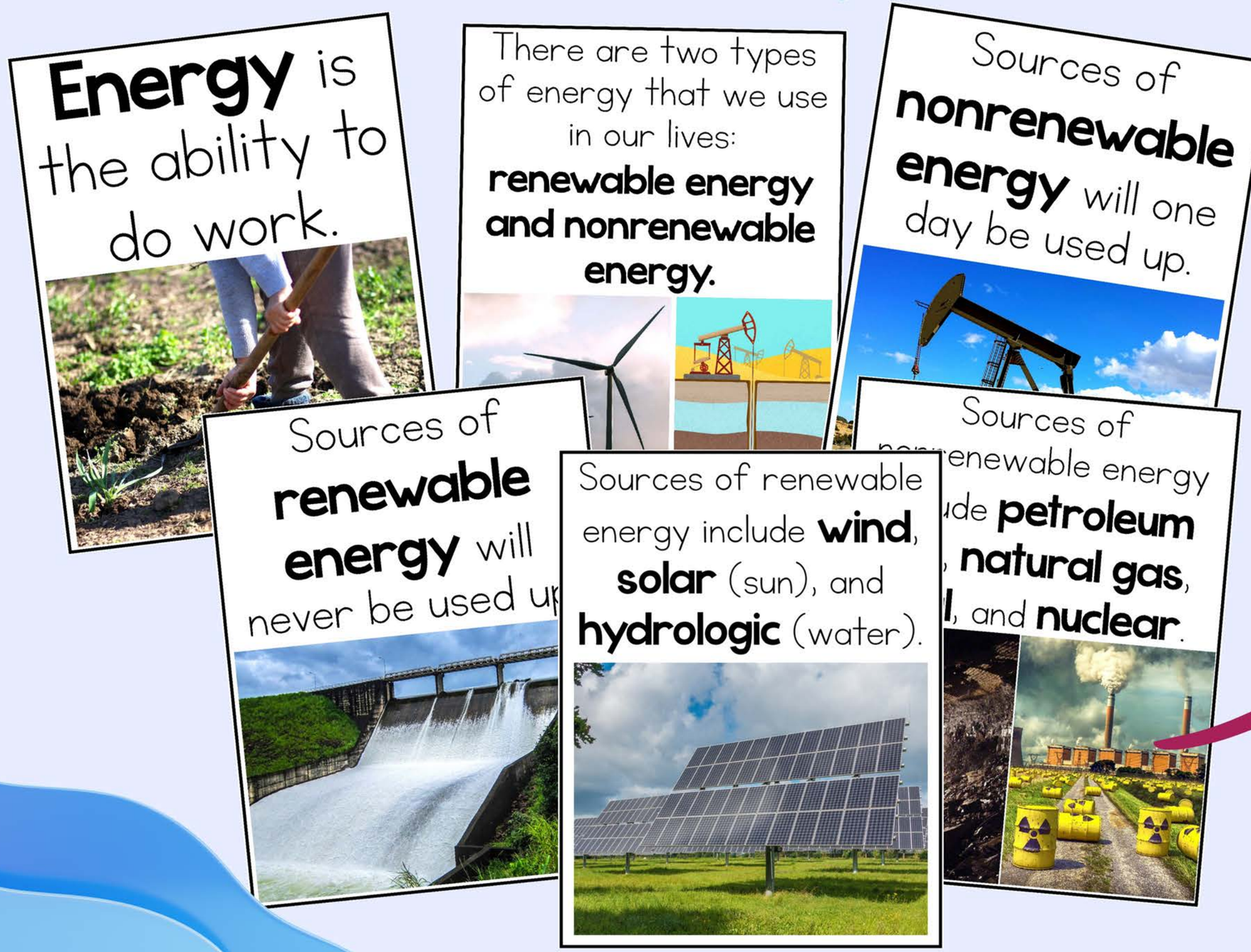
Table of Contents

Science Stations Overview

Materials Checklist

Teacher Notes

BIG IDEA POSTERS



BIG IDEA POSTERS THAT EXPLAIN THE KEY CONCEPTS.

VOCABULARY CARDS IN TWO FORMATS



nonrenewable energy

source of energy that will one day be used up



pollution

things that cause harm to the air, soil, or water



fossil fuel

deposit of fuel that was once ancient plants and animals



energy

the ability to do work

nonrenewable energy

source of energy that will one day be used up

fossil fuel

deposit of fuel that was once ancient plants and animals

WITH PICTURES

WITHOUT PICTURES

SNEAK PEEK: ONE VIDEO FROM THE WATCH STATION


Name: _____ Electricity

Watch a Video

1. Where do you see electricity in action?
You see electricity in action with the power needed for the computer, lightbulbs, etc.

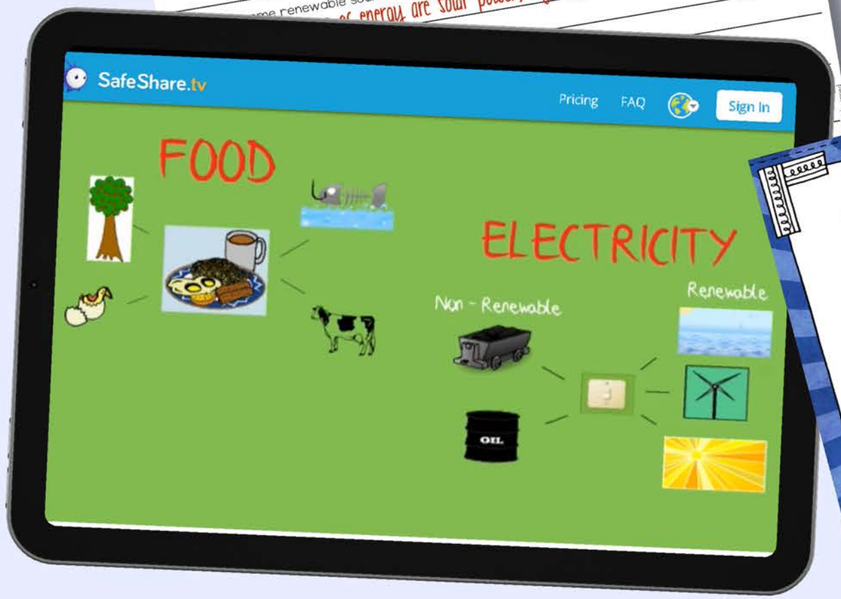
2. What does electricity do for machines?
Electricity gives machines energy so they can work.

3. What does nonrenewable mean?
Nonrenewable means something cannot be made again in a short period of time.

4. What are some nonrenewable sources of energy?
~~Some nonrenewable sources of electricity are uranium, coal, natural gas, oil, and petroleum.~~

5. What does renewable mean?
Renewable means it can be made without producing waste.

...me renewable sources of energy?
...of energy are solar power, hydropower, wind power, and biomass.





STUDENTS WATCH ONE OF TWO VIDEOS AND THEN ANSWER QUESTIONS ABOUT THE VIDEOS. VIDEOS INCLUDE: DIFFERENT SOURCES OF ENERGY AND FOSSIL FUELS.

> Excellent easy to use resource!
>
> - Angela McMahon

LEARN MORE

WATCH STATION

SNEAK PEEK: ONE GAME FROM THE PLAY STATION



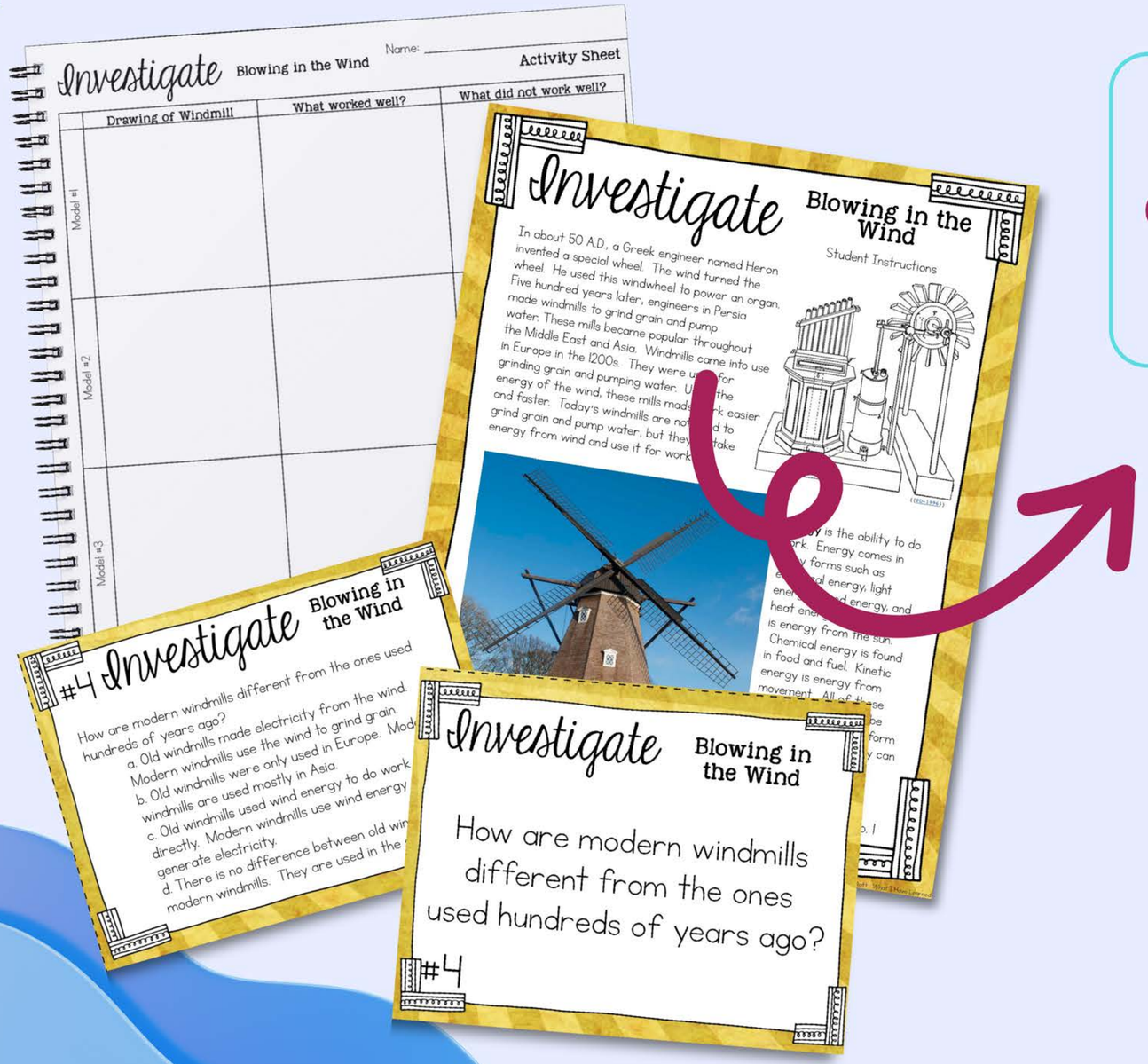
STUDENTS PLAY A VIDEO GAME AND LEARN ABOUT ALTERNATIVE ENERGY SOURCES OR SOURCES OF ENERGY AND HOW TO SAVE ENERGY AROUND THE HOME. STUDENTS ANSWER QUESTIONS TO REINFORCE THE NEW LEARNING.

> "This resource is great! The seller was also amazing with answering my questions quickly!"
>
> - Hollie M.

LEARN MORE

PLAY STATION

SNEAK PEEK: PAGES FROM INVESTIGATE STATION



STUDENTS READ ABOUT WIND POWER. THEY PARTICIPATE IN A WINDMILL DESIGN CHALLENGE IN ORDER TO INVESTIGATE THIS. STUDENTS THEN ANSWER QUESTIONS TO REINFORCE THE CONCEPTS LEARNED.

> "This was a great resource for building my lesson plan for my masters degree!"
>
> - Elysia Head

LEARN MORE

INVESTIGATE STATION

SNEAK PEEK: PAGES FROM DIAGRAM STATION



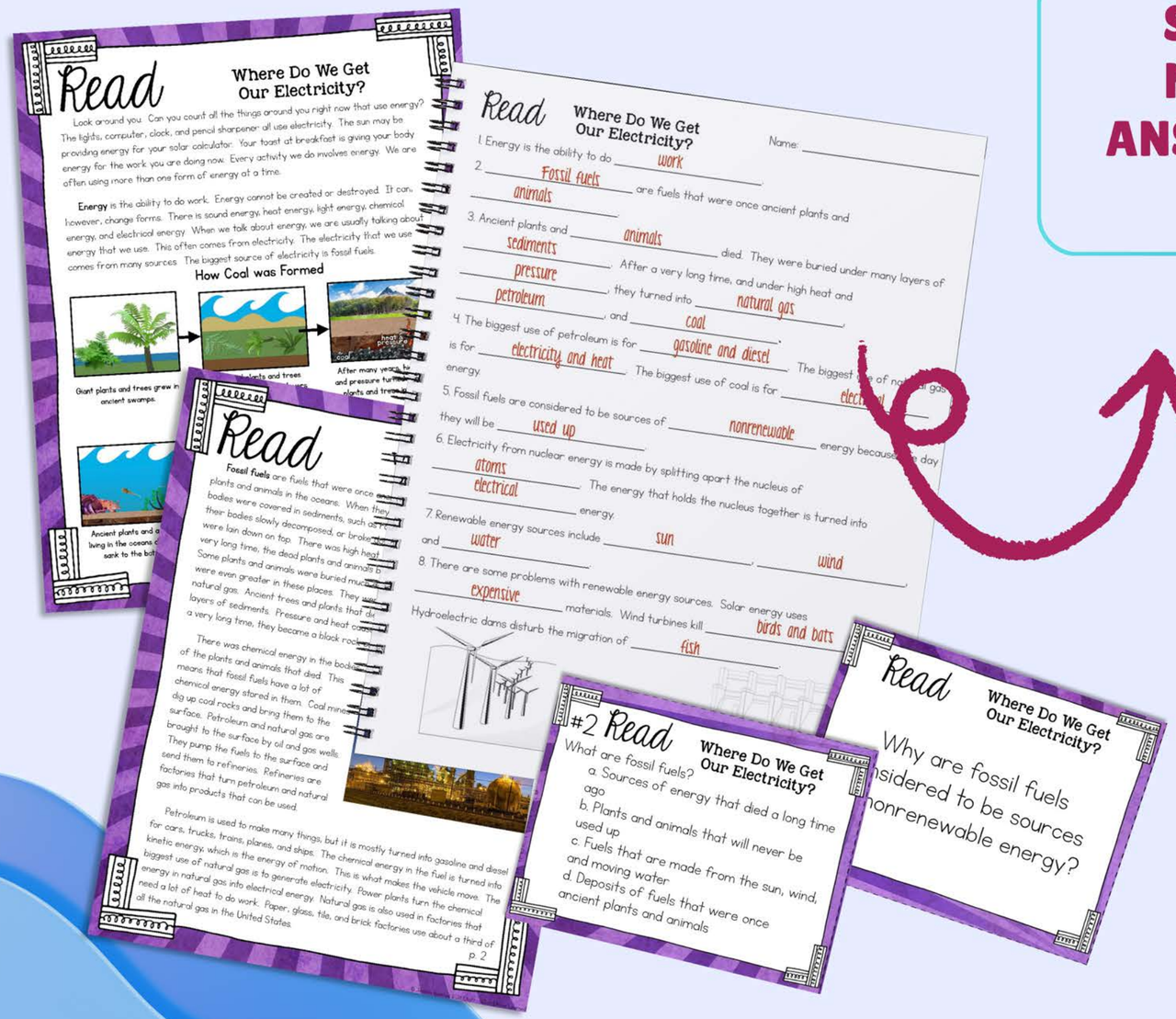
STUDENTS READ ABOUT HOW FOSSIL FUELS ARE FORMED. THEY DRAW A DIAGRAM OF THE STEPS OF FOSSIL FUEL FORMATION AND ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

> "Wonderful resource to help reinforce objectives."
>
> - Gretchen Campbell

LEARN MORE

DIAGRAM STATION

SOME OF THE PAGES IN THE READ STATION



STUDENTS READ ABOUT RENEWABLE AND NONRENEWABLE ENERGY SOURCES. THEY ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

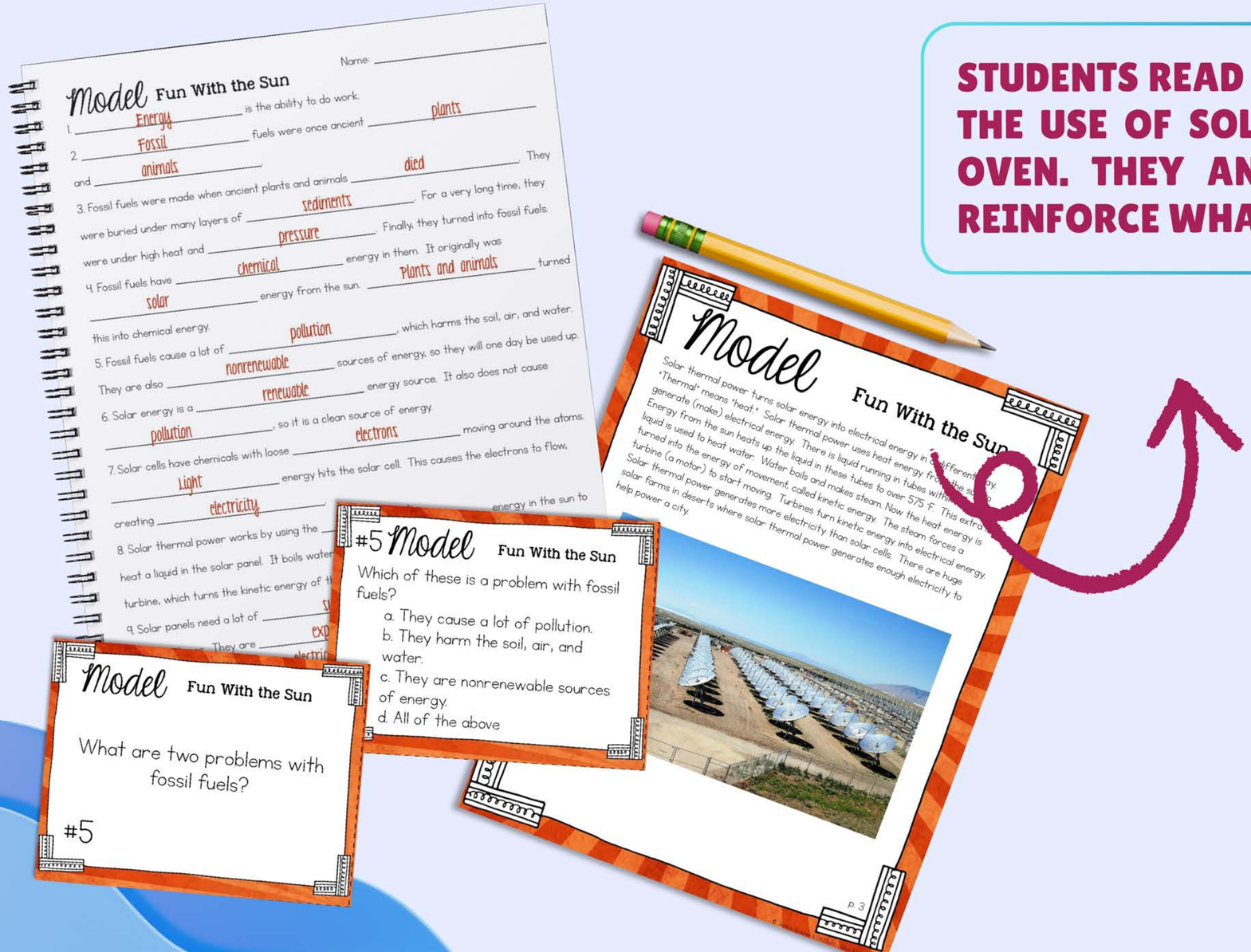
> Great resource for distance learning! Thank you for the low prep materials!
>
> - Jackie L.

LEARN MORE

READ STATION

SNEAK PEEK: PAGES FROM THE MODEL STATION

STUDENTS READ ABOUT SOLAR ENERGY AND MODEL THE USE OF SOLAR ENERGY BY MAKING A SOLAR OVEN. THEY ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

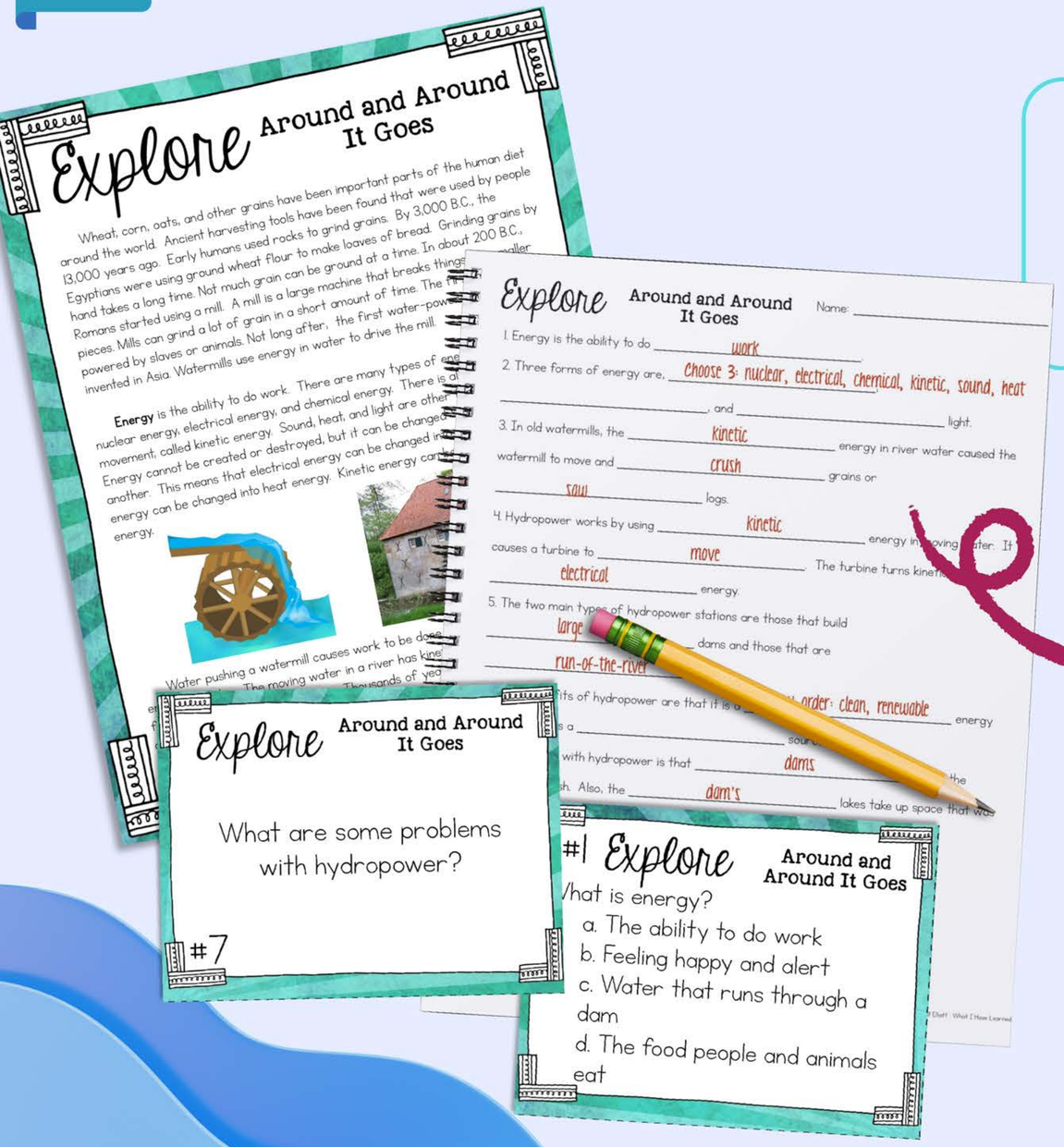


> "Great resource for distance learning! Thank you for the low prep materials!"
>
> - Jackie L.

LEARN MORE

MODEL STATION

A FEW PAGES FROM THE EXPLORE STATION



STUDENTS READ ABOUT THE HISTORY OF THE WATER WHEEL IN ORDER TO EXPLORE HYDROPOWER. THEY CONSTRUCT A WATER WHEEL. THEY THEN ANSWER QUESTIONS ABOUT THE EXPLORATION.

> "Exactly what I was needing for two days of water labs! Thank you!
> - Little Log Cottage School"

LEARN MORE

EXPLORE STATION

A FEW PAGES FROM THE SORT STATION



STUDENTS READ ABOUT SOURCES OF RENEWABLE AND NONRENEWABLE ENERGY. THEY SORT DIFFERENT SOURCES OF ENERGY INTO CATEGORIES. STUDENTS THEN ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

> "Great activity! My students were very engaged! Would recommend this resource!
> - Morgan Z."

LEARN MORE

SORT STATION



All activities have the same basic components:

- Student Directions
- Short Answer Worksheet
- Fill-in-the-Blank Worksheet
- Cut & Paste Worksheet
- Short Answer Task Cards
- Multiple Choice Task Cards

Some activities have more reading to build background knowledge and additional worksheets or activity sheets to help organize the new information.

NOT ALL VERSIONS OF THE PAGES ARE DISPLAYED ON THE FOLLOWING PAGES, BUT ALL ARE IN EACH RESOURCE

DIGITAL VERSIONS

- ✔ Google Forms and/or
- ✔ Google Slides for every station
- ✔ Videos
- ✔ Video Games
- ✔ Digital Crossword Puzzles & Word Searches

Answer keys provided

CAN BE INDEPENDENT

- Watch
- Play
- Read
- Sort

MAY REQUIRE TEACHER SUPPORT

- Investigate
- Diagram
- Model
- Explore

TEACHER PREP

- Choose a topic and activities
- Choose which type of questions students will answer
- Set up the station using the included materials list
- Have students read the passage to build background knowledge (optional)
- Have students complete the stations using the included student directions

TEACHERS LOVE IT!

The activities in this bundle were wonderful for providing engaging learning opportunities for students while also embedding literacy skills into our science instruction!

Jess M.

This is a very easy to use resource! She has it all laid out and ready to go. I really like that I can choose the types of questions I want my students to answer.

Jessica G.





My passion is making learning accessible to all students.
I love scaffolding learning, breaking down the concepts and building them up so that students can see the connections.
I love figuring out the small components that build up to the big ideas and helping students see it all.



teach MATH | teach SCIENCE | teach READING | teach WRITING

What I have LEARNED