

SPECIAL ED

ALTERNATIVE FORMS OF ENERGY FOR HIGH SCHOOL

58
GOOGLE
SLIDES



Special Needs for Special Kids



This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, and loves the sound of piano keys. With some support he is able to do this unit, and enjoys the challenge. He is my tester!!

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4-44	Alternative Forms of Energy book
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This unit contains almost 200 pages of material. I have included a detailed lesson plan to help you make the most of everything in this unit including how to add some group activities.

Alternative Energy Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
 - Laminate or place in page protector
- Book
 - Print out, laminate, and bind
 - OR your students can listen to the pre-recorded version
- Vocabulary cards
 - Print out a set of cards onto cardstock and laminate
 - Make one set for each student and also one for the teacher to use in I Spy games

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your students
- Give the assessment to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

Teaching Tips

1. *Color Coding:* this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
 - a. For more info, read more here:
<https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/>
 - b. I also have a blog post on differentiating one activity 3 ways:
<https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/>
2. *Make your own copies of the activities:* Every day I review the activity we did yesterday. For that reason:
 - a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
 - b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their work.

The lesson plans contain:

Overall tips for teaching
students with significant
needs

Quick Look

Day	Activity	Day	Activity
1	<ul style="list-style-type: none"> • Book • Vocab cards introduction • Circle map 	9	<ul style="list-style-type: none"> • Book • Energy collage • Pros/cons sorting
2	<ul style="list-style-type: none"> • Book • Vocab cards activity • Circle map 	10	<ul style="list-style-type: none"> • Book • Vocab cards cut and paste • Vocabulary puzzle
3	<ul style="list-style-type: none"> • Book • Vocab cards activity • Sorting activity 	11	<ul style="list-style-type: none"> • Book • Vocab cards cut and paste • Vocabulary puzzle
4	<ul style="list-style-type: none"> • Book • Vocab cards activity • Energy collage • Pros/cons sorting 	12	<ul style="list-style-type: none"> • Book • Vocab cards activity • Close worksheet
5	<ul style="list-style-type: none"> • Book • Vocab cards activity • Energy collage • Pros/cons sorting 	13	<ul style="list-style-type: none"> • Book • Vocab cards activity • Close worksheet
6	<ul style="list-style-type: none"> • Book • Energy collage • Pros/cons sorting 	14	<ul style="list-style-type: none"> • Book • Vocab cards activity • Close worksheet
7	<ul style="list-style-type: none"> • Book • Energy collage • Pros/cons sorting 	15	<ul style="list-style-type: none"> • Assessment
8	<ul style="list-style-type: none"> • Book • Energy collage • Pros/cons sorting 		

The lesson plans contain:

A quick look at what you will do each day

Day 2

Activity	Notes	Materials
Read or listen to a recording of the book (15 minutes)	<ul style="list-style-type: none">• Read through the story, asking lots of questions• Continue to make connections between book and vocabulary board	<ul style="list-style-type: none">• Book• Vocabulary board
Vocabulary cards I Spy Game (10 minutes)	<ul style="list-style-type: none">• Determine how many cards your students can handle in front of them. This can vary, some students may be able to have all the cards, so may only be able to handle a field of 3-5• Discuss relevant points on the card<ul style="list-style-type: none">◦ You can also play this game in this manner having them find the symbol on their vocabulary board	<ul style="list-style-type: none">• Vocabulary cards (student set and teacher set)• Vocabulary board
Circle map review (5 minutes)	<ul style="list-style-type: none">• Review the circle map completed yesterday	<ul style="list-style-type: none">• Circle map completed yesterday
Circle Map (10 minutes)	<ul style="list-style-type: none">• Do the circle map which is an overview of renewable resources• Choose the best version (errorless or not) depending on the learning level of your students• Students cut out symbols and place in circle map• Make connections to the book as necessary	<ul style="list-style-type: none">• Circle map• Scissors• Glue
Sharing (10 minutes)	<ul style="list-style-type: none">• Each student shares their circle map with the group using the communication method of their choice	<ul style="list-style-type: none">• Completed circle maps• Communication devices

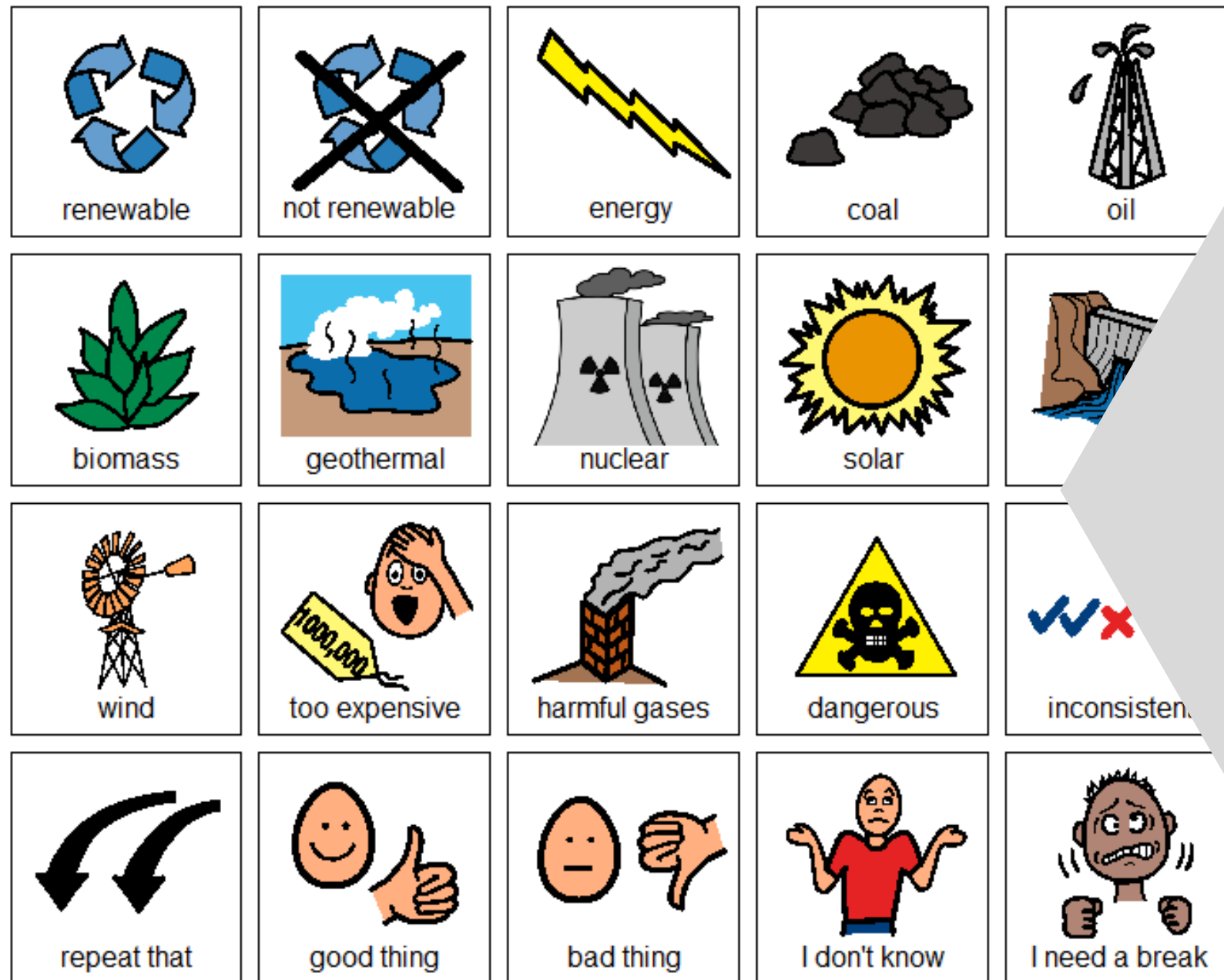
The lesson plans contain:

Detailed instructions on how that day's lesson should run

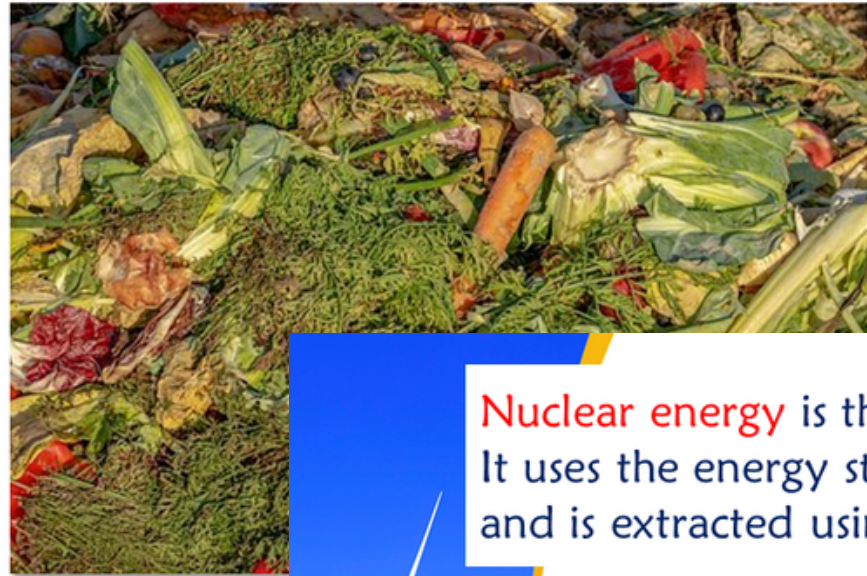
This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!



The first source is **biomass or bioenergy**. This form of energy uses plants and waste and turns them into different forms of energy.



Nuclear energy is the third type of alternative energy. It uses the energy stored in the nucleus of atoms and is extracted using a process of fission.



There is a book with this unit using simple text and photos. It is 41 pages and is an overview of Alternative Energy Sources.

Both come in pdf versions as well as a voice-recorded powerpoints (so you don't have to print it out.)

uranium

Radioactive element used to break apart an atom's nucleus.



solar power

Energy produced from the light and heat of the sun. The most abundant renewable resource.



hydropower

Energy produced from running or falling water like a river or waterfall.



turbine

Engine that uses the movement of wind or water to spin a set of blades and make electricity.

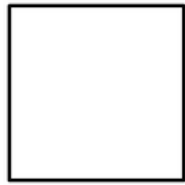


There are 14 vocabulary cards that come in color and black and white.

Included are suggestions for group activities to do with these each day.

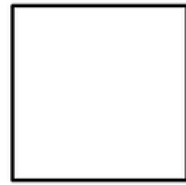
non-renewable

Sources of energy that can run out like coal, oil, and natural gas.

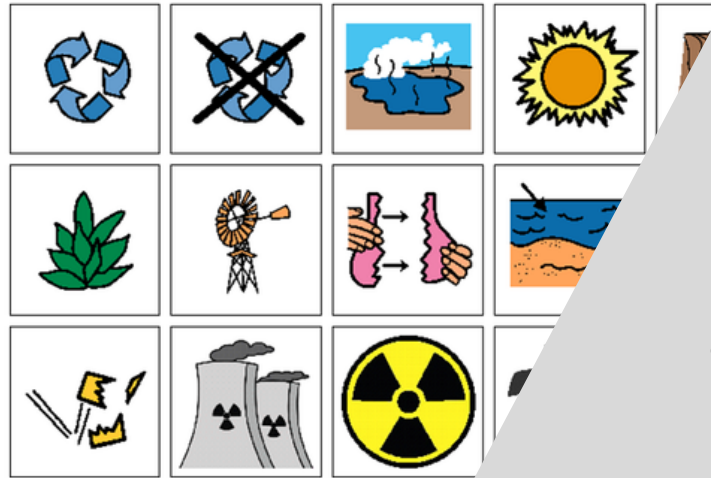


renewable

Sources of energy that can never run out like biomass, geothermal, solar, wind.

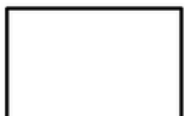


Cut apart and match pictures with definition.



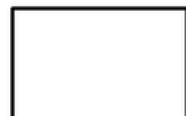
biomass/bioenergy

Uses plants and waste and turns them into different forms of energy

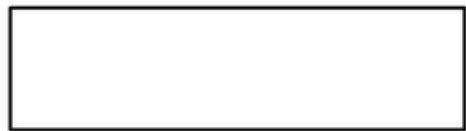


feedstock

Any raw material that you use when creating energy



uranium



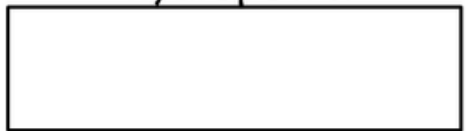
solar power



Cut apart and match definition with pictures.

Energy produced from the light and heat of the sun. The most abundant renewable resource.	Any raw material that you use when creating energy
Sources of energy that can run out like coal, oil, and natural gas.	Engine that uses the movement of wind or water to spin a set of blades and make electricity.
Energy produced using the movement of the wind to turn a turbine and create electricity.	When 2 or more nuclei collide and produce a new nucleus releasing energy.
Uses the energy stored in the nucleus of an atom to create energy.	Uses the heat from deep in the Earth's crust to create energy.

hydropower



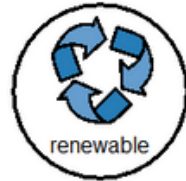
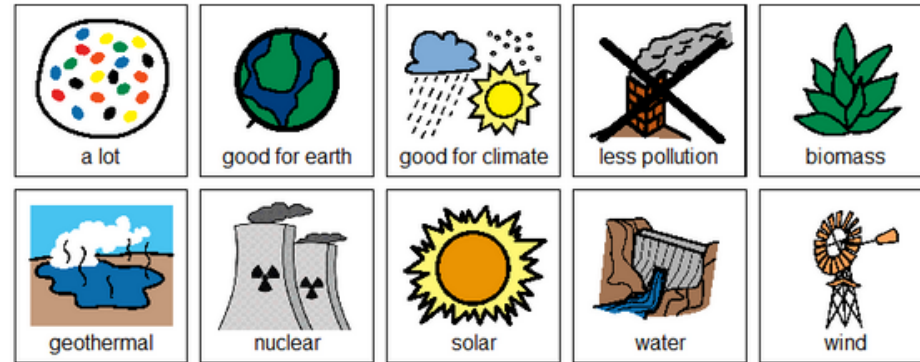
turbine



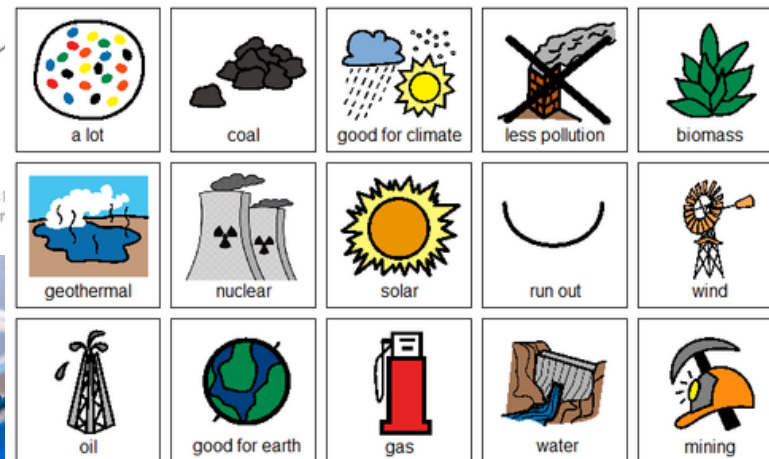
On days 10&11 there is an activity where students will match either the picture to the definition or the definition to the picture (harder).

Errorless version

Place the pictures in the circle map on previous page about renewable energy sources.



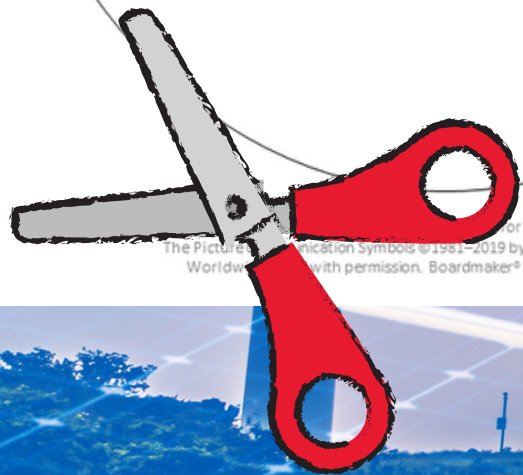
Place the pictures in the circle map on previous page **ONLY IF** you think it relates to renewable energy sources.



There are 2 circle maps, one is on renewable and one on non-renewable energy sources.

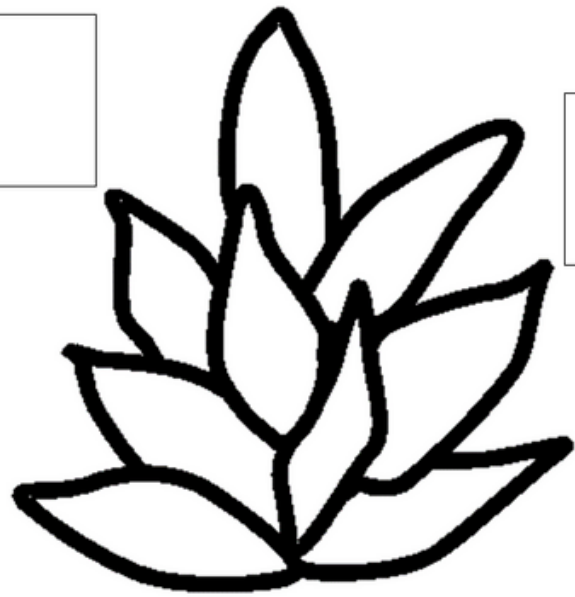
Circle maps are a great way for students to see the concept at a glance. There are 2 versions:

- One is errorless
- One has wrong answers mixed in students will have to set aside



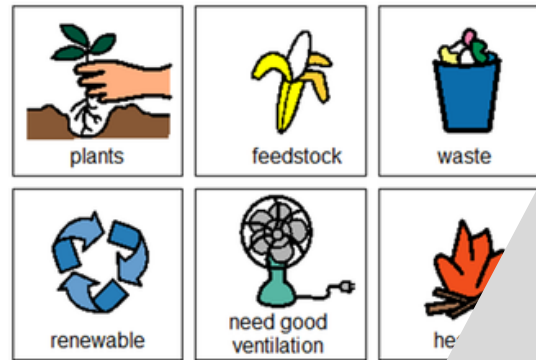
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Biomass

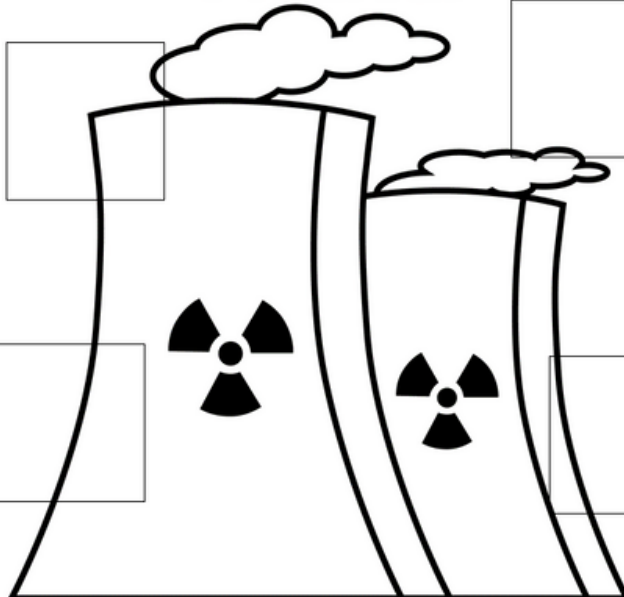


Biomass

Cut out symbols and place on the image depicting the biomass or bioenergy

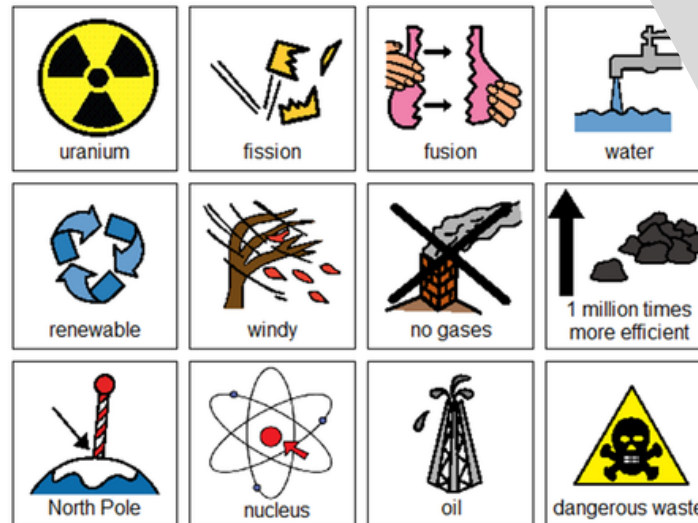


Nuclear

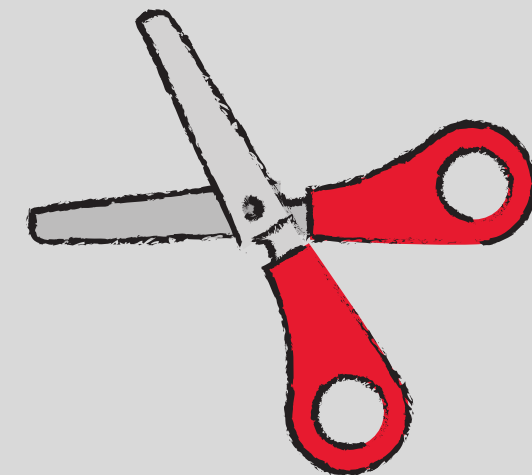


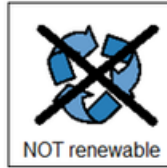
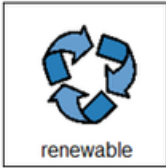
Nuclear

Cut out symbols and place inside collage **ONLY IF** it applies energy.




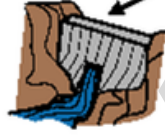








There are 6 collages one for each energy source. they come in an errorless and non-errorless version.

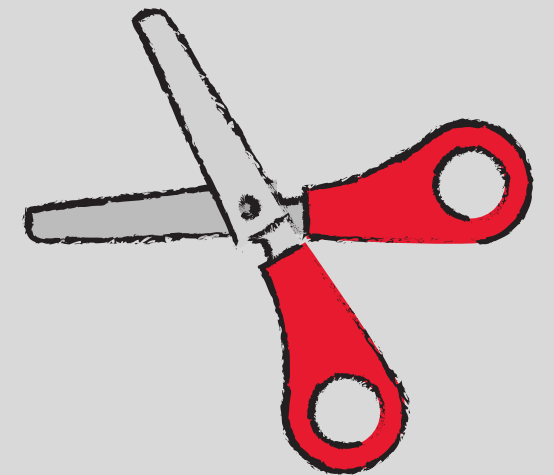




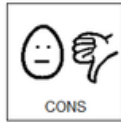
Sort the pictures depending on if they are a renewable source of energy. If you are not sure, place it on the center line.

 oil	 solar	 wind	 water
 coal	 natural gas	 biomass	 nuclear
 gas	 geothermal		

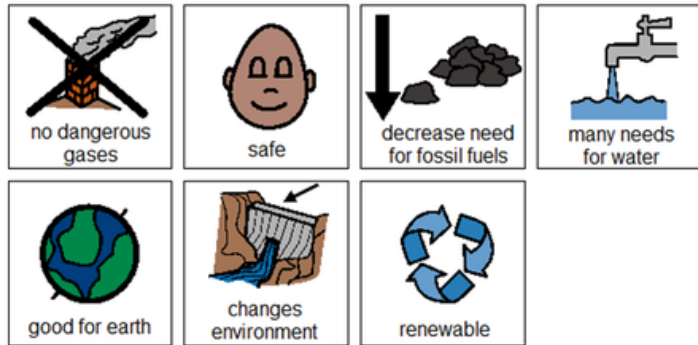
There is a sorting activity that has students sort renewable and non-renewable energy sources.



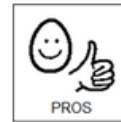
Water



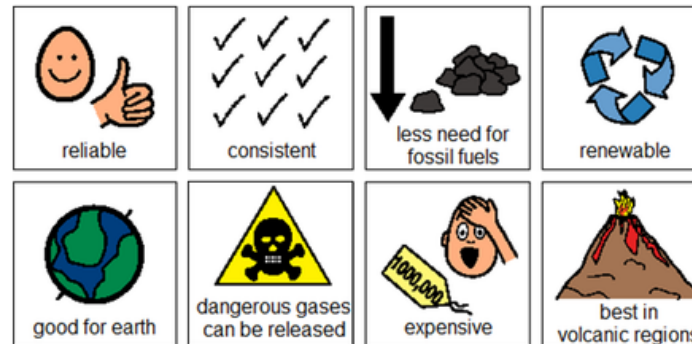
Sort the pictures depending on if they are a good thing (PRO) or bad thing (CON) about that form of energy. If you are not sure, place it on the center line.



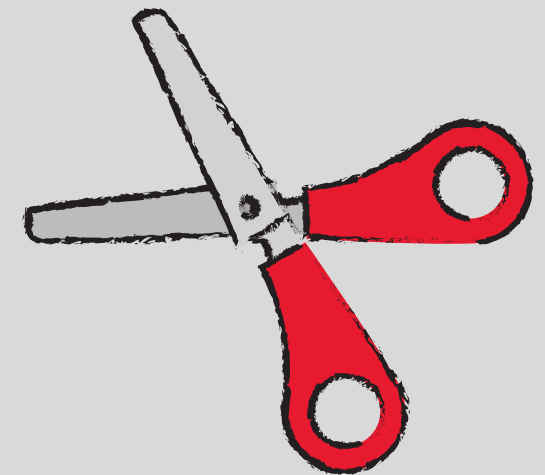
Geothermal























Sort the pictures depending on if they are a good thing (PRO) or bad thing (CON) about that form of energy. If you are not sure, place it on the center line.



There is also a sorting activity for each energy source. Students sort the pros and cons of each.















Alternative Energy









		 wind		 hydropower	 biomass
 nuclear	 hydropower		 geothermal		
 wind	 biomass				 geothermal
 solar			 wind		
 biomass	 geothermal		 hydropower	 wind	 nuclear
 hydropower	 wind			 geothermal	 solar

Christa Joy, Special Needs for Special Kids
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Place the following images in the empty squares on the previous page, completing the sudoku puzzle.

 biomass	 biomass	 biomass	 geothermal
 geothermal	 nuclear	 nuclear	 nuclear
 nuclear	 solar	 solar	 solar

Alternative Energy

 hydropower			 wind
 wind	 renewable		 solar
	 hydropower		
	 wind	 solar	

Christa Joy, Special Needs for Special Kids
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There is a Sudoku puzzle in this unit as well. This is a great way to work with the new vocabulary!!

There are 2 versions plus answer keys.



Alternative Forms of Energy

F E E D S T O C K W
B U F F U S I O N X
H Y D R O P O W E R
B I O M A S S S M U
G E O T H E R M A L
S W N U C L E A R F
O I J F I S S I O N
L N H U R A N I U M
A D T U R B I N E K
R R E N E W A B L E

geothermal	hydropower	renewable	feedstock
biomass	nuclear	turbine	fission
uranium	fusion	solar	wind

Alternative Forms of Energy

F E E D S T O C K W
B U F F U S I O N X
H Y D R O P O W E R
B I O M A S S S M U
G E O T H E R M A L
S W N U C L E A R F
O I J F I S S I O N
L N H U R A N I U M
A D T U R B I N E K
R R E N E W A B L E

geothermal	hydropower	renewable	feedstock
biomass	nuclear	turbine	fission
uranium	fusion	solar	wind

There is also a word search to work with vocabulary. If your students cannot do a word search, have them highlight the circle words on the answer key.

Biomass

1. Feedstock is made up of and other waste material.

2. is used to change the waste into electricity.

3. Biomass is a energy source.

4. Biomass our need for nonrenewable energy sources.

5. You need to make sure there is good when using bioenergy.



Wind

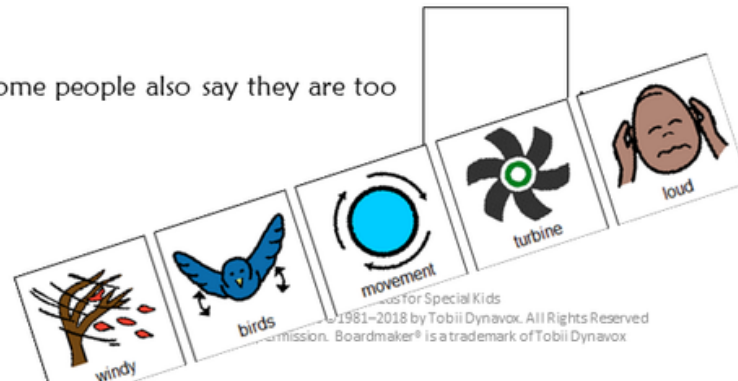
1. You can also make electricity by using the wind.

2. The wind spins a that creates electricity.

3. This type of energy works better in areas that are more .

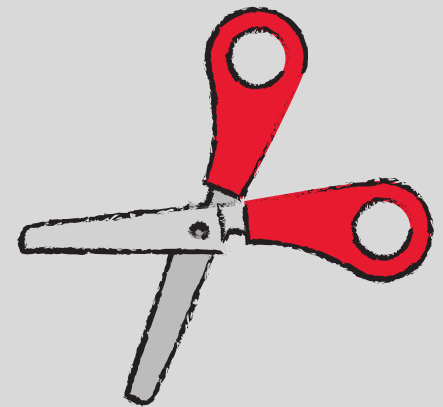
4. The windmills can be dangerous for .

5. Some people also say they are too .

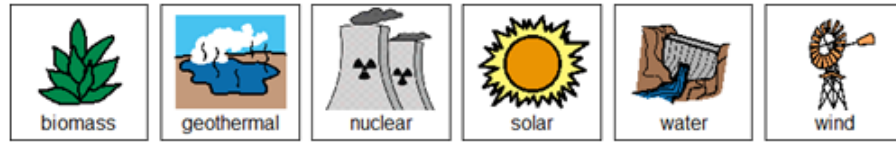


Close worksheets are a great informal assessment. There is one worksheet (5 questions) for each energy source.

Answer key included.



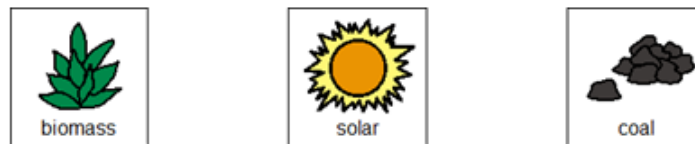
1. Circle the examples of renewable energy:



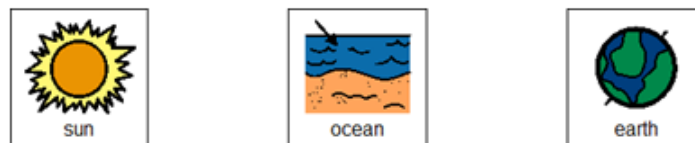
2. One problem with renewable energy is that most forms are very:



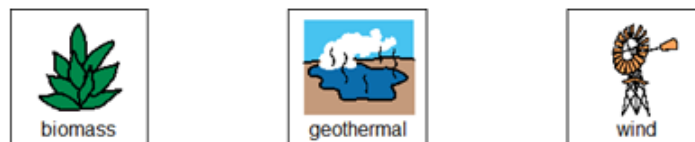
3. Which form of energy relies on plants and other waste product?



4. Geothermal energy uses heat from the:



5. Which form of renewable energy can be dangerous for birds?



FINALLY the assessment!! There are 3 versions. This version has 10 questions with 3 picture choices for each question.

Answer key included.

Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

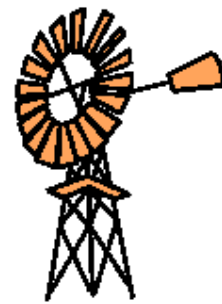
Q 5



biomass



geothermal



wind

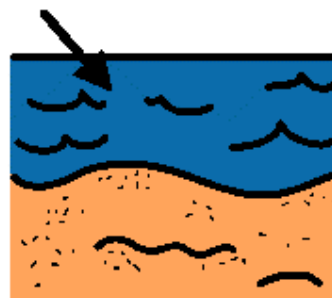
Q 6



fossil fuels



weather



ocean

With this version, you cut out the answer choices and glue them on index cards. Ask the student the question, and they point to the correct answer.

1. Circle the examples of renewable energy:
 - A. Biomass
 - B. Geothermal
 - C. Nuclear
 - D. Solar
 - E. Water
 - F. Wind
2. One problem with renewable energy is that most forms are very:
 - A. Dangerous
 - B. Expensive
 - C. frustrating
3. Which form of energy relies on plants and other waste product?
 - A. Biomass
 - B. Solar
 - C. Coal
4. Geothermal energy uses heat from the:
 - A. Sun
 - B. Ocean
 - C. Earth
5. Which form of renewable energy can be dangerous for birds?
 - A. Biomass
 - B. Geothermal
 - C. Wind
6. The best thing about renewable energy is that it decreases our need for:
 - A. Fossil fuels
 - B. Weather
 - C. Ocean

This is your traditional multiple choice version. It can also be used as a recording sheet if your students are using the version with index cards.

Watch the movie
on Alternative
Forms of Energy



This unit also has 58 google slides. There are 2 sets of slides (29 in each set). The second set is differentiated using color.



I realize there will be some students out there unable to do cutting activities. I have a blog post with ways to complete activities without a pair of scissors!!

All of the activities (except the book) come in color and black and white.

[Click Here to read more!!](#)