ELECTRICITY & CIRCUITS

For Special Ed

INCLUDES GOOGLE SLIDES

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!!

Table of Contents

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.

Electricity 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
- Sample Circuit cards
  - Print out a set of cards for each student onto cardstock and laminate
  - See cards for activity suggestions

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your studen
- 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 you 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.

The lesson plans contain:

Overall tips for teaching students with significant needs

Quick Look

Day	Activity		Day	Activity
1	• Book • Vocab cards activity • Circle map		9	• Book • Vocab cards activity • Counting switches
2	• Book • Vocab cards activity • Circle map		10	• Book • Experiment #1
3	• Book • Vocab cards activity • Sorting activity		11	• Book • Experiment #3
4	• Book • Vocab cards activity • Sorting activity		12	• Book • Vocab cards cut and paste • Vocabulary puzzle
5	• Book • Vocab cards activity • Labeling circuits		13	• Book • Vocab cards cut and paste • Vocabulary puzzle
6	• Book • Vocab cards activity • Labeling circuits		14	• Book • Vocab cards activity • Close worksheet
7	• Book • Vocab cards activity • Labeling circuits		15	• Book • Vocab cards activity • Close worksheet
8	• Book • Vocab cards activity • Counting switches		16	• Assessment

The lesson plans contain:

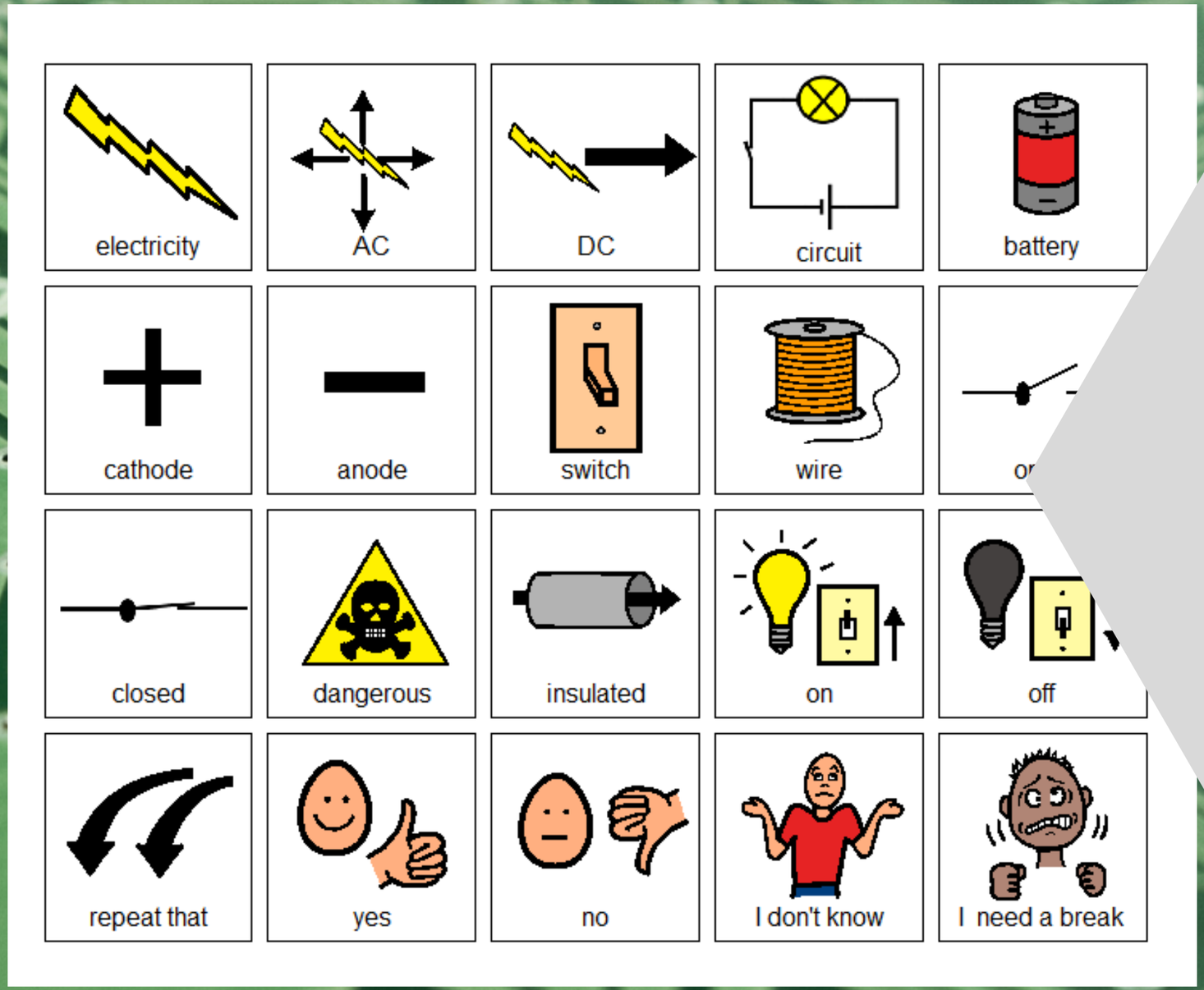
A quick look at what you will do each day

Day 9

Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	• Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board	• Book • Vocabulary board
Vocabulary cards Bean Bag Toss (10 minutes)	• Glue the cut apart symbols to the paper plates (one on each plate) • Arrange them around the room • Students toss the bean bag trying to get it to land on a paper plate • Students retrieve the paper plate and share the vocabulary card they retrieved	• Vocabulary cards • Vocabulary cards cut apart • Small paper plates (you can also use pieces of construction paper) • Bean bags
Counting activity Review (5 minutes)	• Review the counting activity from yesterday	• Finished counting activity
Counting activity (10 minutes)	• Complete 2 of the activities where students count switches, lights, and name the type of circuit • Add color coding if needed for more support • Make connections to book and vocabulary cards	• Counting activity • Scissors • Glue
Sharing (10 minutes)	• Each student shares their finished sequencing activity	• Completed activity • Communication devices

The lesson plans contain:

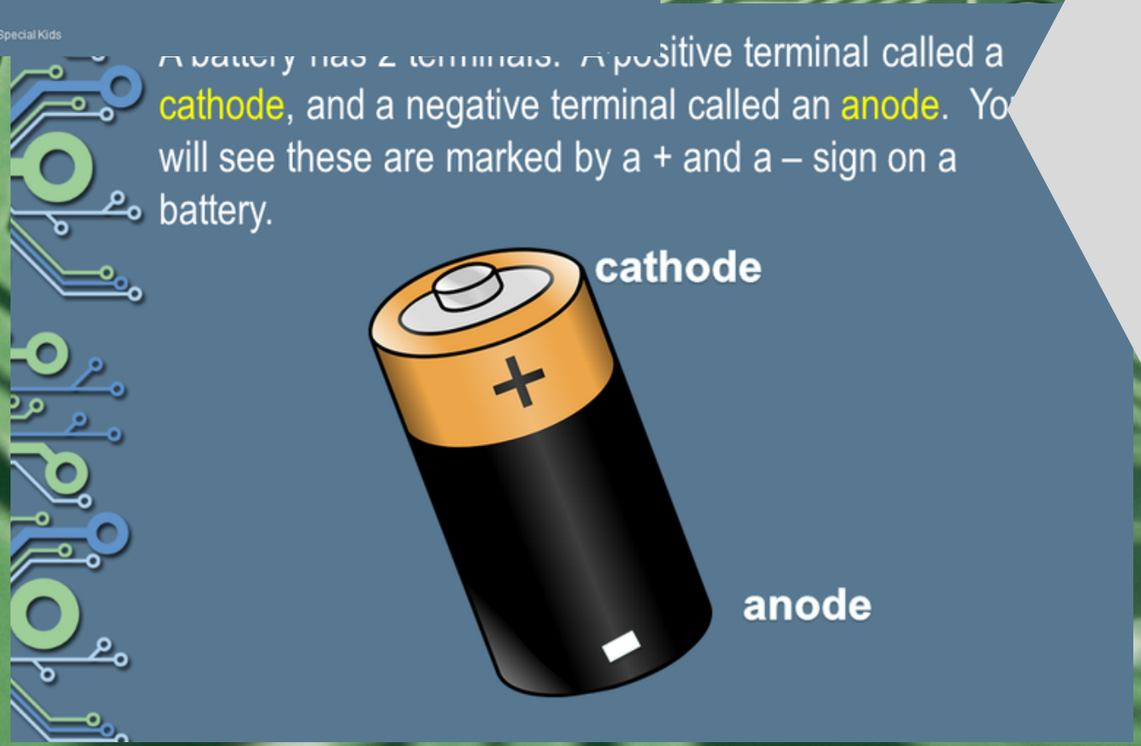
Detailed instructions on how that day's lesson should run



This unit comes with a vocabulary board.

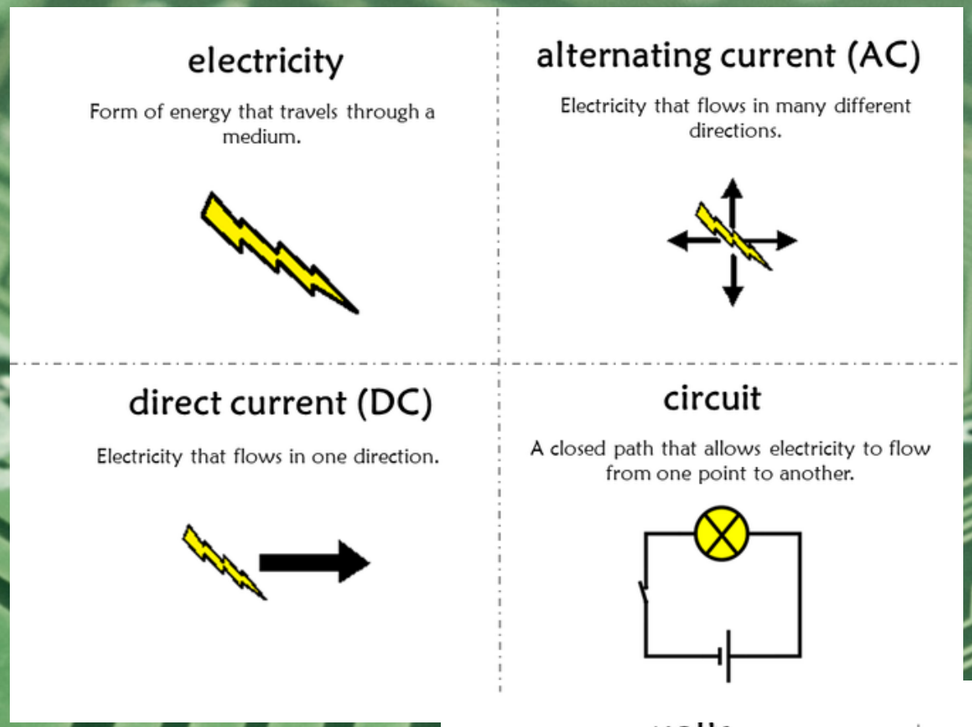
Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

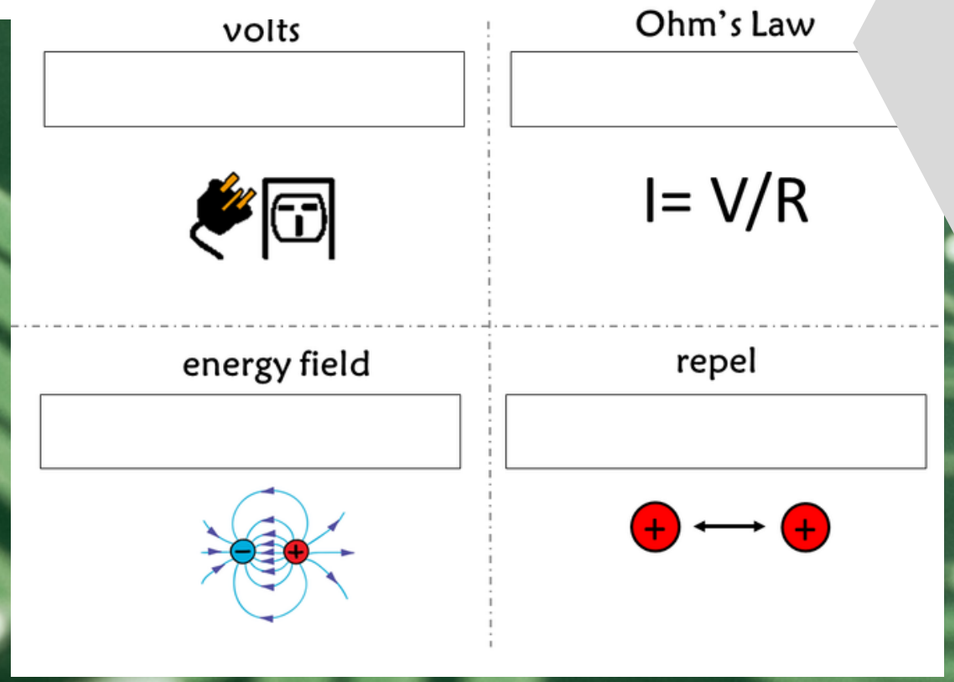
Tips on how to use in the unit!!



There is a 42 page book with this unit using simple text and photos.

It comes in a pdf version as well as a voice recorded powerpoint (so you don't have to print it out.)





There are 16 vocabulary cards that come in color and black and white.

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

cathode

Positive end of a battery.

anode

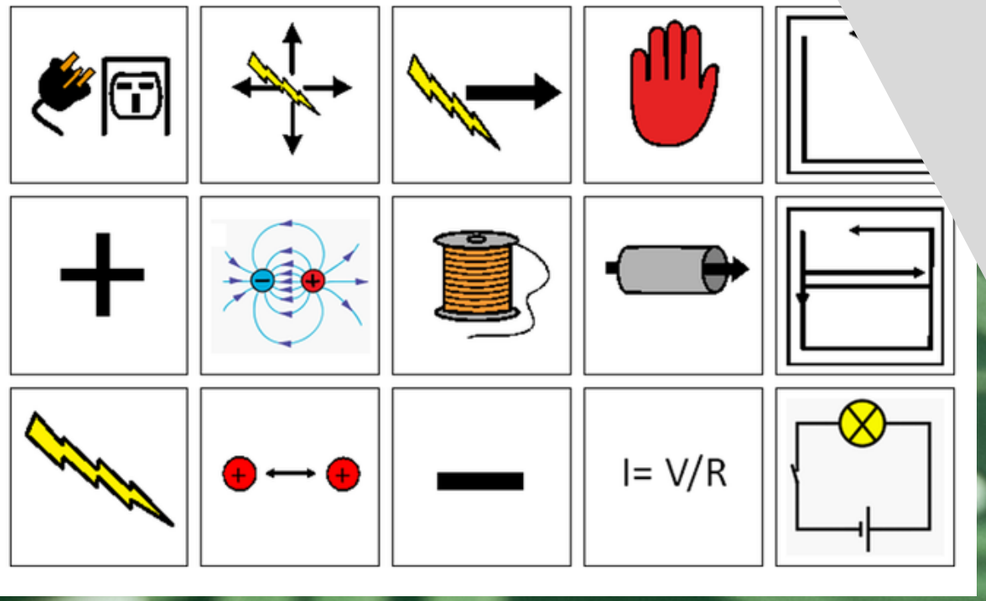
Negative end of a battery.

conductor

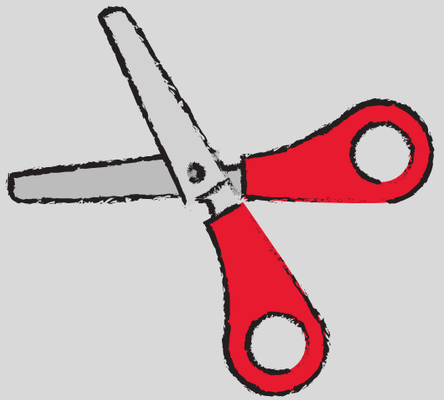
An object that allows electricity to flow through it easily, like metals.

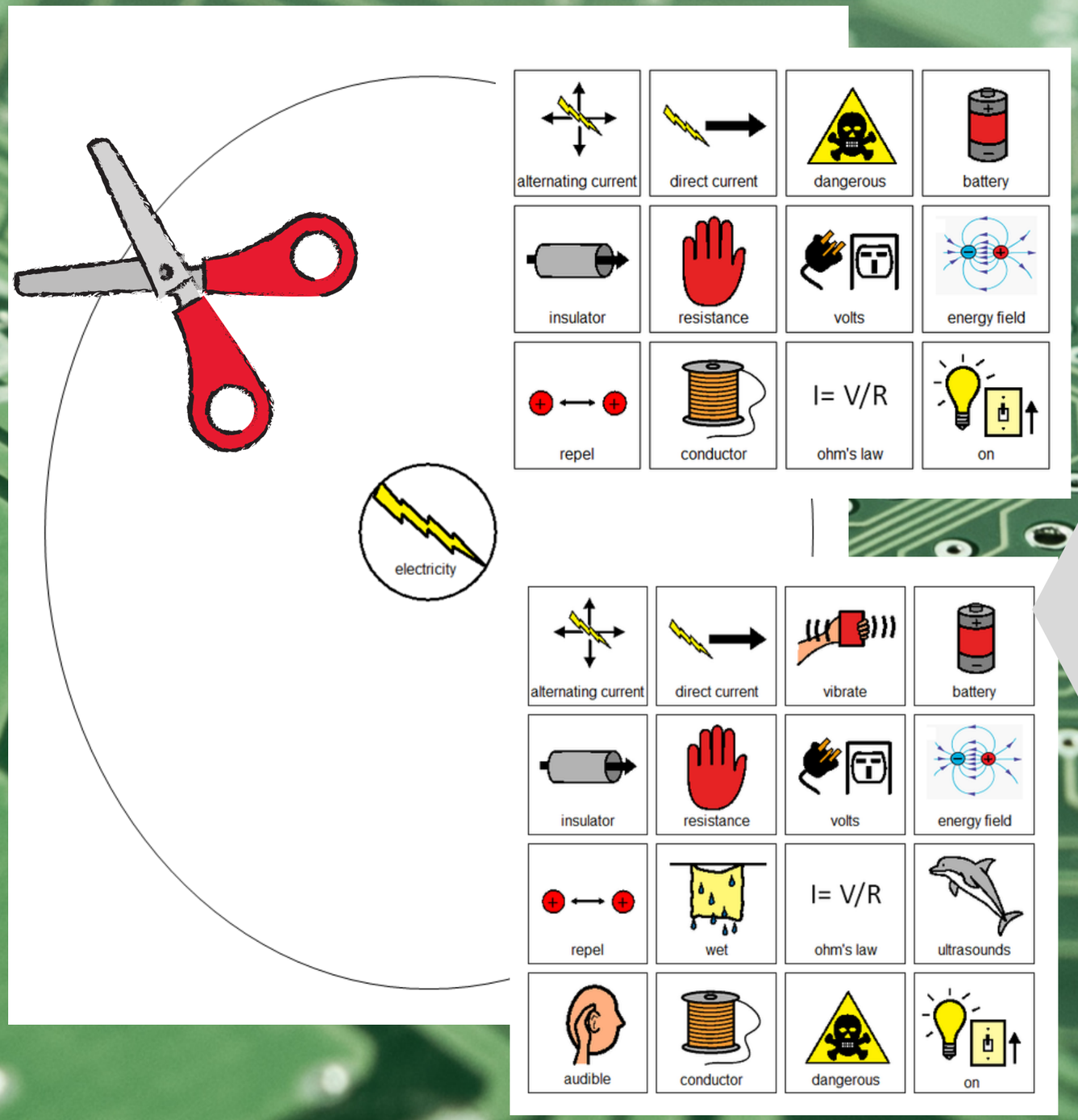
resistance

Something that slows down the flow of electricity and decreases the conductivity.



On days 12 & 13 there is an activity where students will match either the picture to the definition or the definition to the picture (harder).



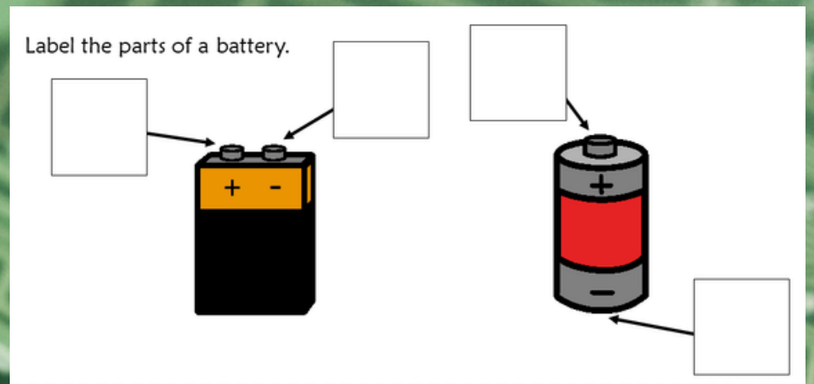


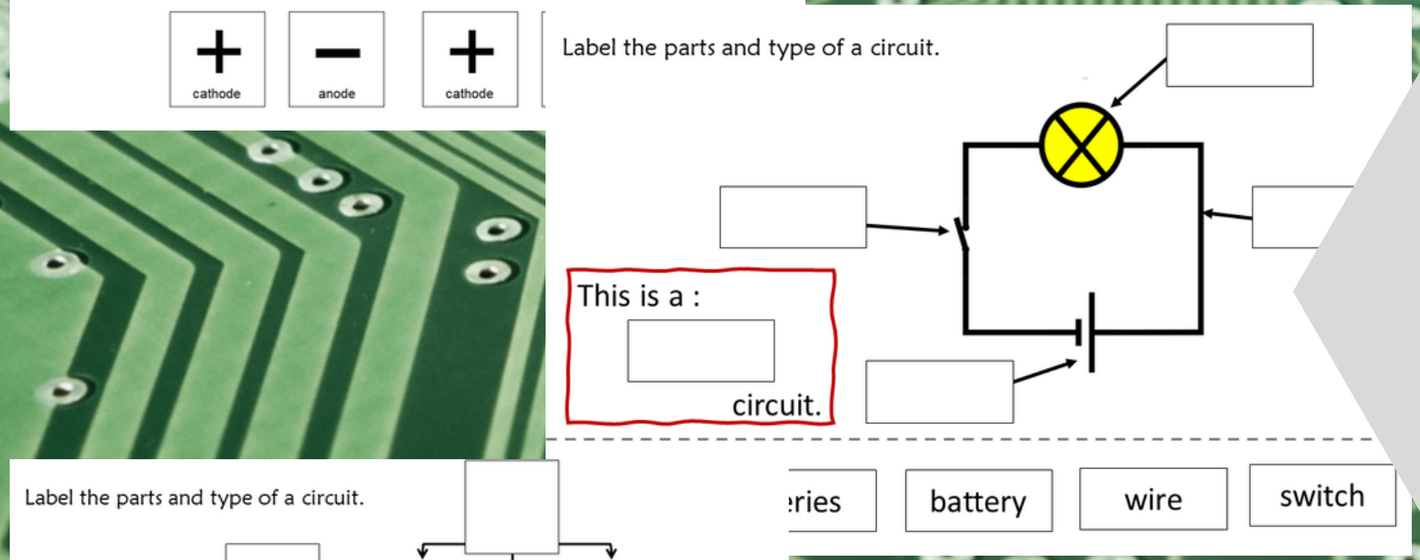
There are 2 circle maps. One is on electricity and one is on the components of a circuit.

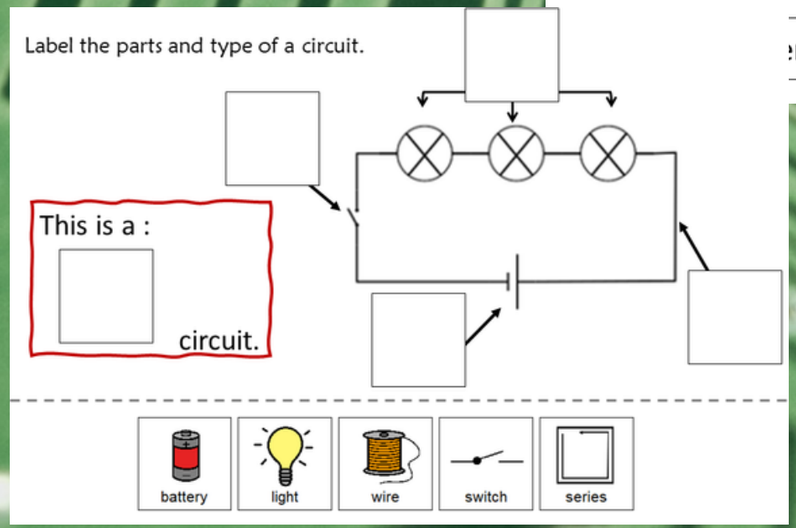
Circle maps are a great way for students to see the concept at a glance. There are 2 versions:

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

There are 2 sorting activities exploring electricity.
Suggestions for differentiation and answer keys are included.

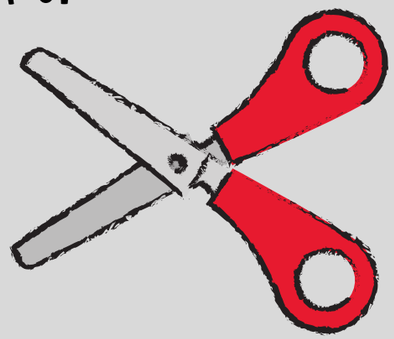


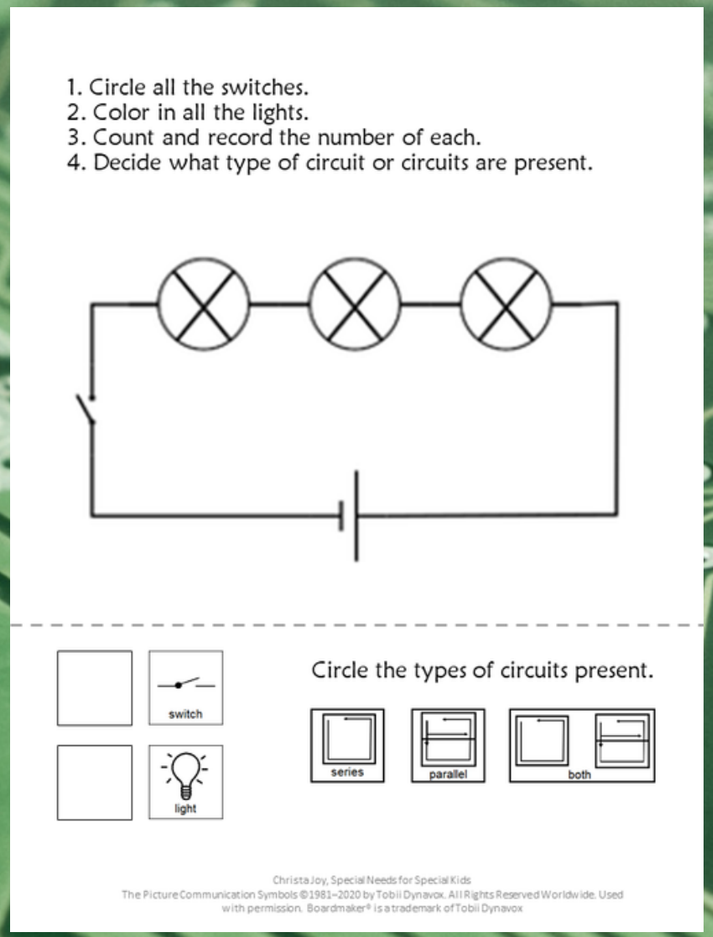


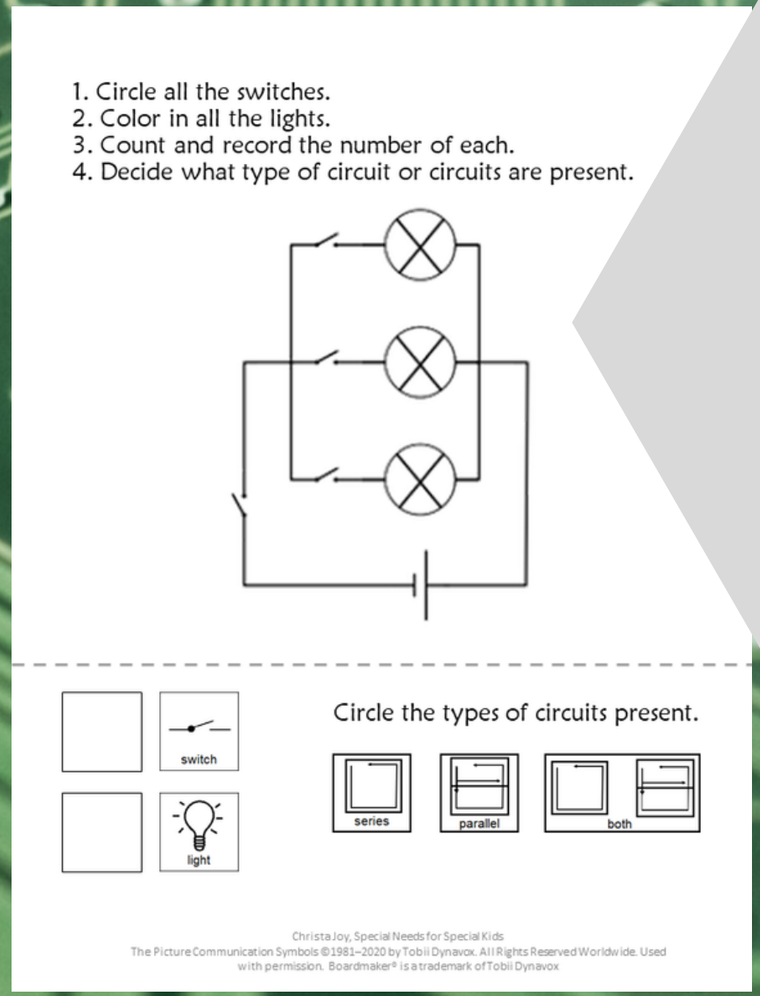


There are 3 labeling activities. 3 of them use words and 3 of them include picture symbols.

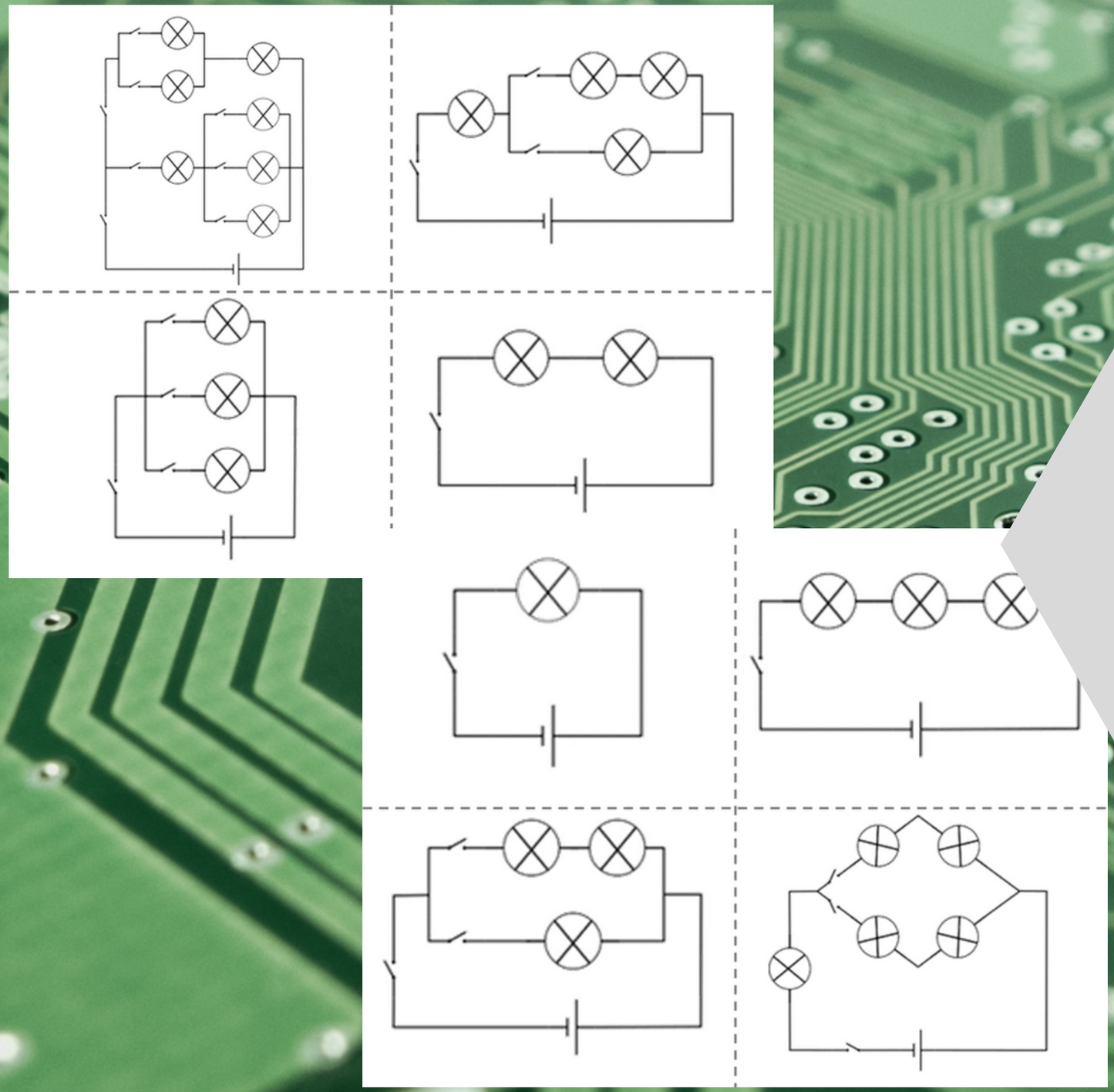
There are color-coded options provided for students who need more support.



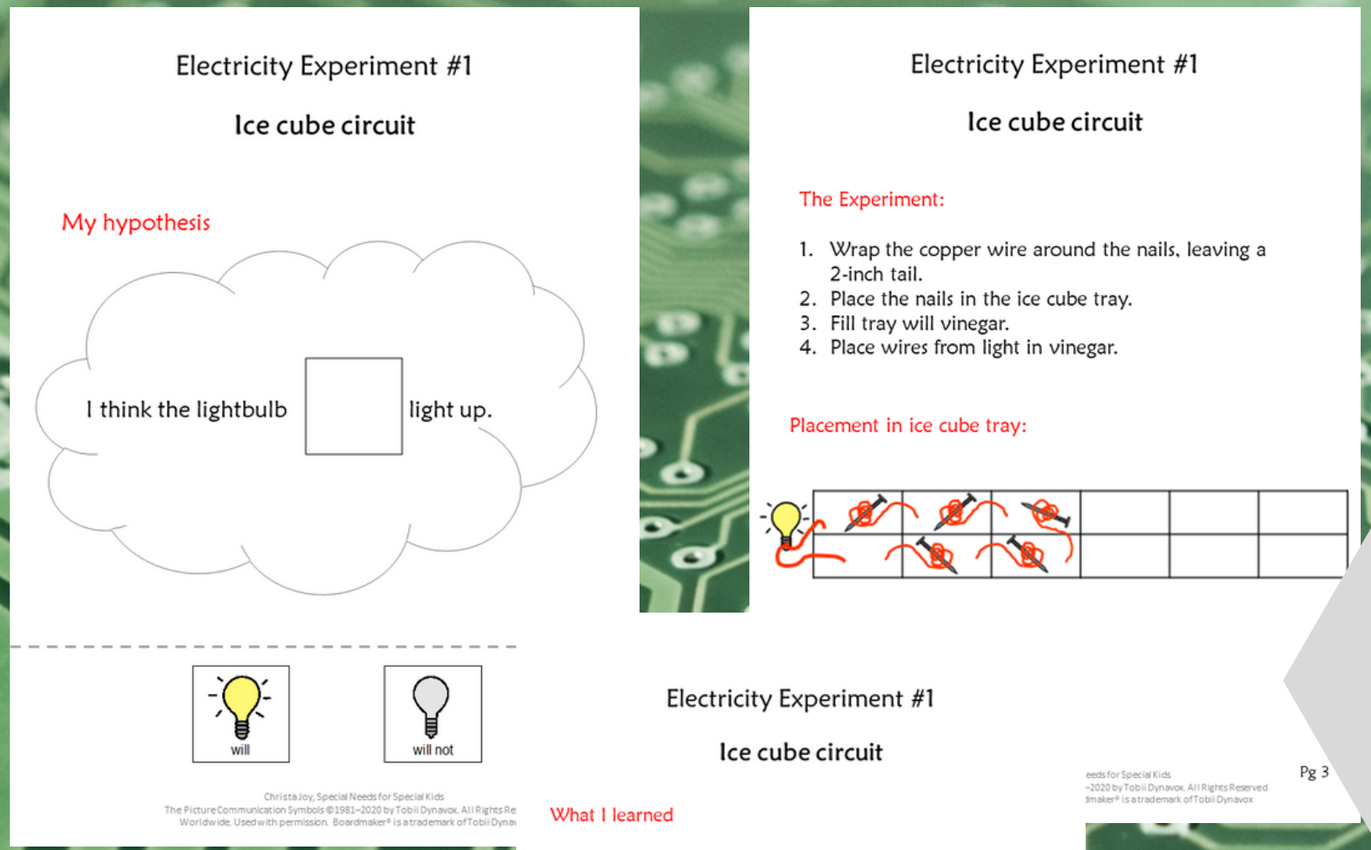


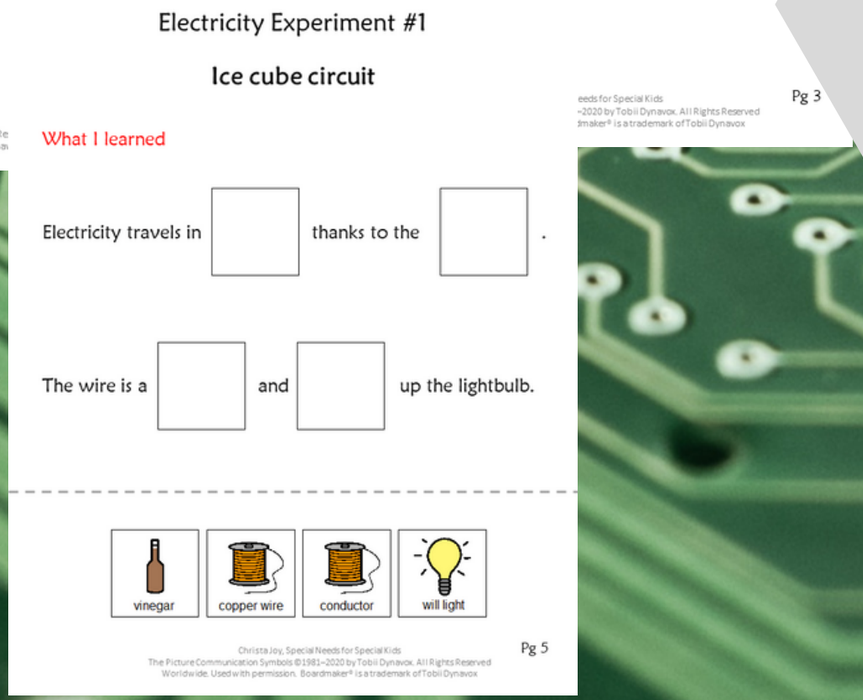


There are 5 activities where students count the number of switches and lights. They also need to identify the type of circuit. Suggestions for differentiation and answer keys are included.



There are 12 large sample circuit cards. Included is a list of activities you can use these cards for with your students.





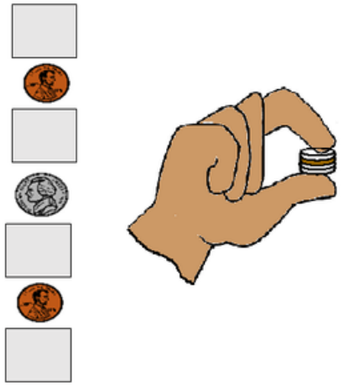
There are 2 experiments included in this unit. The first one explores making a circuit with an ice cube tray. It guides students through creating and testing a hypothesis. At the end they summarize what they have learned.

Electricity Experiment #2

Coin Battery

The Experiment:

1. Make a stack in this order: paper, penny, paper, nickel
2. Keep repeating until all the paper is gone.
3. Hold the stack between your index finger and thumb.
4. What do you feel?
5. Repeat the above steps, but first soak the paper in vinegar.
6. What do you feel?



Electricity Experimen

Coin Battery

Testing my hypothesis:

	Prediction (what I will feel)	
Dry paper		
Wet paper		

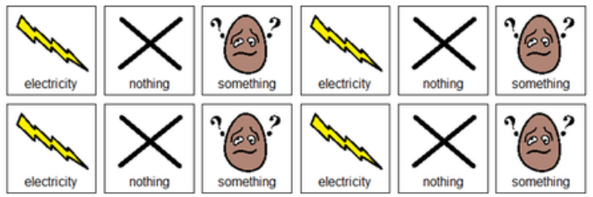
Electricity Experiment #2

Coin Battery

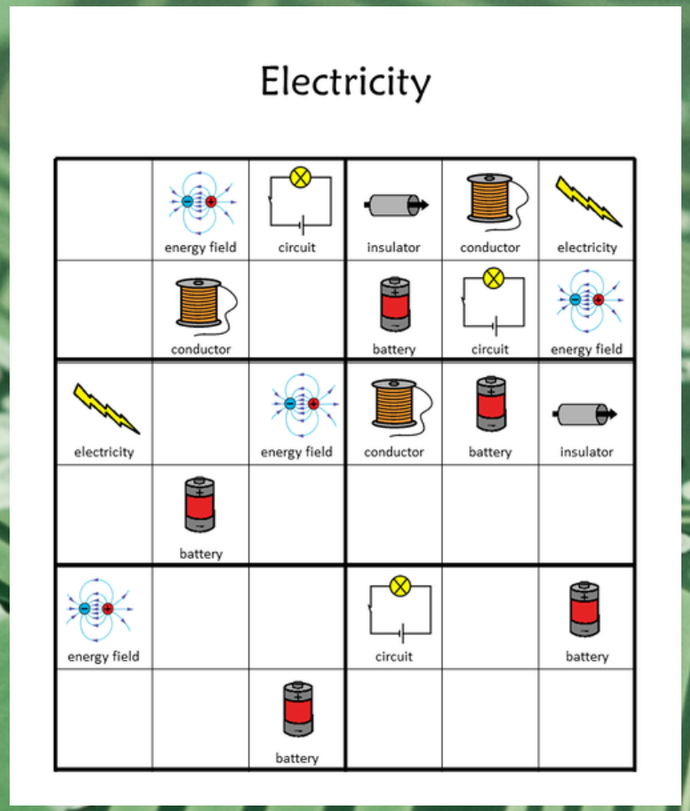
What I learned

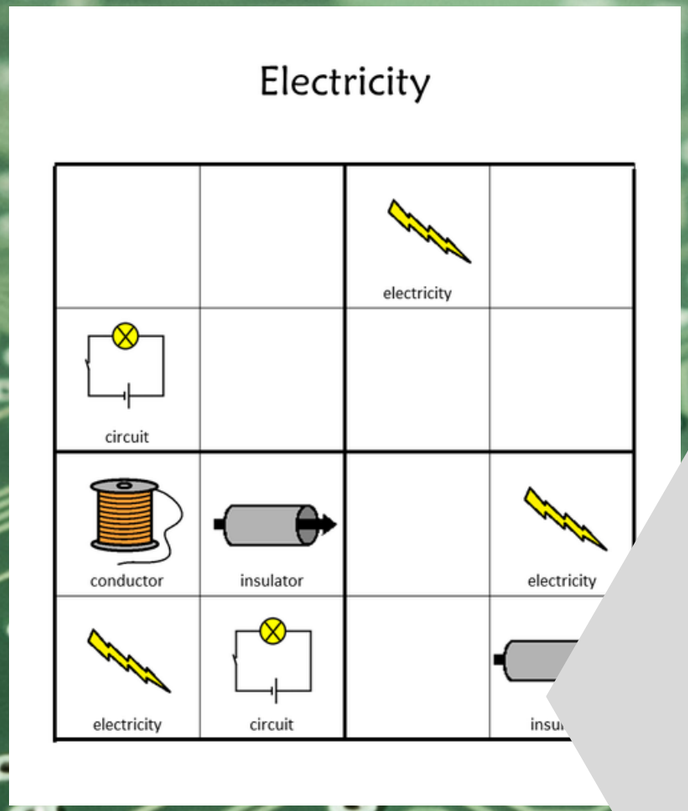
[ ] makes electricity travel through the [ ]

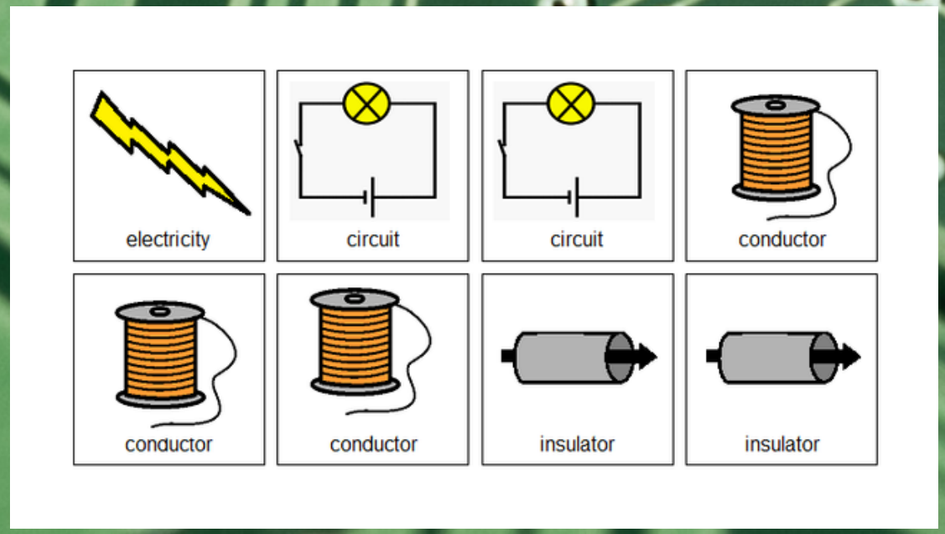
I [ ] feel the [ ].



The second experiment explores what it takes to make a battery out of coins. It guides students through creating and testing a hypothesis. At the end they summarize what they have learned.

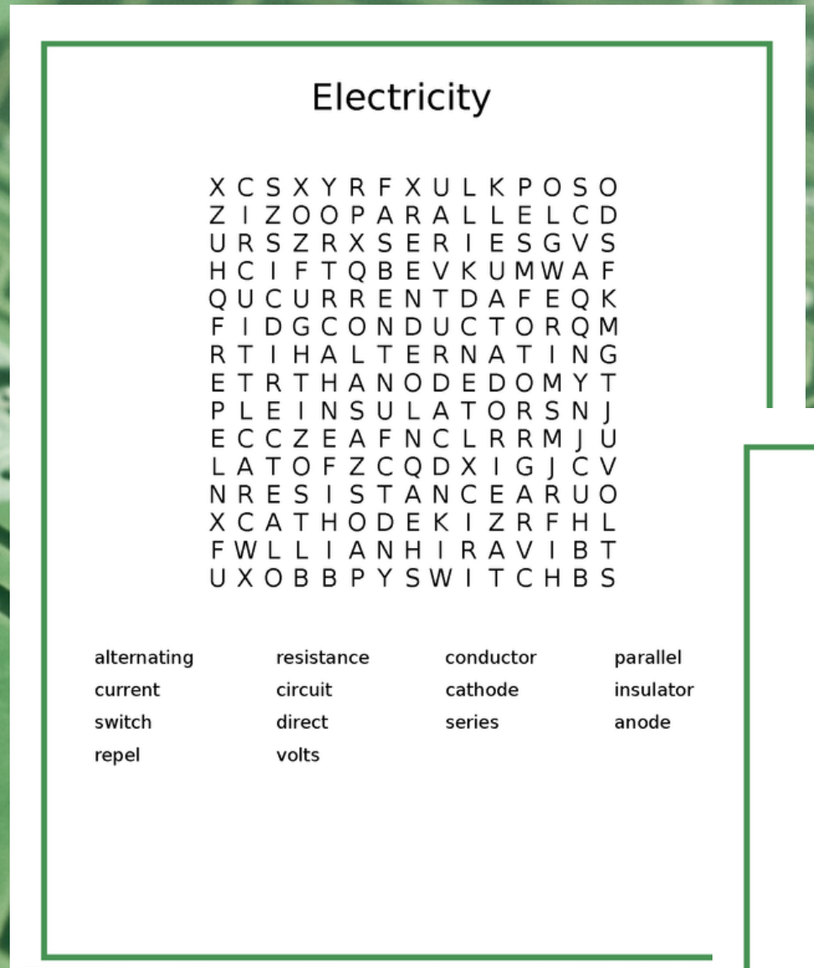


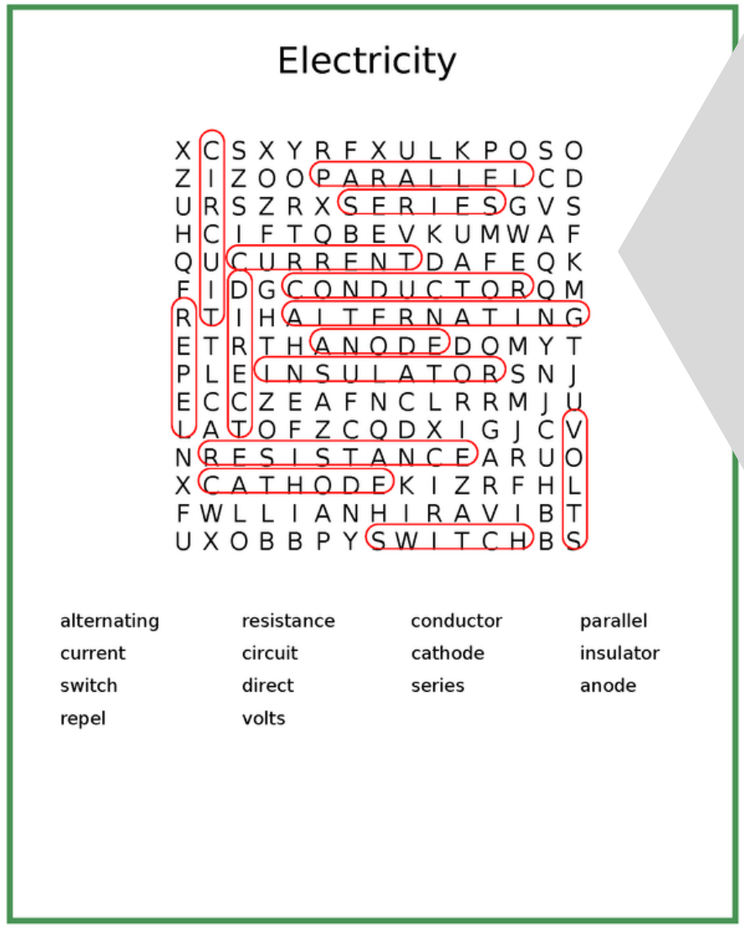




There is a Sudoku puzzle in this unit as well. This is a great way to work with the new vocabulary!!

There are 2 versions plus answer keys.





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.

Electricity

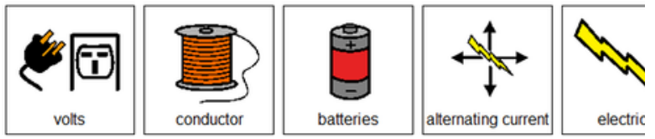
1. [ ] is energy that travels in a current.

2. The current is measured in [ ] .

3. [ ] is electricity that comes from a source and goes in many directions.

4. [ ] use direct current to send electricity around a circuit

5. Copper wire is a good [ ] of electricity.



Circuits

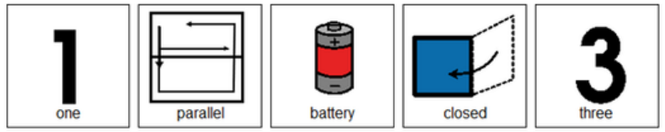
1. There are [ ] main parts to a circuit.

2. A [ ] is an example of a power source.

3. For the circuit to be complete, the switch must be [ ] .

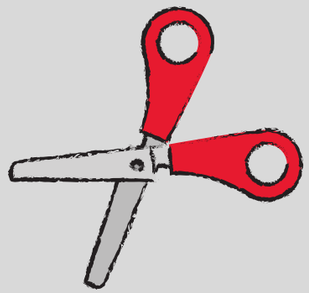
4. A series circuit sends the current in [ ] direction.

5. A [ ] circuit can send the current in more than one direction.



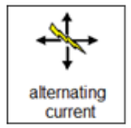
Close worksheet are a great informal assessment. This unit has 10 questions that review facts in the book.

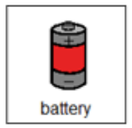
Answer key included.

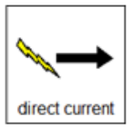


Version 1

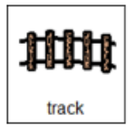
1. Electricity that comes from a power plant and goes in many directions uses:

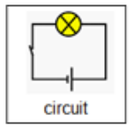




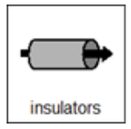


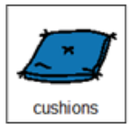
2. What is the name of the pathway the current runs on?

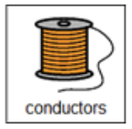




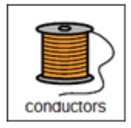
3. Wire and other metals make good:

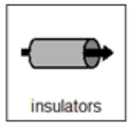




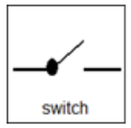


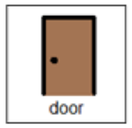
4. Paper, plastic, and rubber make good:





5. When this is open on a circuit, the current will stop:





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

Answer key included.

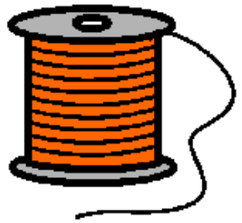
Version 2

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

Q 3

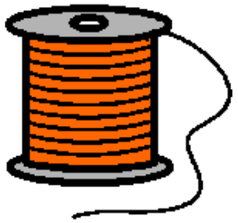
insulators

cushions



conductors

Q 4



conductors

insulators

plugs

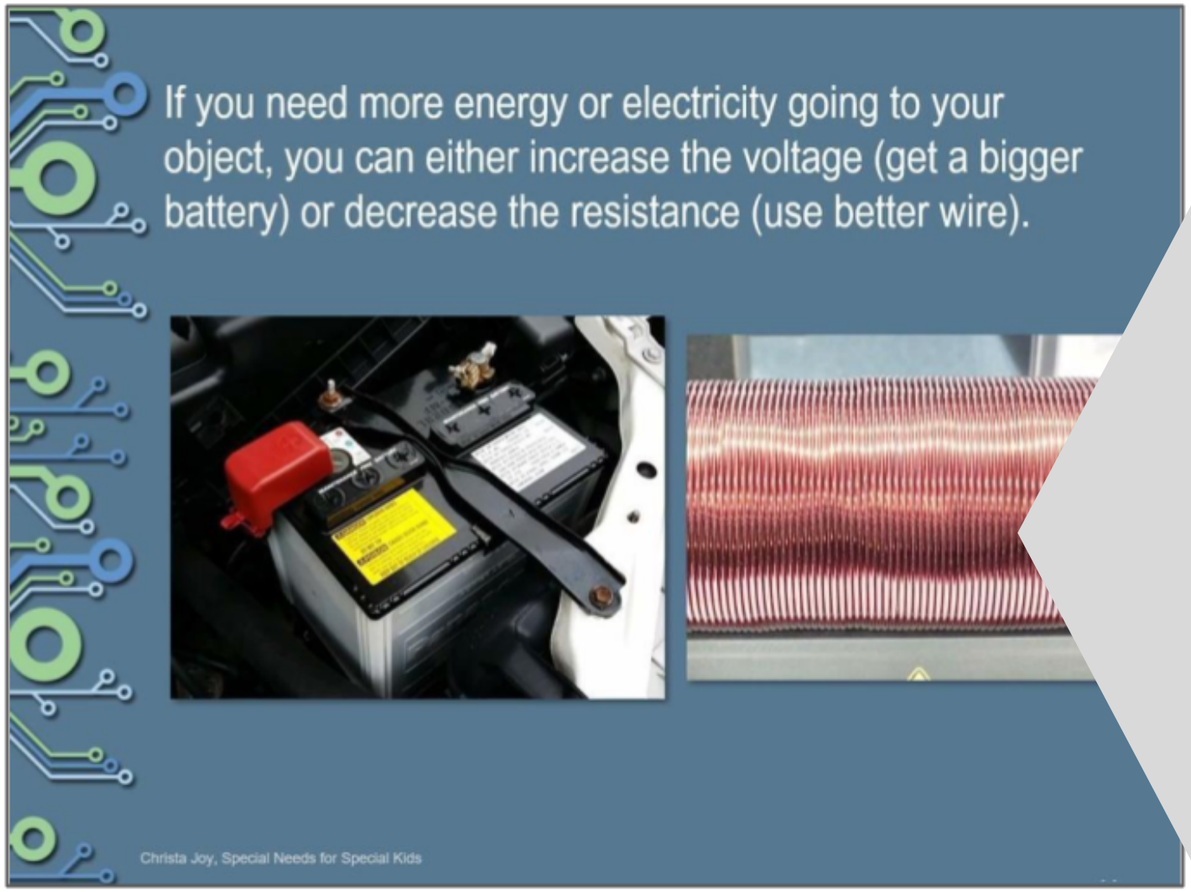
With this version, you cut out the answer choices and glue them on index cards. Ask the student the question, and they point to the correct answer.

Version 3

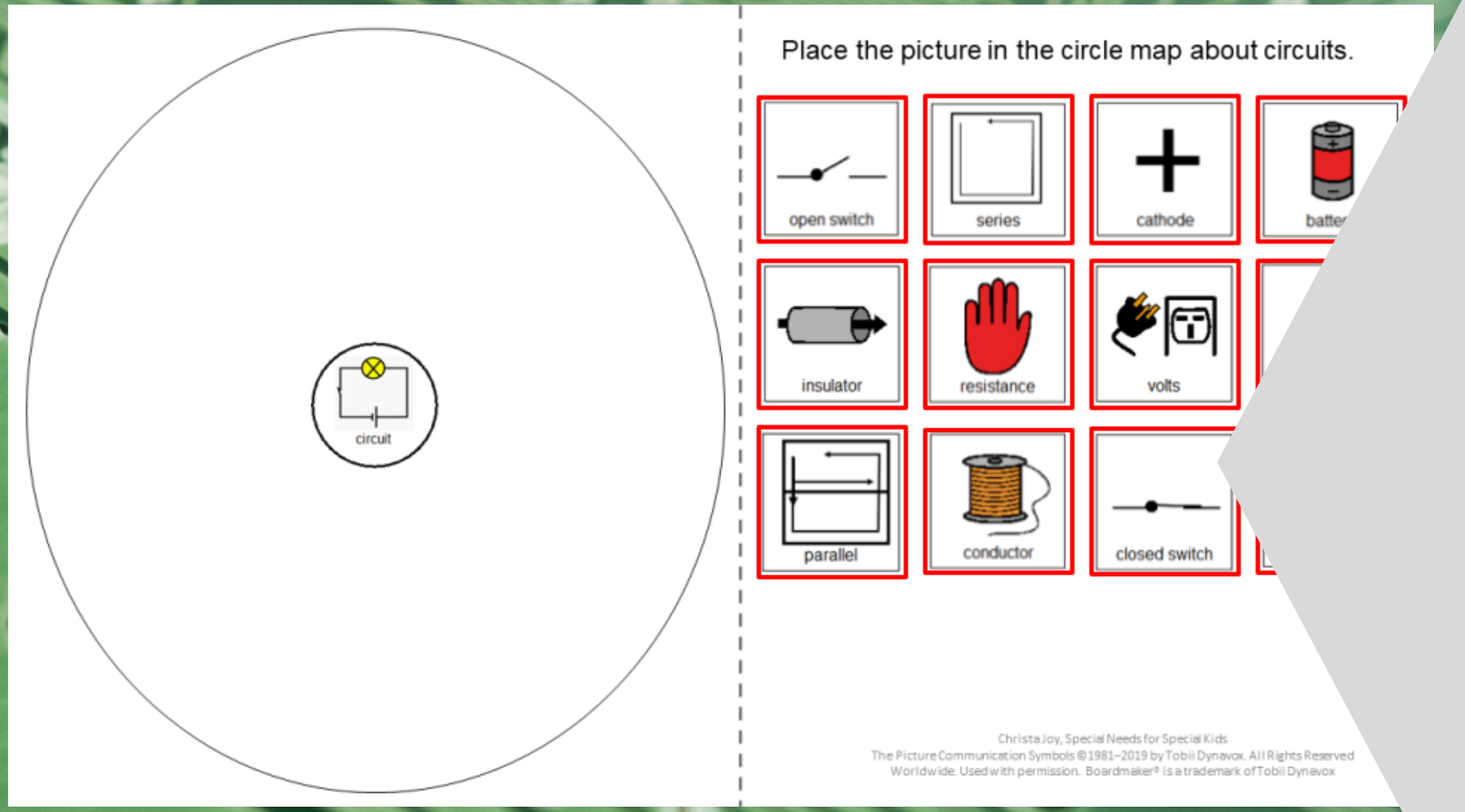
1. Electricity that comes from a power plant and goes in many directions uses:
   A. Alternating current
   B. Battery
   C. Direct current
2. What is the name of the pathway the current runs on?
   A. Track
   B. Circuit
   C. Road
3. Wire and other metals make good:
   A. Insulators
   B. Cushions
   C. conductors
4. Paper, plastic, and rubber make good:
   A. Conductors
   B. Insulators
   C. plugs
5. When this is open on a circuit, the current will stop:
   A. Switch
   B. Door
   C. Window
6. Something that slows the current down is said to cause:
   A. Friction
   B. Flow
   C. resistance

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.

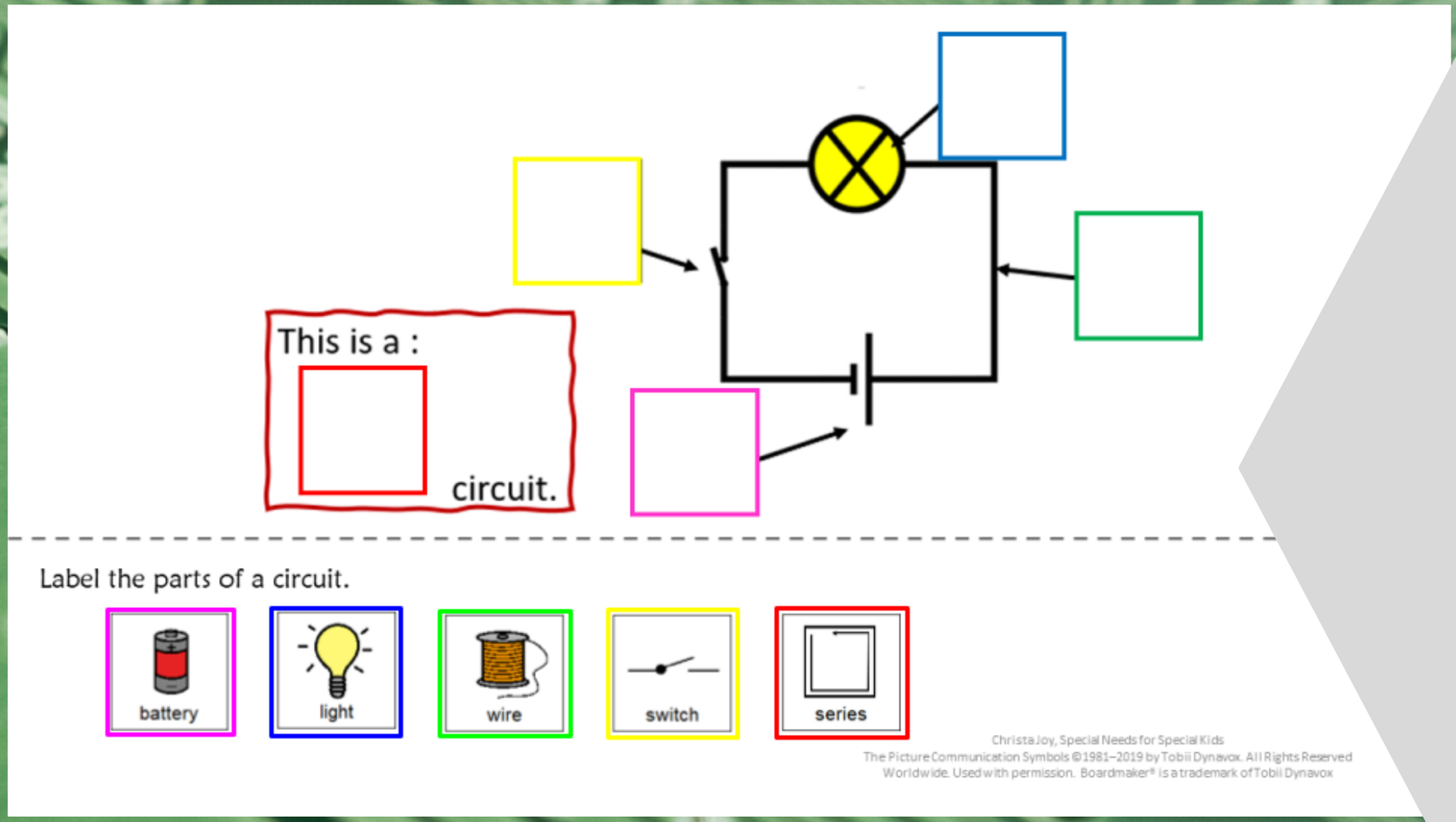
Watch the movie on Electricity



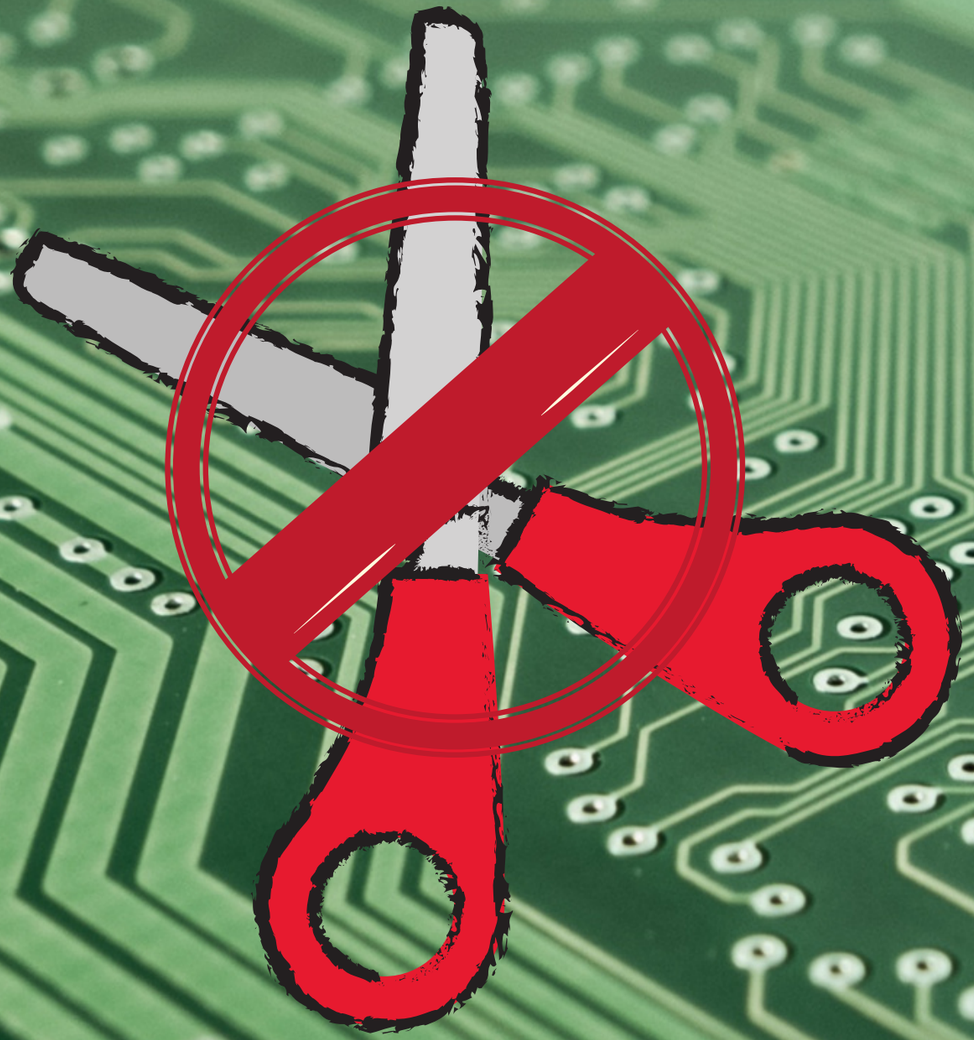
This unit also has digital activities. There is a movie version of the books students can listen to read aloud.



The digital activities have students click and drag their answers.



There are 2 sets of slides. One set has color-coding for more support.



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 books) come in color and black and white.

Click Here to read more!!