Research Room:
Gather Information & Evidence

Use the research room to find some answers to questions you and your class asked. Don't have any questions? Use these:

- ❑ What is needed to light a bulb?
- ❑ What materials transfer energy?
- ❑ What materials stick to magnets?
- ❑ How does the force of magnets change?
- ❑ What is an electromagnet?
- ❑ What happens when objects collide?
- ❑ How are waves involved in energy transfer?
- ❑ How does light travel?
- ❑ How does solar power work?

Not sure what to do? Click here.

Click to enter the

Research Room

RESEARCH

Welcome to the Research Room

Here are a few tips to help you get started.

1
Objects

Click on objects to learn more and gather information on energy.

2
Research Log

Keep notes on what you learn and what source you learned it from. Sources include books, videos, and observations. This is also where you will be answering questions.

To access your Research Log, click the icon below.

3
Navigate

Use the navigation buttons to move around.

The **green button** takes you to the research room.

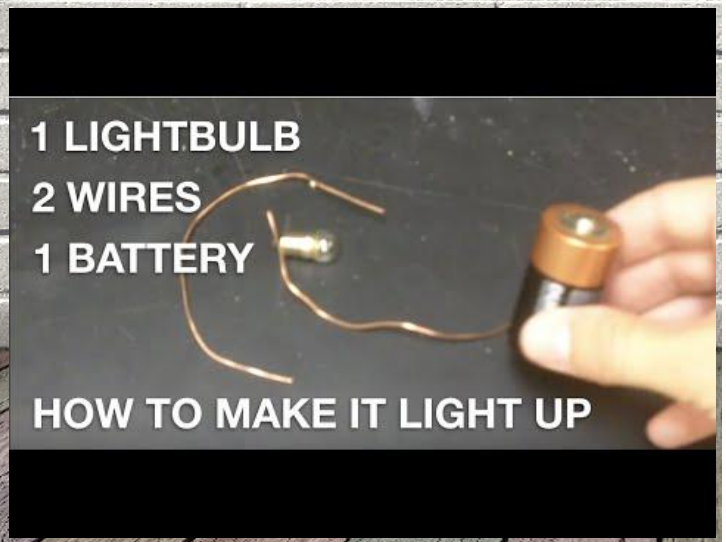
Click or tap HERE now!

RESEARCH ROOM

Click or tap on any item to collect information about energy

What is needed to light a bulb?

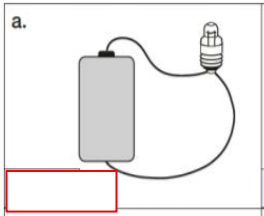
1. **Watch** the video.
2. **List** your observations and questions in your notebook.
3. **Write** your thinking: *How do you light a bulb?*
4. **Visit** the website to the right. Go through the information, the activity, and the quiz. Only do the section "What makes circuits work?"
5. **Complete** the "Lighting Bulbs" activity.



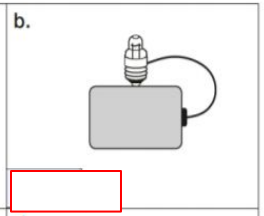
Lighting Bulbs

Write a prediction for each circuit in the small box. If you think it will light, write "yes."
If you think it won't light, write "no."

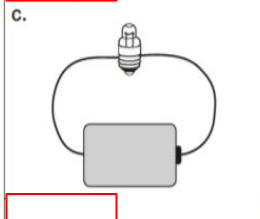
a.



b.



c.



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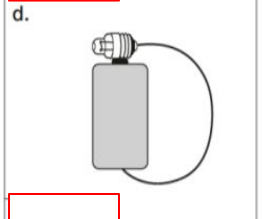
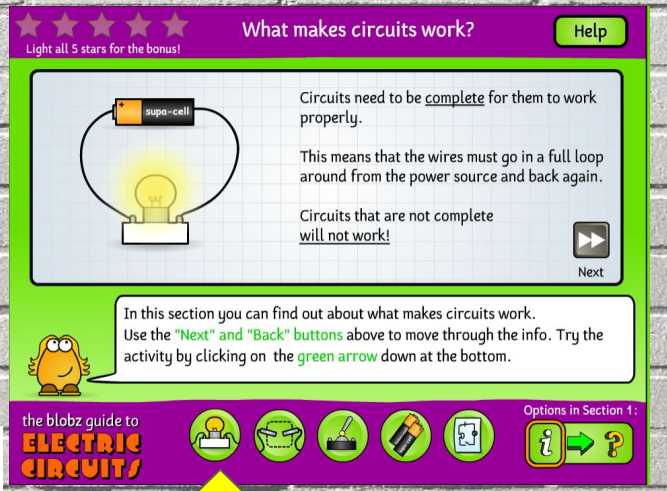




Only do this one

Return to the RESEARCH Room

My Mini Anchor Chart

Insulators & Conductors

Insulators and Conductors help with the flow of electrical energy.

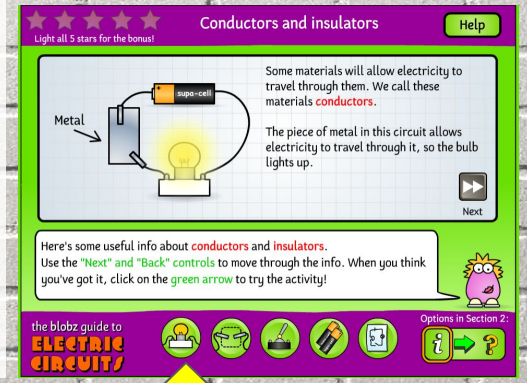
Insulators stop the transfer of energy. They slow down the energy and make it difficult for it to pass through the object.

Conductors help the transfer of energy. They allow energy to easily pas through the object.

Electrical Insulators	Electrical Conductors
	
What do all these insulators have in common?	What do all these conductors have in common?

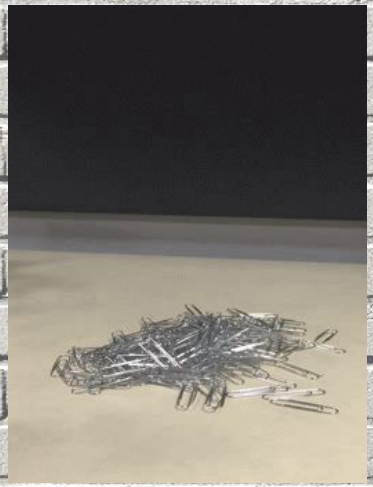
What materials transfer energy?

1. Watch the experiment in the video.
2. In your notebook, record what materials allowed energy to pass through, and which materials did *not* allow energy to pass through.
3. Try out the interactive activity and record your findings.



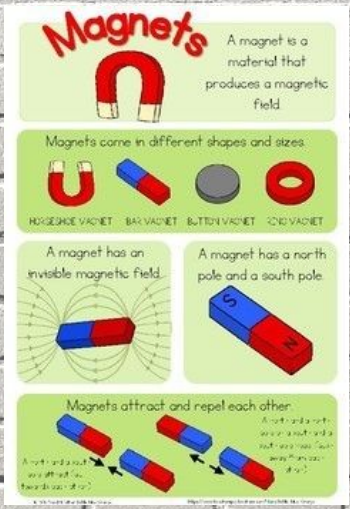
Only do this one

Return to the RESEARCH Room



What materials stick to magnets?

1. **Watch** the first video below.
2. In your notebook, **make a chart** of magnetic and nonmagnetic items from the experiment. If you try it at home, record your findings as well.
3. Watch the second video below.
4. In your notebook, write about what happens when two or more magnets interact?

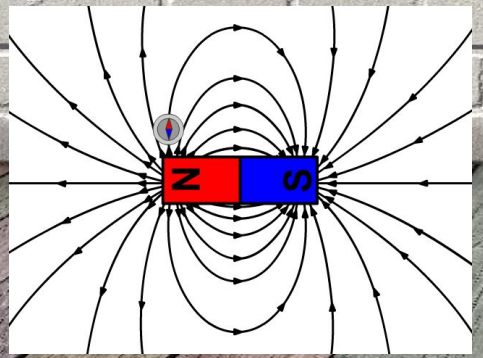


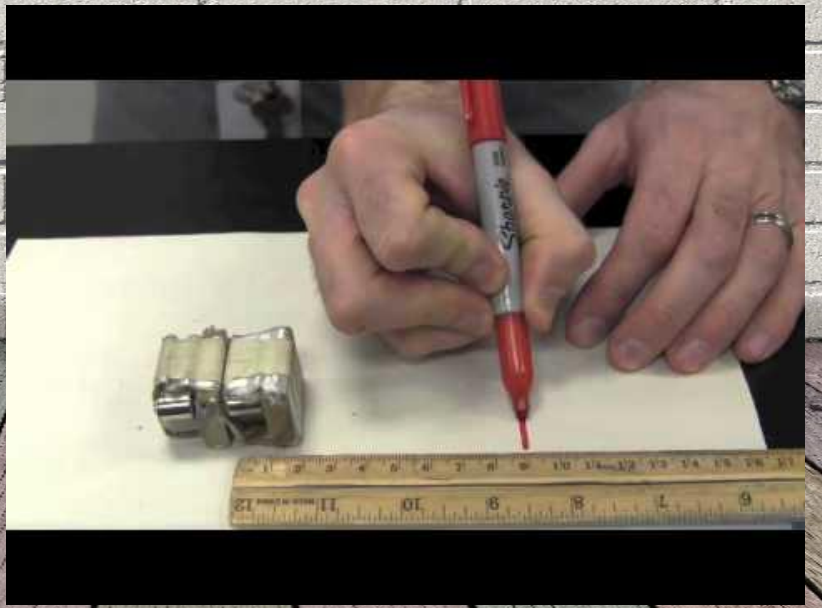
If you have a magnet, try this out at home!
**REMEMBER: NEVER GO NEAR ELECTRONICS WITH MAGNETS!

Return to the RESEARCH Room

What is the effect on the force of attraction between two magnets as the distance between them changes?

1. Watch the video below.
2. Did the size of the magnet affect the strength of the magnetic force? Explain.
3. Does distance affect the strength of the magnetic force? Explain.

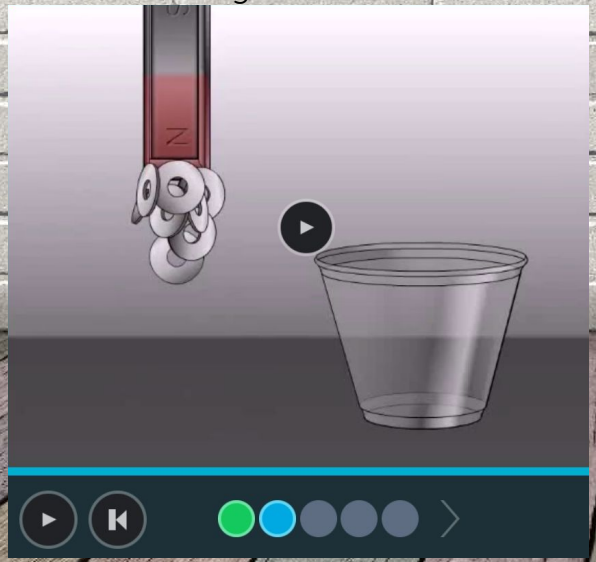


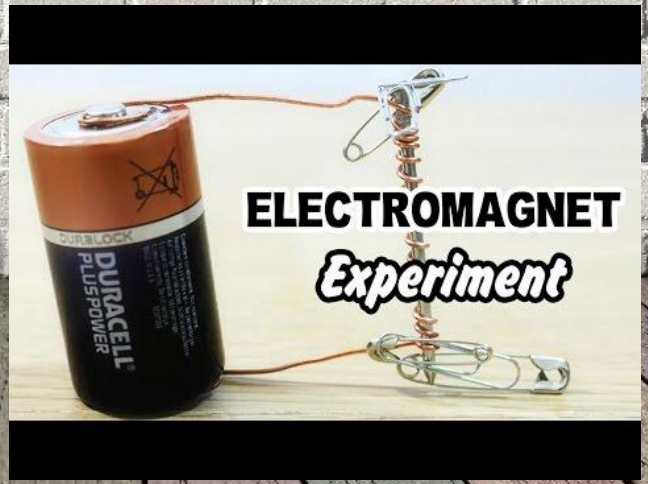


Return to the RESEARCH Room

How can you turn a steel rivet into a magnet that turns on and off?

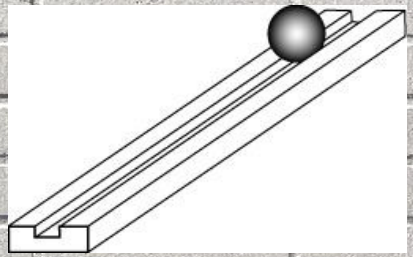
1. Click on the image below and follow the link to watch the demonstration.
2. In your notebook, describe how to make an electromagnet.
3. Watch the second video.
4. In your notebook, describe how to make the magnetic field stronger.
5. How do you turn off an electromagnet?





Return to the RESEARCH Room

How does the starting position affect the speed of a ball rolling down a ramp?

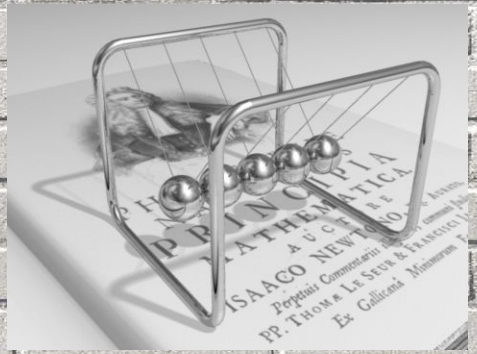


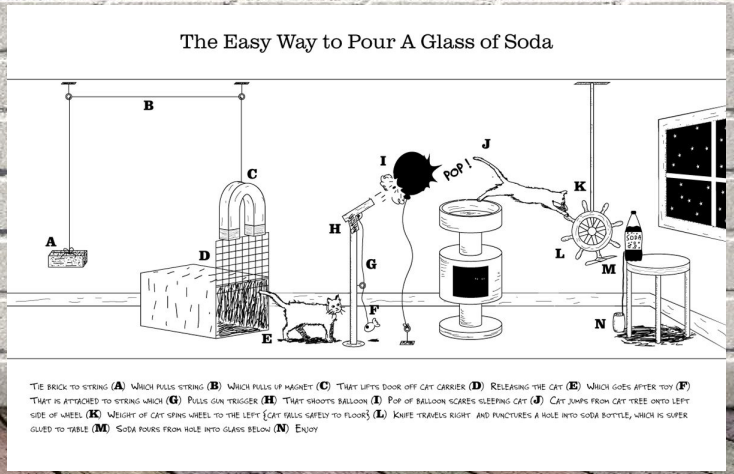
1. Watch the first video below.
2. Write about the results of the experiment. What happened when the ball was moved further up the slope?
3. Watch the second video.
4. Describe what happened between the big rubber ball and the ping pong ball.
5. Describe what happened between the ping pong ball and the golf ball.
6. Describe what happened between the big rubber ball and the golf ball.

Return to the RESEARCH Room

What happens when objects collide?

1. Watch the video below.
2. What is a collision?
3. What happened when the moving object collided with the non-moving object?
4. For fun, click on the cartoon to hear “Just Like Rube Goldberg” read aloud by the author, Sarah Aronson.





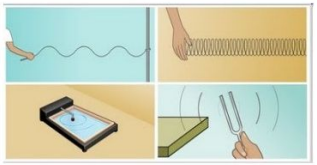
Return to the RESEARCH Room

How are waves involved in energy transfer?

1. Watch the video below.
2. How does sound travel through the air?
3. Describe what happens during each of the experiments in the video.
4. If you have the items at home, try this experiment out. Write about what happens.

Essential Question?

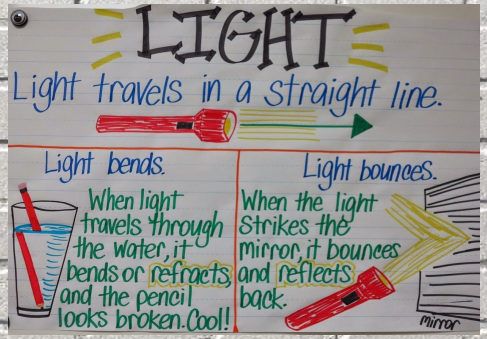
- How does a wave transfer energy?

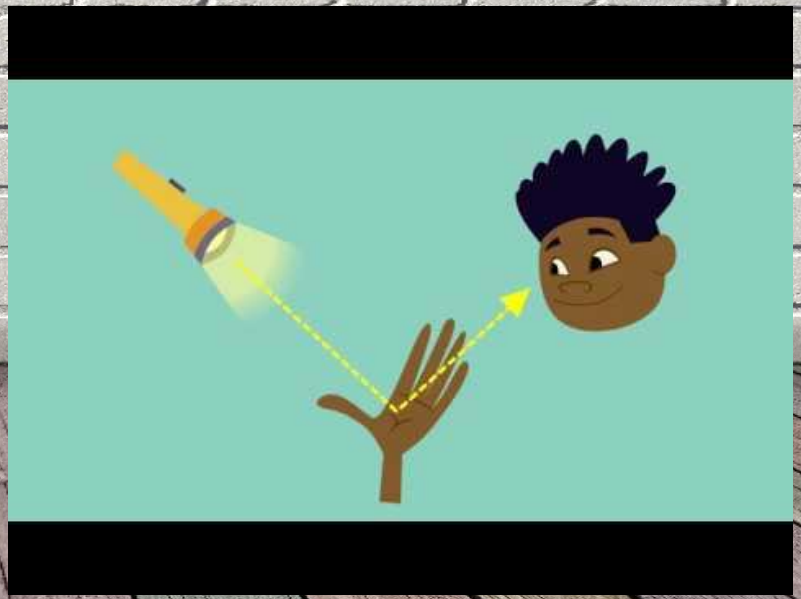


Return to the RESEARCH Room

How does light travel?

1. Watch the first video below.
2. What three things happen when light hits something in its way?
3. What is reflected light? What is refraction?
4. Watch the second video below.
5. What happens when light hits a shiny metal?
6. What happens when light hits glass?
7. Describe how you can see yourself in a mirror.

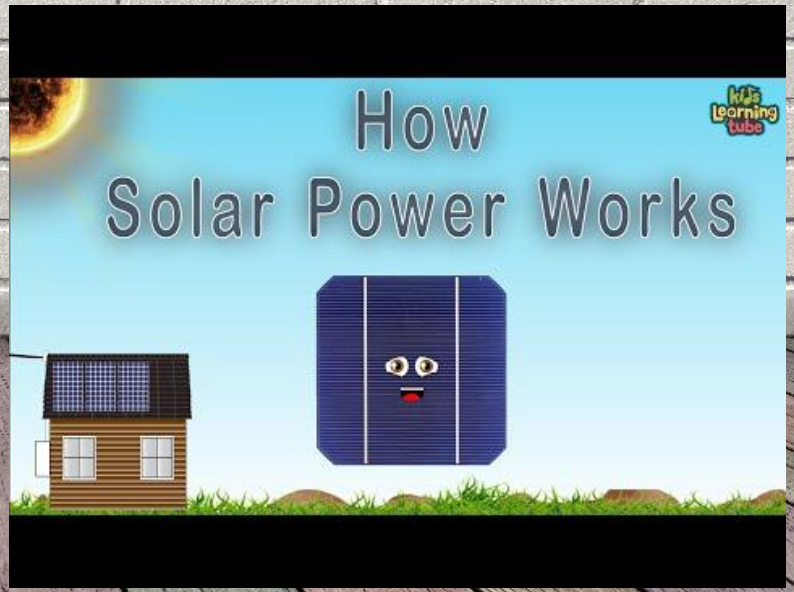




Return to the RESEARCH Room

How does solar power work?

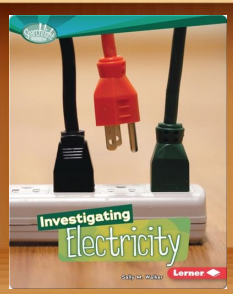
1. Watch the first video below.
2. What is solar power? What do solar panels do?
3. She builds a solar updraft tower in the video. Describe how it works and what happens.
4. EXTENSION: watch the second video to learn how solar power works (lots of science vocabulary).

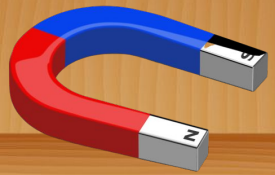


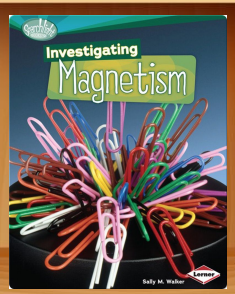
Return to the RESEARCH Room

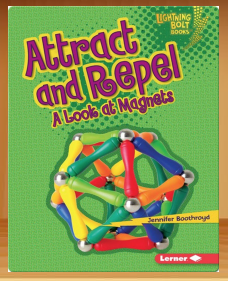
Log into EPIC now.

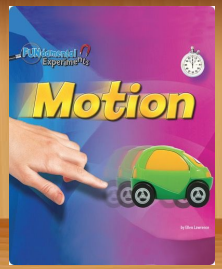
This will make opening the books easy!!

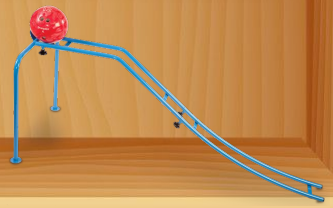


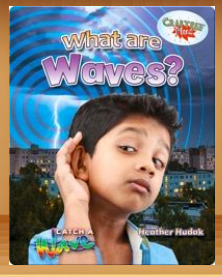


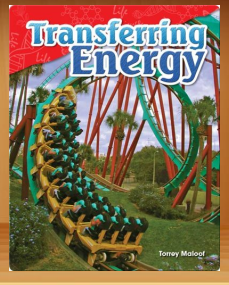












Researchers take notes

Main Ideas & Details

Compare & Contrast

Connect Information

RESEARCH LOG

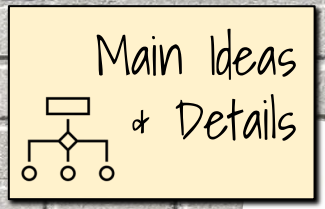
Return to the RESEARCH Room

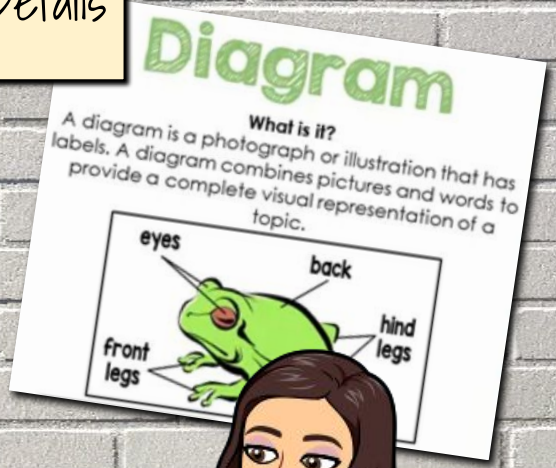
Read the book on EPIC.

Need help logging in?

During or after you read, go to your notebook
And write about these prompts:

1. Keep a list of facts about electricity.
2. What is the difference between conductors & insulators? Give an example of each.
3. Explain the flow of a current in detail (p. 36).





Return to the BOOKSHELF

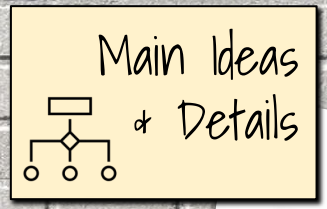
Return to the RESEARCH Room

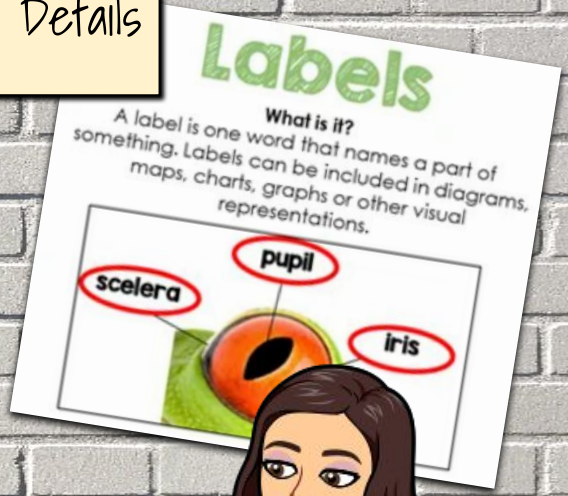
Read the book on EPIC.

Need help logging in?

During or after you read, go to your notebook
And write about at least **three** of these prompts:

1. Keep a list of facts about magnetism.
2. What is a magnetic force?
3. Are all magnets the same strength? Give examples.
4. Give examples of what magnets DO and DO NOT stick to.
5. What is a magnetic field?
6. What happens when you put two magnets together?





Return to the BOOKSHELF

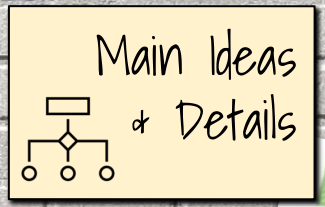
Return to the RESEARCH Room

Read the book on EPIC.

Need help logging in?

During or after you read, go to your notebook
And write about at least **three** of these prompts:

1. What is a natural magnet?
2. What metals do magnets stick to? Which metals do they NOT stick to?
3. What materials can a magnetic force pass through?
4. Where is the magnet's force the strongest?
5. Name three ways we use magnets.

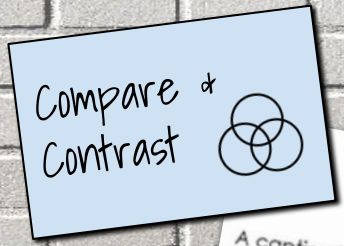


Read the book on EPIC.

Need help logging in?

During or after you read, go to your notebook
And write about at least **three** of these prompts:

1. Describe a force that makes things move (p. 6).
2. Describe another type of force that can move an object (p. 8).
3. What is friction?
4. Why do objects fall to the ground?
5. Try out one of the experiments in the book. Describe what you did and what happened.

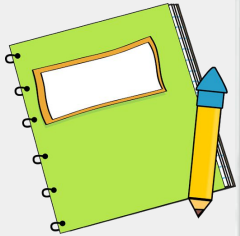


Return to the BOOKSHELF

Return to the RESEARCH Room

Read the book on EPIC.

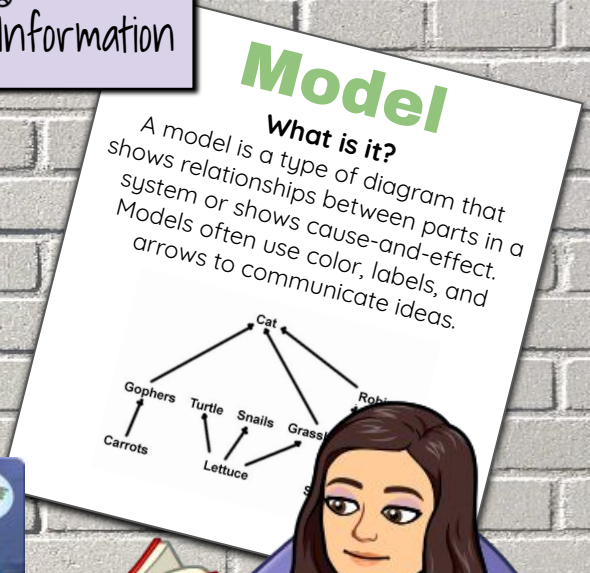
Need help logging in?

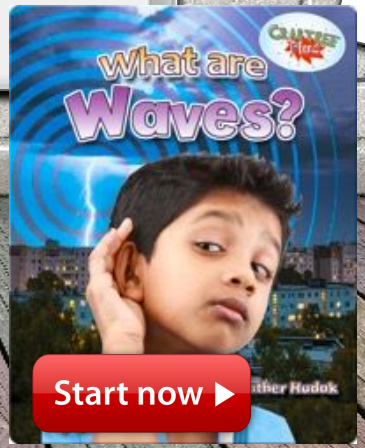


During or after you read, go to your notebook
And write about these prompts:

1. Name three ways we use waves.
2. What is a crest? What is a trough?
3. Describe the three properties of waves in detail (pgs. 12 & 13)
4. What does wavelength affect (p. 17)

Connect Information





Return to the BOOKSHELF

Return to the RESEARCH Room

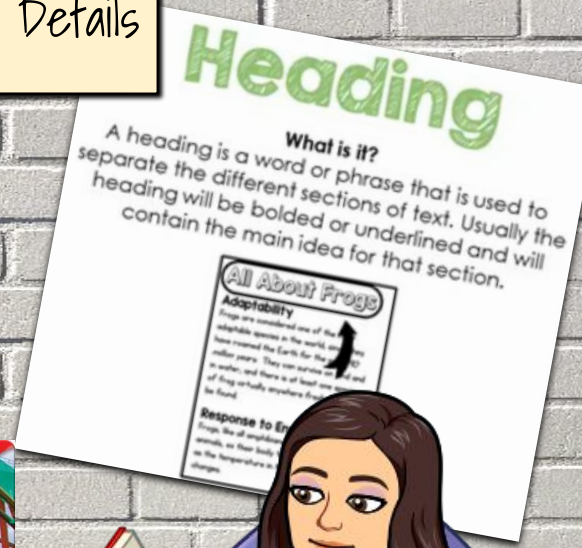
Read the book on EPIC.

Need help logging in?

Read to page 17. During or after you read, go to your notebook and write about these prompts:

1. Describe kinetic and potential energy (p. 7).
2. Give an example of potential and kinetic energy (p. 8).
3. How are sound waves created (p. 11)?
4. How does the sun give us energy (p. 16)?

Main Ideas & Details



Return to the BOOKSHELF

Return to the RESEARCH Room

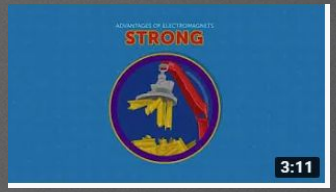
AQUOS

SCIFLIX

Browse

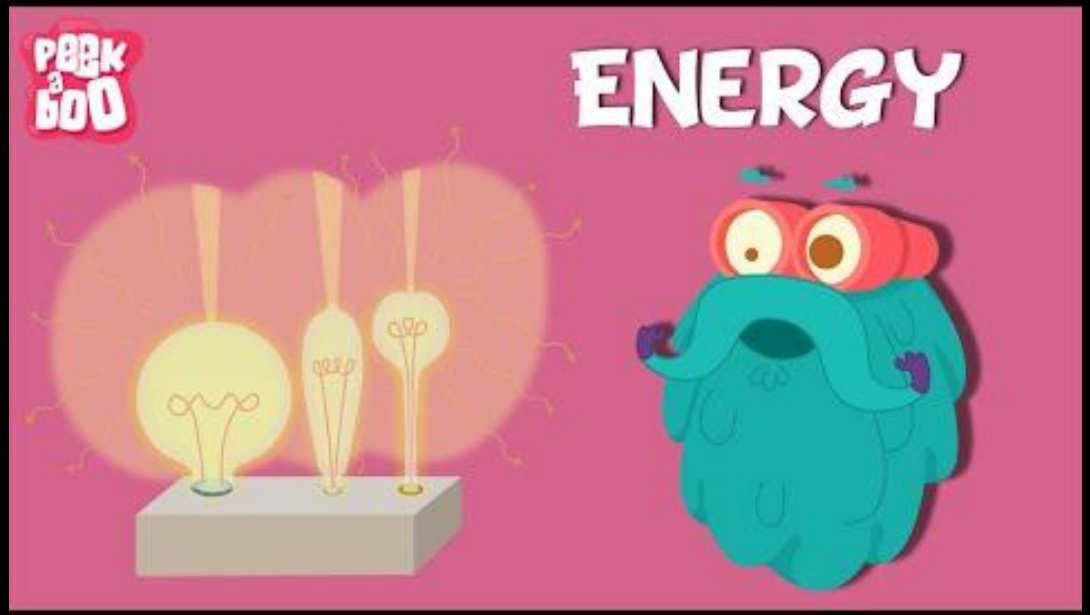
Top Picks for You

Trending Now



New Releases

SHARP



SCIFLIX

Watch the video

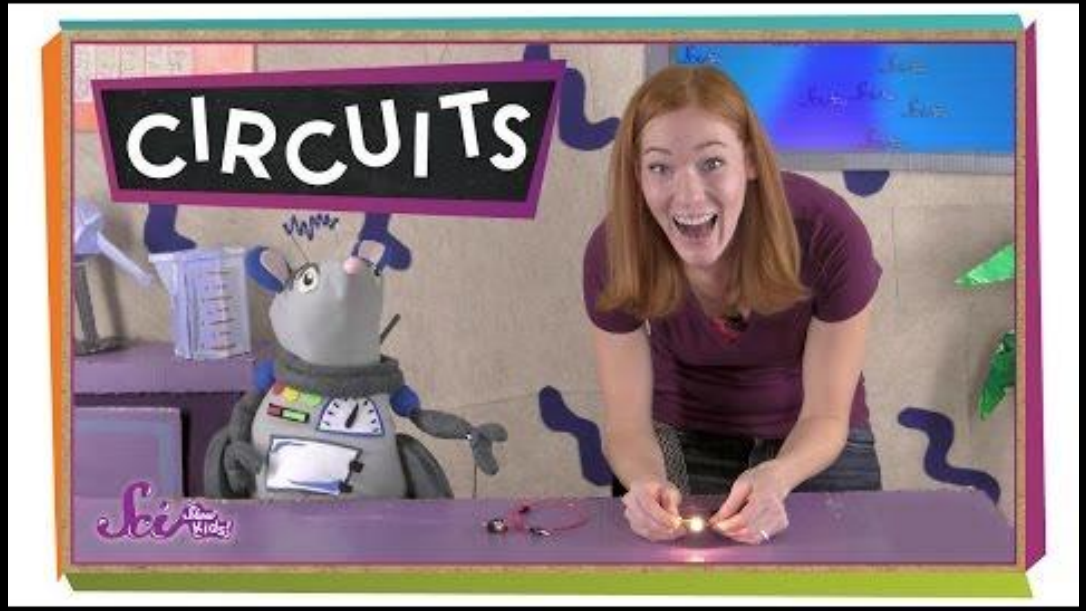
Introduction to Electricity

During or after, write about these prompts in your notebook:

1. What is energy?
2. Describe kinetic energy.
3. Describe potential energy.
4. What are the two types of energy a light bulb creates?

Return to the SCIFLIX MENU

Return to the RESEARCH Room



SCIFLIX

Watch the video

SciShow Kids: Circuits

During or after, write about at least two of these prompts in your notebook:

1. What is a circuit?
2. What happens if there is a gap in the circuit?
3. What do you need to do if you want to turn the light off?
4. What does a switch do?

Return to the SCIFLIX MENU

Return to the RESEARCH Room

SCIFLIX

Watch the video

SciShow Kids: Magnets

During or after, write about three of these prompts in your notebook:

1. What is a magnet?
2. What is a force?
3. What is a magnetic field?
4. What two materials do magnets NOT stick to?
5. What is the type of metal that magnets stick to?

Return to the SCIFLIX MENU

Return to the RESEARCH Room

SCIFLIX

Watch the video

Electromagnets

During or after, write about both of these prompts in your notebook:

1. What is an electromagnet?
2. Describe the three advantages of electromagnets.

Return to the SCIFLIX MENU

Return to the RESEARCH Room

SCIFLIX

Watch the video

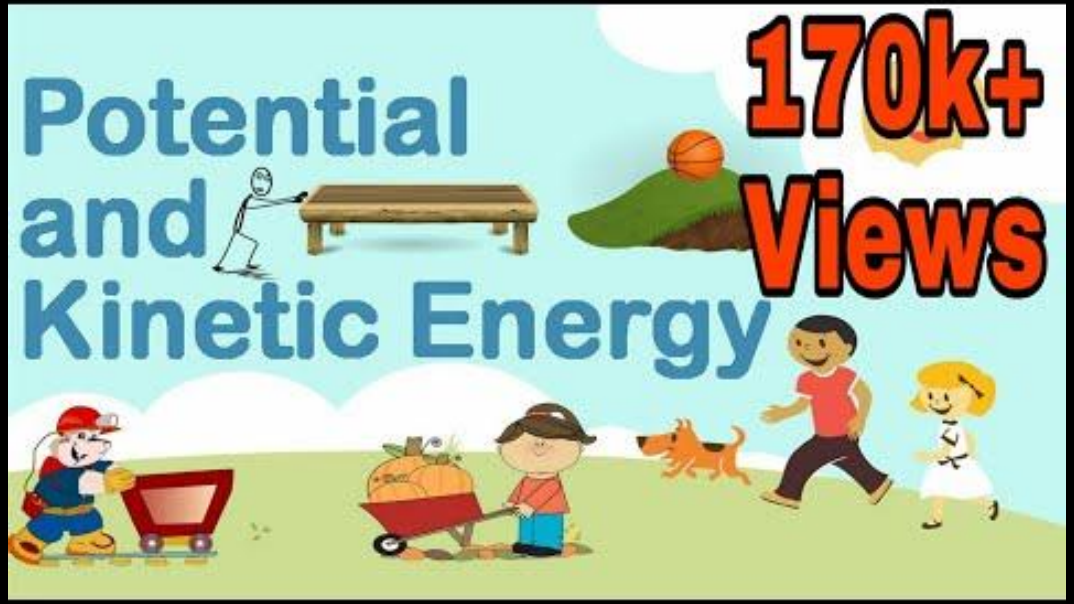
BrainPop: Electromagnets

During or after, write about at least three of these prompts in your notebook:

1. How is an electromagnet made?
2. What happens the further you move away from the wire?
3. How can you strengthen the magnetic field?
4. What 3 ways are electromagnets different than regular magnets?

Return to the SCIFLIX MENU

Return to the RESEARCH Room



SCIFLIX

Watch the video

Potential and Kinetic Energy

During or after, write about these prompts in your notebook:

1. What is potential energy?
2. What are three types of potential energy?
3. What is kinetic energy?

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Watch the video

Generation Genius: Wave Properties

During or after, write about these prompts in your notebook:

1. Why didn't the ball move through the water with the waves?
2. What is wavelength? What does it determine?
3. What is amplitude?

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Watch the video

SciShow Kids: What is Sound?

During or after, write about the following prompts in your notebook:

1. What is vibration?
2. How does sound travel?

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Watch the video

BrainPop Jr. - Light

****You only need to watch until 5:30 on the video**

During or after, write about at least three of these prompts in your notebook:

1. How does light move?
2. What happens when light hits an object?
3. What can light pass through?
4. What happens when light bends?

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Source Title of the book or Video or describe what you did.	Learning What are important facts or things you observed?	Connection How can this help us answer the questions in the beginning?
1		
2		
3		
4		
5		
6		

Research Room Checklist

Did you...?

- ❑ Get information and answer the questions from the books and videos
- ❑ Make observations about circuits and light
- ❑ Track what you found out by taking notes

No? Click the links above to do these tasks.

Yes? Share with your teacher or class.

Ask your teacher if you aren't sure where to share your learning, ideas, and questions!

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