

Ten Science Trade Books & Ten Activities

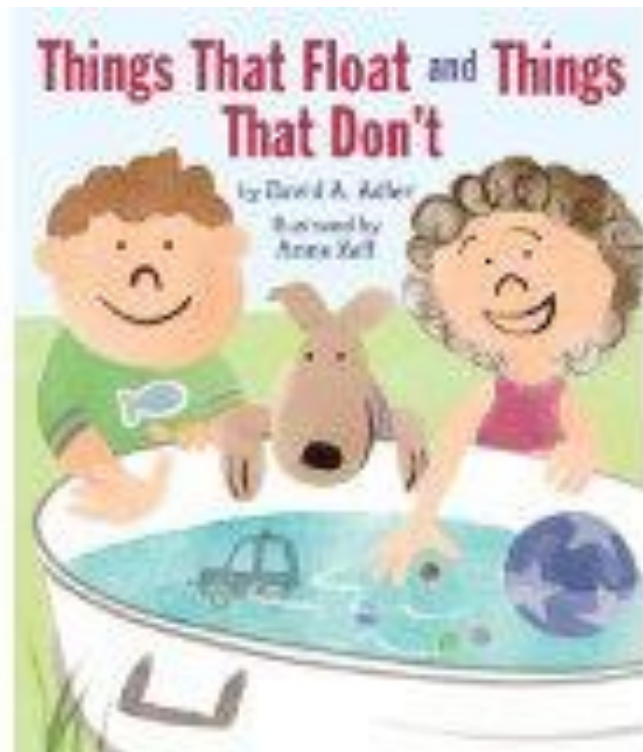
Literacy & Learning Conference

Eastern Illinois University

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Density and Water Displacement



Building a Boat that Floats



<p>My boat design (sketch and describe your boat).</p> 	<p>When I put my boat in the water, it looked like this...</p>  <p>Water line</p>
<p>If I add marbles to my boat, I predict that.....</p> <p>I added _____ marbles.</p>	<p>After adding marbles to my boat, it looked like this....</p>  <p>Water line</p>
<p>Explain in your own words why the block of clay floated/ sank.</p> 	<p>Explain in your own words why your boat made out of clay floated.</p>

Natural or Designed

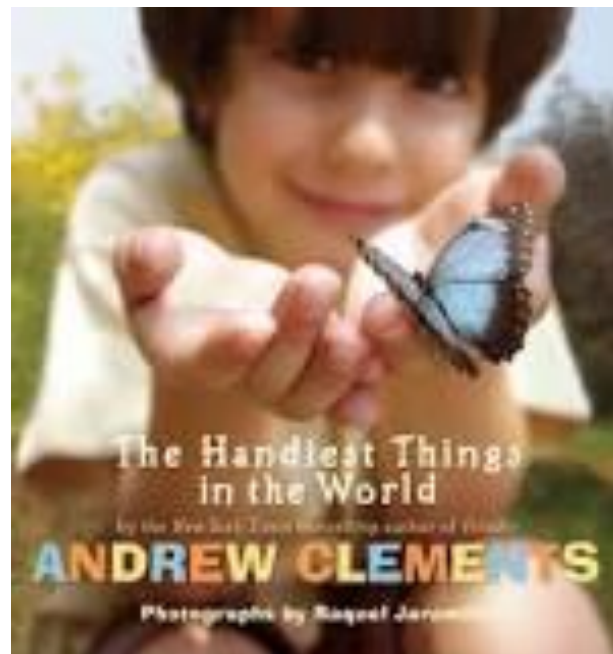


Look around the room

What items are
Designed?

What items are
Natural?

The Handiest Things ...



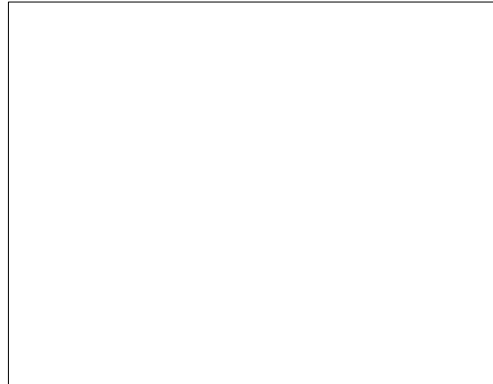
Select an Invention

One Handy Thing

Names _____

1. Name of Invention _____

2. Draw a picture below that shows what the invention does.



3. What problem does this invention solve? _____

4. What would life be like without this invention? _____

Pre-Assessment

Figure 1.

“When Is the Next Full Moon?” formative assessment tool.

When Is the Next Full Moon?



What are you thinking?

Which student do you think is correct?

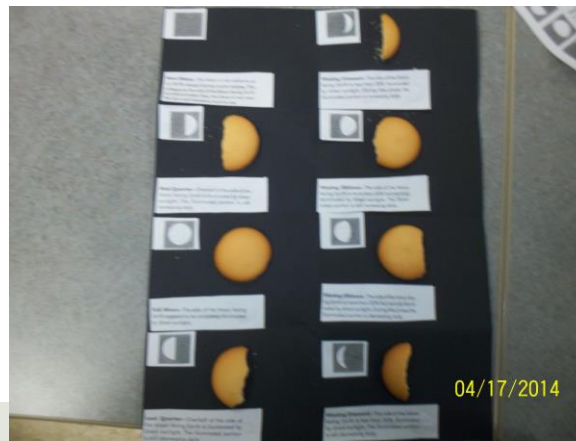
Which student you think has the correct understanding about the phases of the moon?

The Moon

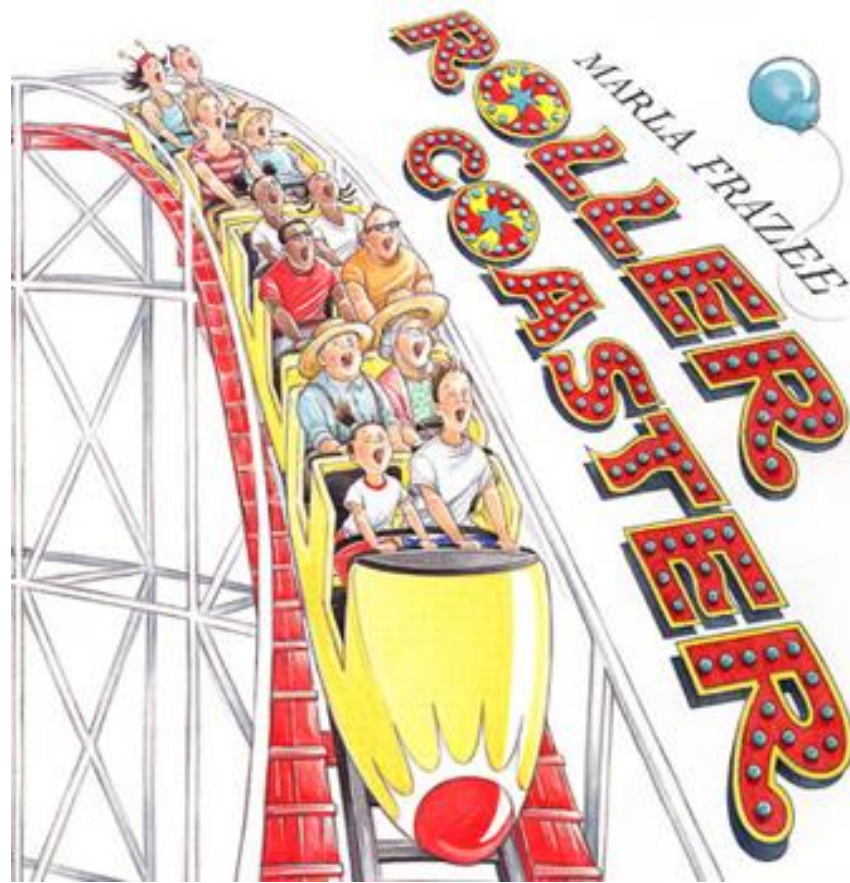
After keeping a moon journal for a month, read "Faces of the Moon".



1. Fold a piece of black construction paper in half three times.
2. Get eight vanilla wafers. Chew the wafers into the shape for each of the eight phases of the moon shown in Faces of the Moon.
3. Write a title and your name on your paper with a white crayon.



Wheeee!



Exploration

Materials:

foam insulation (track)

cups

marbles (roller coaster)

lab sheet

You will be using these materials to explore how roller coasters work. You will only release the roller coaster, not push or throw the roller coaster.

Explanation

How did you make the ball roll faster?

How did you make the ball roll more slowly?

How did you make a hill on your roller coaster?

Were you able to make two hills?

Which was the highest, the first hill or the second hill?

How did you make the ball go over the hills or around loops on your roller coaster?

Did the ball ever fall off of the roller coaster? What made it fall?

What causes the ball to go down the track?

Explanation

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Were you able to make two hills?

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How did you make the ball go over the hills or around loops on your roller coaster?

Did the ball ever fall off of the roller coaster? What made it fall?

What causes the ball to go down the track?

Explanation

Draw a roller coaster using what you have learned from exploring with the foam track? Make as many hills and loops as you wish. Your drawing has to illustrate that your roller coaster would actually work in real life.

Label where the roller coaster will be moving the fastest and where it would be moving the slowest.

Questions to think about: What do you need at the beginning of the ride to get the roller coaster car moving fast? Can a second hill be higher than a first hill?

Nests

An 2016 Illinois Reads Book



Questions to Ponder

1. Where were some of the places that various birds built their nests?
2. Why do you think they built their nests in those locations?
3. What materials did they use? Why do you think they selected those materials?

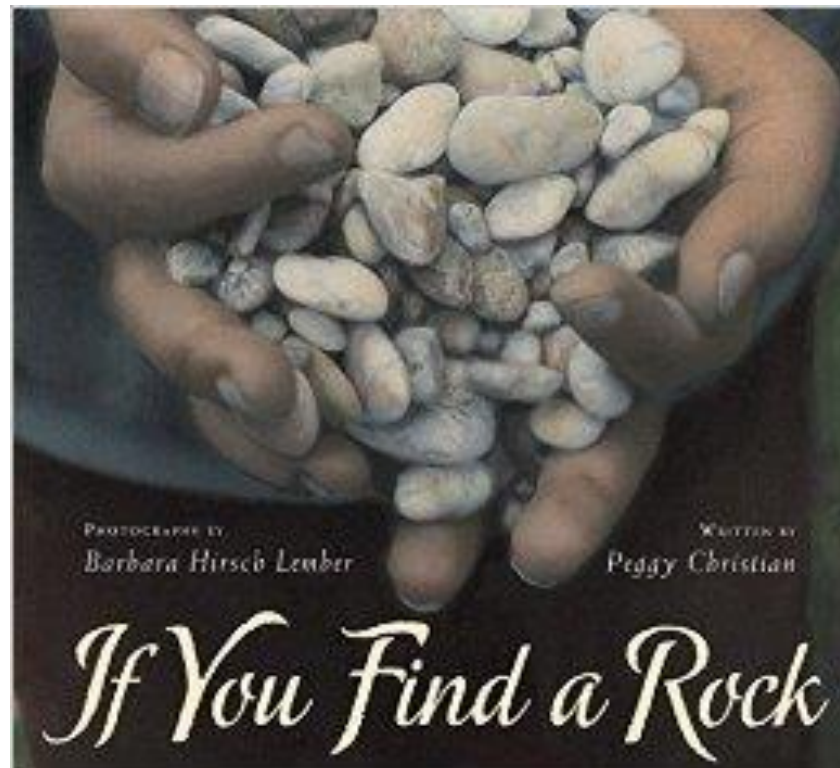
Video of Floating Nest of Little Grebe

<https://www.youtube.com/watch?v=Z3iPoTtSKtU>

Research Project

1. Small groups research one of the birds described in the book.
2. The small groups then create a life-sized model of the nest, including the number of eggs the bird will lay.
3. Each group develops a presentation about the selected bird.

If you ...



Observations

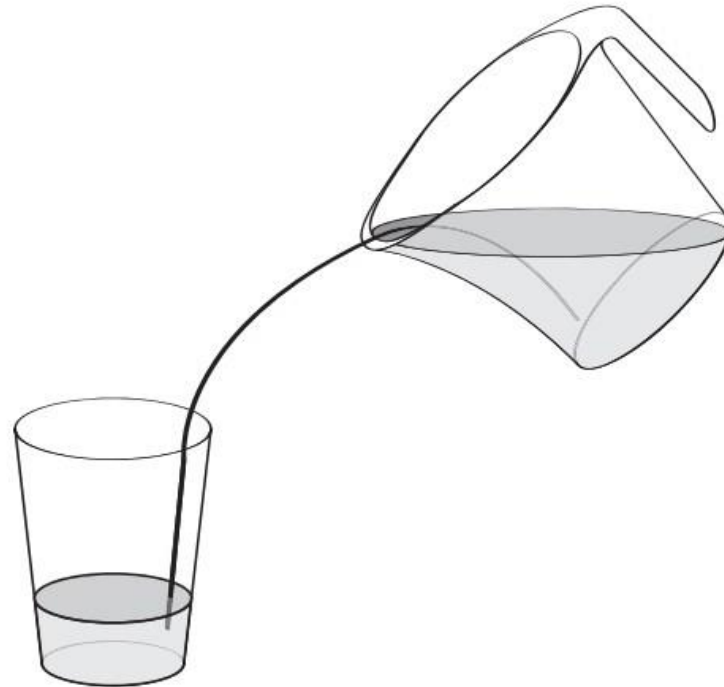
- Closely examine your rock.
- Describes its physical features.
- Draw a picture of your rock.
- Write a list of words you would use to describe your rock.
- How could your rock be used?
- What do you know about rocks?

Observations continued

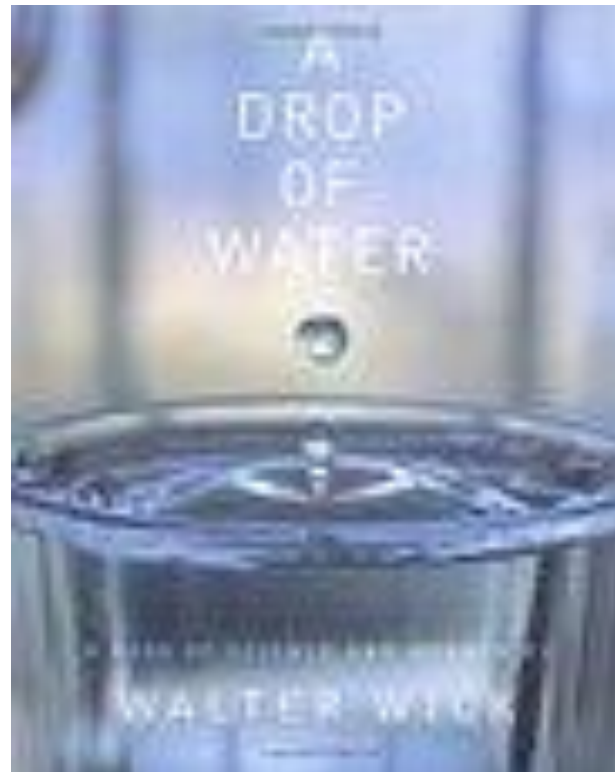
Complete the following data table with words and drawings.

What color is your rock?	
Look at the bits or pieces that make up your rock. What size or sizes are they? Big, medium, or small?	
Does your rock have layers?	
Does your rock have fossils?	
Does your rock have air holes?	
Gently rub your rock back and forth against the paper. Do any bits break off or leave color on the paper?	

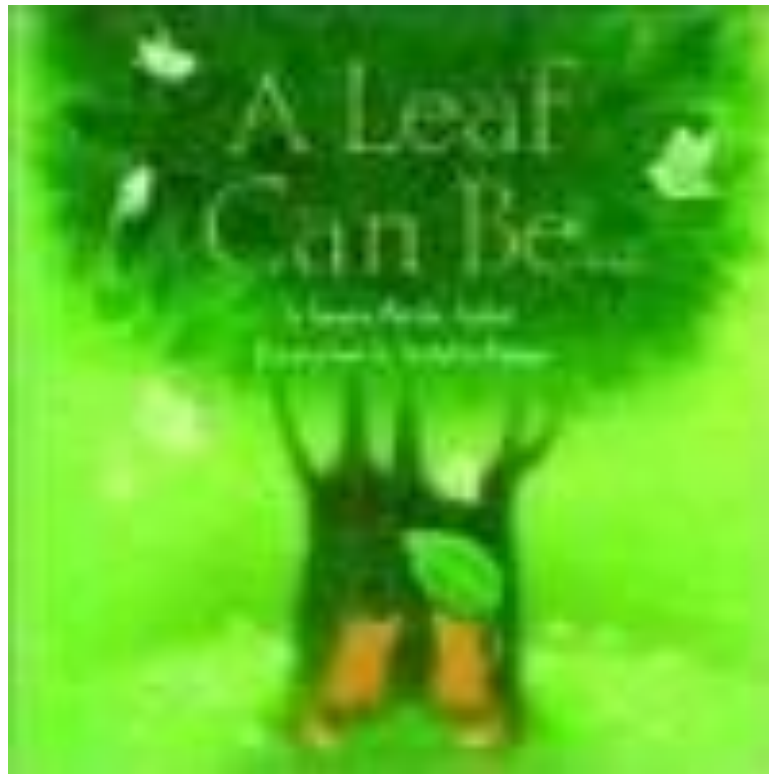
Can you pour water down a string?



A Drop of Water



How are leafs useful?



Leaf Collectors

1. Take students for a walk to collect green leaves.
2. Select a leaf.
3. Complete a rubbing of the leaf.
4. Describe the physical features of your leaf.
5. Use leaf snap to see what type of leaf you found.



Catapult into science and literacy!



The Catapult Wars

- Use the following materials to create a Catapult.
 - 1 ruler
 - 1 plastic spoon
 - 1 block
 - Tape
- Place a projectile in the spoon and launch.
- Measure the distance the projectile went.
- Will the angle of the catapult effect the distance the projectile will travel?
 - Try launching the projectile with the catapult at different angles.
 - Complete three trials for each angle.
 - Measure and collect data.

Redesign

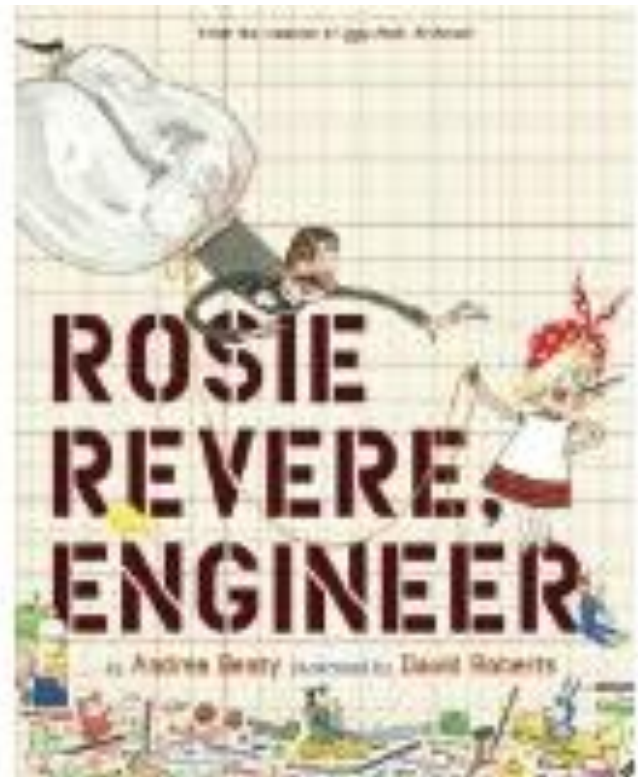
- Redesign your catapult so that it launches the projectile further when launching from the optimum angle of your first catapult.
 - Draw a picture of your redesigned catapult.
 - Make a prediction about how far the projectile will travel.
 - Launch the projectile at least three times.
 - Measure and collect data.
- Did your redesigned catapult launch the projectile further than your first catapult?

Rosie

What does an engineer do?

As you listen to the story, listen for things that show how Rosie is an engineer.

What things do Rosie do that shows she is an engineer?



Pens are an amazing invention!

Structure

Function

References

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