Christina School District Assignment Board

Student's First & Last Name_____ Student ID/Lunch # _____ School _____ Grade _____

Grade Level: 8th

Week of June 1st, 2020

		Day 1	CSD PD	Day 2	Day 3	Day 4
ELA		This week you will read blogs in order to become a blog writer --- What do you already know about blogs? Have you ever read a blog? Think of a blog you've read and explain what it was about. Why did you choose to read it? Read **"What is A Blog Anyway?"** As you read, annotate important details. Summarize your understanding in 12 words exactly.		Read the blog sample 1. **Spicy cauliflower burgers** As you read make notes. Underline things you find interesting. Complete the graphic organizer for the blog	Read the blog sample 2. **"TOP ENGAGING NETFLIX MOVIES AND EDUCATIONAL SHOWS FOR STUDENTS "**As you read, make notes. Underline things you find interesting. How is this blog different/ similar to blog 1? Complete the graphic organizer for the blog	Read the blog samples 2. **"Interesting DIY Tech Accessories, Gadgets, and Gifts**". As you read, make notes. Underline things you find interesting. How is this blog different/ similar to blogs 1 and 2. Complete the graphic organizer for the blog. **Challenge:** Create your own blog.
Math	**Math8**	*Applications of the Pythagorean Theorem* Answer "Which One Doesn't Belong?" and		Complete 9-124, 9-125, and 9-126 (attached) Refer to Math Notes if needed.	Complete 9-127, 9-129, and 9-130. (attached) Refer to Math Notes if needed.	Journal Entry: The Pythagorean Theorem describes the special

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		justify your choice. (attached) Read Math Notes: The Pythagorean Theorem. Complete 9-122 and 9-123 (attached)				relationship that exists between the side lengths of a right triangle. Describe how the Pythagorean Theorem can be used to find a missing side length on a right triangle. Make up examples in which either the hypotenuse length is missing or a leg length is missing. Be sure to include pictures and describe how you would find each missing length. Title this entry "Pythagorean Theorem" and label it with today's date.
	IM1 (MS only) (IM 2 can be found on the HS Boards)	*When It's a 50-50 Chance* Answer "Which One Doesn't Belong?" and justify your choice. (attached) Complete Probability Worksheet #1-2. (attached)		Read pages 49-51 and use examples to complete p. 52 #1-6. (attached)	Complete p. 52-53 #7-15. (attached) Refer to examples p. 49-51 if needed.	Complete p. 53 #16-21. (attached) Refer to examples p. 49-51 if needed.
Science		**Energy Transfers and Transformations (part 1):** Read article. In GREEN, highlight or underline information about how energy is transformed from one		**Energy Transfers and Transformations (part 2):** Reread article and/or notes as needed. Write a claim that answers the following:	**Energy Transfers and Transformations (part 3):** Reread article and/or notes as needed. Write your best answers to the following:	**Energy Transfers and Transformations (part 4):** Reread article and/or notes as needed. Write your best answers to the following:

Christina School District Assignment Board

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	form into another. In RED, highlight or underline information about how thermal energy is transferred through conduction. In BLUE, highlight or underline information about how thermal energy is transferred through radiation.		How can you tell when energy has been transferred? Support your claim with evidence from the article. Then, explain why the evidence supports your claim.	a) Write a statement that you feel best describes how a golf club does "work" on a golf ball. b) When you turn on the air conditioner during a hot summer day the cooler air will sink to the floor, while warmer air rises to the ceiling. Which type of heat transfer is this an example of? c) Why does a pot of water start to steam after it boils? d) Which statement is an example of an energy transformation? 1. A rabbit eats a plant. 2. A metal pot conducts heat. 3. A plant grows on a sand dune. 4. The sun radiates thermal energy.	a) Reread the paragraph that begins "Energy cannot be created or destroyed, meaning…". Write an example that supports the idea that energy remains constant during energy transformation. b) According to the article, life on Earth could not exist without both energy transfer and transformation. Which paragraph from the article BEST supports that idea? Explain. c) How is energy transfer different from energy transformation? d) What is the difference between conduction and convection? .
Social Studies	Complete Activity 1 and Activity 2 from the document titled, "Radical Reconstruction"		Complete Activity 3, Guiding Questions on Thaddeus Stevens from the document titled, "Radical Reconstruction"	Complete Activity 3, Guiding Questions on Andrew Johnson from the document titled, "Radical Reconstruction"	Complete Activity 3, Discussion Questions and Overarching Questions from the document titled, "Radical Reconstruction"

What Is A Blog Anyway?

You've seen the word, you've seen the websites and you may even have one. But have you ever wondered: What's the big deal about blogs?

To make sense of blogs, you have to think about the news and who makes it. We'll look at news in the 20th vs. the 21st century to make our point. In the 20th century, the news was produced professionally. When news happened, reporters wrote the stories and a tiny group of people decided what appeared in a newspaper or broadcast. Professional news was mainstream: general and limited.

The 21st century marked the point where news became both professional and personal. A new kind of web site called a weblog or blog came onto the scene that let anyone be a reporter and publisher - often for free. As blogs became popular, they created millions of news sources and gave everyone an audience for their own version of news. Of course, we're using the word "news" loosely. But really - isn't everything news to someone?

With a blog...A business owner can share news about his business. A mother can share news about her family. A sport's star can share news with fans. These people are all "bloggers".

How did this happen? Well, blogs made sharing news on the web easy. Anyone with an idea can start a new blog with the click of a button and share news minutes later. Here's how blogs work.

Blogs are websites that are organized by blog posts - these are individual news stories, like articles in the paper. Bloggers simply fill out a form and with the click of a button, the blog post appears at the top of the web page, just above yesterday's news. Over time, the blog becomes a collection of these posts, all archived for easy reference.

Also, each blog post can become a discussion through comments left by readers. Blogs make the news a two-way street. Additionally, Bloggers often work together. In addition to comments, you'll read each other's posts, quote each other and link your blogs together. This creates communities of bloggers that inspire and motivate each other.

Whether it's their ease of use or the opportunities they offer, blogs have been adopted in a very big way. Since 2003, there have been over 70 million blogs created, each with its own version of news. So, the big deal about blogs is that they gave people like you the power of the media and creates a personal kind of news that appeals to a high number of small audiences.

Common Blog Features

- Blogs can use any layout and can cover many different topics, but they all have basic characteristics in common.
- Blog entries usually have a title that describes or relates to the content of the entry. Titles are usually set off in a layout with a bold font.
- Blog entries usually include the date and specific time that they were posted (a timestamp).
- The blogger's name is usually listed with the timestamp. By default, blogs usually end "Posted by [blogger's name]."
- Depending upon the blog site, you may also find other kinds of information with each blog entry.
- Blogs often contain pictures or links to other products
- Readers and the blogger can usually comment on (or reply to) a blog entry. The comments can turn into a dialogue, with the readers and blogger talking together.

spicy cauliflower burgers JANUARY 6, 2016

OH YES I DID.
I most definitely DID make cauliflower burgers!
With cauliflower (as in the veg-e-ta-bel cauliflower) and quinoa and almonds and eggs and other non-meat stuff. I absolutely, for surely, deliciously did that. It is part veggie-burger, part rule-breaker. We are just straight up defying traditional food categories over here.
Guess what? Even regular-burger-loving Bjork loved these little babes.

Here's what's about to go down:

- a golden brown, cheesy, spicy cauliflower+quinoa burger
- a layer of Magic Green Sauce
- a layer of cilantro lime slaw bcuz crunchy is necessary
- a layer of creamy chipotle mayo compliments of Christmas gifting – one thing, though: do normal people get things like chipotle mayo for Christmas?
- a jalapeño cheddar bun, because who can even walk by those in the grocery store without buying them?! be real with yourself.
- A VERY HAPPY EATER

These burgers are literally everything. Is that the right use of literally? Cool and fresh because of that avocado-based sauce and all the lime and cilantro in the slaw, but also a little fiery because those cauliflower burgers are packin' the heat, just the right amount of crunchy thanks to the purple slaw, and a little smooth+creamy because of the smooth chipotle mayo on top.

As with almost all meatless burgers that I've encountered, these want to crumble a bit. See also: fails.
But after several rounds with the recipe, I discovered that with enough eggs and enough, umm, cheese (so maybe I just used cheese as a key binding ingredient – can we move on already?), they hold together beautifully.
Not only do they hold together, but they get a lusciously golden brown exterior that is screaming to be smeared with sauces and toppings and packed into a jalapeño cheddar bun.

Amiright tho?

Here's the deal: Over the last year or so, I've realized that I don't really like to make healthy trades when it comes to cooking. Like, if you're going to have a burger, just eat a regular burger. **With the exception of a few things, like cauliflower sauce instead of cream-based sauce. But in general, that's mostly how I feel about it.

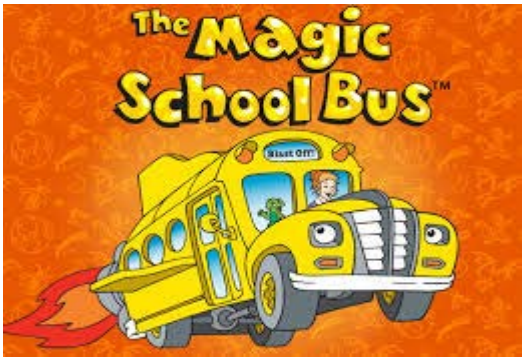
But friends, I truly, honestly, deeply and very seriously LOVE a good meatless burger. I might even love a made-from-scratch veggie burger MORE than a traditional burger. The texture? The flavor? It is so much more interesting and satisfying tha– okay, I'm getting glares. I'll stop.

So around here we love veggie burgers, we also love cauliflower, and we mostly love quinoa except when it tastes a little dirty, but we forgive these things for the versatility and health factors, no? So this cauliflower burgers recipe is not so much a "healthy swap" for a burger and more of something that our type of food peeps truly love to eat.
It's cauli-burger go-time!

ABOUT LINDSAY
A little thing about me: I ♡ FOOD. I also love food photography. I wrote an ebook that can help you learn your camera and I also teach food photography workshops in Minneapolis.

TOP ENGAGING NETFLIX MOVIES AND EDUCATIONAL SHOWS FOR STUDENTS

Etcetra James



Netflix movies are now an important past-time activity for people who are now on a stay-at-home quarantine amidst the global pandemic. Most residents around the world are now enjoying the luxury of using online media as a way to entertain. Netflix is now taking advantage of offering movies for all residents who want to maximize the comfort of their homes. Here are some top engaging Netflix movies and educational shows for students at home.

BRAINCHILD

Brainchild is an educational Netflix movie that targets a young audience interested in science. The movie talks about scientific experiments. There are detailed simple experiments that present the scientific explanation of how things work. The movie is educational because it helps students understand the mechanics of experimenting with science. One example is how sunlight can cause flames using a magnifying glass. Experimentation satisfies the younger audience due to its visual stimulating experimentation.

AMERICAN PROMISE

Teachers in history require students to watch this movie because it presents the socio-political history of the United States. American Promise is a show on Netflix for students because it talks about how politics work in the United States. It reveals the importance of knowing how the political norms of the country affect the younger generation. One example is the importance of casting votes during the US election. Students will realize how to choose wisely when voting for a politician during the election. The movie helps students how the election is important for choosing the leaders of society.

RACE TO NOWHERE

One of the top shows on Netflix is the Race to Nowhere. It is a movie, presenting a psychological pressure on the teenagers in their studies. The purpose of the movie is to show how patience and perseverance of learning are important to students. Scenes related to the everyday struggle of school-age students to accomplish their dreams through rough studying and sacrificing their time. The realistic presentation shows how the younger generation struggles before becoming future leaders and role models of our society.

ON THE WAY TO SCHOOL

One of the best teen shows on Netflix is the movie On the Way To School. The movie looks at the conditions of remote places where schools are scarce. It reveals a glimpse of children who walk 10 miles from home each day to school. The scenes present a sad reality for impoverished nations how they struggle to provide education for children. The main characters of the movie show how children cross the jungle on their way to school. While on their way, children are risking their lives by becoming a potential prey for wild animals along their path.

Overall, Netflix is helping young students at home to watch meaningful shows that can improve study skills. Teachers recommend while staying at home due to the ongoing pandemic, children watch educational movies and television series to stimulate their learning experience. Movies with a semi-documentary presentation show how some students should feel lucky to be living in a comfortable household. Netflix is an important instrument for students to understand the reality of going to school and having a job. Students who become successful in life are those who take a risk in challenging their path and absorb obstacles as future leaders in our society.

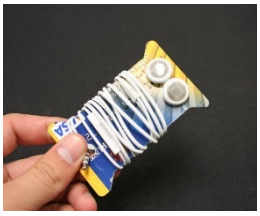
January 26, 2020

Interesting DIY Tech Accessories, Gadgets, and Gifts by Marly La Mar 28, 2020

Have you ever wanted to add some oomph to your gadgets? Something to give them some life and make them stand out a bit? We're going to show you 7 gadget projects that will help you do just that.

Now sure, you could buy most of these things at the store, but why pay tons of money for something when you can make it yourself? Right? Detailed instructions will show you how to build these cool projects!

1. Earbud Holders



Earbuds are great but those pesky wires always seem to find some way to tangle up and cause problems. The solution? A convenient holder made from a plastic card. Frugal and functional!

You'll Need:

- An expired plastic credit card or membership card.
- Utility or X-acto Knife (heavy duty)
- Electric drill with drill bit
- Cutting board

2. Cross-Stitch iPhone Cases

There are a ton of great iPhone cases on the market (almost an endless amount), but have you ever wanted a completely unique case? Well, the only way to accomplish that goal is to make your own. Cross-stitch iPhone cases aren't too difficult to make, and they're completely customizable. Pick your favorite pattern and get to work! These would make for a great handmade gift as well.

You'll Need:

- Leese Design's iPhone 4 Cross Stitch Case
- Caroline Vincent's Sampler Workbook: Motifs and Patterns, page 17.
- All threads used in this version are Sajou Retors du Nord 4-ply embroidery floss
- Leaves: 2039, 2405, 2529
- Branches: 2227
- Bird: 2010
- Bird's eye and legs: 2234

4. iPhone Stand

Have you ever wanted to stand your iPhone up on its own for a hands-free, mini-theatre experience? There are products on the market to help you accomplish this, but why spend money when you can make your own? You won't need much to make one of these DIY iPhone stands, and you can customize it with your own fabric as well.

You'll Need:

- Thick cardboard (I used the back of an old note pad)
- Ruler
- Craft Knife
- Fabric (at least 27cm by 30cm)
- Pins
- Large Needle/ Darning Needle and thick thread (Or wool)
- Scissors
- A Sewing Machine (optional)

Final Thoughts: When I think of gadgets I automatically think of cold, bland electronics. That's just often how they are. However, with a bit of craftiness and love, you can bring some warmth and personality into your gadgets. I hope these DIY tech accessories have inspired you to create some awesome accessories for your own gadgets. Let us know what you're planning to create!

	Day 1	Day 2	Day 3
What do you notice about the blog?			
What do you like?			
What do you dislike?			
What is the blogger's purpose in writing?			
Who is the audience?			
What did you learn about blogs by viewing the sample?			

Challenge: Create your own blog

Think about the following questions. Choose 1 of the styles form the blog samples and 1 of the prompts below to create your own blog. Most blogs have pictures- cut out magazines or draw pictures to compliment your blog.

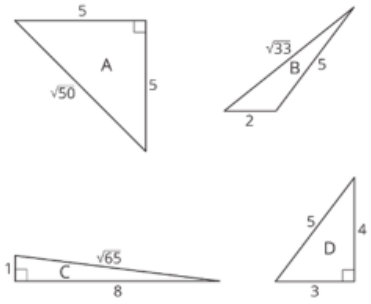
- What hobbies do you have?
- Share a picture of any collections you have or tell your readers how you got interested in a hobby.
- What's the best book you've read lately? What did you like about it?
- Look in your phone choose a picture you've taken recently and tell about it.
- Describe your favorite meal to have for dinner.
- List all the ways you can think of to earn money around the house.
- Review a movie you've watched.
- Tell about your time being restricted by the stay-at-home order.

  - ❖ Be sure to include blog features.
  - ❖ Have someone in your home read your blog, ask them to write a comment to your blog.

Math 8 – Week of June 1st

Applications of the Pythagorean Theorem

Which One Doesn't Belong? Why?

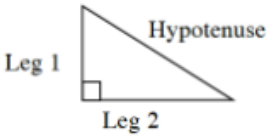


METHODS AND MEANINGS

MATH NOTES

Right Triangles and the Pythagorean Theorem

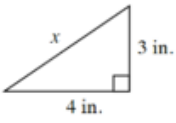
A right triangle is a triangle in which the two shorter sides form a right (90°) angle. The shorter sides are called **legs**. The third and longest side, called the **hypotenuse**, is opposite the right angle.



The **Pythagorean Theorem** states that for any right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.

$$(\text{leg } 1)^2 + (\text{leg } 2)^2 = (\text{hypotenuse})^2$$

Example:

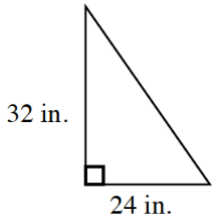


$$3^2 + 4^2 = x^2$$
$$9 + 16 = x^2$$
$$25 = x^2$$
$$5 = x$$

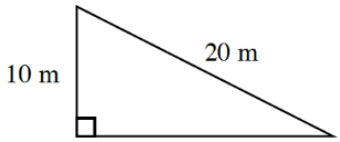
The **converse of the Pythagorean Theorem** states that if the sum of the squares of the lengths of the two shorter sides of a triangle equals the square of the length of the longest side, then the triangle is a right triangle.

9-122 Ann is measuring some fabric pieces for a quilt. Use the Pythagorean Theorem and your calculator to help her find each of the missing lengths below. Decide whether each answer is rational or irrational. If it is rational, explain whether the decimal repeats or terminates.

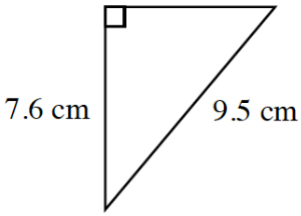
a.



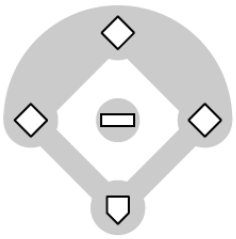
b.



c.

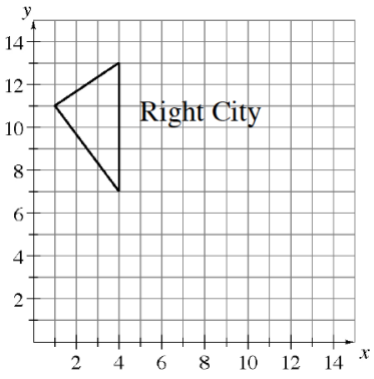


9-123 Coach Kelly's third-period P.E. class is playing baseball. The distance between each base on the baseball diamond is 90 feet. Lisa, at third base, throws the ball to Dano, at first base. How far did she throw the ball? State whether your answer is rational or irrational.

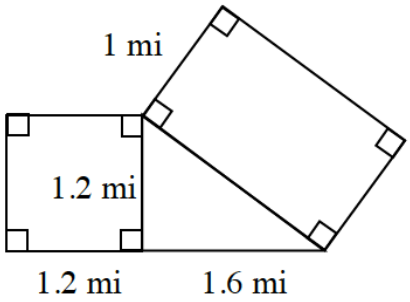


9-124 As the city planner of Right City, you are responsible to report information to help the Board of Supervisors make decisions about the budgets for the fire and police departments. The board has asked for a report with answers to the following questions. Each grid unit in the figure at right represents 1 mile.

a. For fire safety, bushes will be cleared along the perimeter of the city. What is the length of the perimeter? Include all of your calculations in your report.
b. Some people say that Right City got its name from its shape. Is the shape of the city a right triangle? Show how you can tell.



9-125 Clem and Clyde have a farm with three different crops: a square field of corn, a rectangular field of artichokes, and a right-triangle grove of walnut trees (as shown at right). A fence totally surrounds the farm. Find the total area of Clem and Clyde's land in square miles and tell them how much fencing they need to enclose the outside of their farm.



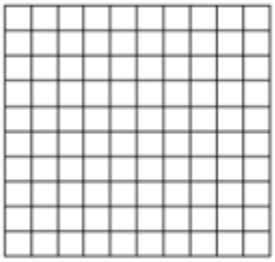
9-126 Scott and Mark are rock climbing. Scott is at the top of a 75-foot cliff, when he throws a 96-foot rope down to Mark, who is on the ground below. If the rope is stretched tightly from Mark's feet to Scott's feet, how far from the base of the cliff (directly below Scott) is Mark standing? Draw a diagram and label it. Then find the missing length. Is the length irrational?

9-127 Nicole has three long logs. She wants to place them in a triangle around a campfire to allow people to sit around the fire. The logs have lengths 19,11, and 21 feet.

a. Can she form a triangle with these lengths? If so, what type of triangle (acute, obtuse, or right) will the logs form? Justify your answers.
b. Nicole realized she wrote the numbers down incorrectly. Her logs are actually 9,11, and 21 feet. Will she still be able to surround her campfire with a triangular seating area? If so, will the shape be a right triangle? Justify.

9-129 On a coordinate grid, draw a triangle with vertices at (2,6), (2,2), and (5,6).

a. Find the lengths of each side of the triangle. What is the perimeter?
b. What type of triangle is formed by these points? Justify your answer.

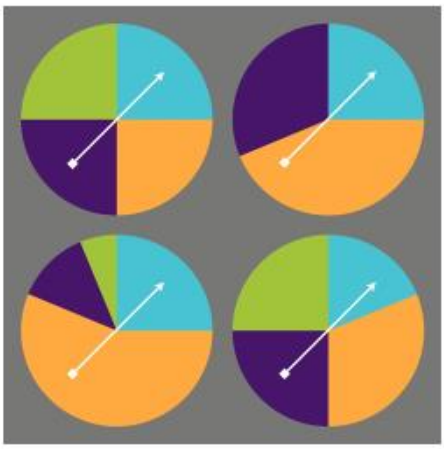


9-130 Ann lives on the shoreline of a large lake. A market is located 24 km south and 32 km west of her home on the other side of the lake. If she takes a boat across the lake directly toward the market, how far is her home from the market?

IM1 (Middle School) – Week of June 1st

When It's a 50-50 Chance

Which One Doesn't Belong? Why?



Probability Practice Worksheet

1. Noah is planning his birthday party. Here is a tree showing all of the possible themes, locations, and days of the week that Noah is considering.

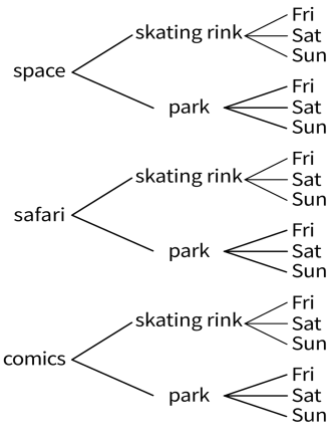
    a. How many themes is Noah considering?

    b. How many locations is Noah considering?

    c. How many days of the week is Noah considering?

    d. One possibility that Noah is considering is a party with a space theme at the skating rink on Sunday. Write two other possible parties Noah is considering.

    e. How many different possible outcomes are in the sample space?



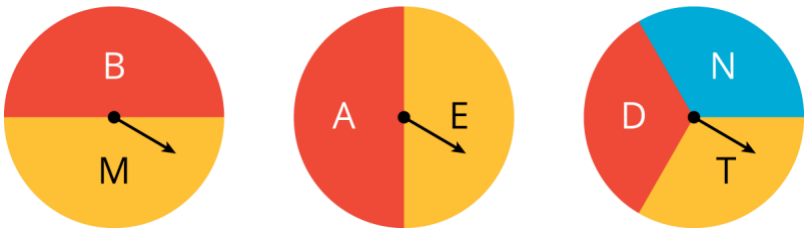
2. For each event, write the sample space and tell how many outcomes there are.

    a. Lin selects one type of lettuce and one dressing to make a salad.

        i. Lettuce types: iceberg, romaine
        ii. Dressings: ranch, Italian, French

    b. Diego chooses rock, paper, or scissors, and Jada chooses rock, paper, or scissors.

    c. Spin these 3 spinners.



Although the definition of probability is simple, calculating a particular probability can sometimes be tricky. When calculating the probability of flipping a coin and having it come up tails, we can easily see that there are only two possibilities and one successful outcome. But what if neither the total number of outcomes nor the total number of successes is obvious? In this case, we need to have an accurate way to count the number of these events. In these lessons, we look at three models to do this: making a systematic list, making a tree diagram, and making an area model. Each different model has its strengths and weaknesses, and is more efficient in different situations.

See the Math Notes boxes in Lessons 4.2.3 and 4.2.4 for more information about calculating probabilities.

Example 1

As Ms. Dobby prepares the week's lunch menu for the students, she has certain rules that she must follow. She must have a meat dish and a vegetable at each lunch. She has four choices for meat: chicken, fish, beef, and pork. Her list of choices for vegetables is a bit larger: peas, carrots, broccoli, corn, potatoes, and beets. Considering just the meat and the vegetable, what is the probability that the first lunch she makes will have meat and a green vegetable?

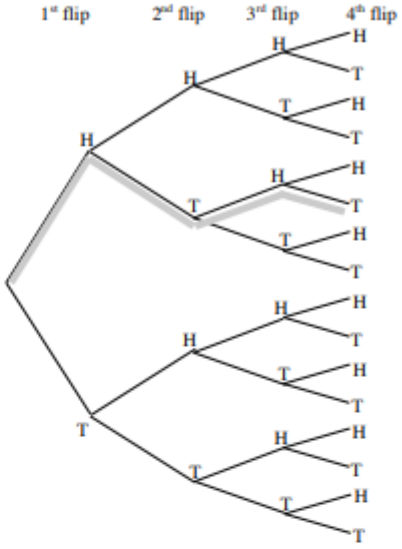
To determine the probability of a lunch with meat and a green vegetable, we need to know how many different lunch menus are possible. Then we need to count how many of the lunch menus have meat and a green vegetable. To count all of the possible lunch menus, we will make a systematic list, pairing each meat with a vegetable in an organized way.

Chicken	Fish	Beef	Pork
Chicken and peas	Fish and peas	Beef and peas	Pork and peas
Chicken and carrots	Fish and carrots	Beef and carrots	Pork and carrots
Chicken and broccoli	Fish and broccoli	Beef and broccoli	Pork and broccoli
Chicken and corn	Fish and corn	Beef and corn	Pork and corn
Chicken and potatoes	Fish and potatoes	Beef and potatoes	Pork and potatoes
Chicken and beets	Fish and beets	Beef and beets	Pork and beets

From this list we can count the total number of lunch menus: 24. Then we count the number of lunch menus with meat and a green vegetable (peas or broccoli). There are eight such menus. Therefore the probability of the first lunch menu having meat and a green vegetable is $\frac{8}{24} = \frac{1}{3}$.

Example 2

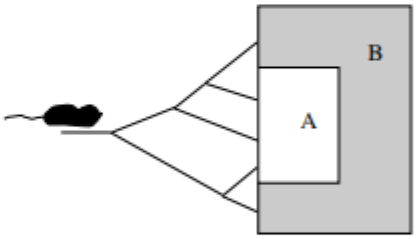
What is the probability of flipping a fair coin 4 times and have tails come up exactly two of those times?



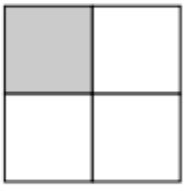
To solve this problem, we could make a systematic list as we did in the previous example, but there is another technique that works well for this type of problem. Since each flip gives us only two outcomes, we can organize this information in a tree diagram. The first flip has only two possibilities: heads (H) or tails (T). From each branch, we split again into H or T. We do this for each flip of the coin. The final number of branches at the end tells us the total number of outcomes. In this problem, there are 16 outcomes. We now count the number of "paths" along the branches that have exactly two Ts. One path consisting of HTHT is highlighted. The others are HHTT, HTTH, THHT, THTH, and TTHH, for a total of six paths. Thus the probability of flipping a coin four times and having T come up exactly two times is $\frac{6}{16} = \frac{3}{8}$.

Example 3

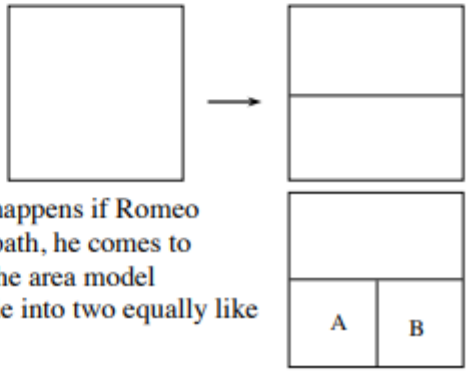
Romeo the rat is going to run through a maze to find a block of cheese. The floor plan of the maze is shown at right, with the cheese to be placed in either section A or section B. If every time Romeo comes to a split in the maze he is equally like to choose any path in front of him, what is the probability he ends up in section A?



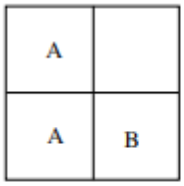
To answer this question we will construct an area model to represent this situation. Using an area model is like turning the problem into a dartboard problem. It is easy to see what the probability of hitting the shaded portion on the dartboard at right is because the shaded portion makes up one-fourth of the board. Therefore the probability of hitting the shaded portion is $\frac{1}{4}$. What we want to do is turn the maze problem into a dartboard with the outcome we want (our success) represented by the shaded part.



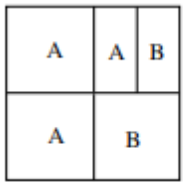
To begin, we start with a square dartboard. You can think of this as being a 1×1 square. When Romeo comes to the first branch in the maze, he has two choices: a top path and a bottom path. We represent this on the dartboard by splitting the board into two same sized (equally likely) pieces. Then consider what happens if Romeo chooses the bottom path first. If he chooses the bottom path, he comes to another split with two choices, each equally likely. On the area model (dartboard) we show this by splitting the bottom rectangle into two equally like sections, shown at right.



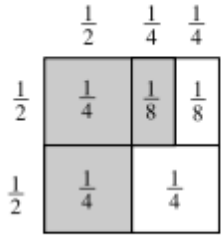
With one branch, Romeo will end up in section A; with the other branch he will end up in B. We indicate this by putting the letters in the regions representing these outcomes. Note: you can split the bottom rectangle in half with a "top" rectangle and a "bottom" rectangle as well. Since we are ultimately going to consider the area covered with an "A," it can be split in any way as long as the pieces are equal in size.



Now consider the top path. If Romeo takes the top path at the first split, he quickly comes to another split where again he has a choice of a top path or a bottom path. Once again we split the top rectangle into two same-sized rectangles since each path is equally likely. One box will represent the top path and one will represent the bottom. If Romeo takes the lower path, he will end up in section A. We indicate this by choosing one of the new regions as representing the lower path, and writing an A in that portion. If Romeo takes the upper path, he comes to another split, each equally likely. This means the last section of the dartboard that is not filled in needs to be cut into two equal parts, since each path is equally likely. One of the paths will lead directly to section A, the other to section B. Now we can fill in those letters as well.



By looking at the dart board now, we can see that since A takes up more of the board, we would be more likely to hit section A. But to find the actual probability, we must determine how much area the sections marked with A take up. Recall that this is a 1×1 square. We can find the fraction of the area of each part. Remember: the key is that we divided regions up into equal parts. The length of each side of each rectangle is shown on the exterior of the square, while the area is written within the region. We want to know the probability of getting into section A, which is represented by the shaded portion of the dartboard. The area of the shaded region is:



$$A = \frac{1}{4} + \frac{1}{4} + \frac{1}{8}$$
$$= \frac{2}{8} + \frac{2}{8} + \frac{1}{8}$$
$$= \frac{5}{8}$$

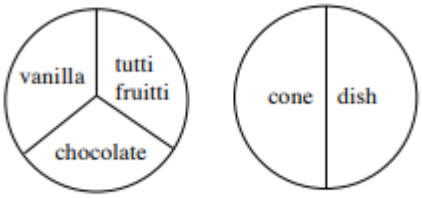
Therefore the probability of Romeo wandering into section A is $\frac{5}{8}$. This means the probability that he wanders into section B is $\frac{3}{8}$ since the sum of both probabilities must be 1.

Problems

1. If Keisha has four favorite shirts (one blue, one green, one red, and one yellow) and two favorite pairs of pants (one black and one brown), how many different favorite outfits does she have? What is the best way to count this?

2. Each morning Aaron starts his day with either orange juice or apple juice followed by cereal, toast, or scrambled eggs. How many different morning meals are possible for Aaron?

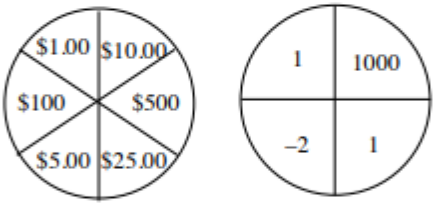
3. Eliza likes to make daily events into games of chance. For instance, before she went to buy ice cream at the local ice cream parlor, she created two spinners. The first has her three favorite flavors while the second has "cone" and "dish." Eliza will order whatever comes up on the spinners. What is the probability that she will be eating tutti fruitti ice cream from a dish?



4. Barty is going to flip a coin three times. What is the probability that he will see *at least* two tails?

5. Mr. Fudge is going to roll two fair dice. What is the probability that the sum will be 4 or less?

6. Welcome to another new game show, "Spinning for Luck!" As a contestant, you will be spinning two wheels. The first wheel determines a possible dollar amount that you could win. The second wheel is the "multiplier." You will multiply the two results of your spin to determine the amount you will win. Unfortunately, you could *owe* money if your multiplier lands on –2! What is the probability that you could win $100 or more? What is the probability that you could owe $100 or more?



Dollar amount Multiplier

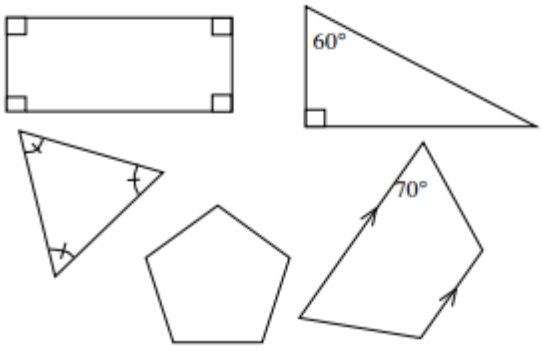
For problems 7 through 10, a bag contains the figures shown below right. If you reach in and pull out a shape at random, what is the probability that you pull out:

7. A figure with at least one right angle?

8. A figure with an acute angle?

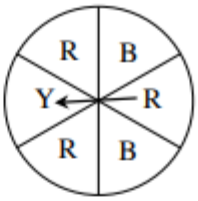
9. A shape with at least one pair of parallel sides?

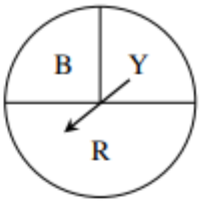
10. A triangle?



For each question that follows, use an area model or a tree diagram to compute the desired probability.

For problems 11-13 use the spinners at right.





11. If each spinner is spun once, what is the probability that both spinners show blue?

12. If each spinner is spun once, what is the probability that both spinners show the same color?

13. If each spinner is spun once, what is the probability of getting a red-blue combination?

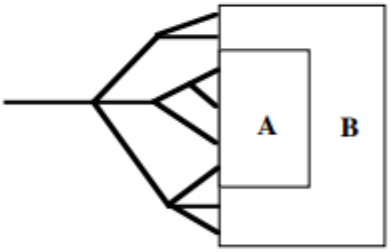
14. A pencil box has three yellow pencils, one blue pencil, and two red pencils. There are also two red erasers and one blue. If you randomly choose one pencil and one eraser, what is the probability of getting the red-red combination?

15. Sally's mother has two bags of candy but she says that Sally can only have one piece. Bag #1 has 70% orange candies and 30% red candies. Bag #2 has 10% orange candies, 50% white candies, and 40% green candies. Sally's eyes are covered and she chooses one bag and pulls out one candy. What is the probability that she chooses an orange candy?

16. You roll a die and flip a coin. What is the probability of rolling a number less than 5 on the die and flipping tails on the coin?

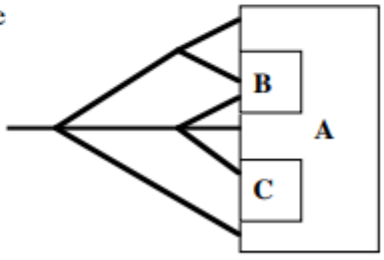
17. A spinner is evenly divided into eight sections—three are red, three are white, and two are blue. If the spinner is spun twice, what is the probability of getting the same color twice?

18. You and your friend have just won a chance to collect a million dollars. You place the money in one room at right and then your friend has to randomly walk through the maze. In which room should you place the money so that your friend will have the best chance of finding the million dollars?



19. Find the probability of randomly entering each room in the maze shown at right.

    a. P(A) b. P(B) c. P(C)



20. The weather forecast shows a 60% chance of rain. If it does not rain then there is an 80% chance of going to the beach. What is the probability of going to the beach

21. A baseball player gets a hit 40% of the time if the weather is nice but only 20% of the time if it is cold or windy. The weather forecast shows a 70% chance of being nice, 20% chance of being cold, and 10% chance of being windy. What is the probability of that the baseball player will get a hit?

Energy transfers and transformations

By National Geographic Society, adapted by Newsela staff on 09.12.19
Word Count **906**
Level **1120L**

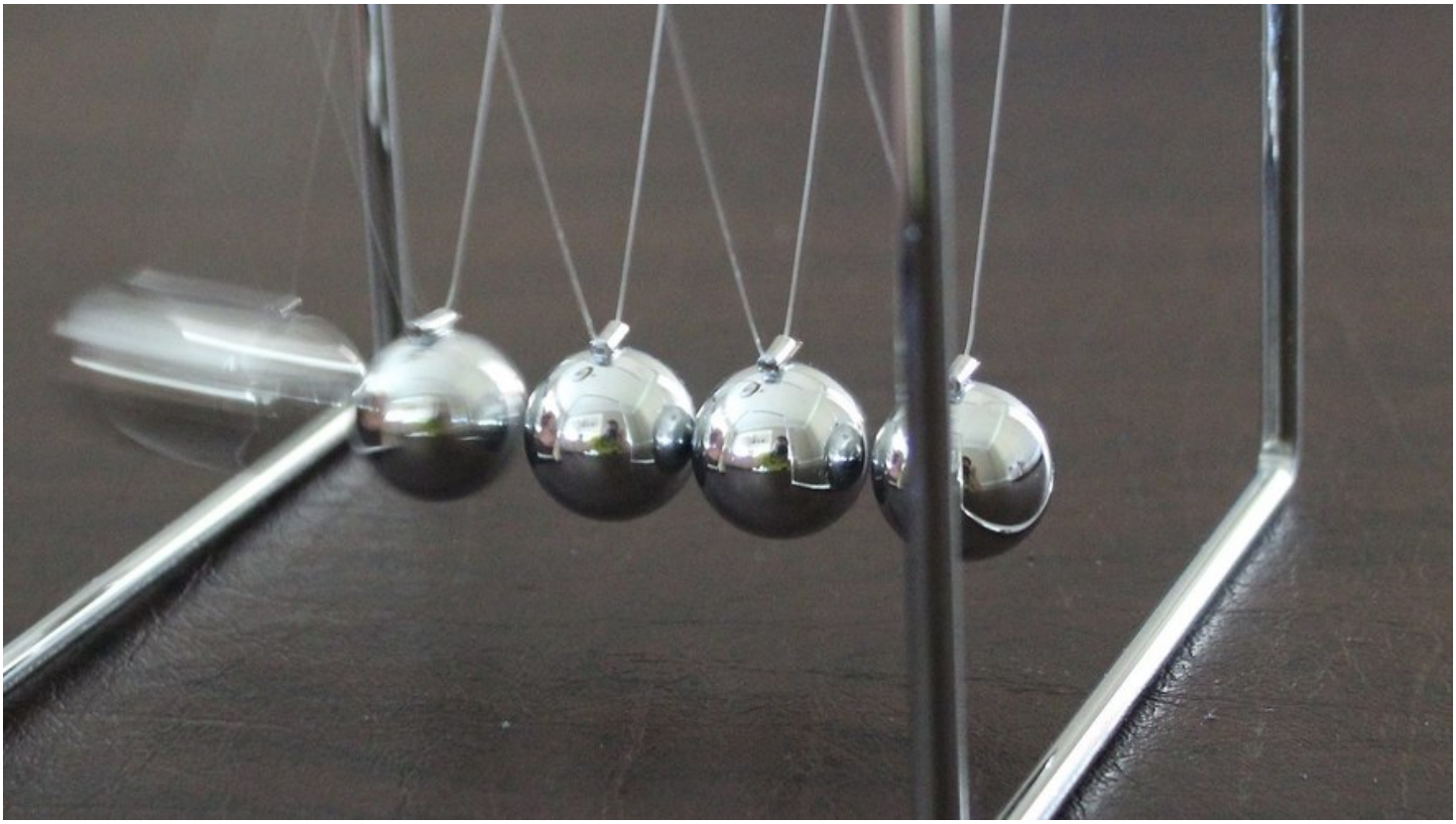


Image 1. Newton's cradle is a device that demonstrates the transfer of kinetic energy. Photo from: Wikimedia Commons

Energy cannot be created or destroyed, meaning that the total amount of energy in the universe has always been and will always be constant. However, this does not mean energy is unchangeable. It can change form and even transfer between objects.

A common example of energy transfer is the transfer of kinetic energy — the energy associated with motion — from one moving object to a stationary object via work. In physics, work is a measure of energy transfer. It refers to the force applied by an object over a distance. When a golf club is swung and hits a golf ball, some of the club's kinetic energy transfers to the ball as the club does "work" on the ball. In this type of energy transfer, energy moves from one object to another but stays in the same form. A kinetic energy transfer is easy to observe and understand, but other important transfers are not as easy to visualize.

Thermal energy has to do with the internal energy of a system from its temperature. When a substance is heated, its temperature rises because its molecules move faster and gain thermal energy through heat transfer. Temperature measures the "hotness" or "coldness" of an object, and

the term heat is used to refer to thermal energy being transferred from a hotter system to a cooler one. Thermal energy transfers occur in three ways: through conduction, convection and radiation.

When thermal energy is transferred between molecules that are in contact with one another, this is called conduction. If a metal spoon is placed in a pot of boiling water, even the end not touching the water gets very hot. This happens because metal is an efficient conductor. That means that heat travels through the material with ease. The vibrations of molecules at the end of the spoon touching the water spread up the spoon, until all the molecules are vibrating faster (i.e., the whole spoon gets hot). Some materials, such as wood and plastic, are not good conductors. That is, heat does not easily travel through the material. They are known as insulators.

Convection And Radiation

Convection only occurs in fluids, such as liquids and gases. When water is boiled on a stove, the water molecules at the bottom of the pot are closest to the heat source and gain thermal energy first. They move faster and spread out, creating a lower density of molecules, or quantity of molecules in that volume, at the bottom of the pot. These molecules rise to the top of the pot. They are replaced at the bottom by cooler, denser water. The process repeats, creating a current of molecules sinking, heating up, rising, cooling down and sinking again.

The third type of heat transfer — radiation — is critical to life on Earth. With radiation, a heat source does not have to touch the object being heated. Radiation can transfer heat even through the vacuum of space. Nearly all thermal energy on Earth comes from the sun and radiates to the surface of our planet, traveling in the form of electromagnetic waves. Electromagnetic waves, such as visible light, are waves of energy. Materials on Earth absorb these waves to be used for energy or reflect them back into space.

In an energy transformation, energy changes form. A ball sitting at the top of a hill has gravitational potential energy, which is an object's potential to do work due to its position in a gravitational field. Generally speaking, the higher on the hill this ball is, the more gravitational potential energy it has. When a force pushes it down the hill, that potential energy transforms into kinetic energy. The ball continues losing potential energy and gaining kinetic energy until it reaches the bottom of the hill.

In a frictionless universe, the ball would continue rolling forever, since it would have only kinetic energy. On Earth, however, the ball stops at the bottom of the hill due to the kinetic energy being transformed into heat by the opposing force of friction. Just as with energy transfers, energy is conserved in transformations.

Energy Transfer On A Sand Dune

In nature, energy transfers and transformations happen constantly, such as in a coastal dune environment.

When thermal energy radiates from the sun, it heats both the land and ocean. However, water has a high specific heat capacity, so it heats up slower than land. This temperature difference creates a convection current, which manifests as wind.

This wind possesses kinetic energy, which it transfers to grains of sand on the beach by carrying them short distances. If moving sand hits an obstacle, it stops due to the friction created by the

contact and its kinetic energy is then transformed into thermal energy, or heat. Once enough sand builds up, these collisions can create sand dunes, and possibly even an entire dune field.

These newly formed sand dunes provide a unique environment for plants and animals. A plant may grow in these dunes by using light energy radiated from the sun to transform water and carbon dioxide into chemical energy, which is stored in sugar. When an animal eats the plant, it uses the energy stored in that sugar to heat its body and move around, transforming the chemical energy into kinetic and thermal energy.

Though it may not always be obvious, energy transfers and transformations constantly happen all around us and are what enable life to exist.

Radical Reconstruction

Benchmark Standard	History 2a: Students will master the basic research skills necessary to conduct an independent investigation of historical phenomena.
Grade	8
Vocabulary	Below each document

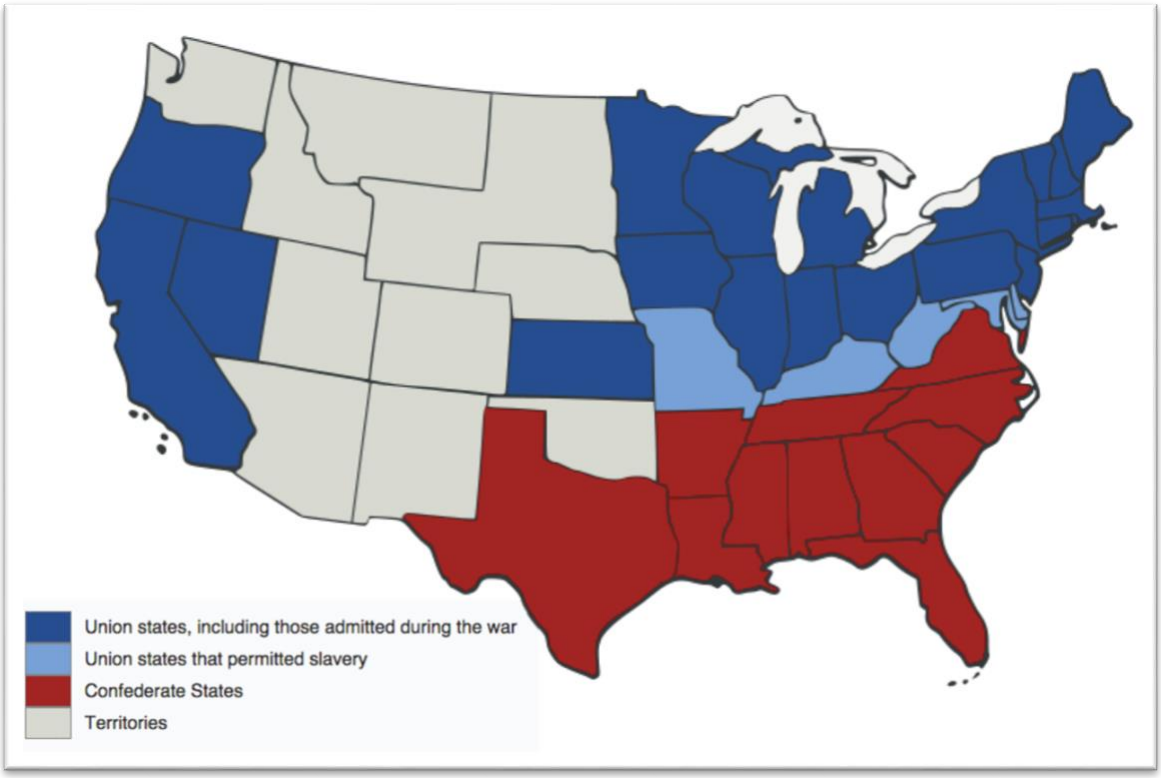
~This is a Stanford History Education Group (SHEG) lesson, modified by CSD for use at home~

ACTIVITY 1: Observe the photograph and on a separate sheet of paper, answer the three questions below it.

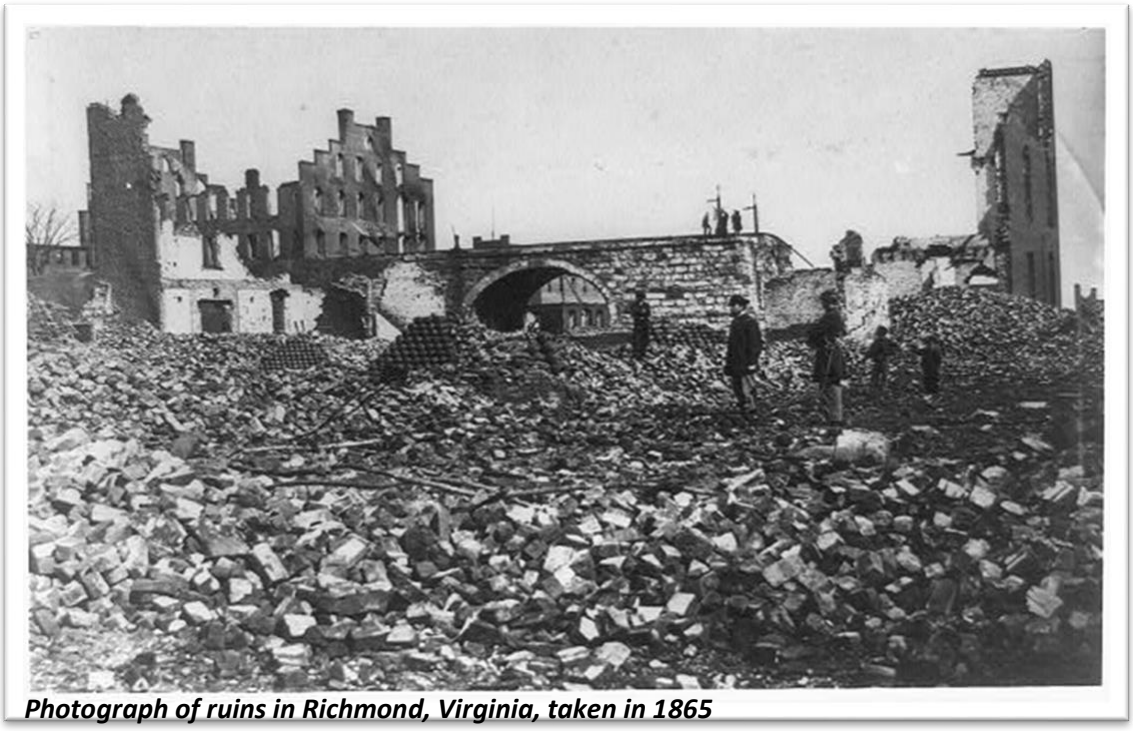
1. Describe this photograph
2. When and where do you think this photograph was taken?
3. What are three things you think people living in this setting did in the years following the photograph?

FYI: This photograph was taken in April 1865 in Richmond, Virginia, the capital of the Confederate States. Today you are going to learn about some of the major challenges that the United States faced after the Civil War.

ACTIVITY 2: Read the following information to briefly review the Civil War and to highlight the major issues of Reconstruction. As you read, answer the 8 questions throughout the reading on a separate sheet of paper. The answers to the questions are based on your *opinion*.



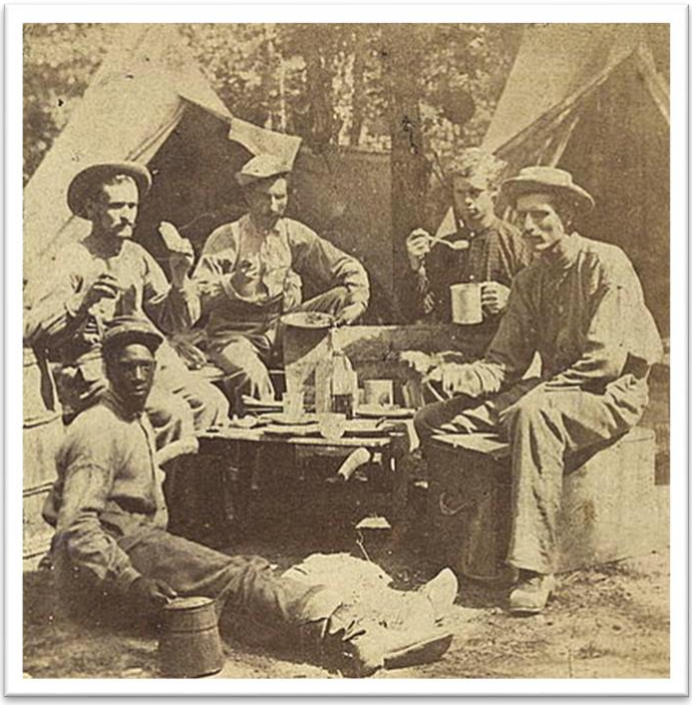
The Civil War, 1861-1865.
The American Civil War was fought between the United States and the Confederate States of America from 1861 to 1865. Disagreements about slavery were a central source of the increasing political unrest and disunity in the country that led to the war. These disagreements largely followed sectional lines. Many white Southerners, both slaveholding and not, supported slavery, while many Northerners opposed slavery. The United States defeated the Confederate States of America.



Photograph of ruins in Richmond, Virginia, taken in 1865

Reconstruction Era, 1865-1877
Reconstruction refers to the period following the Civil War between 1865 and 1877. John Wilkes Booth, a Confederate sympathizer, assassinated President Lincoln five days after the supreme commander of the Confederate army surrendered. As Lincoln's vice president, Andrew Johnson became the new president. Johnson was a Southern Democrat who opposed secession of the Confederacy but, compared to Northern Republicans, was relatively sympathetic to Southern states.

Many people in Congress opposed Johnson. His biggest opponents were called Radical Republicans. "Radical" means extreme, and "radicals" typically want to see extreme changes in society. In the 1860s the Radical Republicans wanted to punish the South for the Civil War and supported equal rights for freedmen.



Major Questions After the Civil War

1. How should the South be rebuilt?
2. How should the states that seceded be brought back into the Union?
3. How should former slaves be incorporated into the country as freed men and women?

Reconstructing a Nation

Hundreds of thousands of soldiers died during the Civil War. A recent study suggests that the total number of deaths was 750,000. At the start of the Civil War, there were nearly four million slaves in the United States.

- After 4 years of war and over 200 years of slavery, could Northerners and Southerners rebuild the South together?
- Could they unify as citizens of the same country?

Photograph of a Union soldier camp taken between 1861 and 1865

Punishment for the Confederate States?

Other questions were raised about what the consequences would be for the Confederate states.

4. Should people who fought against the United States be recognized as citizens? Should they be punished?
5. What should be done to the Southern state governments that fought against the United States?

Illustration of the Attack on Fort Sumter from 1861

Photograph of an enslaved family in South Carolina taken in 1862

African American in the South

Just before the Civil War, there were about four million enslaved people in the United States. For over two hundred years, black people in America had been systemically dehumanized. As slaves, they were considered property, and as such had no legal rights, and in 1857 the Supreme Court ruled in the Dred Scott case that all African Americans, whether enslaved or free, could not be citizens.

During the Civil War, African Americans provided critical support to the Union's fight, acting as spies, cooks, soldiers, and launderers for the army. Black

soldiers made up ten percent of the Union army, half of whom were free Northerners and half of whom were Southerners who escaped to Union lines. They were often assigned the hardest, most dangerous work, and usually suffered far worse than white soldiers when taken prisoner by the Confederate army.

6. How would freed men and women be treated in the Southern states?
7. How would Northerners address the issue of including former slaves as citizens in society?
8. What were some major challenges that former slaves faced?

You are going to investigate the Central Historical Question → Why was the Radical Republican plan for Reconstruction considered "radical?"

ACTIVITY 3: Read the two primary source documents, "Thaddeus Stevens" and "Andrew Johnson" and answer the questions that follow.

Thaddeus Stevens (Modified)

Thaddeus Stevens was a member of the House of Representatives from Pennsylvania. He was a leader of the Radical Republicans within the Republican Party during the 1860s. This is a series of excerpts from a speech he delivered to Congress on March 19, 1867.

The cause of the war was slavery. We have liberated the slaves. It is our duty to protect them, and provide for them while they are unable to provide for themselves.

None will deny the right to **confiscate** the property of the Southern states, as they all made war as the Confederate States of America. The bill provides that each freed slave who is a male adult, or the head of a family, will receive forty acres of land, (with $100 to build a house). **Homesteads** are far more valuable than the immediate right of **suffrage**, though they should receive both.

Four million people have just been freed from slavery. They have no education, have never worked for money, and don't know about their rights. We must make the freed slaves independent of their old masters, so that they may not be compelled to work for them upon unfair terms, which can only be done by giving them a small **tract** of land to farm.

Source: Thaddeus Stevens, speech to Congress, March 19, 1867.

VOCABULARY:	
confiscate: take or seize someone's property	suffrage: the right to vote
homestead: a piece of land gifted by the government to a citizen who lives on and farms it	tract: an area of land

Andrew Johnson (Modified) Part 1 of 2

Andrew Johnson was a Democrat who served as President of the United States from 1865 to 1869. The following is a series of excerpts from a campaign speech that Johnson gave in September 1866 in Cleveland, Ohio. In the speech he discusses the Freedmen's Bureau, which was a federal agency designed to help former slaves with jobs and education. Radical Republicans, like Thaddeus Stevens, supported additional funding for the Freedmen's Bureau.

Before the Civil War there were 4,000,000 black people held as slaves by about 340,000 people living in the South. That is, 340,000 slave owners paid all the living expenses of the slaves. Then, the war began and the slaves were freed . . . Now to the Freedmen's Bureau bill. What was it? Four million slaves were emancipated and given an equal chance and fair start to work and produce . . . But the Freedmen's Bureau comes and says we must take charge of these 4,000,000 slaves. The bureau comes along and proposes, at a cost of $12,000,000 a year, to take charge of these slaves. You had already spent $3,000,000,000 to set them free and give them a fair opportunity to take care of themselves - then these [Radical Republicans], who are such great friends of the people, tell us they must be taxed $12,000,000 to sustain the Freedmen's Bureau.

Source: Andrew Johnson, campaign speech, September 3, 1866.

(continued on next page)

Andrew Johnson (Modified) Part 2 of 2

Andrew Johnson delivered the following speech to Congress on March 2, 1867, after he vetoed legislation that would have given freedmen the right to vote.

The purpose and object of the bill is to change the entire structure and character of the State governments. Blacks have not asked for the privilege of voting. The vast majority of them have no idea what it means. The Federal Government has no **jurisdiction**, authority, or power to regulate such subjects for any State. To force the right of **suffrage** out of the hands of the white people and into the hands of the blacks is an arbitrary violation of this principle.

Source: Andrew Johnson, speech to Congress, March 2, 1867.

VOCABULARY:	
jurisdiction: the official power to make legal decisions	suffrage: the right to vote

GUIDING QUESTIONS: Answer the following questions on a separate sheet of paper.

Thaddeus Stevens

1. (Sourcing) Thaddeus Stevens was a Radical Republican. What did Radical Republicans stand for?
2. (Close reading) Based on this document, what were three policies that the Radical Republicans proposed for Reconstruction?
3. (Context) Given what was going on in the country at the time, why might Democrats have opposed these plans?

Andrew Johnson

1. (Close reading) What reason did Andrew Johnson give for opposing funding to help the freed slaves?
2. (Contextualization) The first Johnson document is a campaign speech. How might this influence what he says?
3. (Close reading) What were two reasons why Andrew Johnson opposed giving African Americans the right to vote?

DISCUSSION QUESTIONS: Answer the following questions on a separate sheet of paper.

1. What are the major differences between the Radical Republicans and Andrew Johnson?
2. Which plan do you think would be more likely to unite the country after the Civil War? Why?
3. Why do you think the Radical Republican plan was considered "radical"?
4. What do you predict actually happened during Reconstruction?

OVERARCHING QUESTIONS: Answer the following questions on a separate sheet of paper.

1. Why was the Radical Republican plan for Reconstruction considered "radical"? Support your answer with evidence from the documents.
2. Do you think it was "radical"? Explain why or why not and support your answer with evidence from the documents.