Christina School District Assignment Board

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

Grade Level: 7th

Week of May 18th, 2020

	Day 1	Day 2	Day 3	Day 4	Day 5
ELA	This week's focus is to build upon your prior knowledge, giving you experience in reading real-world informational texts, note-taking, critical thinking, and metacognitive skills. --- Review the chart on writer's moves. Put a check next to all of the ones that you remember from ELA class and that you understand. --- Read the following statements and respond in a sentence or two. Do you agree, disagree? Explain. -"You're only as good as your next post." - Your phone is like your life. You either control it or it controls	Read the article **"Half of Teens Think They're Addicted to Their Smartphones."** Follow the instructions on the article.	Answer the **Digging Deep Questions.**	Analyzing Writer's Craft	Write a 1-2 paragraph response to the article. Utilize 1-2 of the writer's techniques in your response OR Choose one of the quotes from Day 1 and explain in a paragraph how it connects to the main idea of the article.

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		you." _____ On the same sheet of paper take the Cell Phone Addiction 'pre-test". 1. Do you think you're addicted to your smartphone and/or social media? Explain 2. What are the 3 benefits you get out of using a smartphone ? 3. What are the 3 ways in which your smartphone has a negative effect on you?				
Math (IM1 can be found on the 8th Grade Board)	**7**	*Percent Increase and Decrease* Answer "Which One Doesn't Belong?" and justify your choice. (attached) Read Math Notes: Percent Increase or Decrease. Complete 7-76 and 7-77. (attached)	Complete 7-78, 7-79, and 7-80. (attached) Refer to Math Notes if needed.	Complete Percent Increase/Decrease Practice Problems #1-2. Refer to Math Notes if needed.	Read page 94 and use examples to complete p. 95 #1-5. (attached)	Complete p. 95 #6-10. (attached) Use examples if needed.
	7+	(Math 7+ should follow the Math 8 calendar in the 8th grade packet PLUS complete the Puzzle Investigator Problem (PIP) 7 - Customer Service (attached)				
Science		**Frogs and Humans:** Look at the images (attached) of the internal and external anatomy of a frog. Think about the following questions: How are the different parts of a frog similar to	**Why Do You Have Two Lungs But Only One Heart? (part 1):** Read the article. In BLUE, highlight or underline information about how different parts of the human body function. In GREEN,	**Why Do You Have Two Lungs But Only One Heart? (part 2):** Reread the article as necessary. Make a claim answering this question: Why do humans require two	**What Animal Has the Weirdest Heart? (part 1):** Read the article. In BLUE, highlight or underline information about the human heart. In GREEN, highlight or underline	**What Animal Has the Weirdest Heart? (part 2):** Reread the article as necessary. Make a claim answering this question: How do differences in each

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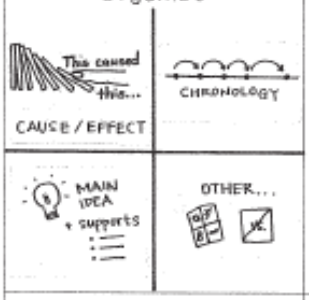
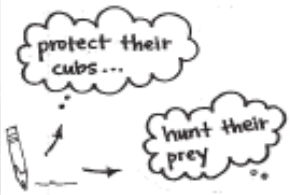
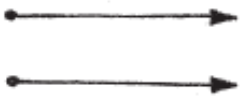
	the physical structures that make up your own body? How are they different? Create 3 columns on a piece of paper. Label them as follows: I See: I Think: I Wonder: Record your observations, thoughts and wonderings about how the physical structures of a frog are both similar to and different from the physical structures of humans.	highlight or underline information about how similar structures can be found in different organisms. If you have any questions as you are reading, annotate them in the margins.	lungs but only one heart? Support your claim with evidence from the article. Then explain why the evidence supports your claim.	information about how other organisms' hearts are similar to the human heart. If you have any questions as you are reading, annotate them in the margins.	animal's heart increase its chances of survival? Support your claim with evidence from the article. Then, explain why the evidence supports your claim.
Social Studies	Complete Part 2, Cartoon 1 from the document titled, "Cartoons: Needs vs. Wants"	Complete Part 2, Cartoon 2 from the document titled, "Cartoons: Needs vs. Wants"	Complete Part 2, Cartoon 3 from the document titled, "Cartoons: Needs vs. Wants"	Complete Part 2, Cartoon 4 from the document titled, "Cartoons: Needs vs. Wants"	Complete Part 3 from the document titled, "Cartoons: Needs vs. Wants"

Writers of Informational Texts Use Techniques Such As:

Organize 	Make a comparison 	Raise questions (and sometimes answer them) 
Give an example/anecdote 	Address the reader directly 	Quote an authority 
Provide a surprising fact or statistic 	Choose words/phrases that lead the reader to think one way or another 	Repeat Use parallelism 
Use text features and/or provide a visual 	Define key terms and use technical vocabulary 	Incorporate humor 

Instructions:

Step 1: Number the paragraphs
Step 2: Skim the article using these symbols as you read:
(+) agree, (-) disagree, (*) important, (!) surprising, (?) wondering
Step 3: Read the article now carefully and make notes in the margin. Try to mark each paragraph with an important note, idea or question.
Step 4: Answer the following.

1. What surprised you as you read?
2. What did the author think you already knew?
3. What challenged, changed or confirmed what you knew?

Step 5: Write a 1-2 sentence summary of the article.

Half of Teens Think They're Addicted to Their Smartphones

Kelly Wallace, CNN, May 3, 2016

I don't have teenagers yet, but watching my 8- and 10-year-olds spend endless amounts of time on iPads during spring break makes me worried about the day -- hopefully years from now -- when they have their own devices.

A new poll that confirms just how much teens depend on their phones gives me even more to worry about. Fifty percent of teens feel they are addicted to their mobile devices, according to the poll, which was conducted for Common Sense Media, a nonprofit focused on helping children, parents, teachers and policymakers negotiate media and technology. A larger number of parents, 59%, said their teens were addicted. The poll involved 1,240 interviews with parents and their children, ages 12 to 18. "Technological addiction can happen to anyone," said digital detox expert Holland Haiis, who describes technology as "the new 21st century addiction" in her book "Consciously Connecting: A Simple Process to Reconnect in a Disconnected World."

"If your teens would prefer gaming indoors, alone, as opposed to going out to the movies, meeting friends for burgers or any of the other ways that teens build camaraderie, you may have a problem."

How many teens are truly addicted to their devices and the Internet? It is difficult to say. A 2011 review of 18 research studies found that Internet addiction might affect between zero and 26% of adolescents and college students in the United States, according to Common Sense Media. And, while Internet addiction is viewed as a public health threat in other parts of the world, it is not yet a recognized disorder in the United States. After reviewing all the existing research, Common Sense Media concludes that more study is needed to determine how real digital addiction is, and what the signs and consequences could be.

Whether it is an addiction or not, two-thirds of parents -- 66% -- feel their teens spend too much time on their mobile devices, and 52% of teens agree, according to the poll.

'Teenage zombies' consumed by phones

Nearly 80% of teens in the new survey said they checked their phones hourly, and 72% said they felt the need to immediately respond to texts and social networking messages. Thirty-six percent of parents said they argued with their child daily about device use, and 77% of parents feel their children get distracted by their devices and don't pay attention when they are together at least a few times per week.

Terry Greenwald, a father of three grown children, works as a custodian at a high school in Homer, Alaska, and said the hallways are often half-filled with "teenage zombies who are glued to their phones."

They often walk near the walls so they can move from class to class without looking away from their screens, he said. "It gets interesting when they get to the stairways and the walls end for the stairway," he said. "They don't want to look up and they don't way to tumble down the stairs but often just slow way down and inch along until they reach the wall just past the opening. They are often late to the next class, but that's OK because they were successful at not diverting attention from their phone."

Janis Elspas, founder of Mommy Blog Expert, believes the rules and boundaries parents set for their children when they get their first cell phone or smartphone might be helpful in heading off any addictions later on.

Her children, 18-year-old triplets and a 20-year-old, didn't own their first cell phones until they were at least a junior in high school and had a part-time job to pay for part or all of the monthly phone service. She also has a no-phone policy at the dinner table, which extends to her and her husband.

"This rule also applies to the kids' friends who might be sitting at the table with us," said Elspas of Los Angeles. "Sometimes they are shocked when I reprimand them for bringing their phone out and if there's a notification or it rings, I ask them to turn off their device."

Such a rule can prove to kids, firsthand, that they can "survive" without having to see or use their smartphone constantly, she added.

There are signs that some teens may be getting that message and realize too much time on their devices isn't necessarily a good thing. More than one-third of teens, 37%, said they very often or occasionally try to cut down the amount of time they spend on their devices, the Common Sense Media poll found.

Parents have a problem, too

Parents might complain about the amount of time their teens spend on their phones, but they admit they have their own difficulties when it comes to unplugging.

Twenty-seven percent of parents feel they are addicted to their mobile devices, while nearly the same number of teens, 28%, believe their parents are addicted, according to the poll.

Sixty-nine percent of parents check their devices at least hourly compared to the 78% of teens who say they do that, and nearly half, 48%, of parents feel they need to immediately respond to texts and social networking messages. More than half, 56%, of parents admit checking their mobile devices while driving and nearly the same number, 52%, very often or occasionally try to cut down the amount of time they spend on devices.

GG Benitez, a mother of three, said that as the founder and chief executive officer of her own public relations firm, she feels the pressure to always be available due to the fear of losing any potential press opportunities for her clients.

While she is often praised by her clients and her family and friends for her "immediate response" to texts, emails and social media posts, she said this constant need to be connected can be taxing. Yet, even when she tries to stay off her phone in the evenings for at least one hour, she has a tough time.

"I had taken my son to a movie, and he turned around to me and said, 'Are you serious, Mom? We are at the movies and you are still on your phone?'" said Benitez, who has a 10-year-old son and two daughters, ages 11 and 22.

Haiis, the digital detox expert, said one way to try to curb an addiction to digital devices is to resist endless hours of surfing the Internet. "We have constant access to new information and this is alluring, intriguing and exciting, but without setting limits for yourself, it's a slippery slope," she said. She also said to limit posting on social media to three to five times a week, if possible, which will make you more specific about what you post and will lead to less time spent looking at other people's posts.

And, when you are at home and feel the urge to reach for your device, go outside, take a walk or exercise, she said. "The dopamine in our brains is stimulated by the unpredictability that social media, emails and texting provide," said Haiis. "It's a vicious cycle and in order to break that cycle, you need to find the same unpredictability and stimulation which is out there if you are exercising. You never know what's around the bend when out for a jog, bike ride or walk."

Benitez, the public relations executive who finds it hard to stay off her phone, said she has taken steps to curb her own digital addiction, such as setting aside the phone during mealtime. "I have consciously made the decision to be more 'present' and will place the phone on silent and away from my vision, but not without the anxiety that I may be missing something important," she added.

Digging Deep – answers may be in phrases.

1. Write connections you have to the topic, text, or ideas.

   _____

   _____

2. Are you concerned with cell phone addiction? Explain.

   _____

   _____

3. Pick a word/line/passage from the article and respond to it.

   _____

   _____

Analyzing Writer's Craft

Re-read the article a final time looking specifically for writer's craft.

Make notes about the kinds of ideas covered in the text, the type of evidence the writer uses to support his ideas, how the piece is organized and presented, and how the writer uses language/words to add layers of meaning. Refer back to the writer's craft sheet from day 1 to help you.

After you identify some of the techniques choose one of focus.

- Quote the example from the text.
- Identify where in the text the author uses the technique.
- How does the use of this technique support the main idea and impact the reader?
- Explain in a paragraph.

Math 7 – Week of May 18th

Percent Increase and Decrease

Which One Doesn't Belong? Why?

METHODS AND MEANINGS

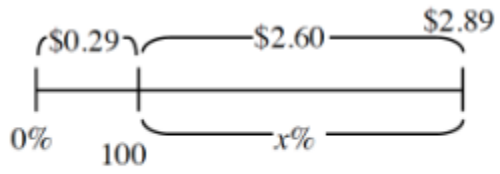
MATH NOTES

Percent Increase or Decrease

A **percent increase** is the amount that a quantity has increased, represented as a percent of the original amount. A **percent decrease** is the amount that a quantity has decreased, written as a percent of the original amount. You can write an equation to represent a percent change that is an increase or decrease using a scale factor or multiplier:

amount of increase or decrease = (% change) (original amount)

Example 1: A loaf of bread increased in price from \$0.29 to \$2.89 in the past 50 years. What was the percent increase?



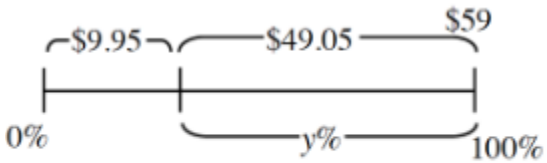
$$\begin{aligned} \text{increase} &= \$2.89 - \$0.29 \\ &= \$2.60 \end{aligned}$$

$$\$2.60 = (x)\,(\$0.29)$$

$$\frac{\$2.60}{\$0.29} = x$$

$$x \approx 8.97 \text{ or } 897\%$$

Example 2: Calculator prices decreased from \$59 to \$9.95. What was the percent decrease?



$$\begin{aligned} \text{decrease} &= \$59 - \$9.95 \\ &= \$49.05 \end{aligned}$$

$$\$49.05 = (y)\,(\$59)$$

$$\frac{\$49.05}{\$59} = y$$

$$y \approx 0.83 = 83$$

7-76 Several years ago, Joe started a lawn-care business. Due to rising costs, he needs to increase his prices. He is concerned, however, because he has heard that if he raises his rates more than 33%, he might lose business. At right is a letter he sent to his clients.
Joe began to wonder about how the increase in his fees could be expressed in terms of a percent.

Dear Valued Customer,

After several years of business, Mowcare is increasing its price for lawn service. Since the cost of gas and other supplies has increased, we need to raise our prices. Our prices will increase from \$12.50 *per hour to* \$15 *per hour. We hope you continue to be happy with the quality of our work.*

Sincerely,
Joe

a. Joe wants to determine the scale factor (multiplier) for the price increase and wrote the following equation:

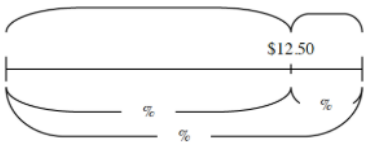
12.50x = 15

Explain how this equation represents this situation. What does x represent?

b. Solve the equation above to determine the scale factor for his change in fees. Represent this multiplier (scale factor) as a fraction, as a decimal, and as a percent.
c. How could this situation be represented with a line diagram? Copy and complete the diagram below. Then answer and do the following:

- Which portion of the diagram corresponds to the original price? Circle and label this part "original."

- Which portion of the diagram corresponds to the change in price? Circle and label this part "change."



d. When Joe raised his rates, what was the percent increase? That is another way of asking: What percent of the original price did the price change? Should Joe expect to lose business?

7-77 Paige needs your help! She wants to convince her grandmother to let her sign up for a rock-climbing class. The class normally costs $50, but the school is offering a special price of $34. Paige's grandmother wants to know what percent of the cost of the class she would save.

a. Without calculating, estimate the percent of the discount.
b. Determine the percent change in the price of the class. Use the prompts below to help guide your thinking.
    - Draw a diagram or write an equation that represents the situation.
    - What is the original (whole) value? Indicate this on your diagram or in your equation.
    - What percent is the change? Find and indicate this on your diagram or in your equation.
    - Does this situation represent an increase or decrease?

7-78 The **percent change** is a comparison of the amount of change to the original amount. If a number increases from the original amount, it is called **percent increase**. If the number decreases from the original, it is called a **percent decrease**.

a. What is the percent change from $30 to $33? Is this a percent increase or decrease? To answer this question:
    - Draw a diagram to represent the problem.
    - Determine if it is a percent increase or decrease.
    - Calculate the percent change.
b. What is the percent change from $33 to $30? Is this a percent increase or decrease? To answer this question:
    - Draw a diagram to represent the problem.
    - Determine if it is a percent increase or decrease.
    - Calculate the percent change.
c. If both parts (a) and (b) above have a change of $3, why are the percent changes different? Explain.

7-79 To attract new customers, a shoe company called Shoe Fits will raise its prices 10% and then offer a 10%-off coupon.

a. Without doing any calculations, consider the following question: If a coupon is used, do you think the final price will be more than, less than, or the same as the original price? Explain your thinking.
b. Karl wants to use a coupon to buy a pair of shoes that originally cost $46. What will the increased price be? What will be the price after the 10%-off coupon is used? Show all calculations. Does this result confirm your answer to part (a)?
c. Karl had assumed that if the price increased 10% and then he received a 10% discount, it would return to the original price. Explain why this did not happen.

7-80 Joe wanted to know more about how the cost of fertilizer for his lawn-care business was changing. The cost of a bag of fertilizer just increased from $8 to $15. What is the percent increase of the price? Represent the change as a fraction, as a percent, and as a decimal.

Percent Increase/Decrease Practice Problems

1. Match the situations with the equations.

   a. Mai slept for x hours, and Kiran slept for $\frac{1}{10}$ less than that.

   b. Kiran practiced the piano for x hours, and Mai practiced for $\frac{2}{5}$ less than that.

   c. Mai drank x oz of juice and Kiran drank $\frac{4}{3}$ more than that.

   d. Kiran spent x dollars and Mai spent $\frac{1}{4}$ less than that.

   e. Mai ate x grams of almonds and Kiran ate 1.5 times more than that.

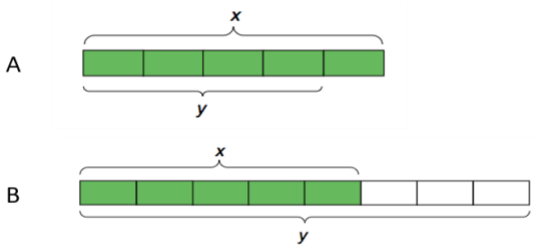
   f. Kiran collected x pounds of recycling and Mai collected $\frac{3}{10}$ less than that.

   g. Mai walked x kilometers and Kiran walked $\frac{3}{8}$ more than that.

   h. Kiran completed x puzzles and Mai completed $\frac{3}{5}$ more than that.

$y = 2.33x$	$y = 0.75x$
$y = 1.375x$	$y = 1.6x$
$y = 0.6x$	$y = 0.7x$
$y = 0.9x$	$y = 2.5x$

2. For each diagram, decide if y is an increase or a decrease of x. Then determine the percentage.



A percent increase is the amount that a quantity has increased based on a percent of the original amount. A percent decrease is the amount that a quantity has decreased based on a percent of the original amount. An equation that represents either situation is:

amount of increase or decrease = (% change)(original amount)

For additional information see the Math Notes box in Lesson 7.1.1 of the *Core Connections, Course 2* text.

Example 1

A town's population grew from 1879 to 7426 over five years. What was the percent increase in the population?

- Subtract to find the change:

$$7426 - 1879 = 5547$$

- Put the known numbers in the equation:

$$5547 = (x)(1879)$$

- The scale factor becomes x, the unknown:

$$\frac{5547}{1879} = x$$

- Divide: $x = \frac{5547}{1879} \approx 2.952$
- Change to percent: $x = 295.2\%$

The population increased by 295.2%.

Example 2

A sumo wrestler retired from sumo wrestling and went on a diet. When he retired he weighed 385 pounds. After two years he weighed 238 pounds. What was the percent decrease in his weight?

- Subtract to find the change:

$$385 - 238 = 147$$

- Put the known numbers in the equation:

$$147 = (x)(385)$$

- The scale factor becomes x, the unknown:

$$\frac{147}{385} = x$$

- Divide: $x = \frac{147}{385} \approx 0.382$
- Change to percent: $x \approx 38.2\%$

His weight decreased by about 38.2%.

Problems

Solve the following problems.

1. Forty years ago gasoline cost $0.30 per gallon on average. Ten years ago gasoline averaged about $1.50 per gallon. What is the percent increase in the cost of gasoline?

2. When Spencer was 5, he was 28 inches tall. Today he is 5 feet 3 inches tall. What is the percent increase in Spencer's height?

3. The cars of the early 1900s cost $500. Today a new car costs an average of $27,000. What is the percent increase of the cost of an automobile?

4. The population of the U.S. at the first census in 1790 was 3,929 people. By 2000 the population had increased to 284,000,000! What is the percent increase in the population?

5. In 2000 the rate for a first class U.S. postage stamp increased to $0.34. This represents a $0.31 increase since 1917. What is the percent increase in cost since 1917?

6. In 1906 Americans consumed an average of 26.85 gallons of whole milk per year. By 1998 the average consumption was 8.32 gallons. What is the percent decrease in consumption of whole milk?

7. In 1984 there were 125 students for each computer in U.S. public schools. By 1998 there were 6.1 students for each computer. What is the percent decrease in the ratio of students to computers?

8. Sara bought a dress on sale for $30. She saved 45%. What was the original cost?

9. Pat was shopping and found a jacket with the original price of $120 on sale for $9.99. What was the percent decrease in the cost?

10. The price of a pair of pants decreased from $49.99 to $19.95. What was the percent decrease in the price?

MATH 7+ - PUZZLE INVESTIGATOR PROBLEM (PIP) 7 – CUSTOMER SERVICE

Patti the Plumber wants to be ready to repair broken pipes of any whole-number length up to 30 feet long. Unfortunately, her truck has a rack that only allows her to transport 5 pipes. To make new lengths, she can join any pieces end-to-end. Assume her truck can carry pipes of any length.

Patti does not want to cut the pipe on location. Help Patti figure out which five lengths of pipe she should carry in the truck to be able to produce lengths of 1, 2, 3, 4, 5, …, 29, and 30 feet. Show how Patti can produce each length using one or more of the lengths of pipe you propose.

---

a. What is the longest length Patti can produce with her pipes from part (a)?

b. When solving this problem, Patti remembered a game she used to play as a child. After asking her friend to silently pick a number from 1 to 15, she would then have the friend indicate which cards below had his number on it. She would then instantly know which number her friend had picked. For example, if her friend said his number was on cards B, C, and D, she would quickly know the number was 14. How does this game work? And what is its connection to her problem with pipe lengths?

1	3	5	7
9	11	13	15
17	19	21	23
25	27	29	31

Card A

2	3	6	7
10	11	14	15
18	19	22	23
26	27	30	

Card B

4	5	6	7
12	13	14	15
20	21	22	23
28	29	30	31

Card C

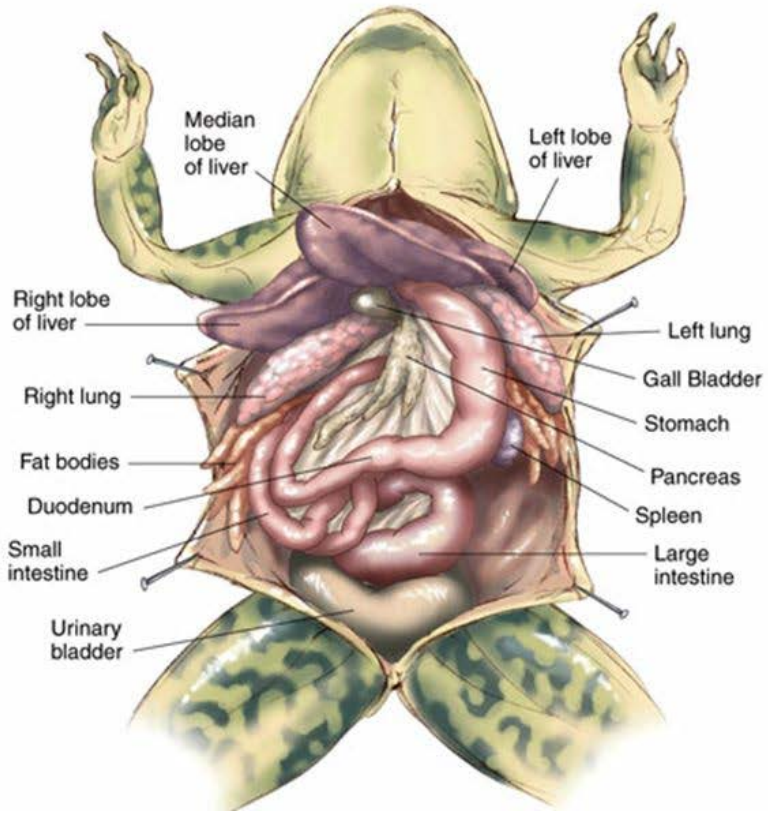
8	9	10	11
12	13	14	15
24	25	26	27
28	29	30	31

Card D

16	17	18	19
20	21	22	23
24	25	26	27
28	29	30	31

Card E

Internal Anatomy of a Frog



Why do you have two lungs but only one heart?

By Josh Clark, How Stuff Works on 09.11.19
Word Count **1,168**
Level **MAX**

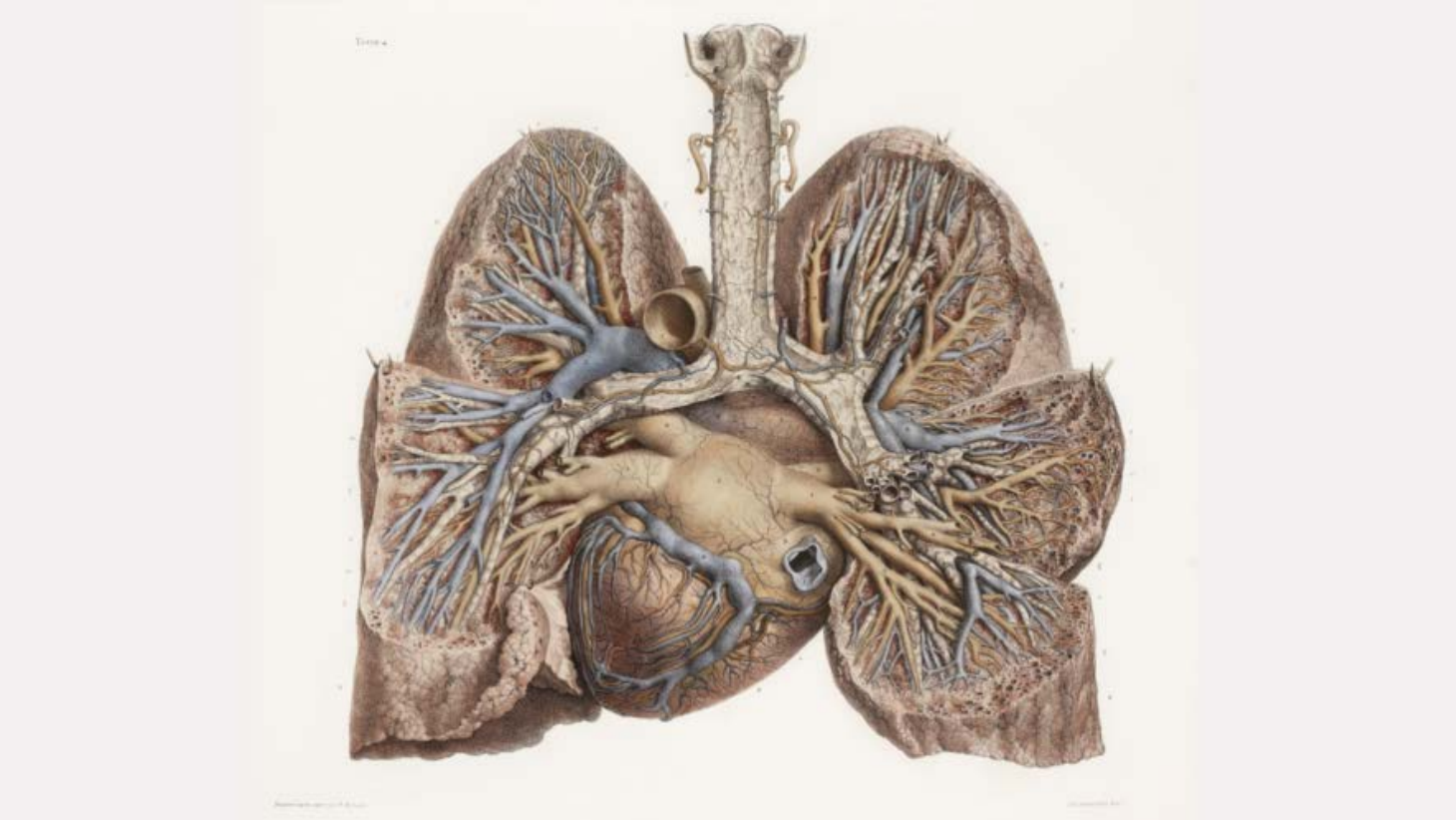


Image 1. This illustration by Nicolas-Henri Jacob from the 19th century shows the lungs on either side of the heart. Image from: SPL/Science Source

Your body is pretty amazing. At any given point you have a great many biological processes going on, such as digestion, respiration, metabolism, and fighting off invading bacteria. Different regions and systems within your body work together to create a state of balance -- just the right amount of blood sugar here, just enough electrolytes there -- to keep you working at peak performance.

But have you ever asked yourself how your body got to be the way it is? Why do you have two of some organs and just one of others? Take the heart and lungs, for instance -- why do you have two lungs but just one heart? Wouldn't it be better to have two hearts?

Your vital organs -- like your lungs, your heart, your pancreas, brain and liver -- are just that, vital. Not only are they vital to life, they are also vital to one another. Your lungs, for example, breathe in oxygen and exhale carbon dioxide (one of your body's waste products). The lungs transfer oxygen to the blood, which is carried to the heart for distribution throughout the rest of the body. The blood carries waste carbon dioxide back to the lungs, where it is absorbed and exhaled. It's a beautiful system. But how did it come about?

It's a very ancient system, says Rutgers University anthropologist Susan Cachel -- and it's not unique to humans. The organ systems we find in most animals contain one heart and two lungs. That is, with the exception of earthworms and cephalopods -- the invertebrate class that includes octopi and squid. Earthworms have five heart-like structures. Cephalopods have three hearts (two to send blood to the gills, and one to send blood to the rest of the body) and no lungs.

Cachel says that the one heart/two lungs system began to emerge about 300 million years ago, when animals first moved from sea to land to escape predators and find new sources of food. From that point on, it's been the norm. But why didn't it continue to change?

In this case, Occam's razor provides the key -- the simplest explanation is usually the right one. Ultimately most animals developed a system of two lungs and one heart (along with the rest of their organs) because that's what was needed to survive and thrive on Earth. People didn't develop two hearts or eight legs or wings because we didn't need them for survival. And we developed two lungs because we need them.

Phylogeny is the study of how the first ribonucleic acid (RNA) strands in Earth's primordial soup developed into humans and other animals. As these animals evolved into such divergent species as birds, insects and humans, the organ systems in those animals remained similar to one another. We still have stomachs to digest food, lungs to breathe air, and kidneys to filter waste. All of this indicates that species -- including humans -- have been shaped and molded specifically to live on Earth.

So does this mean that our system of internal organs is perfect? We know through our study of disease that going from two lungs to one is detrimental to our health, but what about adding an extra heart? Wouldn't that make us better able to survive? Read on to find out about what it would be like to have two hearts.

Life With Two Hearts

You might imagine that having two of some organs is redundant. We have two lungs, two kidneys, two eyes -- each doing the same job at the same time. But Dr. Tony Neff, a professor of anatomy and cell biology at Indiana University-Bloomington, warns against downplaying the role of duplicate organs. It takes both organs in those sets to carry out their job fully; Although one can function alone, the process it carries out will not be done at full capacity, and the rest of the body suffers. For example, you can see with only one eye, but the eyes' function of providing depth perception will suffer and you'll bump into things much more frequently seeing with one eye than you would with two.

So if you need both lungs to function at full capacity, what would happen if you had an extra heart? Would the performance of the processes it carries out double?

Not at first, says physiologist Bruce Martin, a colleague of Dr. Neff's at Indiana University. Your body is a system, and it's built so that the system is always functioning at its full capacity. When

the system is attacked -- for example, through starvation -- all parts of the system suffer at the same rate. Conversely, when one part breaks down, the whole system suffers. If your lungs become irreparably damaged -- say, through emphysema -- the rest of the system will slow down to accommodate the broken part.

So since your system is already functioning at full bore, the addition of an extra heart wouldn't do much. But your system also possesses potential function, as seen in the muscles, when they're called upon to act beyond their normal capacity, like in the case of hysterical strength. We can train our bodies to function at higher levels, the way athletes do. Since the heart pumps blood to the muscles, with a second heart your muscles would eventually grow stronger with time. Once the rest of the system is used to having a second heart, a person could grow stronger and have more endurance.

But the same can't be said for your brain. The brain is already getting more than enough blood to it, so it wouldn't function at a higher level, theorizes Dr. Martin.

Interestingly, when we are in the embryonic stage of development, we actually do have two hearts. The heart primordia (which describes the stage of the heart's development) in the embryonic stage is actually two hearts, which eventually fuse together into one heart with four chambers. Embryologists in the 1920s and '30s kept the heart primordia from fusing in embryonic frogs, and the frogs that grew up developed two hearts. The same also goes for our eyes. We begin with one primordia of the eye, which eventually separates to form two. If the primordia is kept from splitting, one central eye develops, like a cyclops, says Dr. Neff.

So it's theoretically possible for us to develop two hearts. And if we could determine how to use both fully, we could also advance ourselves into a species of super-strong, intellectually average beings. But wouldn't tampering with our own evolution as a species be dangerous?

"We've already taken ourselves out of evolution," says Rutgers' Susan Cachel. "(Humans are) all effectively tropical animals, and through our use of technology, like winter clothes, we've shielded ourselves from the effects of cold weather."

So we've beaten natural selection by the elements. We'll see what we can achieve with two hearts.

What animal has the weirdest heart?

By Atlas Obscura, adapted by Newsela staff on 02.23.20
Word Count **1,051**
Level **1040L**

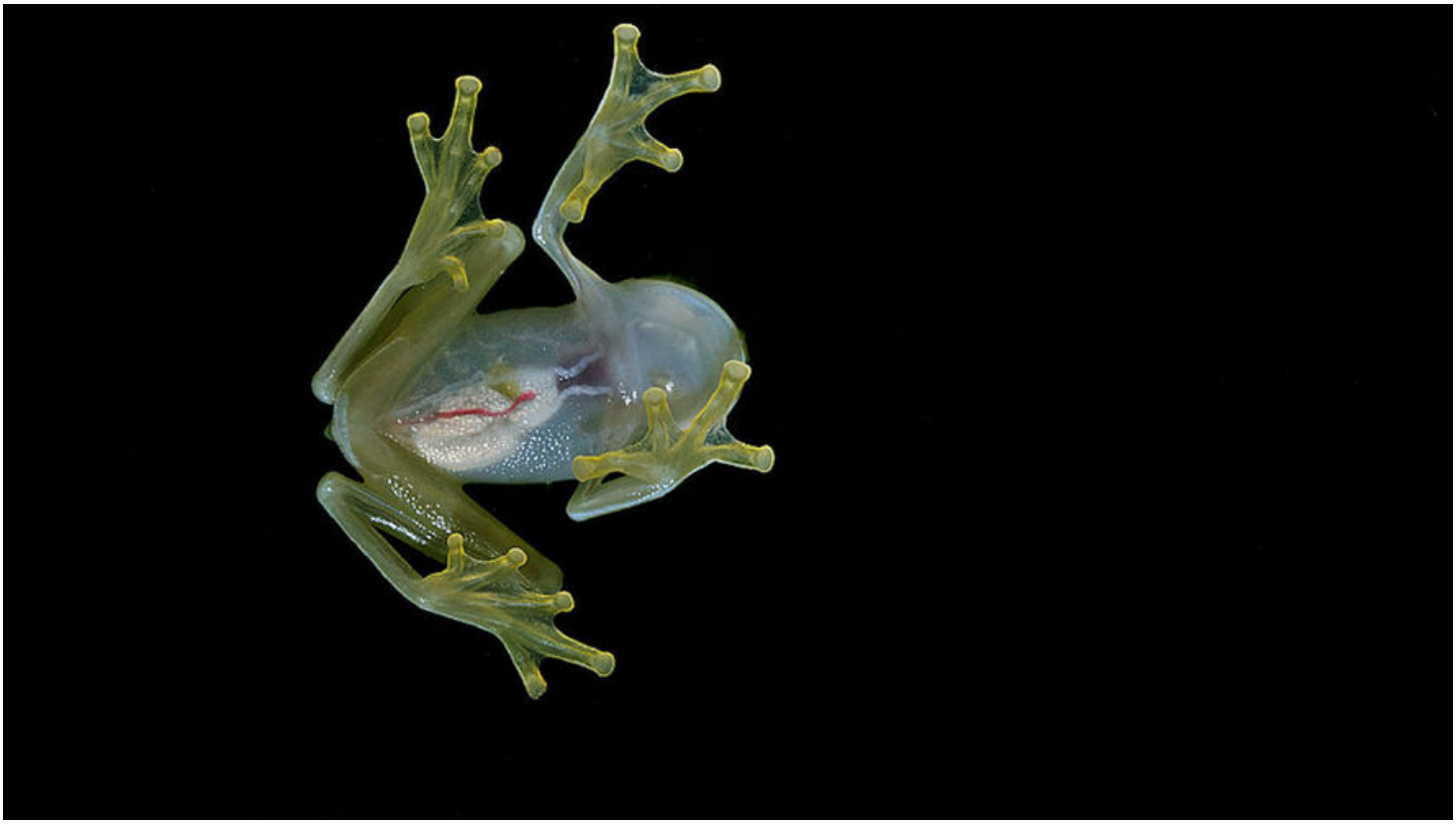


Image 1. A glass frog, with its organs — including its small red heart — clearly visible. Photo: Geoff Gallice/Flickr

The human heart is a wonder — it keeps us alive, and it is literally electric. Does the human heart have the power to regenerate itself, though? Does it pump exclusively clear blood? Can it freeze and then come back to life? Some animal species' hearts can do these things and more.

We searched the animal kingdom for cardiac marvels, from the depths of the ocean to the top of the Himalayas. Here are some of the strangest we found.

Earthworm

Depending on how you define your terms, earthworms either have five hearts or no heart at all. They lack the chambered, muscular organ that normally comes to mind when you think of a heart. However, they do have five special blood vessels that contract to pump blood. If you look really closely at a specimen, you can see the vessels squeezing and releasing.

Cockroach

A human heart has four chambers, each with a specific job, so if any of them fail, it's bad news. A cockroach heart, on the other hand, has 12 to 13 chambers, all powered by a separate set of

muscles. This means that if any one chamber fails, the cockroach is barely affected.

Marmalade Hoverfly

Marmalade hoverflies like to linger in the air over flowers, harvesting as much pollen as possible in one trip. To do this, they have evolved what is essentially a one-track heart. It spends almost all of its time and energy pumping blood forward into the head and thorax, where the wing muscles and mouthparts are.

Zebrafish

The zebrafish looks like your average pet store minnow, but inside of it beats an incredible heart. In 2002, scientists did an experiment. They found that if you cut out part of the zebrafish's lower ventricle, the fish will regenerate, or regrow, all of that lost tissue within a couple of months. This happens because of specialized muscle cells that promote their own growth and the production of new veins.

Ocellated Icefish

Ocellated icefish live about a mile (kilometer) down in the Southern Ocean, which is next to Antarctica. Their blood lacks hemoglobin, the red protein that normally binds to oxygen. Instead, due to the low temperatures, oxygen is dissolved directly into their plasma. Because of this, they have clear blood.

Blue-Throated Hummingbird

You have probably heard that hummingbirds flap their wings 15 times a second. The wings move so fast that the human eye just sees a blur. Enabling that wing speed is an even faster heart, which in the blue-throated hummingbird has been measured beating up to 21 times a second. That powerful heart helps the hummingbird to quickly bring oxygen to its muscles.

Emperor Penguin

Emperor penguins are famous for the softness of their hearts. Penguin couples spend most of each year tending to each other, their eggs and their chicks. Less well-known, but equally important, is the slowness of their hearts. While diving, emperor penguins can dial back their heart rate to about 15 beats per minute. This shuts off blood supply to all but the most important organs.

Wood Frog

Plenty of animals, from bears to groundhogs, slow their hearts when hibernating. As far as we know, though, only wood frogs can stop the beat completely. During the winter, these frogs essentially become frogsicles. Thanks to special substances in their cells, they can halt the metabolic activity, the chemical reactions that that provide the body with energy. Stopping this activity allows most of their body water to solidify. Their hearts take it in stride, stopping when the world freezes and starting again when it thaws out.

Glass Frog

All frogs have three-chambered hearts, with two atria that receive blood from the body, and one ventricle that sends blood back out again. Glass frogs are unique in that you can actually see this happening. Their see-through abdominal skin provides a great view of the heart at work, as well as the blood vessels snaking through its other organs.

Python

If a human heart is filled with fat, there is cause for concern. If a python heart is filled with fat, in comparison, things are going great for that python. After one of its famously giant meals, a python's heart increases in size by about 40 percent. It swells up with the fatty acids it absorbs from the meal. This helps to speed up digestion, though it still takes days.

Blue Whale

The heart of the blue whale is often said to be as big as a car, and that a human could crawl through its aorta. The aorta is the large artery that carries blood away from the heart. In truth, the blue whale's heart and aorta are not that big, though they are pretty big. Scientists say the blue whale heart is closer in size to a small golf cart or a big bumper car. Meanwhile, the aorta could barely fit a human head, according to scientist Jacqueline Miller. She shared this information with British TV in 2015, after dissecting a blue whale heart.

Giraffe

You know those carnival games where you hit a lever and, if you are good, the target shoots 6 feet up into the air? A giraffe's heart has to do something similar every day, fighting the pressure of gravity to get blood up to the head. The animal manages this by having extra-thick, extra strong cardiac walls. The blood vessels get thicker as the giraffe's neck gets longer so that they don't collapse under the increasing weight.

Cheetah

A cheetah's resting heart rate is around 120 beats per minute (BPM), about the same as a jogging human's. The human heart rate tops out around 220 BPM, and it takes a little while to get there. The cheetah's heart, however, can skyrocket to 250 BPM in just a few seconds. This ramp-up is so intense that it limits the cheetah's sprinting time to about 20 seconds. If she ran any longer than that, her organs would become so hot they would be permanently damaged.

Benchmark Standard	Economics 1a: Students will analyze how changes in supply and demand interact in competitive markets to determine or change the price of goods and services.
Grade Band	6-8
Vocabulary	Needs; wants

~This is a Next Gen Personal Finance lesson – modified by CSD for use at home~

CARTOONS: Needs vs. Wants

One of the foundations of creating a realistic budget that you can stick to is identifying what you truly need and want. While this might sound simple, it can be difficult at times to recognize the difference when you're considering a purchase.

In this activity, you will analyze each of the cartoons below and decide on how that cartoon depicts the struggle of identifying what is a need versus a want.

Part I: Identify Needs and Wants

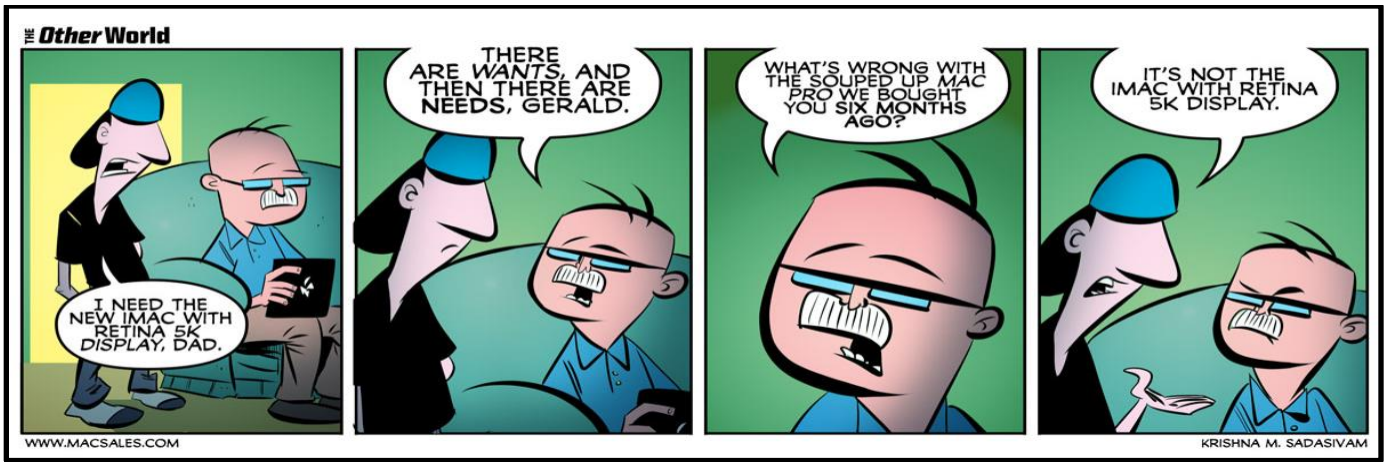
Needs: are expenses that are necessary to meet our day to day needs such as food, shelter, and other financial obligations.

Wants: are expenses that are not necessary to meet our day to day needs. These items are mostly based off of wants and desires.

⚠ Be careful on how you view "needs".

- You need food, but do you need a 10oz filet mignon?
- You need clothing, but do you need brand names or designer labels?
- You need shelter, but do you need a mansion?
- You need transportation, but do you need a Corvette?

Cartoon 1



Cartoon 2

Cartoon 3

Cartoon 4

Part II: Analyze the Cartoons

Use what you know about needs vs. wants to analyze each cartoon and answer the questions below. (There are 4 Cartoons; therefore, each question (A-D) will be answered four different times).

1. In one or two paragraphs, write an analysis of the cartoon you chose and the message it conveys about needs vs. wants. Make sure each question below is answered in your paragraphs.
    A. What message does this cartoon deliver about the struggle of identifying needs vs. wants?
    B. How does this cartoon portray that message?
    C. Did you find this cartoon persuasive? Why or why not?
    D. What other techniques could the cartoonist have used to make this cartoon more persuasive?

Part III: Question to Ponder:

2. How do you think "needs" and "wants" influence the prices of goods and services? Explain and support your answer.