Name: _____

Math 8/Science Checklist: Q3 W 7-8 February 26th- March 9th

Big Ideas:

Math:	Science:
• Slope intercept form • Writing equations • Graphing equations	• Microbes • Diseases

Upcoming Dates:

Week 7	Week 8
☐ 2/28: Math Assessment corrections due ☐ 3/2: Science assessment Earth History	☐ 3/8: Outbreak: Will You Catch it Contagion Lab? ☐ 3/9: Science test corrections due ☐ 3/9: All checklist work due

Shelfwork: Show All Work. Explore work is to be checked against the control and then marked complete. Complete individually unless noted with a "G"

Lesson	Explore	Expand	Extend
❑ Slope intercept form and writing HW ❑ #1 Lesson check in 2/26	☐ Graphs of function rules versatile (G) (___✓, M, 0) ☐ Practice for slope, y-intercept and writing equations (G) (___✓, M, 0)	☐ Writing equations in slope-intercept form (____%)	❑ Create AND teach a green product card (use Extend rubric (____%) **OR** ❑ Choice apply. pg 187, or pg 199, or pg 211 (____%)
Monday's work plan: (Add missing works from last checklist) Time Estimate:		Tuesday's work plan: Time Estimate:	
❑ Microbes HW ❑ #2 Lesson Check-In 2/27	☐ Virus/Bacteria Reading with Graphic Organizer (G) -Create a Venn Diagram OR Use provided Graphic Organizer (___✓, M, 0)	☐ Microbe Wanted Poster (____%)	☐ Microbes and Diseases in the News: Research an article, video, or TedTalk to be used in a seminar (see rubric) (____%) ☐ Feeling inspired to do something else? Submit a proposal, outlining your plan! (____%)
Wednesday's work plan: Time Estimate:		Thursday's work plan: Time Estimate:	
❑ Graphing linear functions equations HW ❑ #3 Check-in 2/28	☐ Graphing lines & killing zombies (G) (___✓, M, 0) ☐ Equations and graphs versatile (G) (___✓, M, 0)	☐ Purple book pg. 209-210 (____%)	☐ Create AND teach a green product card (use Extend rubric (____%) **OR** ☐ Choice apply. pg 187, or pg 199, or pg 211 (____%)
Friday's work plan: Time Estimate:		Monday's work plan: Time Estimate:	

☐ Different representations and real life HW ☐ #4 Check-in 3/5	☐ Table, graph, equation matching cards (G) (___✓, M, 0) ☐ Graphing linear equation word problems (G) (___✓, M, 0)	❑ Graphing linear equation choice board (connect 3 to complete) (___%)	☐ Create AND teach a green product card (use Extend rubric (___%) **OR** ☐ Choice apply. pg 187, or pg 199, or pg 211 (___%)
Tuesday's work plan: Time Estimate:		Wednesday's work plan: Time Estimate:	
❑ Diseases HW ❑ #5 Lesson Check-In 3/1	☐ I Have, Who Has Microbes and Diseases-choose 9 'Who Has' Questions to answer on paper (___✓, M, 0)	☐ Outbreak: Will You Catch it Contagion Lab? (⅜ Thursday) (___%)	☐ Microbes and Diseases in the News: Research an article, video, or TedTalk to be used in a seminar (see rubric for details) (___%) ☐ Feeling inspired to do something else? Submit a proposal, outlining your plan! (___%)
Thursday's work plan: Time Estimate:		Friday's work plan: Time Estimate:	
☐ Re-loop: #5	☐ Hydrology Practice with Test Taking Strategies (___%)		

Homework: (*All assignments are to be done independently and are due the next day unless noted*):

- ☐ Monday 2/26: **Microbes** video on EdPuzzle with graphic organizer AND study for science assessment
- ☐ Tuesday 2/27: **Graphing linear equations** video with guided notes on EdPuzzle AND study for science assessment
- ☐ Wednesday 2/28: **Different representations of linear equations** AND **Real life representations** video on EdPuzzle with guided notes AND study for science assessment
- ☐ Thursday 3/1: Study for science assessment
- ☐ Friday 3/2: Review and organize binder and complete missing work as needed
- ☐ Monday 3/5: **Diseases (epidemic vs pandemic)** video with graphic organizer on EdPuzzle
- ☐ Tuesday 3/6: Complete missing assignments
- ☐ Wednesday 3/7: Complete missing assignments and **Begin test corrections** for check in on Monday.
- ☐ Thursday 3/8: **Systems number of solutions** AND **Systems of equations by graphing** video on EdPuzzle with guided notes
- ☐ Friday 3/9: Review and organize binder (Math and Science) and/or complete missing assignments

Lesson Requests:

- ❑ _____
- ❑ _____

Notes and formulas:

HW Video Graphic Org.

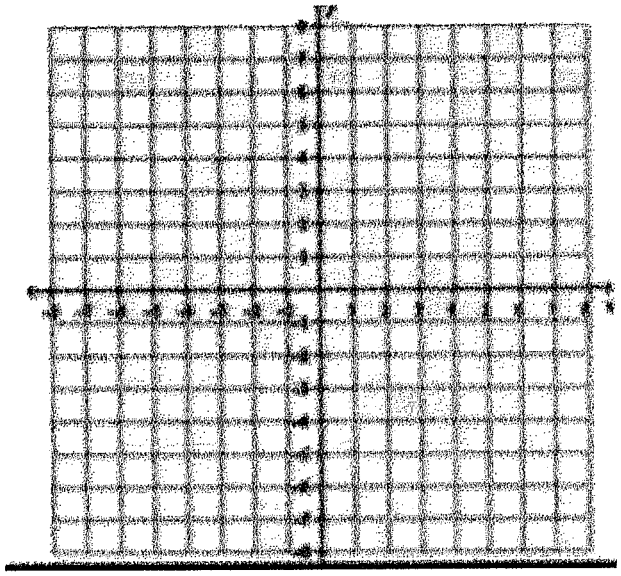
Microbiology:			
Viruses	Bacteria	Fungi	Parasites
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.

Name _____ Community:_____

Graphing linear equations guided notes

Example 1: Graph $y = 2x - 3$

Slope:____ y-intercept: ____

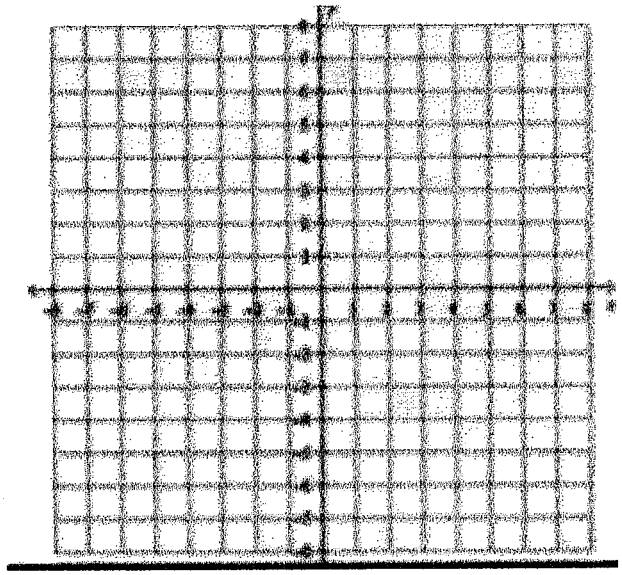


Steps for graphing linear functions:

1. _____
2. _____
3. _____
4. _____
5. _____

You try 1: Graph $y = -3/4x$

Slope:____ y-intercept: ____

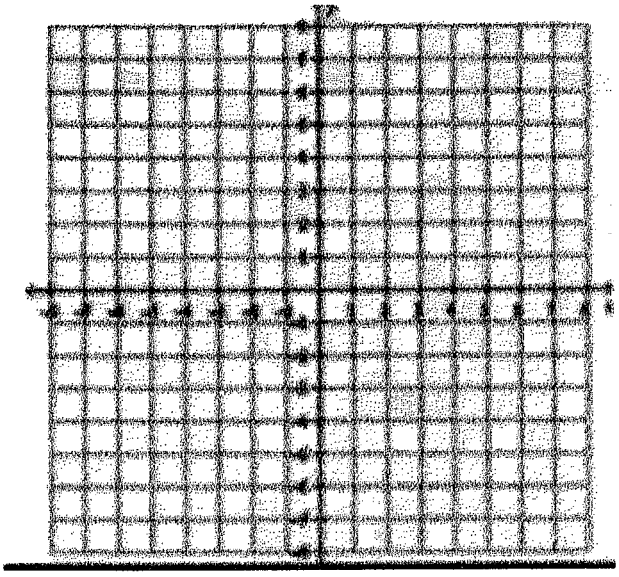


Steps for graphing linear functions:

1. Solve the equation for y.
2. Identify the slope & the y-intercept
3. Graph the y-intercept
4. Use the slope to graph another point on the line
5. Connect the two points with a line

Example 2: Graph $-3 + 2y = -6$

Slope:____ y-intercept: ____

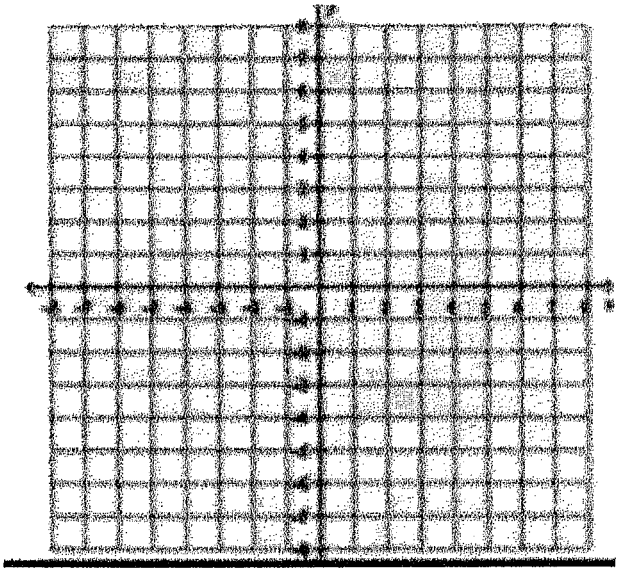


Steps for graphing linear functions:

1. Solve the equation for y.
2. Identify the slope & the y-intercept
3. Graph the y-intercept
4. Use the slope to graph another point on the line
5. Connect the two points with a line

You try 2: Graph $4x + 2y = 8$

Slope:____ y-intercept: ____



Steps for graphing linear functions:

1. Solve the equation for y.
2. Identify the slope & the y-intercept
3. Graph the y-intercept
4. Use the slope to graph another point on the line
5. Connect the two points with a line

Name _____ Community _____

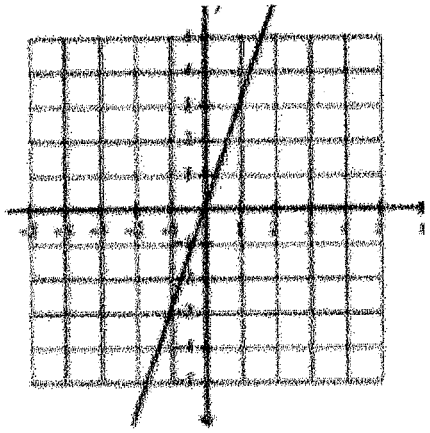
Different representations of linear equations guided notes

We are going to learn about comparing 3 different representations of linear functions:

1) Equation: y = 3x

2) Table:

3) graph



Let's compare representations!

Example 1: Does the table represent the linear function y = 4x?

y = 4x

Slope =_____

y-intercept = _____

Slope = _____

y-intercept = _____

Let's compare representations!

You try 1: Does the table represent the linear function y = 2x-1?

y = 2x-1

Slope =_____

y-intercept = _____

Slope = _____

y-intercept = _____

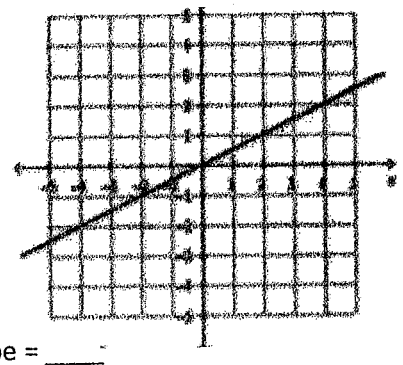
Let's compare representations!

Example 2: Does the graph represent the linear function y = 4x?

y = 4x

Slope =____

y-intercept = ____



Slope = ____

y-intercept = _____

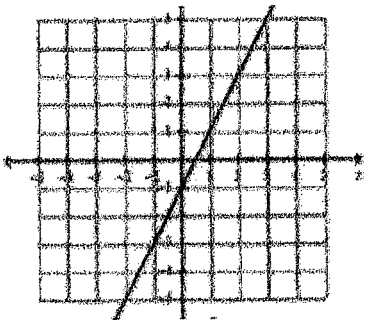
Let's compare representations!

You try 2: Does the graph represent the linear function y = 2x-1?

y = 2x-1

Slope =____

y-intercept = ____



Slope = ____

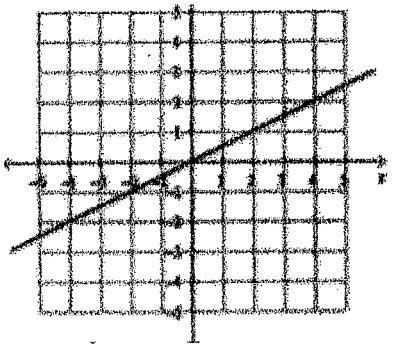
y-intercept = _____

Let's compare representations!

Example 3: Does the table and graph below represent the same linear function?

Slope = ____

y-intercept = _____

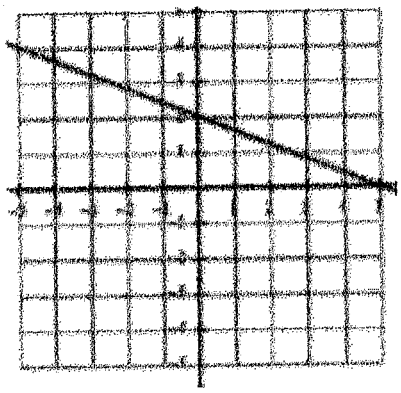


Slope:____

y-intercept:_____

Let's compare representations!

You try 3: Do the table and graph below represent the same linear function?



Slope = _____

y-intercept = _____

Slope:_____

y-intercept:_____

What did we learn today?

_____

_____

_____

Name _____ Community_____

Real-life representations of linear equations guided notes

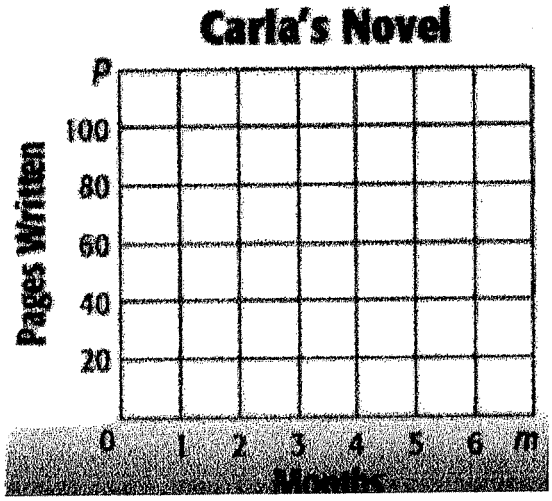
Example 1

Carla has already written 10 pages of a novel. She plans to write 15 additional pages per month until she is finished.

a. Write an equation to find the total number of pages P written after any number of months *m*.

b. Graph the equation

c. Find the total number of pages written after 5 months.



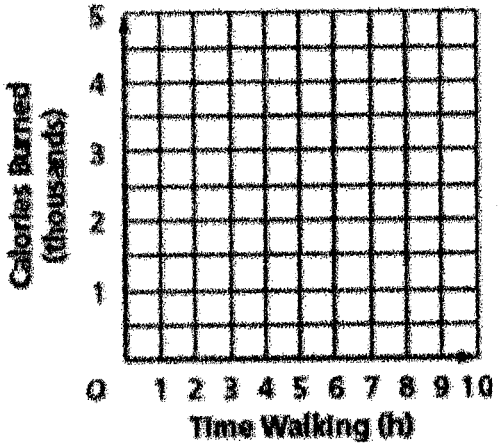
Example 2

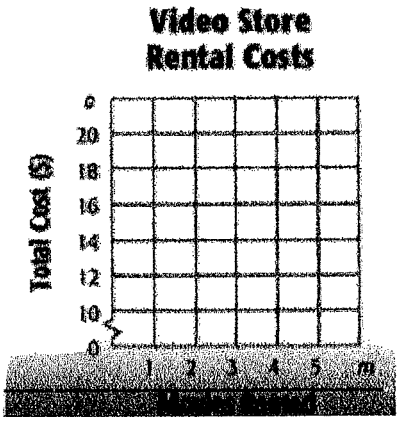
A person weighing 150 pounds burns about 320 calories per hour waling at a moderate pace. Suppose that the same person burns an average of 1500 calories per day through basic activities. The total Calories *y* burned by that person can be represented by...

a. What equation?

b. What graph?

c. How many calories would this person burn after walking 5 hours?





Example 3: YOU TRY!

Video rentals: A video store charges $10 for a rental card plus $2 per rental.

a. Write an equation in slope-intercept form for the total cost *c* of buying a rental card and renting *m* movies.

b. Graph the equation.

c. Find the cost of buying a rental card and 6 movies.

HW Video Graphic Org.

Epidemic vs Pandemic Diseases

Disease:

Epidemic and Pandemic both...

1.

2.

Epidemic:

1.

2.

Pandemic:

1.

2.

Example(s):

Name _____ Community_____

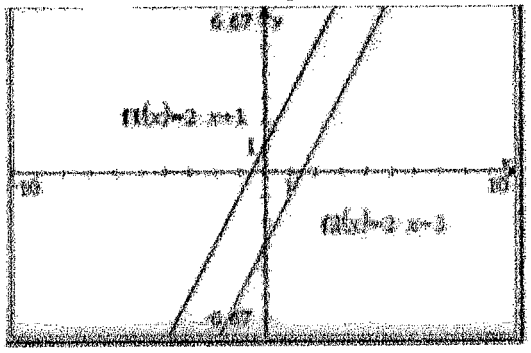
Systems of equations: Number of solutions guided notes

A _____ is when there are _____ or _____ equations being considered at one time. To solve a system of equations, you _____ that the equations have in _____.

Systems of linear equations can have ___, ____, or _____number of solutions.

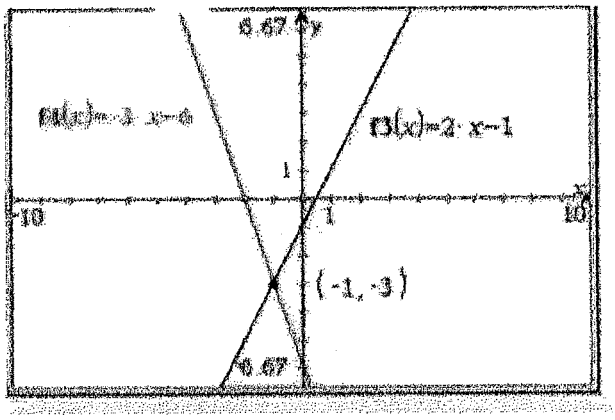
Zero Solutions

- A system of linear equations has ____ solutions when the equations have ____ points in common. When graphed, the lines would _____ cross. Lines that never cross are called _____ lines.
- When looking at equations of lines, it is easy to tell if the lines have 0 solutions. For example, the equations 4x +3y=12 and 4x +3y = 16 will have 0 solutions because you cannot find a point (x,y) where you multiply 4 to x and 3 to y and get 12 and 16.
- Equations that have the _____ slope like y = 2x+1 and y=2x-3 will also have _____ solutions. The lines start at different place on the y-axis and they have the _____ slope. Since they have the same rate of change the lines will be at the same angle and will never cross.



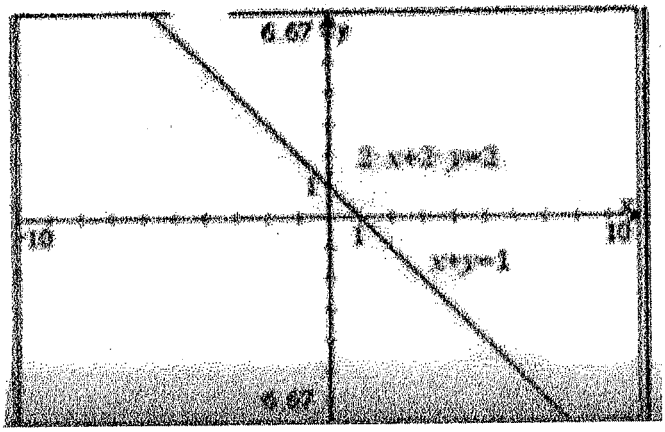
One solution

- Systems of equations have _____ solution if they have _____ point in common.
- The graphs of these equations will _____ at _____ point.
- For example, the equations 3x+2y=5 and 2x-4y = -2 , both pass through the point (1,1) when they are graphed. When x=1 is plugged into both equations, the result is y =1.
- Another example is shown in the graph below. Where the equations y = -3x – 6 and y = 2x-1 both pass through the point (-1,3).



Infinite solutions

- Systems of equations have an _____ number of solutions if the lines _____all of the _____ points.
- When looking at the graph of two lines with an infinite number of solutions, the graphs would look like _____ is sitting on top of the other and the equations would be _____ to each other.
- X+y=1 and 2x+2y=2 will have an _____ number of solutions. It is easy to tell from the equations that the lines will have an infinite number of solutions because the second equation is the same as the first equation except everything is multiplied by 2.



Examples: How many solutions do the following systems of equations have?

1.

2.

3.

4.

Independent practice: How many solutions do the following systems of equations have?

5.

6.

7.

8.

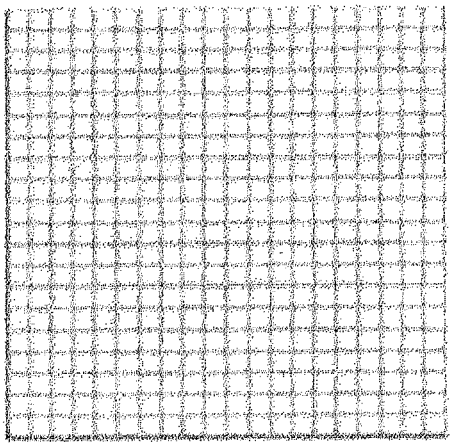
Name _____ Community____

MS 8 Math Systems of equations solving by graphing guided notes

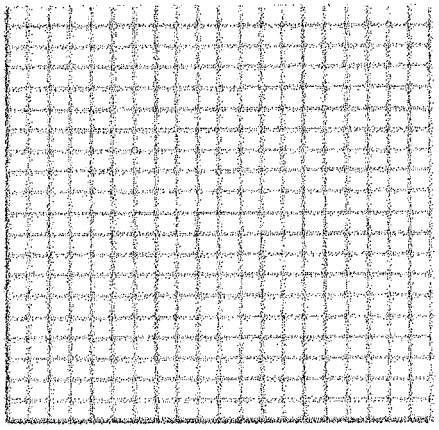
When solving a _____, it is often helpful to _____ equations that can model the situations and then use those equations to make _____.

To solve the system, you have to _____ the _____ where the graphs _____.

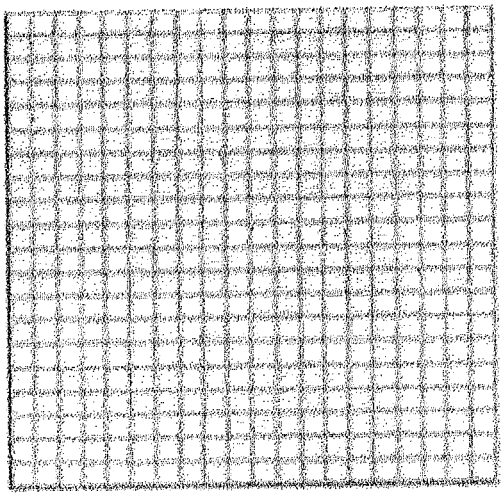
1. In 2003 Jennifer had a cell phone plan that charged a base price of $30 per month and then $0.05 per text message. In the same year Kyle had a cell phone plan that charged a base price of $20 per month and then $0.10 per text message. If Jennifer and Kyle only sent text messages to each other, how many text messages would they need to send so that their phone bills would be the same?



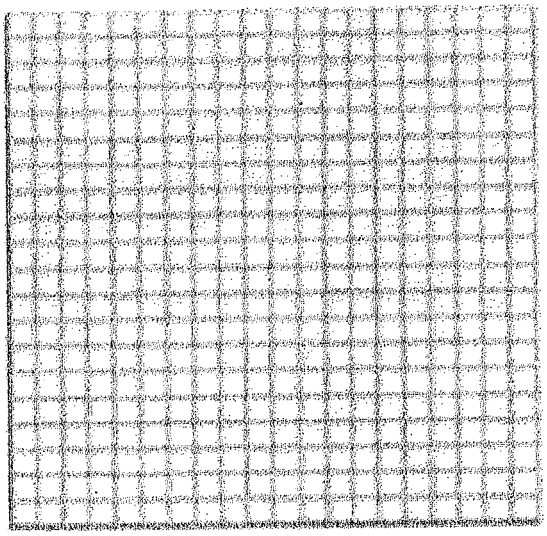
2. Clay goes to a local gas station that is charging $3.00 per gallon of gas to put gas in his truck. While he is there he decides to get a car wash which costs an additional $8 at the gas station. Robert goes to a different gas station to put gas in his car. Robert's gas station is charging $3.50 per gallon of gas. How many gallons of gas do Clay and Robert each have to buy so that they both get the same amount of gas and they pay the same amount at each gas station?



3. Kelly want to buy personalized t-shirts for her friends. One company charges a flat rate of $20 per order and then $5 per shirt. The other company only charges $7 per shirt. When would both companies charge the same amount for the same number of shirts?



4. Susan buys a bag of candy that contains 40 snacks size candy bars and eats 2 pieces of candy a day. Tom buys a bag of candy that contains 60 snack size candy bars and eats 4 pieces of candy each day. On what day will tom and Susan have the same amount of candy?



Name:_____

BACTERIA

VIRUS

Similar

1.
2.
3.

Different

1. Size
2. Shape
3. Living/Non-living
4. Diseases
5. Cells
6. Structure

1.
2.
3.
4.
5.
6.

1.
2.
3.
4.
5.
6.

Bacteria	Viruses
Diseases:	**Diseases:**
Treatment:	**Treatment:**

Check your understanding:

1) Why are viruses considered NON-living?

2) **Summarize:** In what ways are viruses and bacteria alike? In what ways are they different?

3) Which statement below correctly identifies the reason why viruses are not considered alive?

a) They have DNA or RNA
b) They have a protein coat
c) They are really small
d) They can only reproduce inside cells

I choose this answer because _____
_____
_____.

4) Against which disease with an antibiotic be effective (helpful)?

a) The flu
b) Lyme disease
c) HIV
d) Chicken pox

I choose this answer because _____
_____
_____.

5. Why are viruses ***not*** considered living things?

a) Viruses are not made of cells
b) Viruses do not contain hereditary material
c) Viruses cannot make their own nutrients
d) Viruses can be seen only with an electron microscope

I choose this answer because _____
_____
_____.

6) What are vaccines used for?

Name:_____ Date:_____

Hydrology Reloop with Stump the Test!!!

Directions: Annotate each question below by underlining key words and then defining them off to the side. Use the Test Taking Strategies handout and DETER to guide this work. Jot down tips to help you remember the content in the boxes on the right side of the page.

Which will ***most likely*** result if there is increased upwelling in a coastal area?

A more aquatic life

B less nutrients in the water

C higher water temperatures

D fewer nitrates

Which ***best*** determines the health of a lake used as a source of freshwater?

A its depth and width

B its temperature and pH

C its location and depth

D its temperature and depth

Why is water from an aquifer more likely to be cleaner than water from other sources?

A because it forms where fresh and salt water meet

B because it receives water directly from precipitation

C because it rises to the surface near the ocean

D because pollutants are filtered by rock and soil deep within Earth

---

If a body of water has high turbidity levels, what can ***most likely*** be concluded?

A It has a low pH.

B It is unsafe to drink.

C It is too hot to drink.

D It contains a lot of chemicals.

Which ***best*** describes the characteristics of a river basin?

A the land drained by a river and its tributaries

B the land formed when rivers create estuaries and marshes

C the land at the mouth of a river where water flows into the ocean

D the land formed as a result of a river flooding

Which factors can have the ***greatest*** effect on the health of a river system?

A type of soil and salinity

B nitrate levels and turbidity

C human consumption and pH

D natural disasters and tidal changes

In the United States, which is responsible for ensuring the safety of the country's drinking water?

A Environmental Protection Agency (EPA)

B Food and Drug Administration (FDA)

C National Oceanic and Atmospheric Administration (NOAA)

D Center for Disease Control (CDC)

What do bioindicators tell you about the health of a body of water?

Why would fisherman/woman be in favor of upwelling?

You see a layer of green scum on the top of a local pond. What does this indicate about the levels of dissolved oxygen (DO) in the pond?

Self-Reflection:

1. Which test taking strategies work the best for you? Name 2 and be specific.

2. Describe your comfort level with the above questions:

WHAT'S THE DIFFERENCE BETWEEN VIRUSES AND BACTERIA?

Use the following information to make a VENN DIAGRAM describing the differences and similarities between viruses and bacteria. Once you are done, you should use this information to write a detailed description of the two in essay format on Writing Wednesday. The introductory paragraph should include a thesis statement and the similarities between bacteria and viruses. The following two paragraphs should detail how the two are different. Finally, close with your concluding paragraph, summarizing your statements made in your essay.

A BRIEF OVERVIEW

Bacteria are single-cell, living organisms that can survive independently. You can kill them by interfering with their metabolism (internal biological functions), which is basically what antibiotics do. *Antibiotics* are used to treat bacterial infections. Most bacteria are neither male nor female and reproduce by simply dividing in to two. Infections they cause include pneumonia, cystitis and food poisoning bugs like salmonella. But, did you know not all bacteria are bad? In fact, some friendly types actually help protect us from disease.

Viruses are not cells, they have no metabolism and they cannot survive alone. A virus is a chain of DNA (genetic material) and needs a *host cell* in order to stay alive. You can, of course, pick them up on door handles and other surfaces. That's one of the most common ways of catching colds and flu, but that's because they're contained in sweat or skin cells. Once a virus gets in to cells it tricks the cells to replicate it! Antibiotics are useless against viruses. That said, if you have a virus, like a cold, the doctor will never prescribe an antibiotic because it will not work! Antiviral drugs either improve the immunity of the cell to the virus or interfere with the virus's reproduction.

INFECTIONS - BACTERIAL & VIRAL

Many human infections are caused by either bacteria or viruses. Bacteria are tiny single-celled organisms, thought by some researchers to be related to plants. They are among the most successful life forms on the planet, and range in habitat from ice slopes to deserts. Bacteria can be beneficial - for instance, gut bacteria help us to digest food - but some are responsible for a range of infections. These disease-causing varieties are called pathogenic bacteria. Many bacterial infections can be treated successfully with appropriate antibiotics, although antibiotic-resistant strains are beginning to emerge. Immunization is available to prevent many important bacterial diseases. A virus is an even smaller micro-organism that can only reproduce inside a host's living cell. It is very difficult to kill a virus. That's why some of the most serious communicable diseases known to medical science are viral in origin.

HOW BACTERIA & VIRUSES ENTER THE BODY

BACTERIA	VIRUSES
To cause disease, pathogenic bacteria must gain access into the body. The range of access routes for bacteria includes:	Spread from one person to another by:
• Cuts • Contaminated food or water • Close contact with an infected person • Contact with the feces of an infected person • Breathing in the exhaled droplets when an infected person coughs or sneezes • Indirectly, by touching contaminated surfaces - such as taps, toilet handles, toys and nappies.	• Coughs • Sneezes • Vomits • Bites from infected animals or insects • Exposure to infected bodily fluids through activities such as sexual intercourse or sharing hypodermic needles • Forgetting to wash your hands after handling pets and animals is another way for germs to be taken in by mouth.

CURING INFECTIONS:

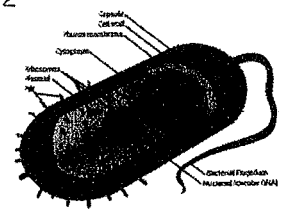
Bacterial infection: The body reacts to disease-causing bacteria by increasing local blood flow (inflammation) and sending in cells from the immune system to attack and destroy the bacteria. Antibodies produced by the immune system

attach to the bacteria and help in their destruction. They may also inactivate toxins produced by particular pathogens, for example tetanus and diphtheria.

Viral infection: Antibiotics are useless against viral infections. This is because viruses are so simple that they use their host cells to perform their activities for them. Antiviral drugs work differently than antibiotics by interfering with the viral enzymes. Antiviral drugs are currently only effective against a few viral diseases, such as influenza, herpes, hepatitis B and C and HIV - but research is ongoing. A naturally occurring protein, called interferon (which the body produces to help fight viral infections), can now be produced in the laboratory and is used to treat hepatitis C infections.

Immunization against viral infection is not always possible

It is possible to vaccinate against many serious viral infections such as measles, mumps, hepatitis A and hepatitis B. An aggressive worldwide vaccination campaign, headed by the World Health Organization (WHO), managed to wipe out smallpox. However, some viruses - such as those that cause the common cold - are capable of mutating from one person to the next. This is how an infection with essentially the same virus can keep dodging the immune system. Vaccination for these kinds of viruses is difficult, because the viruses have already changed their format by the time vaccines are developed.

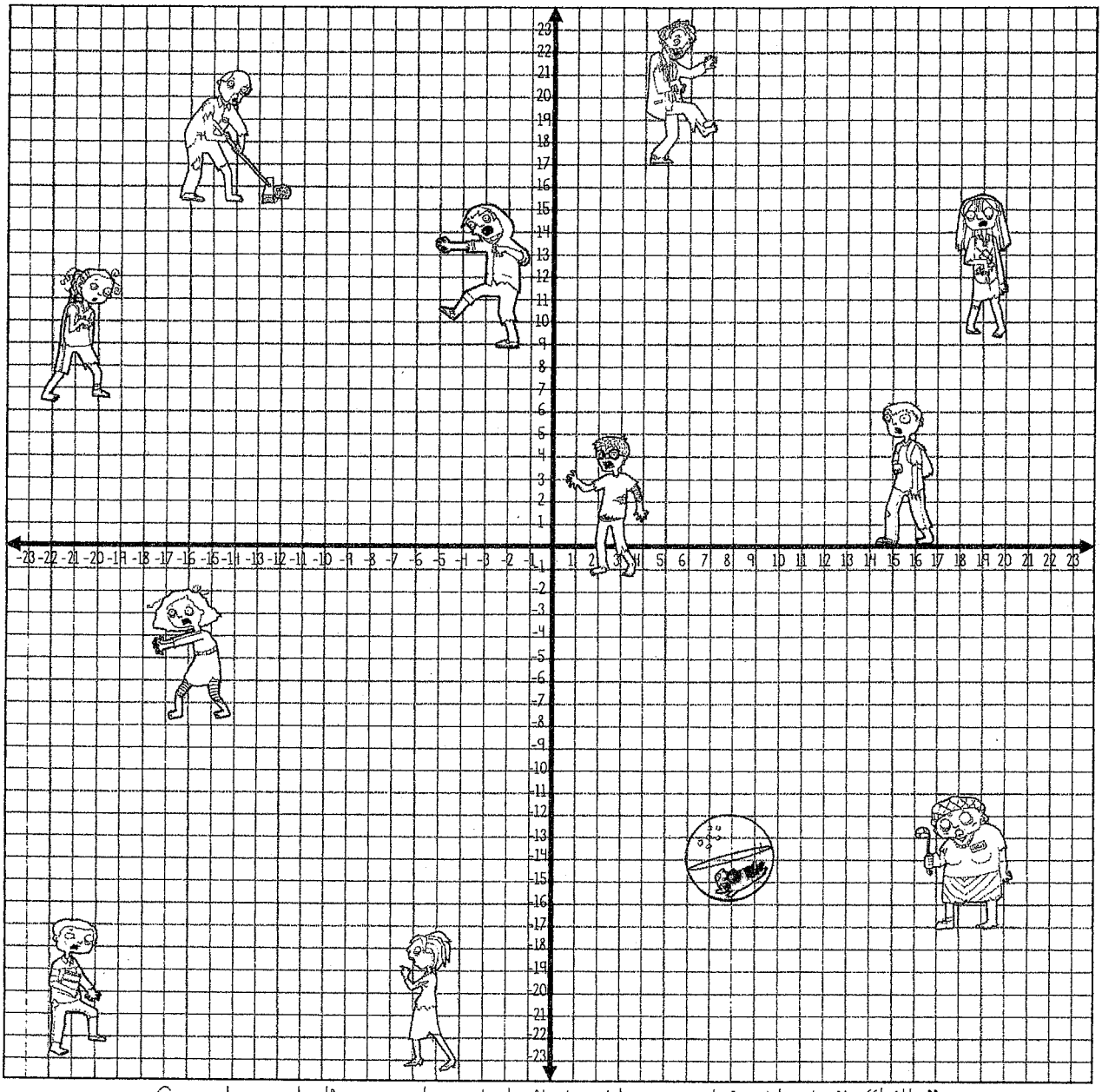
	BACTERIA	VIRUSES
LIVING?	Living organism	Nonliving
NUMBER OF CELLS	Unicellular; one cell	No cells; not living
TREATMENT	Antibiotics	Vaccines prevent the spread and antiviral medications help to slow reproduction but cannot stop it completely
INFECTION	Localized area of body	Systemic - can affect entire body
BENEFITS	Some bacteria are beneficial (e.g. certain bacteria are required in the gut)	Viruses are NOT beneficial. However, a particular virus may be able to destroy brain tumors (see references) Viruses can be useful in genetic engineering.
REPRODUCTION	Splits into 2 	Invades a host cell and takes over the cell causing it to make copies of the viral DNA/RNA. Destroys the host cell releasing new viruses.
SIZE	Larger	Super tiny 

QUICK RECALL FACTS:

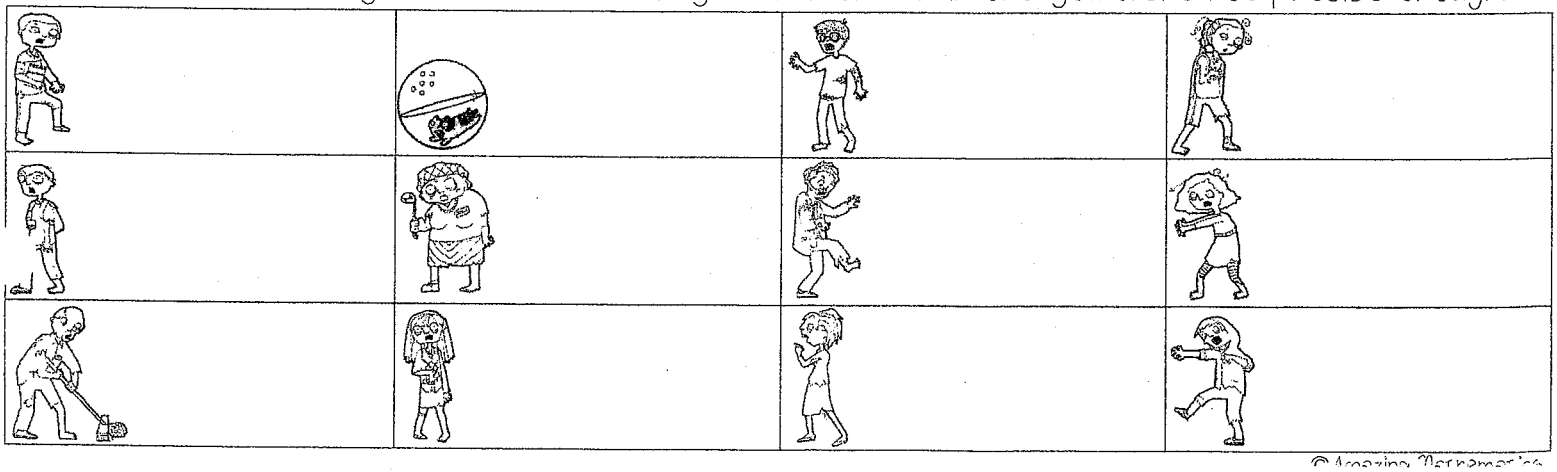
- The biggest difference between viruses and bacteria is that viruses must have a living host – like a plant or animal – to multiply, while most bacteria can grow on non-living surfaces.
- There are some useful bacteria but all viruses are harmful.
- Antibiotics can kill bacteria but not viruses.
- An example of a disease caused by bacteria is strep throat and an example of an affliction caused by a virus is the flu.

Graphing Lines & Killing Zombies

Name _____



Graph each line and match it to the zombie that it "kills".
To kill a zombie the line must run through any part of its body.
Each line should only kill one zombie. If you kill more than one you were not precise enough.



Name:_____

Microbes Wanted Poster Rubric

Directions: You will choose a virus or bacteria to create a Wanted Poster for. This is to be completed independently. Please turn this rubric in with all Wanted Posters.

Name of Virus or Bacteria:_____

Suggestions (Areas that Need Work)	Criteria (Standards for this work)	Compliments (Areas that Exceed Criteria)
	Criteria #1: Mugshot ☐ Include a microscopic image of the virus or bacteria that you are researching. (4) Student:_____/(4) Teacher:_____/(4)	
	Criteria #2: Crimes Committed ☐ Include three negative characteristics or effects that this microbe has on other organisms (12) Student:_____/(12) Teacher:_____/(12)	
	Criteria #3: Last Seen ☐ Where is this microbe most likely to be found within another organism? (4) Student:_____/(4) Teacher:_____/(4)	
	Criteria #4: Reward Information ☐ Description of the reward and contact information this will include which medicines/treatment options work for the microbe you are researching. (8) Student:_____/(8) Teacher:_____/(8)	
	Criteria #5: Organization and Neatness ☐ Poster is neat/easy to understand (2) ☐ Poster is visually appealing, not rushed and neat. (2) Student:_____/(4) Teacher:_____/(4)	

Student Total: _____/32 Teacher Total:_____/32

Reflection:

1. Justify the grade you gave yourself-discuss specifics from the rubric.

2. Discuss one thing you loved about this work, and one you would improve.

Name:_____ Date:_____

Hydrology Reloop with Stump the Test!!!

Directions: Annotate each question below by underlining key words and then defining them off to the side. Use the Test Taking Strategies handout and DETER to guide this work. Jot down tips to help you remember the content in the boxes on the right side of the page.

Which will ***most likely*** result if there is increased upwelling in a coastal area?

A more aquatic life

B less nutrients in the water

C higher water temperatures

D fewer nitrates

Which ***best*** determines the health of a lake used as a source of freshwater?

A its depth and width

B its temperature and pH

C its location and depth

D its temperature and depth

Why is water from an aquifer more likely to be cleaner than water from other sources?

A because it forms where fresh and salt water meet

B because it receives water directly from precipitation

C because it rises to the surface near the ocean

D because pollutants are filtered by rock and soil deep within Earth

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If a body of water has high turbidity levels, what can ***most likely*** be concluded?

A It has a low pH.

B It is unsafe to drink.

C It is too hot to drink.

D It contains a lot of chemicals.

Which ***best*** describes the characteristics of a river basin?

A the land drained by a river and its tributaries

B the land formed when rivers create estuaries and marshes

C the land at the mouth of a river where water flows into the ocean

D the land formed as a result of a river flooding

Which factors can have the ***greatest*** effect on the health of a river system? A type of soil and salinity B nitrate levels and turbidity C human consumption and pH D natural disasters and tidal changes	
In the United States, which is responsible for ensuring the safety of the country's drinking water? A Environmental Protection Agency (EPA) B Food and Drug Administration (FDA) C National Oceanic and Atmospheric Administration (NOAA) D Center for Disease Control (CDC)	
What do bioindicators tell you about the health of a body of water?	
Why would fisherman/woman be in favor of upwelling?	
You see a layer of green scum on the top of a local pond. What does this indicate about the levels of dissolved oxygen (DO) in the pond?	

Self-Reflection:

1. Which test taking strategies work the best for you? Name 2 and be specific.

2. Describe your comfort level with the above questions: