



Alternative Method of Instruction
Middle School – 7th Grade
Day 4

Name: _____

Name: _____

BIODIVERSITY

Name: _____

In 2016, a study published in the journal Science found that 58% of Earth's land has already lost enough biodiversity "to question the ability of ecosystems to support human societies. So what is biodiversity? And how exactly does it support our human societies? And what can we do to reverse this startling statistic?

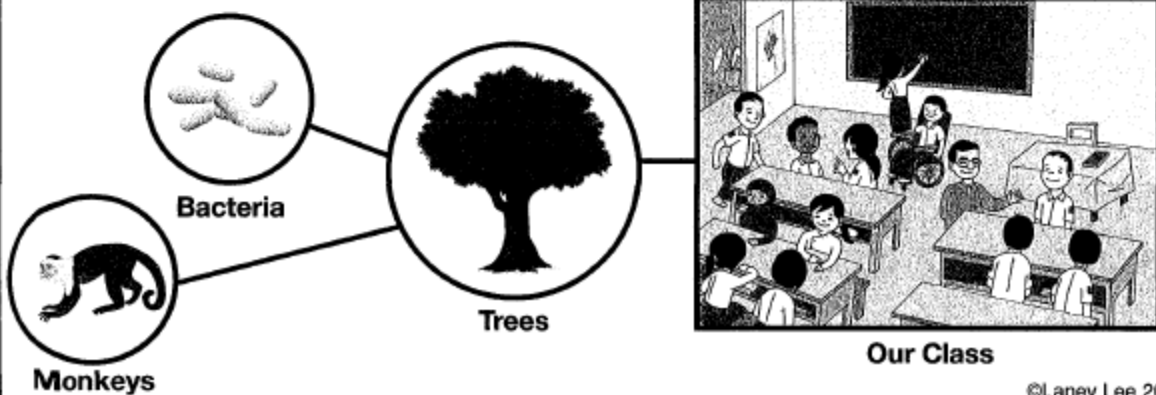
What is Biodiversity?

Biodiversity is defined as the variety (or different forms of) life on Earth. The word comes from a combination of the words "biological" and "diversity." Although biodiversity is rather complex, it is basically a measure of how many different forms of life are present on our planet. Biodiversity can even extend to a microscopic level and be measured as how many different strains of DNA are present on Earth. That means that you, in all your uniqueness, contribute to biodiversity because only you have your DNA! To preserve biodiversity we want to, of course, protect species. Plants, animals, bacteria, fish, and humans all contribute to the incredible varieties of life on Earth. We also want to protect ecosystems, maintaining as many different kinds of habitats as possible, and we want to protect the diversity that exists within species, as these variations help defend the species from the dangers of changing environmental conditions.

Why Do We Need Biodiversity?

Currently, Earth is known to be home to about 1.7 million species of animal, plant, and fungi, but scientists suspect that there could be as many as 8-9 million different species when you consider the millions that haven't been discovered yet. At the same time, though, our human population gets about 75% of our food supply from just 12 plant species and 90% of global livestock production is based on just 15 species of animals and birds. So why do we care about the rest?

To put it simply, wildlife is much more than something you watch on TV. It keeps you alive! The air you breathe relies on biodiversity. Consider the following: Humans (and all other species) rely on plants to give us oxygen. At the same time, those plants rely on bacteria in the soil to give them the nitrogen they need to grow. Therefore, we need those bacteria too. It goes deeper too! In some of the world's largest forests which supply us with the most oxygen, trees depend on monkeys who eat their fruit and spread their seeds. So now we depend on the monkeys too. These kinds of connections are limitless!



BIODIVERSITY

Name: _____

Even though you may only eat a few species of plant or animal, *list more species you indirectly depend on to live and why*. The monkey and bacteria that support our forests are two examples.

Since these important connections are hiding in so many unexpected places, scientists wisely recommend preserving as many species as possible. Of course, there are other reasons too. Did you know that engineers are studying a species of Amazonian ant that they think could lead to breakthroughs in technology for self-driving cars? How many more lessons can we learn from nature? How many more plants have medicinal properties that we have yet to unlock? As species continue to go extinct at alarming rates, scientists have now proposed creating a database of DNA of all living species before it's too late.

A third reason scientists urge governments and citizens to protect biodiversity is because ecosystems simply function better with more variety. On the next page you'll study a food web in an attempt to grasp the importance of *every* little part of a large ecosystem.

Finally, you don't have to be a scientist to get on board with our fourth reason for protecting biodiversity. To put it simply, nature is beautiful. Destroying the natural beauty of the Earth is something that everyone should be against. Currently, only 15% of land and 7% of oceans are protected. Some argue that in order to truly protect our Earth, that number should be at least 50%.

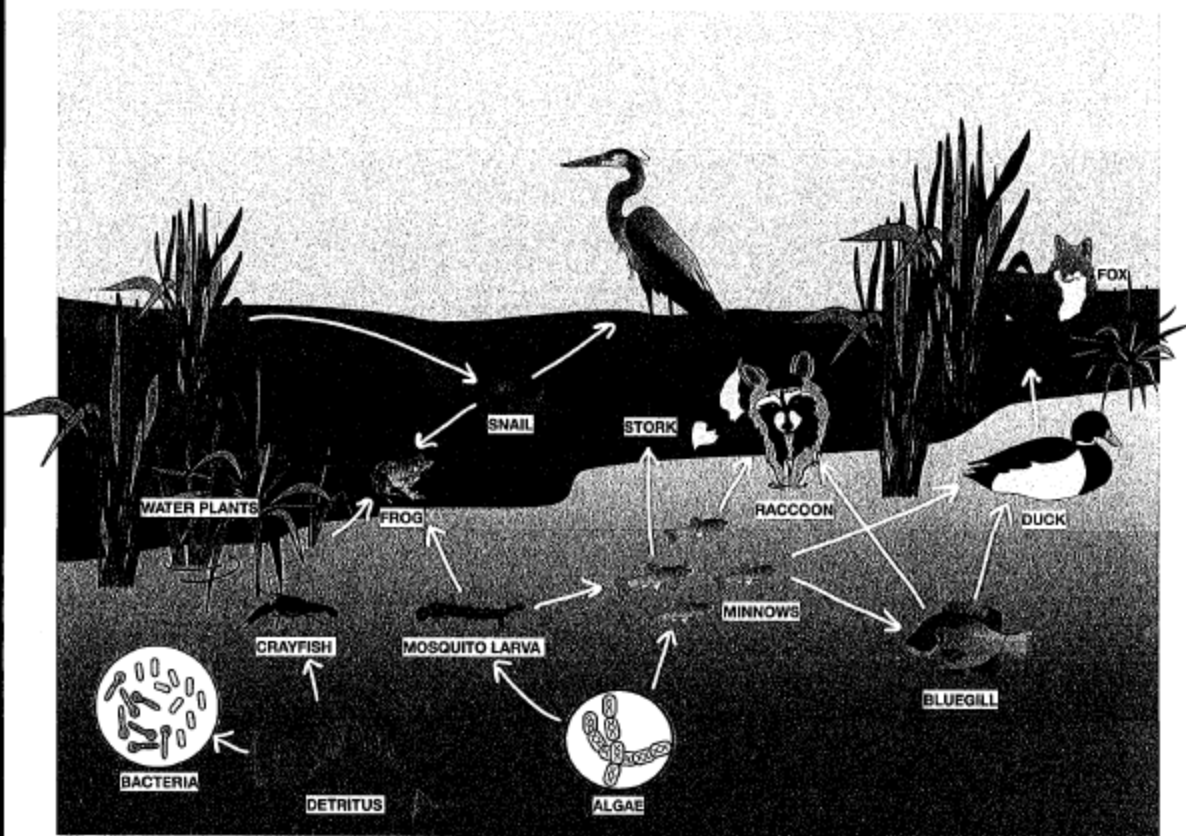
What is Being Done to Support Biodiversity?

Every year, millions of acres of forest are destroyed to make room for farms to meet the demand of the human population for things like cattle, wood, soy, and palm oil. Some areas are more valuable than others, however. For example, just 37 acres of Borneo rainforest has as many species of tree as all of North America combined. But biodiversity is small too! Only one spoonful of healthy soil (which all the food we eat depends on) has 10-50 thousand different species of bacteria. Pollution is heating up our Earth and changing our oceans forever while fungal diseases spread by human activity are decimating the wild amphibian population. Invasive species spread by humans continue to disrupt ecosystems. Only with immediate and focused action can these statistics be reversed and our planet's precious biodiversity be preserved.

BIODIVERSITY

Name: _____

Take a look at the food web below. Note that the arrows point *from* a prey species and *to* a species that depends on it for food. Determine the effects of loss of biodiversity in this ecosystem.



1. Bluegills have become extinct due to overfishing. Which other species will likely also go extinct?
2. Due to a lack of predators, minnows have become overpopulated and eaten all of the algae and mosquito larvae, causing an extinction of these food supplies. Which other species will now also be affected?
3. Some species play roles that may be difficult to see obviously. Brainstorm some possible outcomes that may occur if important bacteria became extinct in an ecosystem.

BIODIVERSITY

Name: _____

Use the information from the passages to answer the questions below.

1. What is biodiversity?
2. List (at least) 4 reasons why we should strive to preserve biodiversity.
3. Take a look at this list of 9 ways to preserve biodiversity. Rank them 1-9 with 1 being the most important action to take and 9 being the least important.

- _____ 1. **Government Legislation** - The government can pass laws which make hunting specific animals illegal, protect habitats, and limit pollutants allowed into the atmosphere just to name a few
- _____ 2. **Create Nature Preserves** - Set aside land for total protection by creating areas like National Parks
- _____ 3. **Reduce Invasive Species** - Prevent non-native species from destroying food webs by monitoring shipments for hidden bugs, plants, etc.
- _____ 4. **Restore Habitats** - Rebuild habitats by cleaning litter, planting trees, and reintroducing native species.
- _____ 5. **Captive Breeding & Seed Banks** - Endangered species of plant and animal can be bred in captivity to prevent their total extinction
- _____ 6. **Reduce Climate Change** - Limit CO₂ emissions to preserve our global climate and prevent further habitat destruction
- _____ 7. **Purchase Sustainable Products** - Purchase products from companies that do not destroy habitats through deforestation, pollution, or other methods.
- _____ 8. **Live Sustainably** - Reduce your negative impact on the planet by eating less meat, saving water, and limiting plastic waste.
- _____ 9. **Get Educated** - Educate others on the importance of numbers 1-8.

4. For the action that you ranked number 1, why do you feel that this is the most important step for preserving biodiversity?
5. For the action that you ranked number 1, what is one baby step that we, as a school, can take a small step towards achieving this?

BIODIVERSITY AROUND ME

Name: _____

Your teacher will give you a specific area to explore, perhaps your backyard or an area around you school. Record the different kinds of species you notice and the total number of each.

Trees 	Describe the different kinds of trees your find. (It's okay if you don't know their official names.)	Number of different Species = _____ Total Number of Individuals = _____
Other Plants 	Look for flowers, grasses, and weeds. Describe them here.	Number of different Species = _____ Total number of Individuals = _____
Animals 	What animals do you see or have you seen in this area before? Don't forget birds!	Number of different Species = _____ Total number of Individuals = _____
Insects 	How many different kinds of flying and crawling insects can you find?	Number of different Species = _____ Total number of Individuals = _____

Biodiversity Index = $\frac{\text{Total Number of Different Species}}{\text{Total Number of Individuals}}$ =

SOCIAL STUDIES – 7TH GRADE

Name: _____

Lesson 4

Subject: Unraveling the Ancient Social Pyramid

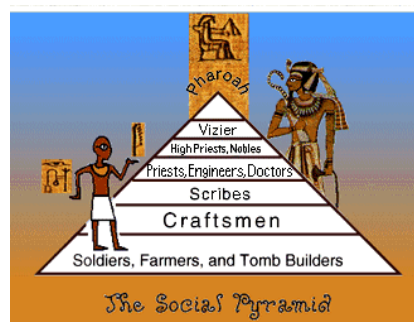
Objective: Students will understand the hierarchical social structure of ancient civilizations, identify key social classes, and analyze the impact of this structure on various aspects of society.

Unraveling the Ancient Social Pyramid

In the ancient world, social structure was intricately woven into the fabric of civilizations, shaping the way societies functioned and individuals interacted. Typically, these societies were hierarchical, with a clear division of classes or castes. At the top of the social pyramid stood the ruling elite, such as kings, pharaohs, or emperors, who wielded immense power and authority. Beneath them were the nobility, comprising aristocrats, priests, and military leaders, whose status was often hereditary.

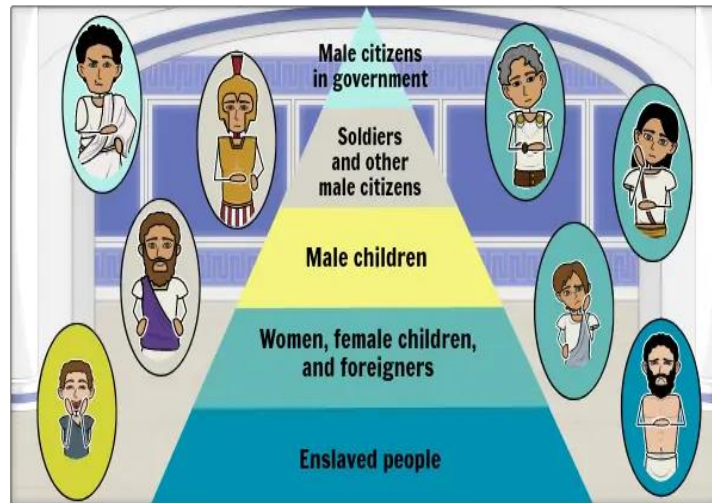


Ancient Roman Social Structure



Ancient Egyptian Social Structure

SOCIAL PYRAMID FOR ANCIENT GREECE



Ancient Greek Social Structure

The majority of the population fell into the commoner class, including farmers, artisans, and traders, who provided essential services and resources. Slavery was also pervasive, with enslaved individuals occupying the lowest rung of the social ladder and subject to the whims of their masters. Social status often dictated access to education, wealth, and legal protections, resulting in a significant disparity between the privileged and the disadvantaged. This hierarchical social structure played a crucial role in shaping cultural norms, economic systems, and the overall dynamics of ancient civilizations.

1. What were the three main classes or castes that made up the ancient hierarchical social structure?

2. Who occupied the top position in the social pyramid of ancient civilizations?

3. How did social status impact access to education, wealth, and legal protections in the ancient world?

ENGLISH LANGUAGE ARTS – 7TH GRADE

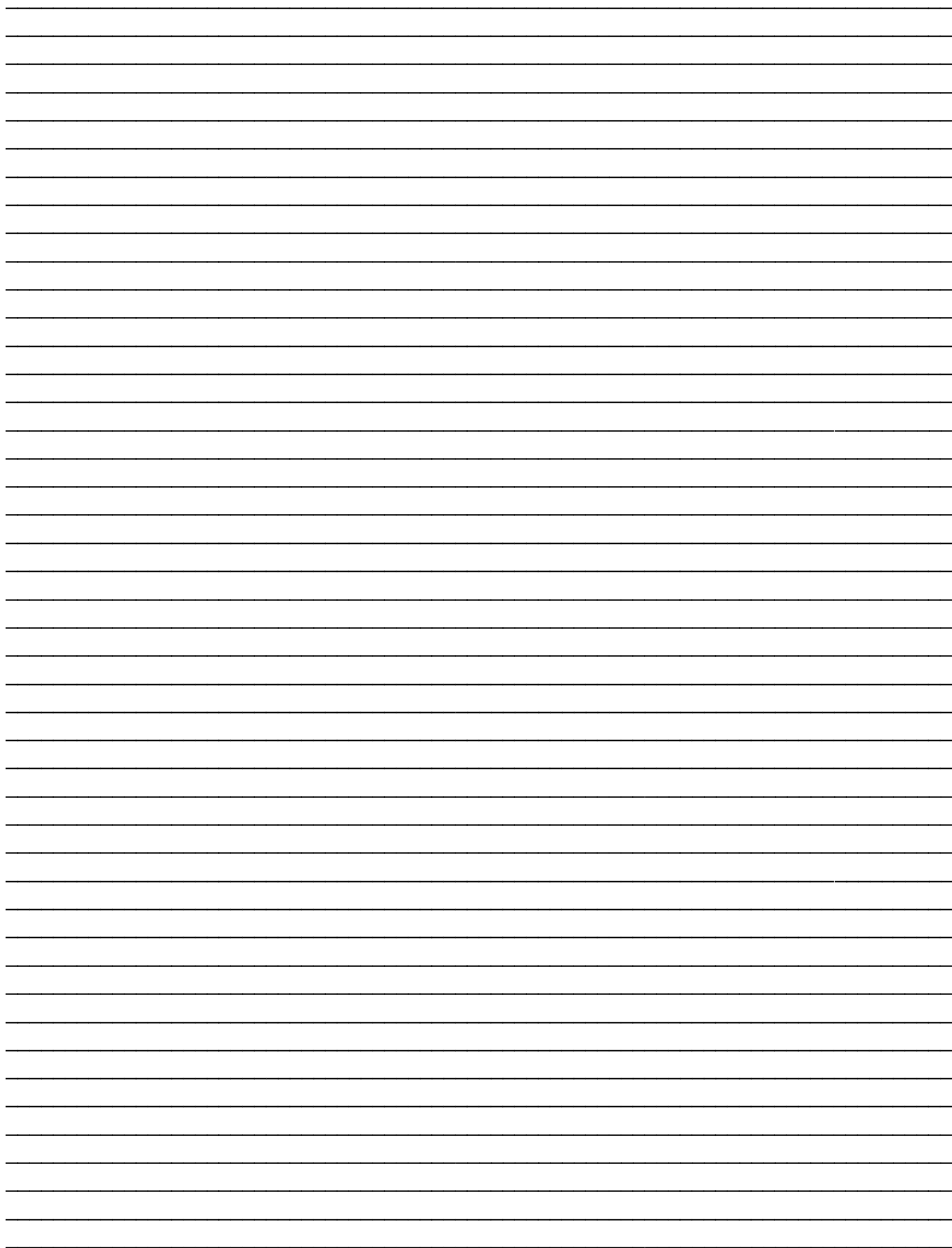
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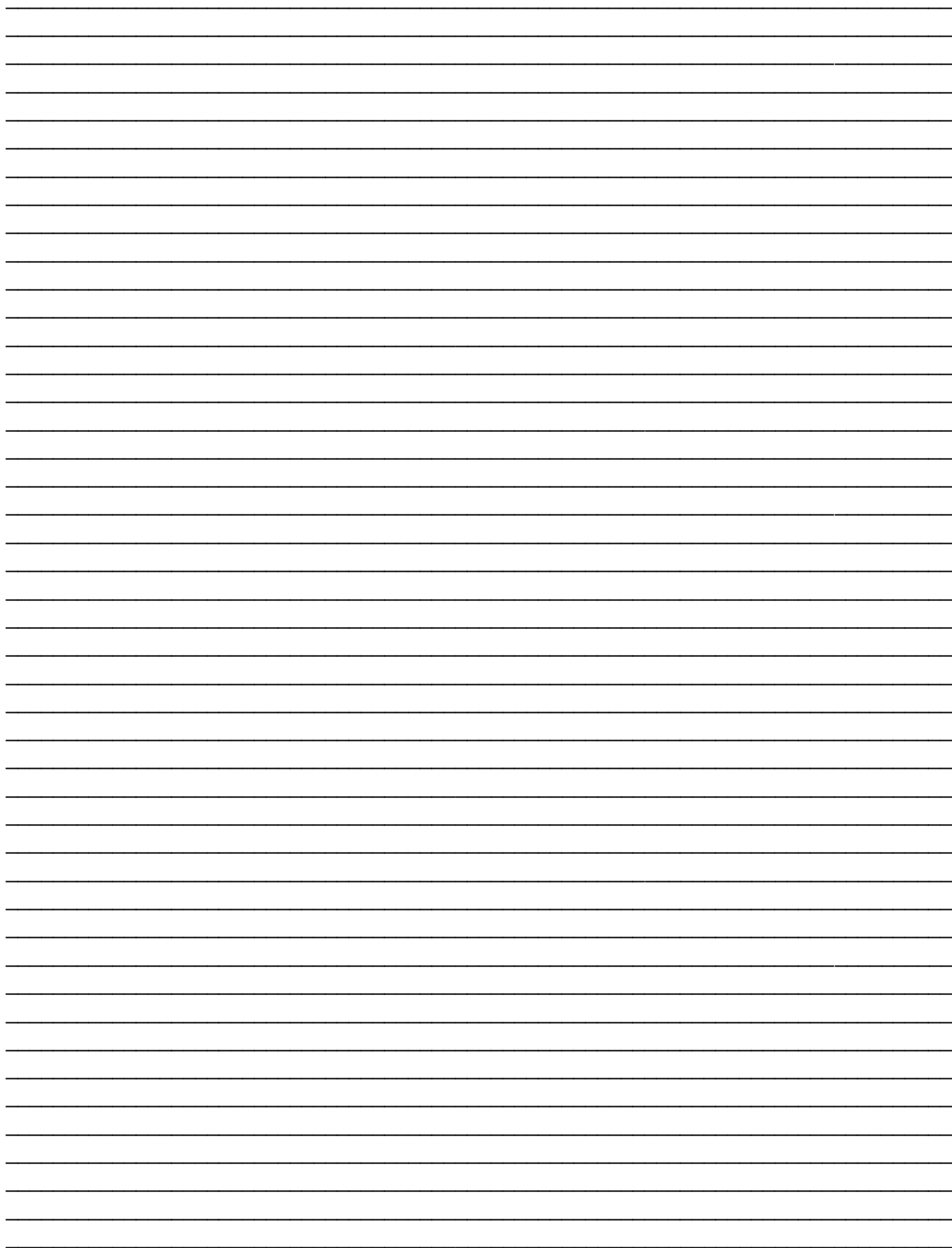
7th Grade AMI ELA Day #4

Directions:

Think about a challenge that exists in your school community. Write a persuasive letter to your school board members informing them of a problem that you see in your school community. Identify the problem you see in your community, and offer some possible solutions that you would like to see the school board take to work toward solutions to the problem in your school community from your perspective as a student. Your letter to the school board should identify and explain a problem and offer at least 2 possible solutions to help resolve the problem in your school community including how these solutions could benefit the entire school community and improve the school system overall based on your perspective as a student. Your letter should be several paragraphs in length. Be sure to consider your audience and purpose when composing your letter.

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general writing. There are no margins, text, or other markings on the page.

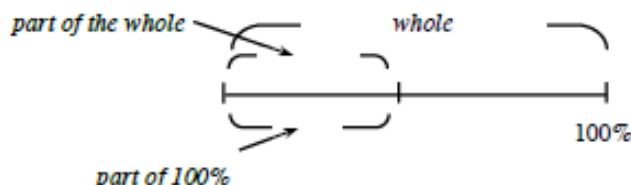




Name: _____

PERCENT PROBLEMS USING DIAGRAMS

A variety of percent problems described in words involve the relationship between “the percent,” “the part” and “the whole.” When this is represented using a number line, solutions may be found using logical reasoning or equivalent fractions (proportions). These linear models might look like the diagram at right.

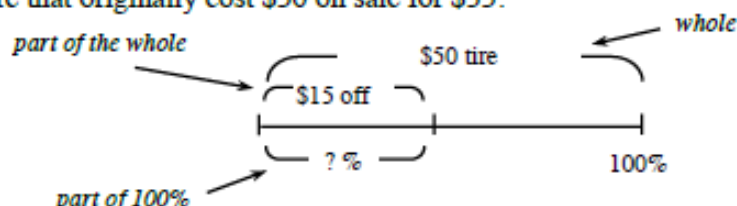


For additional information, see the Math Notes box in Lesson 5.1.2 of the *Core Connections, Course 2* text.

Example 1

Sam’s Discount Tires advertises a tire that originally cost \$50 on sale for \$35. What is the percent discount?

A possible diagram for this situation is shown at right:

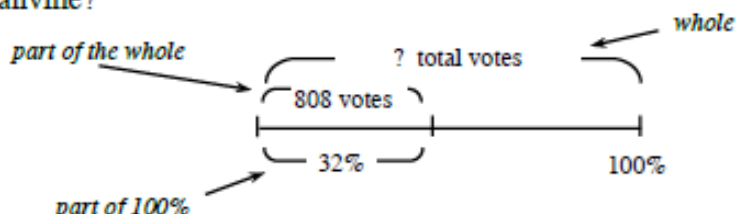


In this situation it is easy to reason that since the percent number total (100%) is twice the cost number total (\$50), the percent number saved is twice the cost number saved and is therefore a 30% discount. The problem could also be solved using a proportion $\frac{15}{50} = \frac{?}{100}$.

Example 2

Martin received 808 votes for mayor of Smallville. If this was 32% of the total votes cast, how many people voted for mayor of Smallville?

A possible diagram for this situation is shown at right:



In this case it is better to write a pair of equivalent fractions as a proportion: $\frac{808}{32} = \frac{x}{100}$.

If using the Giant One, the multiplier is $\frac{100}{32} = 3.125$ so $\frac{808}{32} \cdot \frac{3.125}{3.125} = \frac{2525}{100}$. A total of 2525 people voted for mayor of Smallville.

Note that the proportion in this problem could also be solved using cross-multiplication.

Problems

Use a diagram to solve each of the problems below.

1. Sarah's English test had 90 questions and she got 18 questions wrong. What percent of the questions did she get correct?
2. Cargo pants that regularly sell for \$36 are now on sale for 30% off. How much is the discount?
3. The bill for a stay in a hotel was \$188 including \$15 tax. What percent of the bill was the tax?
4. Alicia got 60 questions correct on her science test. If she received a score of 75%, how many questions were on the test?
5. Basketball shoes are on sale for 22% off. What is the regular price if the sale price is \$42?
6. Sergio got 80% on his math test. If he answered 24 questions correctly, how many questions were on the test?
7. A \$65 coat is now on sale for \$52. What percent discount is given?
8. Ellen bought soccer shorts on sale for \$6 off the regular price of \$40. What percent did she save?
9. According to school rules, Carol has to convince 60% of her classmates to vote for her in order to be elected class president. There are 32 students in her class. How many students must she convince?
10. A sweater that regularly sold for \$52 is now on sale at 30% off. What is the sale price?
11. Jody found an \$88 pair of sandals marked 20% off. What is the dollar value of the discount?
12. Ly scored 90% on a test. If he answered 135 questions correctly, how many questions were on the test?
13. By the end of wrestling season, Mighty Max had lost seven pounds and now weighs 128 pounds. What was the percent decrease from his starting weight?
14. George has 245 cards in his baseball card collection. Of these, 85 of the cards are pitchers. What percent of the cards are pitchers?
15. Julio bought soccer shoes at a 35% off sale and saved \$42. What was the regular price of the shoes?

PHYSICAL EDUCATION – 7TH GRADE

Name: _____

AMI Day 4 Choice Day

Directions: Choose Option 1 or Option 2 to complete your fitness for the day.

Option 1: Log on to the Youtube video Pumpkin Smash Workout Game.

- Link: <https://www.youtube.com/watch?v=bJnlf3mYEyQ>
- After you complete the workout in the space below describe what you liked about the workout and what you would do to make the workout better.

Option 2: Build your own workout.

- Think about all the exercises we've done in class or you do on your own and build a 15- 20 min workout. Make sure you include cardio, upper body, lower body and core exercises.
- Below, write the workout you created and completed.

Workout Created by You

If you were going to do this workout again, what would you change?

READING – 7TH GRADE

Name: _____

For each AMI snow day, students should spend 20 minutes reading. Please use the space below to log your reading.

Title: _____

Format (mark one)

_____ Book

_____ Magazine

_____ eBook

_____ Other: _____

Minutes spent reading: _____

ELECTIVES – 7TH GRADE

Student Name: _____

Directions: Choose **ONE** activity from this list of options to complete for each day of AMI work. Please have an adult initial any activities that you complete for AMI days.

Art	Draw or paint a still life picture of something in your home. _____ initials _____ date	Create a short movie about what you like to do on a snow day _____ Initials _____ date
Music	Practice your band instrument. _____ initials _____ date	Listen to your favorite song and sing along, or . . . Compose an original song. _____ Initials _____ date
Industrial Tech PLTW EbD	Repair something in your home, or . . . Build a fort, either inside your home or with snow outside. _____ initials _____ date	Create a Rube Goldberg machine, or . . . Build a bridge out of something in your home. _____ Initials _____ date
Drama	Act our or record a skit with a family member or friend. _____ initials _____ date	Watch a comedy movie or musical. _____ Initials _____ date
Family and Consumer Science	Ask your adults about budgeting tips. _____ initials _____ date	Make yourself a snack using or creating a recipe. _____ Initials _____ date
World Language / Cultures	Find something in your home from another country and write or tell someone about it. _____ initials _____ date	List your favorite holiday traditions and ask family members or acquaintances about their origins. _____ Initials _____ date