# AMI PACKETS

# #36 - #40

# FOR THE WEEK OF

# MAY 11TH – MAY 15TH

## Day #36

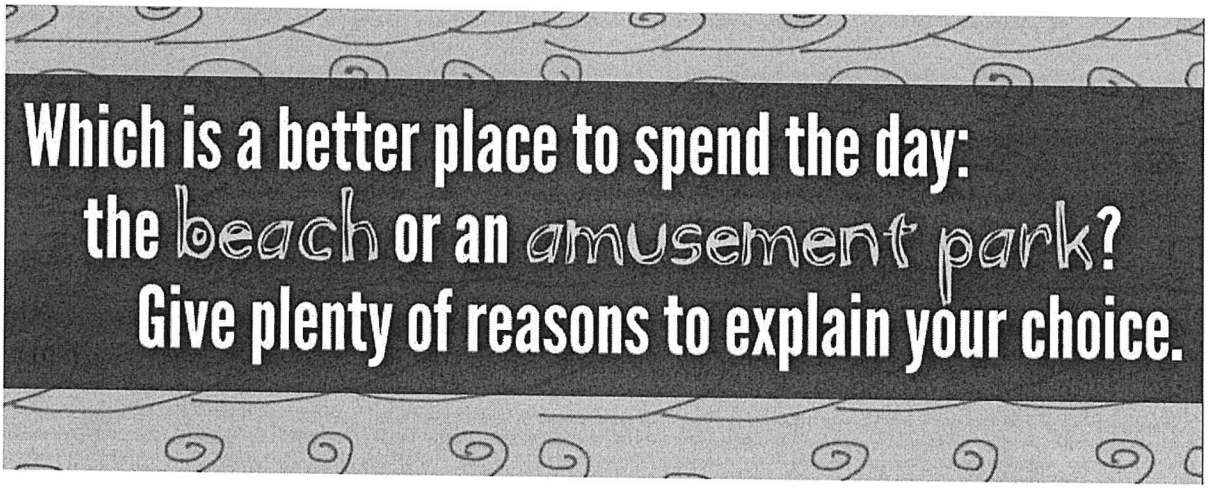
**Use the following prompt to guide your writing.**

**Complete a journal entry just like you would for your Writer's Notebook.**

# Day #37

**Use the following prompt to guide your writing.**

**Complete a journal entry just like you would for your Writer's Notebook.**



## Day #38

**Use the following prompt to guide your writing.**

**Complete a journal entry just like you would for your Writer's Notebook.**

Using your magical rocket ship, you visit a planet that is full of people, just like earth... except there's one major difference...

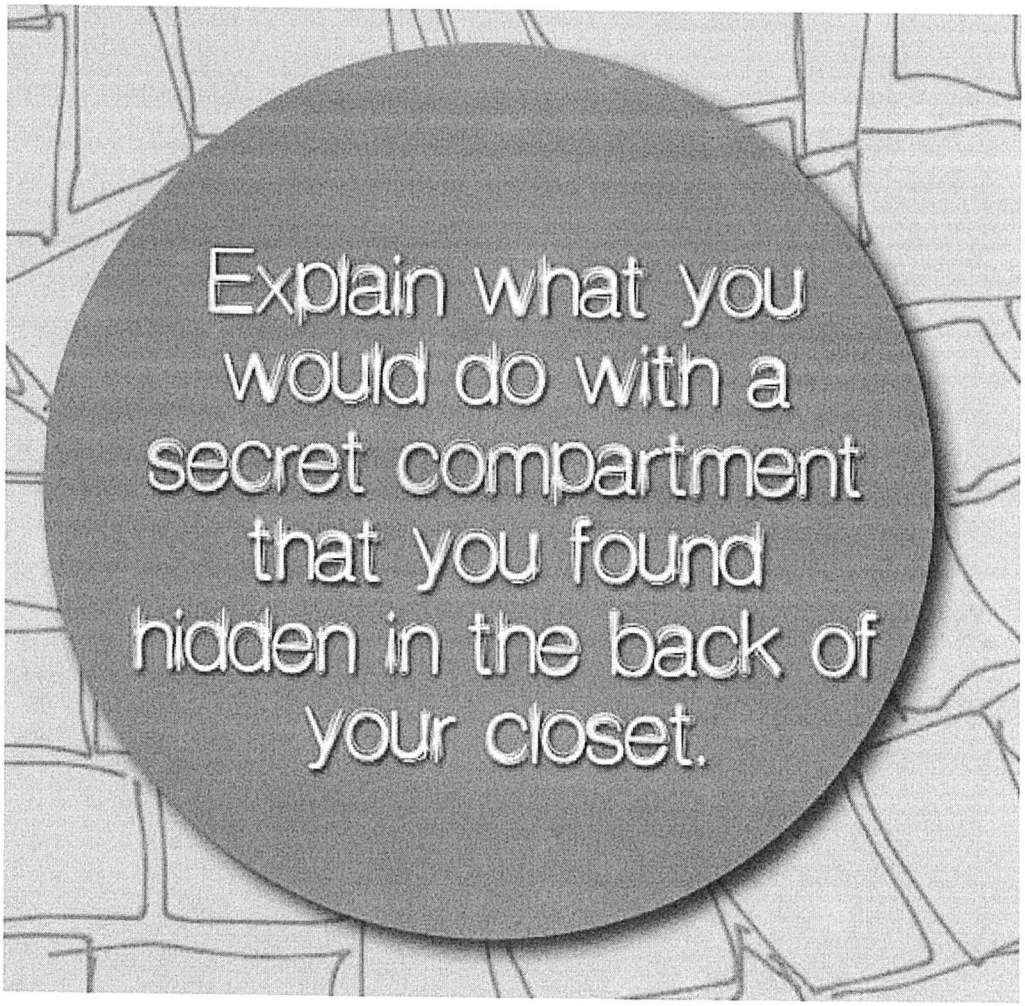
**they don't need sleep.**

How does this make their planet different from earth? How has this made their lives, daily routines, and society different? Do you think you'd like to live on this planet? Do you think it will be that different from earth?

## Day #39

**Use the following prompt to guide your writing.**

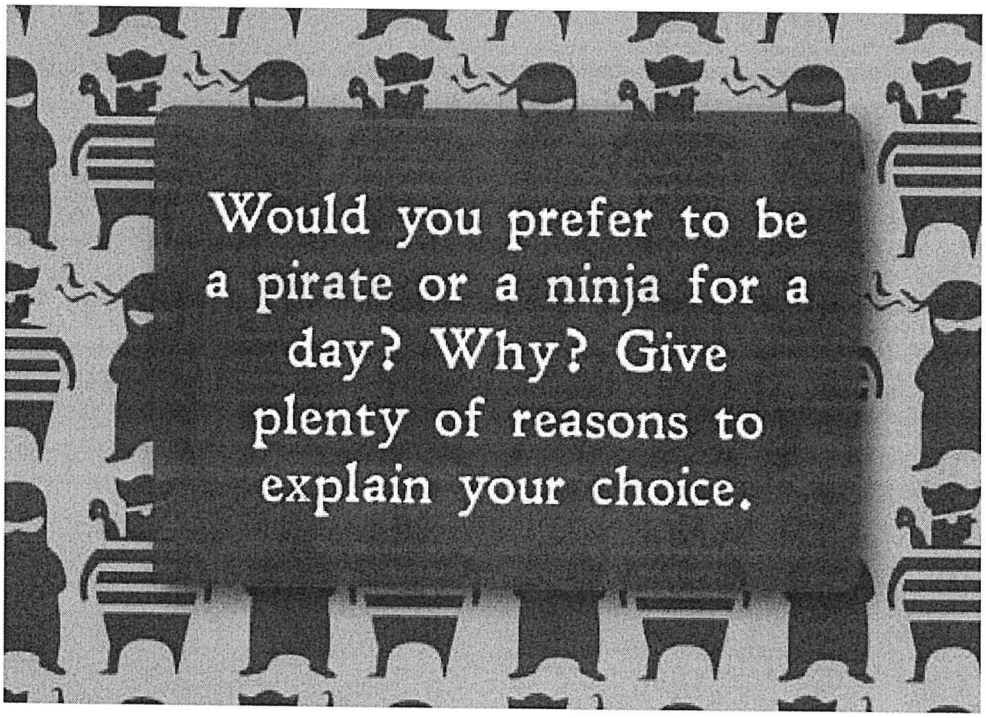
**Complete a journal entry just like you would for your Writer's Notebook.**



# Day #40

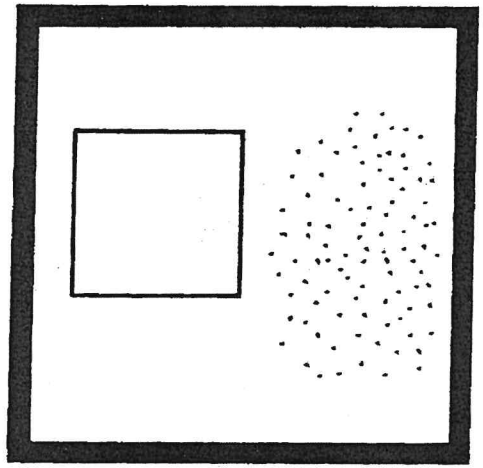
**Use the following prompt to guide your writing.**

**Complete a journal entry just like you would for your Writer's Notebook.**



# What Are the Titles of These Pictures?

Do each exercise below and find your answer in the coded title above that section of exercises. Each time the answer appears, write the letter of that exercise above it. Keep working and you will decode each title.



| 189 | 64 | 144 | 1500 | 1500 | −480 | −72 | −360 | −216 | −480 | −80 |
|---|---|---|---|---|---|---|---|---|---|---|

| 1500 | 144 | 64 | −80 | 10,000 | 144 | 10,000 | −480 | −125 |
|---|---|---|---|---|---|---|---|---|

(D) $-8 \cdot 2 \cdot 5$

(U) $-3(9)(-7)$

(E) $(-4)(-20)(-6)$

(B) $18(-10)(2)$

(A) $(-12)^2$

(R) $(-5)^3$

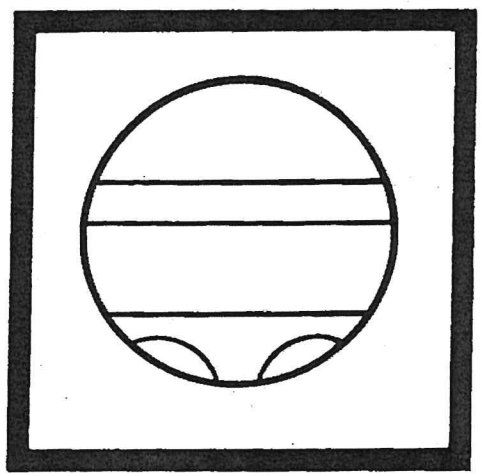
(L) $(-6)^3$

(N) $4(-4)^2$

(M) $(-1)^3(8)(9)$

(P) $(-4)(25)(-5)(20)$

(S) $(-5)(-15)(-2)(-10)$



| −400 | 130,000 | 130,000 | −648 | −900 | 98 | 130,000 | 288 |
|---|---|---|---|---|---|---|---|

| −729 | −120 | −32 | −648 | 400 | 98 | 81 | 288 | 400 | −900 | 400 | 98 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

(E) $(-2)(3)(-4)(-5)$

(G) $(-3)^4$

(O) $(-10)^4(13)$

(A) $(-2)^5$

(K) $(-1)^5(-30)^2$

(W) $(3)^3(-3)^3$

(B) $(-4)(-6)^2(-2)$

(D) $(-1)^3(-20)^2$

(I) $(-2)^4(-5)^2$

(R) $(-9)^2(-2)^3$

(N) $(-1)^7(-7)^2(-2)$

# DAFFYNITION DECODER

1. Lumberjack:

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| −22 | 11 | −2 | −2 | −34 | −17 | 25 | 13 | −22 | 25 | −144 | −22 | 1328 | −17 |

2. Quartz watch:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 336 | −2 | −2 | 1328 | 49 | 25 | −12 | −22 | −29 | 18 | 49 | 336 | 1328 |

3. First aid instructor:

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 49 | −45 | −22 | −5 | −34 | −2 | −54 | −12 | −22 | −360 | −45 | −17 |

TO DECODE THESE THREE DAFFYNITIONS:

Do each exercise below and find your answer in the code. Each time the answer appears in the code, write the letter of that exercise above it. Keep working and you will decode "definie" print.

(D) $-12 + (-30) + 8$

(E) $28 - 45$

(F) $-36 - 18$

(I) $-7(-10 + 3)$

(R) $\frac{-3(20)}{12}$

(A) $(-4)(7) + (-2)(-3)$

(P) $\frac{14 - 40}{-2}$

(L) $(-6)(7)(-8)$

(T) $\frac{-48}{3} + \frac{-65}{5}$

(U) $(-4)(5)(-2)(-9)$

(G) $-24 - (-50) - 38$

(M) $\frac{-68 - 112}{-10}$

(Z) $(-1)(9) + (6)(-6)$

(K) $-4325 + 6128 - 475$

(C) $(36 - 24)(24 - 36)$

(O) $\frac{-6 - 3 + 15 - 2}{4 - 14 - 1 + 9}$

(N) $3(13) + (-7)(2)$

(W) $\frac{-38}{-2} + \frac{-96}{12}$

Missing Add Subtract
Teens and Twenties
Math Worksheet 3


Name:_____

## What operation makes the number sentence correct?

| | | |
|---|---|---|
| 24 − 6 = 18 | 18 ___ 1 = 19 | 27 ___ 5 = 32 |
| 16 ___ 1 = 15 | 25 ___ 5 = 20 | 21 ___ 9 = 30 |
| 5 ___ 12 = 17 | 27 ___ 8 = 35 | 29 ___ 4 = 25 |
| 28 ___ 4 = 32 | 11 ___ 9 = 2 | 22 ___ 8 = 30 |
| 26 ___ 3 = 29 | 5 ___ 17 = 22 | 24 ___ 6 = 30 |
| 24 ___ 7 = 17 | 11 ___ 3 = 14 | 17 ___ 2 = 19 |
| 23 ___ 8 = 31 | 29 ___ 3 = 32 | 15 ___ 6 = 9 |
| 15 ___ 7 = 8 | 13 ___ 5 = 8 | 17 ___ 8 = 9 |
| 5 ___ 15 = 20 | 26 ___ 1 = 25 | 27 ___ 8 = 19 |
| 23 ___ 4 = 19 | 25 ___ 3 = 22 | 28 ___ 3 = 25 |



DadsWorksheets.com

# Missing Numbers in Equations (A)

Fill in the blanks.

| | | | |
|---|---|---|---|
| $7 + \_\_ = 12$ | $16 - \_\_ = 8$ | $\_\_ \div 1 = 5$ | $1 + \_\_ = 5$ |
| $\_\_ \div 2 = 5$ | $\_\_ + 9 = 17$ | $1 + \_\_ = 7$ | $\_\_ + 4 = 7$ |
| $\_\_ \div 8 = 8$ | $\_\_ \div 3 = 4$ | $\_\_ \times 6 = 18$ | $10 \div \_\_ = 2$ |
| $\_\_ + 6 = 8$ | $5 \times \_\_ = 45$ | $6 - \_\_ = 2$ | $\_\_ \div 5 = 1$ |
| $7 \times \_\_ = 42$ | $\_\_ - 4 = 5$ | $3 + \_\_ = 7$ | $4 \div \_\_ = 4$ |
| $1 + \_\_ = 2$ | $\_\_ \div 2 = 3$ | $\_\_ \times 4 = 8$ | $35 \div \_\_ = 5$ |
| $4 \div \_\_ = 4$ | $6 + \_\_ = 7$ | $\_\_ + 6 = 7$ | $\_\_ \times 8 = 72$ |
| $\_\_ + 6 = 13$ | $36 \div \_\_ = 4$ | $1 + \_\_ = 8$ | $\_\_ - 1 = 8$ |
| $\_\_ \times 4 = 28$ | $8 + \_\_ = 16$ | $4 \times \_\_ = 20$ | $15 - \_\_ = 7$ |
| $18 - \_\_ = 9$ | $\_\_ \times 1 = 3$ | $\_\_ \div 3 = 9$ | $6 - \_\_ = 5$ |

**Day 36:**

May 10

# Transcontinental railroad completed, unifying United States

On this day in 1869, the presidents of the Union Pacific and Central Pacific railroads meet in Promontory, Utah, and drive a ceremonial last spike into a rail line that connects their railroads. This made transcontinental railroad travel possible for the first time in U.S. history. No longer would western-bound travelers need to take the long and dangerous journey by wagon train, and the West would surely lose some of its wild charm with the new connection to the civilized East.

Since at least 1832, both Eastern and frontier statesmen realized a need to connect the two coasts. It was not until 1853, though, that Congress appropriated funds to survey several routes for the transcontinental railroad. The actual building of the railroad would have to wait even longer, as North-South tensions prevented Congress from reaching an agreement on where the line would begin.

One year into the Civil War, a Republican-controlled Congress passed the Pacific Railroad Act (1862), guaranteeing public land grants and loans to the two railroads it chose to build the transcontinental line, the Union Pacific and the Central Pacific. With these in hand, the railroads began work in 1866 from Omaha and Sacramento, forging a northern route across the country. In their eagerness for land, the two lines built right past each other, and the final meeting place had to be renegotiated.

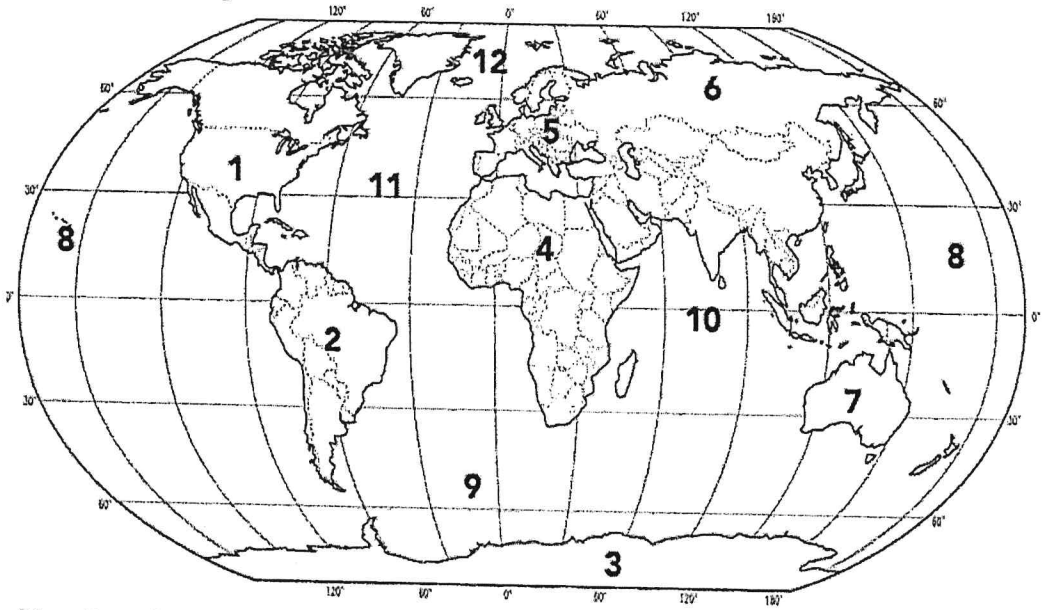
Harsh winters, staggering summer heat, Indian raids and the lawless, rough-and-tumble conditions of newly settled western towns made conditions for the Union Pacific laborers–mainly Civil War veterans of Irish descent–miserable. The overwhelmingly immigrant Chinese work force of the Central Pacific also had its fair share of problems, including brutal 12-hour work days laying tracks over the Sierra Nevada Mountains. On more than one occasion, whole crews would be lost to avalanches, or mishaps with explosives would leave several dead.

For all the adversity they suffered, the Union Pacific and Central Pacific workers were able to finish the railroad–laying nearly 2,000 miles of track–by 1869, ahead of schedule and under budget. Journeys that had taken months by wagon train or weeks by boat now took only days. Their work had an immediate impact: The years following the construction of the railway were years of rapid growth and expansion for the United States, due in large part to the speed and ease of travel that the railroad provided.

1. How do you think the Transcontinental Railroad changed the United States?
2. What two railroad companies built the Transcontinental Railroad?
3. What year was the Transcontinental Railroad complete?
4. What kind of problems did the railroad laborers encounter?

# Day 37:

## CONTINENTS and OCEANS




Directions: Write the number on the line beside the name of each ocean or continent.

| | | | |
|---|---|---|---|
| ____ Southern Ocean | ____ Asia | ____ Australia | ____ Indian Ocean |
| ____ Antarctica | ____ Atlantic Ocean | ____ North America | ____ Arctic Ocean |
| ____ Africa | ____ Europe | ____ South America | ____ Pacific Ocean |

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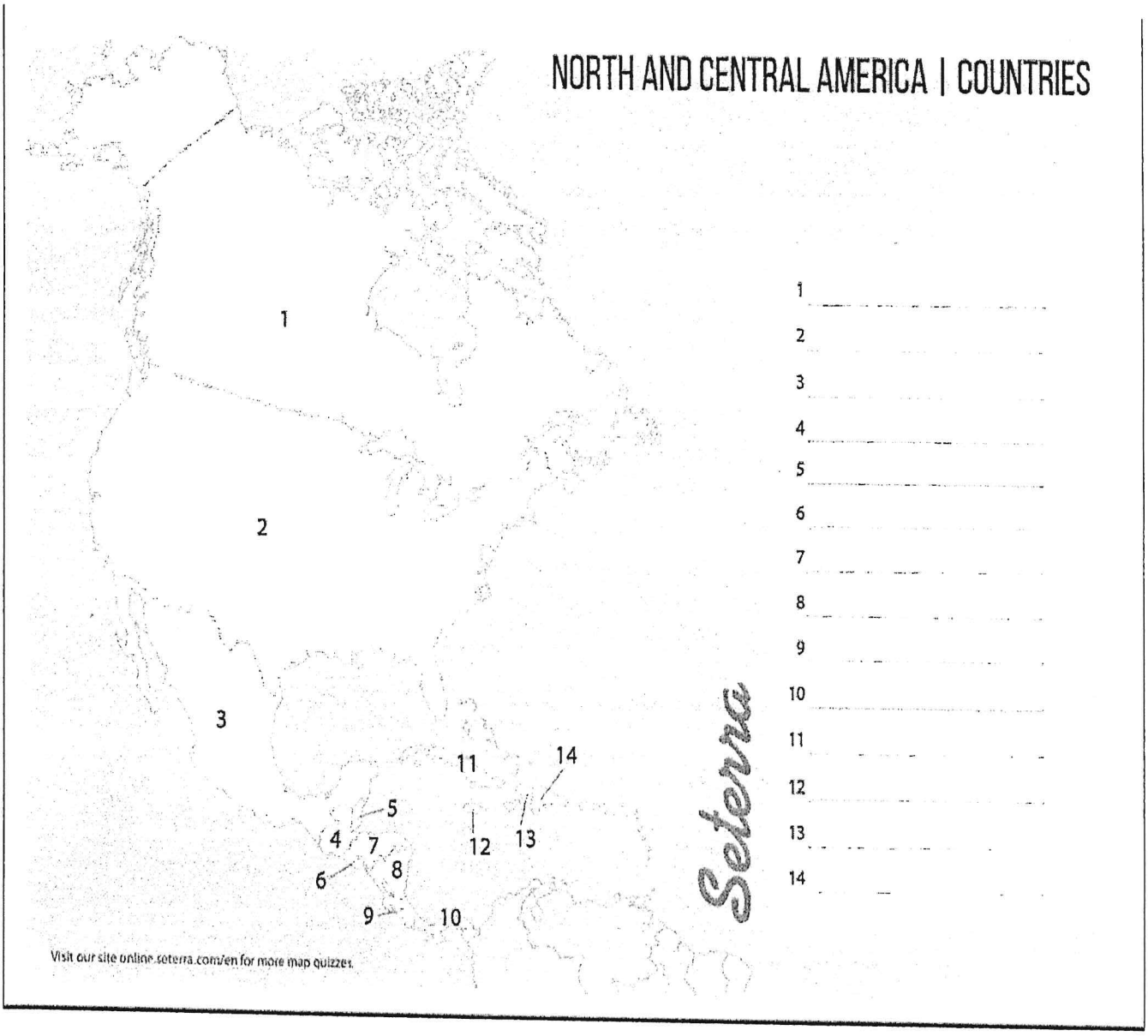
# Day 38:


NORTH AND CENTRAL AMERICA | COUNTRIES
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Visit our site online.seterra.com/en for more map quizzes.
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# Day 39:

**Japanese** soldier Hiroshi Hachiya was killed in action on Iwo Jima in 1945 at age 22. He wrote this poem shortly before his death. The poem expresses the fear and sadness that soldiers on any side might experience.

PRIMARY SOURCE DOCUMENT

## Battle of Iwo Jima Poem

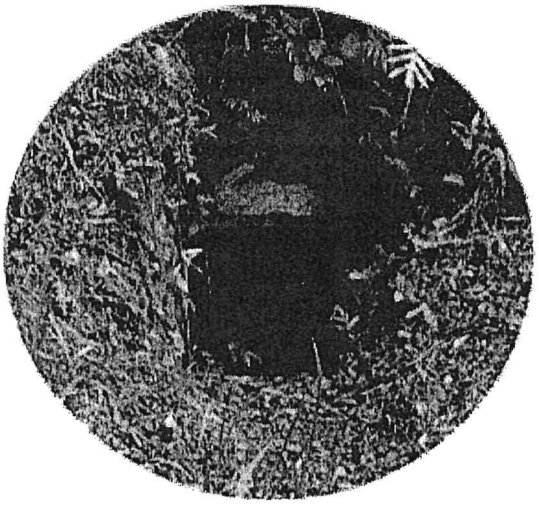
***Memo on the Battle of Iwo-Jima,*** **Hiroshi Hachiya, *December 1944***

Iwo Jima is so tranquil in the smokey-gray rain;
The cannonade of yesterday
must have been a dream.
I am writing a poem in a bomb-shelter and listening
to the sound of the bombs;
how pitiful it is that the springtime of my life is now about to end.

Struggling through the
loneliness of this **southern**
land,
I am alive in a bomb-shelter
filled with others' breath.

So pitiful is a man who has
to live so alone,
in a bomb shelter that is
becoming
even more foul from the
**comrades'** breath!

We watch a darkening cloud
over Iwo Jima:
The sun has gone down as
we wait for a plane
that has not yet returned.



The entrance to a Japanese bomb shelter on a Pacific island.

# 75th Anniversary of the Battle of Iwo Jima

This February marks the 75th anniversary of the battle for Iwo Jima, a fight whose brutality not only established it as a marker for the extraordinary courage and sacrifice of the US Marine Corps, but in 1945 also signified the staggering and escalating violence which American forces faced as they closed in on mainland Japan.

The spirit of the Marines was immortalized four days after the initial landings. On February 23, 1945 atop of Mount Suribachi on the southern end of the island photographer Joe Rosenthal captured the image of six Marines, raising an unfurling American flag. The image appeared in the American Sunday newspaper editions two days later on February 25, 1945; in today's terminology, it immediately went viral. An artist's rendering appeared on millions of posters for the seventh war bond drive in May 1945, the US Postal service released an official postage stamp bearing the image in July 1945, and Rosenthal won the Pulitzer Prize for photography later that year.

But the ultimate triumph implied in Rosenthal's image would take a full month of brutal combat against a fanatical enemy to achieve. The island of Iwo Jima was part of the Tokyo prefecture before the war, and the Japanese fought tenaciously against the first American penetration of their home soil. Their strategy was to force such vicious bloodshed that the Americans might be deterred from invading the Japanese home islands.

The Americans secured victory on Iwo Jima on March 26, 1945, after both sides had paid a devastating toll in lives. Out of an estimated 20,000 Japanese troops on the island, only slightly over 200 survived the battle. American forces suffered over 26,000 casualties, including 6,821 dead, in savage close-quarters fighting with flamethrowers and grenades amongst tunnels, caves and bunkers. The stark courage displayed on Iwo Jima led Admiral Chester Nimitz to famously reflect that "Uncommon valor was a common virtue" before the battle was even over. In the end, 27 U.S. Marines and sailors received the Medal of Honor for actions during the battle; over half (14 total) were posthumously awarded. Three of the flag raisers in Rosenthal's photograph—Sergeant Michael Strank, Corporal Harlon Block, and Private First Class Franklin Sousley—were killed in action.

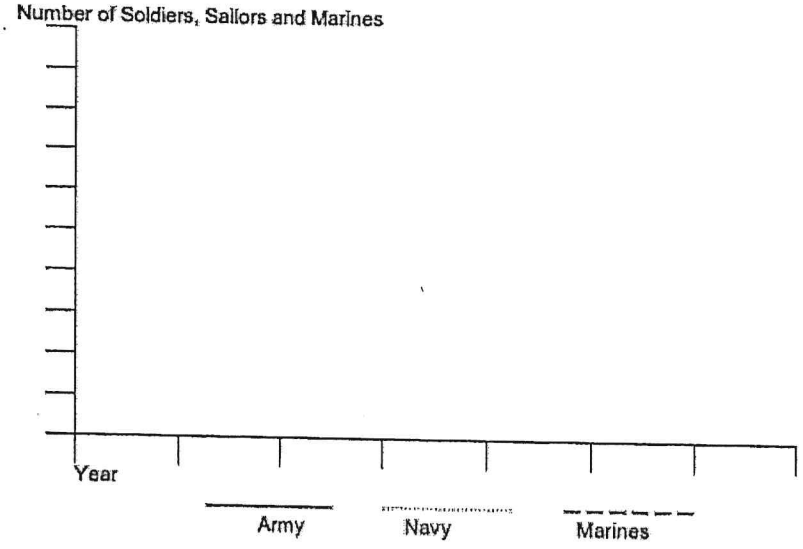
# Day 40:

**WWII by the Numbers**
Charting and Graphing D-Day and WWII Data

1. On a line graph below, fill in both axes and plot and label the growth of each branch of the U.S. military during World War II. Use the type of lines shown for each branch. Then answer the questions below.

**U.S. Active Military Personnel (1939-1945)**

| Year | Army | Navy | Marines | Total |
|---|---|---|---|---|
| 1939 | 189,839 | 125,202 | 19,432 | 334,473 |
| 1940 | 269,023 | 160,997 | 28,345 | 458,365 |
| 1941 | 1,462,315 | 284,427 | 54,359 | 1,801,101 |
| 1942 | 3,075,608 | 640,570 | 142,613 | 3,858,791 |
| 1943 | 6,994,472 | 1,741,750 | 308,523 | 9,044,745 |
| 1944 | 7,994,750 | 2,981,365 | 475,604 | 11,451,719 |
| 1945 | 8,267,958 | 3,380,817 | 474,680 | 12,123,445 |




A. What was the trend in the size of the U.S. military between 1939 and 1945?

B. What year saw the largest increase of military personnel and what event(s) brought about this increase?

C. From the data in this graph, what branch of service do you predict had the highest casualty rate during World War II?

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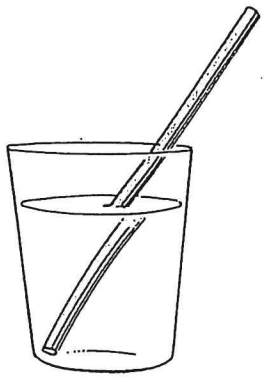
Name _____ Date _____ Class/Teacher _____

SCIENCE AMI PACKET # 3 6

# How Light Travels



How Light Rays Bend

This girl can see her reflection in the mirror.

Light is a kind of energy. Light is given off in tiny particles called **photons.** Photons have no mass. They are not matter. Photons travel in waves. Most light waves have so many photons that the separate photons cannot be seen. They look like solid waves of light.

Sound waves are movements of the matter through which they travel. So sound waves can travel only through matter. But light waves are waves of photons. So light waves can travel through empty space.

Light travels very quickly. It goes through 186,225 miles of air in 1 second. Light travels much faster than sound. Sound goes only about one fifth of a mile in a second. Have you ever been in a thunderstorm? If you have, you may remember that you saw lightning a moment before you heard the thunder. The light from the lightning reached you more quickly than the sound did.

Light travels in straight lines called **rays.** When light rays hit a smooth, shiny surface such as a mirror, they bounce back. You see whatever is in front of the surface. This is called **reflection.**

Light rays cannot turn corners. But they can be bent by things in their path. When a light ray goes through a different substance, such as glass or water, it changes direction. Then the ray comes out on the other side and goes straight on. This is called **refraction.** Look at the picture of a straw in a glass of water. The straw is not really bent. The light rays that your eyes see are bent.

Name _____ Date _____ Class/Teacher _____

# SCIENCE AMI PACKET # 3 6

**A. Use the words below to complete the sentences.**

| | | |
|---|---|---|
| energy | matter | space |
| mass | photons | waves |

Light is a kind of _____. Light is given off in tiny particles called _____. Photons have no _____. They are not _____. Photons travel in _____.

**B. Write the letter for the correct answer.**

1. Sound waves can travel only through _____.
   (a) space (b) water (c) matter
2. Light travels much _____ than sound.
   (a) faster (b) more slowly (c) more loudly
3. Light travels in straight lines called _____.
   (a) particles (b) rays (c) photons
4. The bending of light rays by things in their path is called _____.
   (a) refraction (b) reflection (c) transmission
5. When light rays hit a smooth, shiny surface and bounce back, it is called _____.
   (a) transmission (b) refraction (c) reflection
6. Light is given off in tiny particles called _____.
   (a) electrons (b) photons (c) straws

**C. Answer <u>True</u> or <u>False</u>.**

1. Photons have mass. _____
2. Photons travel in waves. _____
3. Light goes only about one mile in a second. _____
4. Light is much faster than sound. _____
5. Light rays cannot turn corners. _____

Name _____ Teacher/Class Block _____ Date Missed _____

# SCIENCE AMI PACKET #37

Directions: The passage is followed by several questions. After reading the passage and studying the data, choose the best answer to each question. You may refer to the passage as often as necessary.

## A Bloody Puzzle

Antigens occur on the surface of many cell types and provide a unique chemical signature that allows the body to determine the cell's identity. Antibodies are proteins that attack foreign substances that may pose an immune threat to the body. Antibodies identify a substance as foreign by recognizing and binding to its surface antigens. Each type of antibody is antigen-specific, attacking only one type of antigen.

Human blood is classified into different blood groups based on the presence of certain antigens on the red blood cells. The most commonly used blood group system is ABO. This system classifies blood into four groups (types) according to the presence or absence of A and/or B antigens on the blood cells. Cells may contain A antigens only, B antigens only, both A and B antigens, or neither antigen. Blood also contains antibodies against the antigens that are absent from the red blood cells. For example, type A blood contains A antigens and anti-B bodies. Table 1 identifies the antigens and antibodies present in each blood type.

TABLE 1: ABO Blood Types

| Blood Type | Antigens Present | Antibodies Present |
|---|---|---|
| A | A | Anti-B |
| B | B | Anti-A |
| AB | A and B | None |
| O | None | Anti-A and Anti-B |

Blood can also be classified as Rh-positive (Rh+) or Rh-negative (Rh-), based on the presence or absence of a different antigen on the red blood cells. Table 2 identifies whether the Rh antigen or antibody is present in each blood type.

TABLE 2: Rh Blood Types

| Blood Type | Antigens Present | Antibodies Present |
|---|---|---|
| Rh+ | Yes | No |
| Rh- | No | Yes |

The ABO and Rh blood group systems are combined to determine an individual's medical blood type. Figure 3 illustrates the distribution of medical blood types in the general population of the United States.

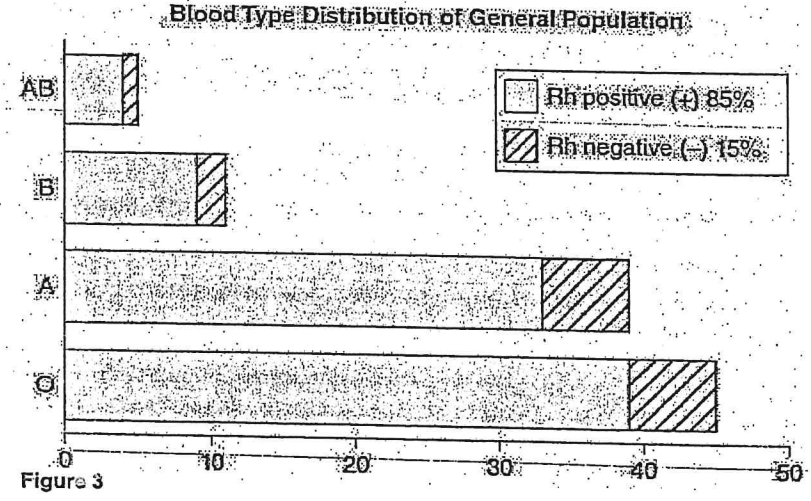


Figure 3

Table 4 indicates the distribution of medical blood types by ethnicity in the United States. The values listed represent the percentage of individuals within the given ethnic group that exhibit each blood type.

TABLE 4: Blood Type Demographics

Percentage of Individuals with Blood Type (%)

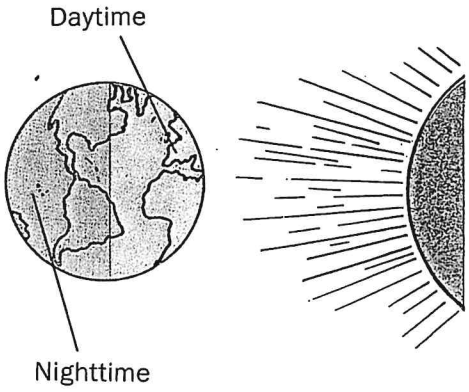
| Blood Type | Caucasian | African American | Hispanic | Asian |
|---|---|---|---|---|
| O+ | 37 | 47 | 53 | 39 |
| O- | 8 | 4 | 4 | 1 |
| A+ | 33 | 24 | 29 | 27 |
| A- | 7 | 2 | 2 | 0.5 |
| B+ | 9 | 18 | 9 | 25 |
| B- | 2 | 1 | 1 | 0.4 |
| AB+ | 3 | 4 | 2 | 7 |
| AB- | 1 | 0.3 | 0.2 | 0.1 |

1. What is the total number of medical blood types possible for a human being?
   A. Two C. Six
   B. Four D. Eight
2. The name of each ABO blood type is derived from the:
   A. antibodies that are present in the blood.
   B. antigens that are present on the red blood cells.
   C. prevalence of each blood type in the general population.
   D. antigens that are absent from the red blood cells.
3. According to the passage, antigens:
   A. distinguish one cell type from another.
   B. recognize and attack antibodies.
   C. are only found on harmful cells.
   D. block antibodies from attacking cells.
4. Rh+ blood always contains:
   A. Rh antigen.
   B. anti-Rh antibodies.
   C. A and B antigens.
   D. anti-A and anti-B antibodies.
5. Blood containing anti-A and anti-Rh antibodies and B antigens would be identified as which blood type?
   A. A+ C. AB-
   B. B- D. B+
6. According to Figure 3, what percentage of the general population has type B blood?
   A. 9% C. 11%
   B. 2% D. 16%
7. The least common blood type in the United States is type:
   A. O+ C. B=
   B. AB+ D. AB-
8. Based on TABLE 4, which continent's population can be inferred to have the greatest incidence of blood type B+?
   A. Asia C. Africa
   B. Europe D. South America
9. In what percentage of the general population are A antigens present on red blood cells?
   A. 39% C. 44%
   B. 33% D. 37%
10. The data in TABLE 4 support the statement that more than half of the:
   A. Caucasian population has type O blood.
   B. Hispanic population has type O+ blood.
   C. general population with type O blood is Caucasian.
   D. general population with type O+ blood is Hispanic.
11. An individual of African-American ethnicity has a greater chance of having a B+ blood type than:
   A. the general population.
   B. an A+ blood type.
   C. an individual of Asian ethnicity.
   D. an O+ blood type.
12. An individual with blood type A- can safely receive a transfusion of which of the following blood types?
   A. A+ or A- C. A- or O-
   B. A- or AB- D. O- or O+

Name _____ Date _____ Class/Teacher _____

# SCIENCE AMI PACKET # 38

## Sources of Light




How the Sun Lights Earth

Most of the light on Earth comes from the sun. The sun shines during the daytime. At night, the sun sets and it is dark. Why does the sun shine only during the day?

The sun is always shining. But because Earth **rotates,** or spins around, you see the sun's light only during the day. When the part of Earth where you are is facing the sun, sunlight falls on it. But as Earth spins, your part of Earth moves and faces away from the sun. Then it is night. Your nighttime is daytime for the people on the other side of Earth.

At night, some light comes from the moon. The moon does not really give off its own light. It just reflects light from the sun. So moonlight is very dim.

Most of the people in the world use electric light bulbs to see at night. The light from a light bulb comes from the **filament.** The filament is a small piece of tungsten wire. Electricity passes through the wire and makes it very hot. The hot wire gives off light.

**Fill in the missing words.**

1. Most of the light on Earth comes from the _____. (sun, moon)
2. Because Earth _____, you see the sun's light only during the day. (is round, rotates)
3. Your nighttime is _____ for the people on the other side of Earth. (twilight, daytime)
4. The moon reflects light from _____. (the sun, Earth)
5. Moonlight is very _____. (bright, dim)

Name _____ Date _____ Class/Teacher _____

# Color

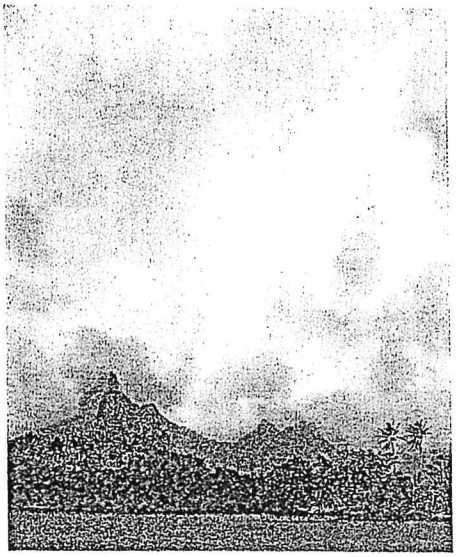
## SCIENCE AMI PACKET # 38

Every day, you see objects of many different colors. The objects do not really have colors. The colors come from light. An object has a certain color because of the way it absorbs light.

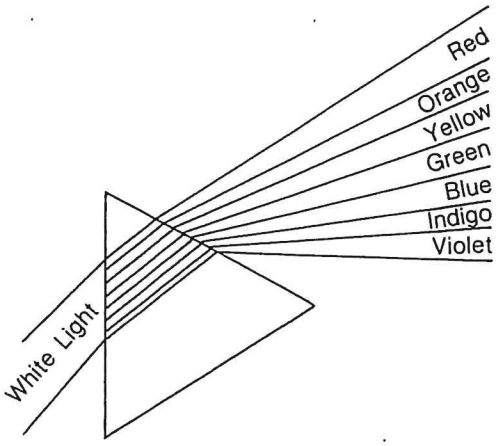
Sunlight is a mixture of light of all colors. Each color of light has a different wavelength. The photons of different colors have different energies. Red light has a long wavelength and low-energy photons. Violet light has a short wavelength and high-energy photons.

A red object, such as an apple, absorbs all colors of light except red. The red light is reflected. You see a red apple. White objects reflect all colors of light. Black objects absorb all colors of light.

The **spectrum** is all the colors of light. You can see the spectrum by using a **prism.** A prism is a piece of glass shaped like a triangle. When light passes through the prism, it is separated into all its different colors. The spectrum can also be seen in a rainbow. Rainbows happen when the sun shines after it has been raining. The drops of water in the sky act like tiny prisms to separate out the different colors of sunlight.



The different colors of light can be seen in a rainbow.




When light passes through a prism, it is separated into its different colors.

### Answer True or False.

1. An object has a certain color because of the way it absorbs light. _____
2. Sunlight is made of only one color of light. _____
3. A red object reflects all colors of light except red. _____

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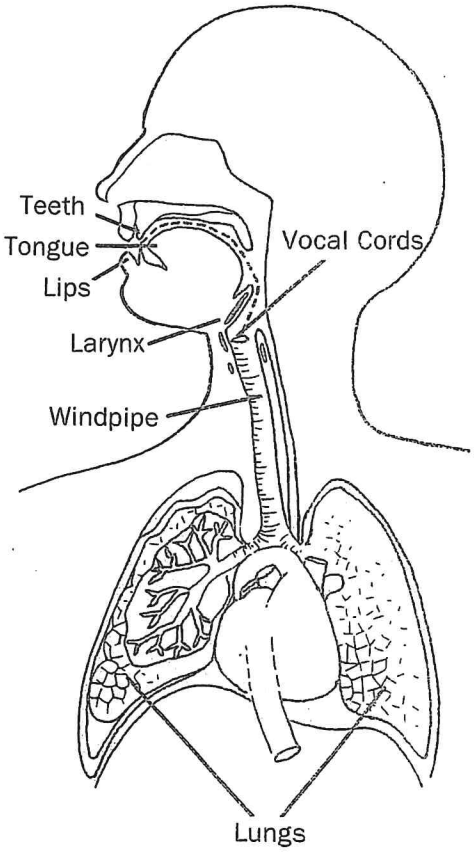
# SCIENCE AMI PACKET # 39

## How You Talk




Parts of the Mouth and Throat

You have learned that all sounds are vibrations. When you speak, you send vibrations out into the air. Where do these vibrations come from?

Your voice begins in your **larynx**, or voice box. The voice box is the top part of your **windpipe**. Your **vocal cords** are small bands of tissue on either side of your voice box.

When you breathe, the vocal cords are relaxed. Your windpipe is completely open. When you talk, the muscles in your larynx pull on your vocal cords. The muscles pull the vocal cords over your windpipe. Only a narrow opening is left. The air coming up through your windpipe makes the vocal cords vibrate. These vibrations are sounds. When you talk, you use your mouth, tongue, teeth, and lips to shape these sounds into words.

Everyone talks the same way. But you can recognize the voices of people you know. This is because no two people have voices that sound exactly alike. Everyone's voice has its own pitch and its own sound.

The pitch of a person's voice depends on how large his or her voice box is. The larger a person's voice box is, the longer his or her vocal cords are. People with high voices have small voice boxes and short vocal cords. People with deep voices have large voice boxes and long vocal cords. People use their teeth, tongue, and lips differently when they talk. This is another reason why no two human voices sound exactly alike.

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# SCIENCE AMI PACKET # 39

**A** Fill in the missing words.

1. Your voice begins in your _ _____. (larynx, mouth)
2. Your vocal cords are small bands of tissue on either side of your _____. (voice box, mouth)
3. Air coming up through your windpipe makes your vocal cords _____. (relax, vibrate)
4. People with high voices have _____ vocal cords. (short, long)
5. People with low voices have _____ vocal cords. (short, long)

**B** Answer True or False.

1. Your vocal cords are small bands of tissue on either side of your voice box. _____
2. When you breathe, your vocal cords are tight. _____
3. When you talk, your vocal cords are relaxed. _____
4. No two human voices sound exactly alike. _____
5. Everyone's voice has the same pitch and the same sound. _____
6. People with deep voices have large voice boxes and long vocal cords. _____
7. People use their teeth, tongue, and lips differently when they talk. _____
8. Your voice begins in your tongue. _____

**C** Use each word to write a sentence about how you talk.

1. larynx _____

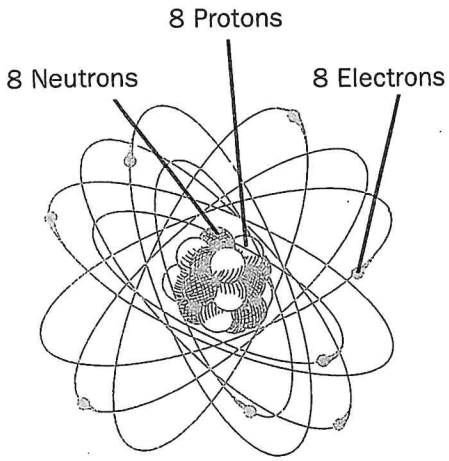
_____

2. vocal cords _____

Name _____ Date _____ Class/Teacher _____

# Atoms

## SCIENCE AMI PACKET # 40




An oxygen atom has 8 positive protons and 8 neutrons in its nucleus, and 8 negative electrons speeding around the nucleus.

Everything is made of **atoms.** Atoms are tiny pieces of matter. They are too small to see even under a microscope. In fact, the smallest piece of matter you can see under a microscope has 10 billion atoms.

Atoms are made of even tinier bits of matter. There are three kinds of particles in atoms. They are **protons, neutrons,** and **electrons.** All electrons are exactly the same. All protons are alike, too. So are all neutrons. If all atoms are made of the same kinds of particles, how are atoms different?

Different kinds of atoms are different from each other because they contain a different number of particles. A carbon atom has six protons, six neutrons, and six electrons. Oxygen has eight protons, eight neutrons, and eight electrons. Oxygen is different from carbon because it has more particles. Each kind of atom has a different number of the three particles.

Protons and neutrons are in the center, or **nucleus,** of the atom. Electrons are much smaller than protons and neutrons. Electrons move around the nucleus at great speeds. Because electrons move so fast, it is impossible to tell exactly where an electron is at any one time.

The particles that are in atoms have different **electric charges.** Electrons have a negative electric charge. Protons have a positive electric charge. Neutrons have no electric charge. An atom with the same number of electrons and protons also has no electric charge. An atom without an electric charge is called a neutral atom.

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# SCIENCE AMI PACKET # 40

**A.** Draw lines to complete the sentences.

| | |
|---|---|
| 1. Atoms | have a positive electric charge. |
| 2. Electrons | are made of protons, neutrons, and electrons. |
| 3. Neutrons | have a negative electric charge. |
| 4. Protons | have no electric charge. |
| 5. The nucleus | is made of protons and neutrons. |

**B.** Write the letter for the correct answer.

1. Atoms are made of three small _____.
   (a) elements (b) particles (c) electrons
2. All electrons are _____.
   (a) exactly the same (b) positive (c) different
3. Different kinds of atoms are different from each other because they contain a different _____ of particles.
   (a) size (b) number (c) speed
4. Protons and neutrons are in the center, or _____, of the atom.
   (a) nucleus (b) electron (c) charge
5. Protons have _____.
   (a) negative charges (b) positive charges (c) no charge
6. Because electrons _____, it is impossible to tell exactly where an electron is at any one time.
   (a) move too slowly (b) do not move (c) move so fast
7. Neutrons have _____.
   (a) positive charges (b) negative charges
   (c) no electric charge

**C.** Use each word to write a sentence about the parts of an atom.

1. proton _____

   _____

2. electron _____

   _____