

Taylor County Schools

Day 2

Eighth Grade



1. Complete this packet on the second ICE Day.
2. Write your name on the booklet.
3. Return this completed packet after the ICE Pack Day. You will keep the others in the envelope for future ICE Pack Days.

Name: _____

Student Name: _____ Teacher: _____

- 1 Which is a simplified form of the following expression where $y \neq 0$?

$$\left(\frac{x^2}{y^4}\right)^3$$

A $\left(\frac{x^5}{y^7}\right)$

C $\left(\frac{y^{12}}{x^6}\right)$

B $\left(\frac{x^6}{y^{12}}\right)$

D $\left(\frac{y^7}{x^2}\right)$

- 2 Which expression is equivalent to

$$ax^0 + a^2y^0?$$

A $a + a^2$

B a^3

C $\frac{1}{a}$

D $ax + a^2y$

- 3 Julie has a square-shaped driveway with an area of 256 square feet. What are the dimensions of the driveway?

A 15 ft \times 15 ft

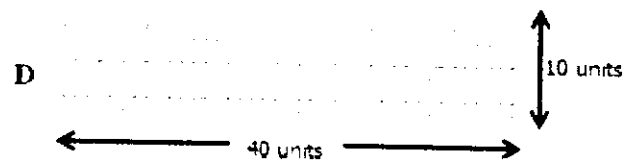
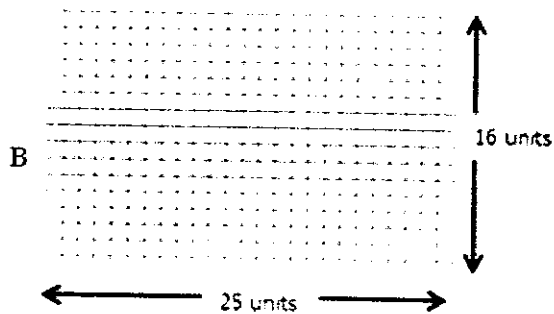
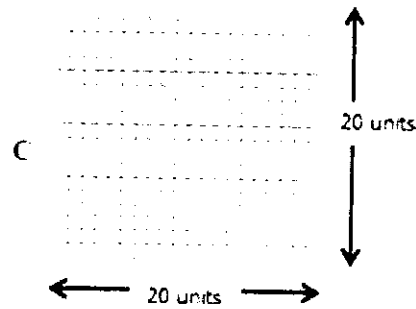
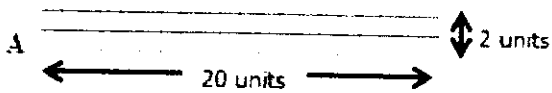
B 32 ft \times 8 ft

C 16 ft \times 16 ft

D 64 ft \times 4 ft

Student Name: _____ Teacher: _____

4 Which model represents the expression $\sqrt{400}$?



5 Look at the table.

	Fraction Form	Decimal Form
A	$\frac{1}{10^{-6}}$	0.000001
B	$\frac{1}{10^{-3}}$	0.000001
C	$\frac{1}{10^6}$	0.0000001
D	$\frac{1}{10^3}$	0.00001

Which row in the table illustrates an equivalent fraction and decimal form?

- A Row D
- B Row A
- C Row B
- D Row C

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6 Which is a simplified form of the following expression using only positive exponents?

$$-2x^2y^{-5}z^{-7}$$

A $\frac{-2x^2}{y^5z^7}$

B $\frac{y^5z^7}{-2x^2}$

C $\frac{-2}{x^2y^5z^7}$

D $-2x^2y^5z^7$

7 Which value of x makes the following equation true?

$$x^3 = 1$$

- A 0
- B 1
- C 2
- D 3

8 What is $(\frac{5}{6})^3$?

- A $\frac{625}{1296}$
- B $\frac{125}{216}$
- C $\frac{125}{6}$
- D $\frac{625}{6}$

9 Ten billion divided by which value below results in a quotient of 1000?

- A 10^6
- B 10^7
- C 10^8
- D 10^9

10 Given $\sqrt{x} = 17$, what is a possible value of x ?

- A 324
- B 289
- C 34
- D 32

Re-imagine Time Packet – Social Studies 8 Day 2: Date _____

Student Name: _____ Teacher: _____

Pick one of the nine tourist regions in West Virginia and write a short essay (three paragraphs) explaining touring attractions in that region.

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Science is putting the squeeze on hydrogen

By Los Angeles Times, adapted by Newsela staff on 01.14.16

Word Count **824**

At room temperature, hydrogen is normally a gas. But when crushed between two diamonds, it can change into a totally different, previously unknown state of matter, according to a team of physicists.

The discovery is a significant step toward finding what's been called the holy grail of high pressure physics: solid metallic hydrogen. The experiment was described in the journal *Nature*, a magazine for scientists.

Hydrogen is the most common element in the universe — stars are made almost entirely out of the stuff. Stars also contain a little helium and traces of heavier chemicals as well. It is an essential ingredient in the building blocks of life, and it is necessary to make water. It's extremely lightweight, often found as hydrogen gas, in the form of two hydrogen atoms bonded together. Made up of a single proton and electron, hydrogen is also the most basic atom in the universe.

Understanding Hydrogen Will Help Our Knowledge Of Stars, Planets

In spite of all this, not much is known about how hydrogen behaves at extreme conditions, said study coauthor Philip Dalladay-Simpson, a physicist at the University of Edinburgh. He studies how matter and energy interact across the universe, and he is an expert in how materials behave under high pressure, high temperature and high strain.

Little is known about hydrogen gas because it is pretty rare in Earth's atmosphere. At Earth's temperatures and pressures, it remains a gas. It never becomes a solid or liquid. That's not the case with other planets such as Jupiter. The gas giant contains enormous amounts of hydrogen under extreme pressures and temperatures, and hydrogen can be found as a gas in its atmosphere and as both a liquid and solid inside the planet.

So, if we want to fully understand the stars and planets around us, we have to have a better understanding of hydrogen.

Liquid Hydrogen Has Long Been A Rocket Fuel

We know a little bit about how hydrogen changes under different conditions. Hydrogen can become a liquid at extremely cold temperatures, and it has long been used as liquid rocket fuel. At high temperatures like those found in the outer atmosphere, or corona, of the sun, the atom's electrons are stripped from the protons. It then forms a gas known as plasma.

Since 1935, scientists have predicted that hydrogen could become solid under extreme pressures but at mild temperatures. To do this, scientists would have to break the bonds holding two hydrogen molecules together. Then its electrons would roam free. The normally clear gas would become a shiny, grayish metal.

Actually making solid hydrogen, however, has been far more difficult than scientists ever thought, Dalladay-Simpson said. At first, scientists figured hydrogen would become a solid if it was put under 25 billion pascals, a unit of pressure. It is equal to 25 gigapascals (GPa), of pressure. Dalladay-Simpson called this an unimaginable amount of pressure for that time.

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A Big Squeeze At A Comfortable 80 Degrees

Since then, scientists have put hydrogen under more than 10 times the pressure and nothing happened.

To solve this question, Dalladay-Simpson and other scientists took hydrogen molecules and squeezed them between diamonds. They kept the temperature a comfortable 80 degrees Fahrenheit but raised the pressure to 325 gigapascals.

"These experiments are highly technically demanding," Dalladay-Simpson said. To reach the needed pressure, they used the same kind of diamonds found in diamond rings. But their tips were polished to a very fine point – about 8 microns, the width of a human hair.

More Pressure Than At The Center Of The Earth

The scientists crushed the hydrogen using more pressure than found at the center of the earth. The amount of hydrogen was about the size of a single human red blood cell.

The scientists found that at such high pressure, the structure of hydrogen started to change in significant ways. Though it is hard to say what a chunk of hydrogen in this state would look like, it might resemble layers of molecular hydrogen interspersed with layers of atomic hydrogen. It would be like hydrogen gas sandwiched between layers of metallic hydrogen. Scientists think they might have made the first stage of solid hydrogen, in which all molecular bonds are broken down.

The next step is to raise the pressure up by a few tens of gigapascals to see if they can actually make solid hydrogen. Dalladay-Simpson said that should not be too hard.

A Possible Game-Changer

Dalladay-Simpson said that one day, it's possible solid metallic hydrogen could be made in large quantities. If this ever happens, it could be a game-changer for technology.

For example, the magnets in Magnetic Resonance Imaging (MRI) machines need to be kept super cold. MRI machines are used to take pictures of organs and other structures inside the body, somewhat like X-rays. Using room-temperature solid hydrogen would reduce the size of these machines significantly. It would also increase the efficiency of all electronics, he said.

Student Name: _____ Teacher: _____

Quiz

1 Select the paragraph from the section "Liquid Hydrogen Has Long Been A Rocket Fuel" that explains the major obstacle that has prevented scientists from making solid hydrogen.

2 Which selection from the article BEST explains scientists' interest in hydrogen?

- (A) It's extremely lightweight, often found as hydrogen gas, in the form of two hydrogen atoms bonded together.
- (B) So, if we want to fully understand the stars and planets around us, we have to have a better understanding of hydrogen.
- (C) Since then, scientists have put hydrogen under more than 10 times the pressure and nothing happened.
- (D) Scientists think they might have made the first stage of solid hydrogen, in which all molecular bonds are broken down.

3 Read the paragraph from the article.

The discovery is a significant step toward finding what's been called the holy grail of high-pressure physics: solid metallic hydrogen. The experiment was described in the journal Nature, a magazine for scientists.

Which word from the paragraph helps you understand that the recent hydrogen experiment is important to the scientific community?

- (A) significant
- (B) step
- (C) high-pressure
- (D) physics

4 Read the selection from the article.

Though it's hard to say what a chunk of hydrogen in this state would look like, it might resemble layers of molecular hydrogen interspersed with layers of atomic hydrogen. It would be like hydrogen gas sandwiched between layers of metallic hydrogen.

Which of the following words from the excerpt helps you understand the meaning of "interspersed"?

- (A) chunk
- (B) resemble
- (C) sandwiched
- (D) metallic

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3 | **The Three Brothers and the Treasure**

by José Maria Eça de Queiroz

In this passage from a story from Portugal, three poor brothers find a great treasure. Do they trust each other to share it equally?

Years ago, in Portugal, there lived three brothers. Their names were Rui, Pablo, and Miguel. They were the laziest, most worthless young men in their village.

The brothers lived in an old house made of clay. One winter day there was a terrible storm. The storm destroyed the roof of the house. It broke all the windows. The brothers had no money to fix the house. So they stayed in their freezing kitchen all winter.

When night came, the brothers ate a meal of black bread. Then they made their way through the snow to the stable. They slept there in the straw. During the night they heard wolves howling outside. The brothers were very poor. And then poverty made them fiercer than the wolves.

Finally spring came. One morning the brothers got on their mules. They rode into the woods. They were hoping to catch some rabbits for food. Or maybe they could find some fruit. It would taste good with the black bread.

Suddenly the brothers came upon a cave. The cave was carved into a large rock. It was hard to see the cave because the rock was concealed by thick bushes.

The brothers pulled out their knives. They cut through the bushes. Then they entered the cave. Inside the cave they saw an old iron chest. The chest had three locks. And in each lock was a key.

The brothers quickly opened the locks. They threw open the chest. They saw that the chest was filled with pieces of gold!

The brothers were delighted when they saw this treasure. They laughed. They shouted. They danced wildly about.

Finally, they faced one another. They did not speak. But their looks seemed to say, "What shall we do with this gold?"

Rui was the oldest of the three. He said, "Brothers, we must divide this gold equally."

Pablo and Miguel thought that was fair. Rui said, "But this chest is very heavy. We cannot move it now. We have not eaten all day."

Rui turned to Pablo. He was the youngest of the three. Rui said, "Take one piece of gold. Put it in your pocket. Ride into town. Buy three large leather bags to carry the gold. Buy three loaves of bread and three pieces of meat. Buy three bottles of wine. When you return, we will eat. Then we will take home the gold."

Pablo stood looking down at the shining gold. He did not move. Finally he said, "The chest has three parts. Each part locks with a different key. I will lock my part. And I will take my key with me."

"Then I will lock my part of the chest too," said Miguel. "And I will keep the key."

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“And I will do the same thing,” said Rui.

So each brother locked his part of the chest. And each put the key safely in his pocket.

Pablo was satisfied. He said good-bye. As he rode away, Miguel and Rui could hear him singing. ■

✓ Enter your reading time below. Then look up your reading speed on the Words-per-Minute table on page 130.

Reading Time _____

Reading Speed _____

Enter your reading speed on the Reading Speed graph on page 131.

Comprehension

Put an **X** in the box next to the correct answer for each question or statement. Do not look back at the selection.

1. The brothers' old house was made of
 - a. clay.
 - b. logs.
 - c. mud and grass.
2. The brothers' house was badly damaged by
 - a. a tornado.
 - b. an earthquake.
 - c. a winter storm.
3. The brothers could not fix their house because
 - a. it was too badly damaged.
 - b. they had no money.
 - c. they did not know how.
4. Why did the brothers ride their mules into the woods?
 - a. to gather firewood
 - b. to get food
 - c. to cut timber with which to repair their house
5. The brothers discovered a cave that was
 - a. carved into a large rock.
 - b. on the side of a mountain.
 - c. under their house.
6. It was hard to see the cave at first because it
 - a. was nighttime.
 - b. was concealed by thick bushes.
 - c. had a very small entrance.
7. What did the brothers discover in the cave?
 - a. a chest filled with diamonds
 - b. a chest filled with gold pieces
 - c. a chest containing a treasure map
8. Before trying to move the chest, the brothers decided to
 - a. sleep.
 - b. bury some of the treasure.
 - c. eat.

25 _____ Number of correct answers
 Enter this number on the
 Comprehension graph on page 132.

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Building Health Skills

Analyzing Influences

What Does Analyzing Influences Involve?

Analyzing influences involves recognizing the factors that affect your health choices. These factors include:

Family and culture
Friends and peers

Messages from the media
Your likes, dislikes, fears, values, and beliefs

Analyzing Influences

Follow the Model, Practice, and Apply steps to help you master this important health skill.

1. Model

Read how Sebastian uses the skill of analyzing influences to decide on a sport.

Sebastian was thinking of trying out for the volleyball team. His older brother said that he should continue a family tradition and try out for track instead. However, Coach Walker felt Sebastian would be a natural at volleyball because of his jumping ability. Sebastian's friends were encouraging him to try out for basketball.

Sebastian made a chart to look at the factors that were influencing him.

Factors That Are Influencing Me	
Personal beliefs	I would like to play volleyball.
Friends	My friends want me to play basketball.
Family	Track is a family tradition.
Coach	Coach Walker thinks that I would be good at volleyball.

Sebastian realized that his personal beliefs affected him the most. He decided to try out for volleyball.

2. Practice

Read the passage and then practice the skill of analyzing influences by answering the questions that follow.

Andrew used the skill of analyzing influences to help him plan a training program to prepare for soccer tryouts. He wants to run two miles every day to strengthen his heart and lungs. Andrew lives in a region that gets a lot of snow. This makes running outdoors difficult. He also needs to allow time for another school club. This club meets every Tuesday, after school. Plus, Andrew's father does not want him running after dark.

1. What factors have an influence on Andrew's training program?
2. In your opinion, which influences would affect Andrew the most? Explain.

3. Apply

Apply what you have learned about analyzing influences by completing the activity below.

1. What activities do you participate in? 2. Do you belong to any clubs or community groups? 3. Do you take music lessons or play sports? Think about what influences your activities. Make a chart of your own influences and how they influence you. Identify which influence affects you most and tell why. Write one paragraph to explain how your activities affect your health triangle.

Self-Check

1. Did I analyze the influences on my choice of activities?
2. Did I explain how my health triangle is affected?

Student Name: _____ Teacher: _____

Why fitness homework?

- To learn how to train to reach our fitness goals
- To reinforce concepts learned in class

Did you know?

1. As many as 300,000 deaths per year can be attributed to the lack of physical activity.
2. The average child watches 24 hours of television per week
3. Excess body weight during adolescence may lead to low self esteem and poor social health
4. Children are more likely to exercise when their parents exercise.
5. Each hour of exercise adds two hours to your life expectancy.

A healthy lifestyle must be reinforced at home as well as at school. That is why it is so important to start positive exercise habits at a young age and that is the main reason we have fitness homework. This fitness assignment is to be signed by a parent or guardian. Hopefully this fitness assignment will be motivating for the entire family and will help every student.

Assignment-Physical- 30 minutes of cardiovascular workout of your choice.

Examples include: Walking, Bicycling, Running, etc.

Activity: _____

Parent Signature: _____

I participated with my child: Yes _____ No _____

Assignment – Written

1. Which fitness face from above stood out to you and why?

2. What physical activity do you enjoy the most?

3. Why is a parent signature required for this assignment?

Student Name: _____ Teacher: _____

Classic Composers Word Search

by Ms. Garrett

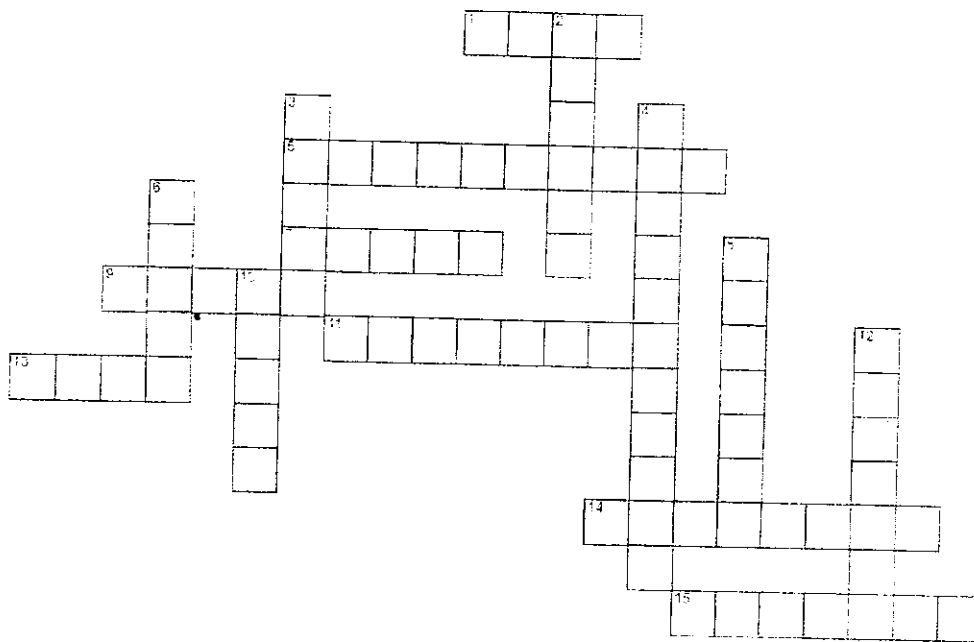
www.musictechteacher.com

Z A J Y W T K D P B A C H M C K
N R H R V K P Y E G J A E X V L
D K M D K T O Y N B L E D N A H
S C H U B E R T V I U N Y K F F
W N F X V E K E R B T S C A K A
F J I X K T I Y K A V A S H N A
H L Q P Y F P B H H B B I Y G P
Y J K E O V A V E Y E J D E C B
E A V K R H M Y S E C W R Q R V
L C O E H U C H L Z T S I A B G
A R P B A N A Q N U H H H O S Q
P V B I Y B E F W W Y M O X B M
A O Q C D S L P I N S Q W V V S
Q X L V N Y T N V N B R Z F E S
I M O Z A R T J L S P Z Z T S N
E D G J Y O N E T T I R B B E T

- BEETHOVEN
- DEBUSSY
- HANDEL
- CHOPIN
- PROKOFIEV
- BACH
- BRAHMS
- HAYDN
- MOZART
- BARTOK
- BRITTEN
- FAURE
- SCHUBERT
- GERSHWIN

Student Name: _____ Teacher: _____

Art Elements and Principles



ACROSS

- 1 An element of art that is a three-dimensional space with height width and depth
- 5 the size relationship of one part of a picture to another part of the picture or to the whole
- 7 The element of art produced by light reflected at different wavelengths; also known as a hue.
- 9 The lightness or darkness of a color
- 11 Any method used to show importance or dominance of one aspect of a picture over the rest of the picture
- 13 Element of art created by marks made that can be zig-zaged, curved, horizontal, vertical, etc.
- 14 The way the eye visually moves from one object in the picture to another
- 15 A way of combining elements in a picture to create complex and interesting relationships

DOWN

- 2 A regular repetition of an element of art to create a visual tempo of beat
- 3 The area between, above, below, beneath or within objects
- 4 The arrangement of objects in a picture
- 6 An element of art that is an enclosed two-dimensional space
- 8 The surface quality or feel of an object.
- 10 A quality of wholeness or oneness that is created by the proper use of the elements and principles of design.
- 12 The way that the elements of art are arranged to create a feeling of stability.

Word Bank				
Proportion	Composition	Balance	Texture	Unity
Form	Shape	Variety	Color	Movement
Rhythm	Value	Emphasis	Space	Line

Using function keys

What do the function keys do? Match the function key with what it does. The first one has been done for you.

Shift key Press this key once to create a one-letter space between words or numbers.

Caps lock key Press this key to start typing on a new line.

Space bar Press this key to move up, down or across the text.

Backspace key Press this key to delete the letter, number, symbol or space to the left of the cursor.

Return key Press this key to continue typing in capital letters.

Delete key Press this key to delete letters, numbers, symbols or spaces to the right of the cursor.

Tab key Press and hold this key to type a capital letter or to type the top symbol on a letter, number or symbol key.

Arrow keys Press this key to create a larger space between words or numbers.

