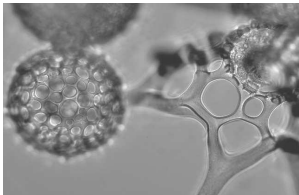


Name _____

Cells



Locate and read a book about cells, read the "Cell" article in an encyclopedia, and find a site about cells on the Internet to complete these activities.

SYNTHESIS LEVEL

- You have just discovered a brand-new type of cell! Draw and color a diagram of your cell which must have a nucleus and at least 5 new structures. On your diagram, include a name for this cell, state where it can be found, label all of its parts, and explain the job of each new structure.

Student Points	
Teacher Points	

	Stage One	Stage Two	Stage Three	
	1	2	3	4
Synthesis				
Diagram of a newly discovered cell	Cell diagram is unclear; <u>OR</u> has little more than a name	New cell has a name and at least 3 labeled new structures with job descriptions; diagram has color	New cell has a name and at least 5 new structures are labeled with job descriptions; diagram is carefully colored	Unique new cell has a name and more than 5 new structures, labeled with detailed job descriptions; unusual, effective use of color

The World of Dinosaurs - 2

Learning Style/Modality

Visual

Taxonomy Level

Analysis

Multiple Intelligence

Visual/Spatial

Logical/Mathematical

Assessment Mini-Rubric

1. shows similarities and differences
2. accuracy of information
3. resources cited
4. lists 5 facts
5. follows Chart criteria card

Project Question

How is a pterosaur like a bird? A bat? How is it different?

Questivities™ Thinking Questions

List things that fly.

Compare/contrast living on the land with living in the air.

What would happen if birds became extinct?

Would you rather only fly or only walk? Why?

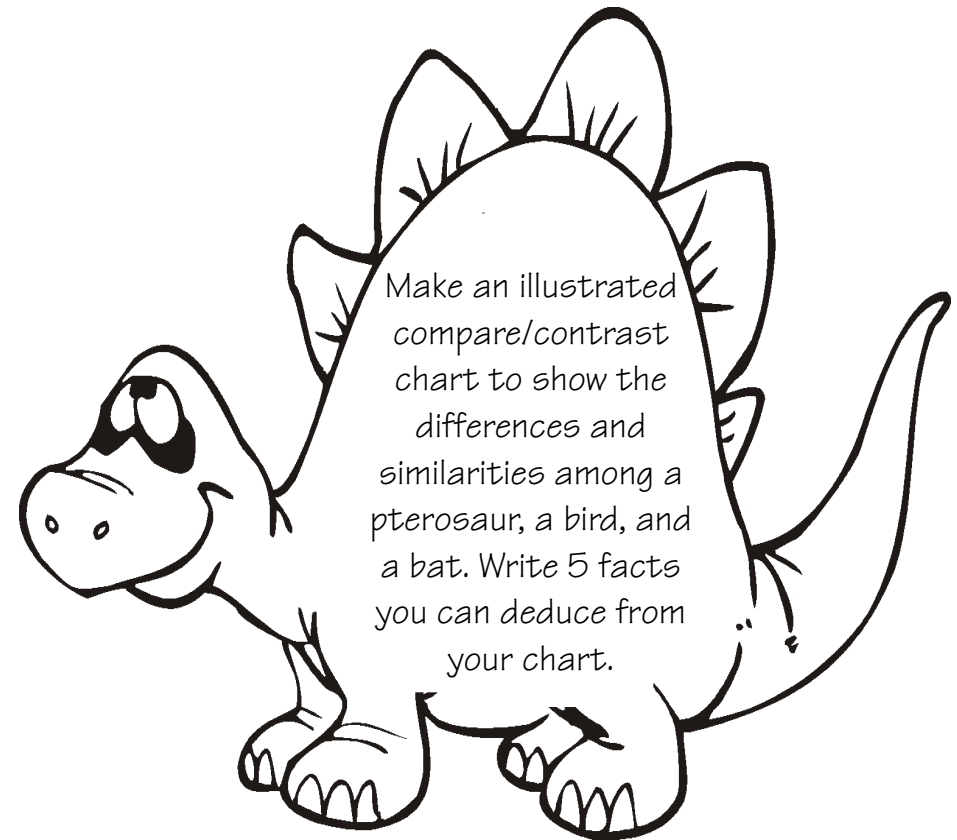
How are birds different from bats?

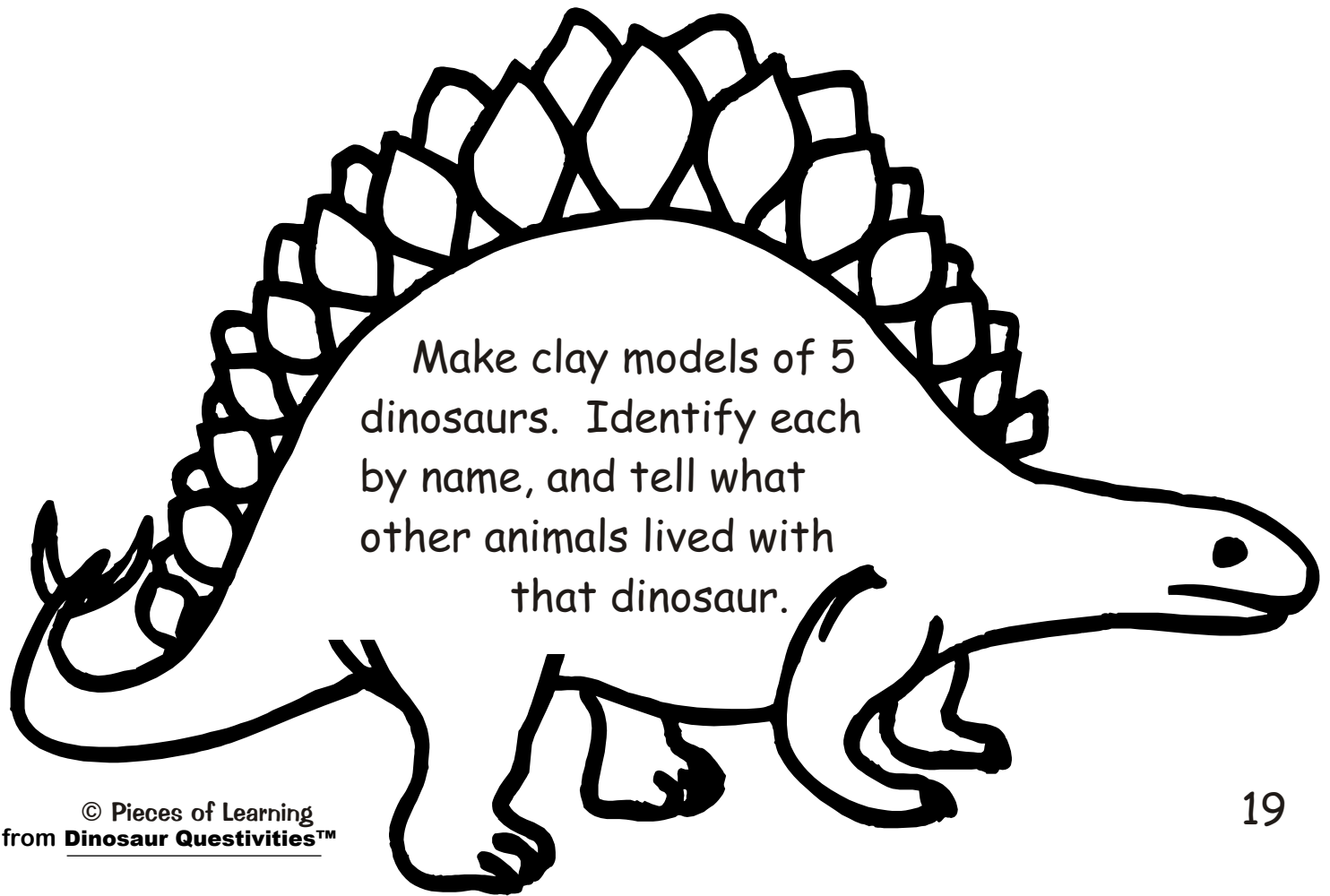
Why don't all animals fly?

Active Question

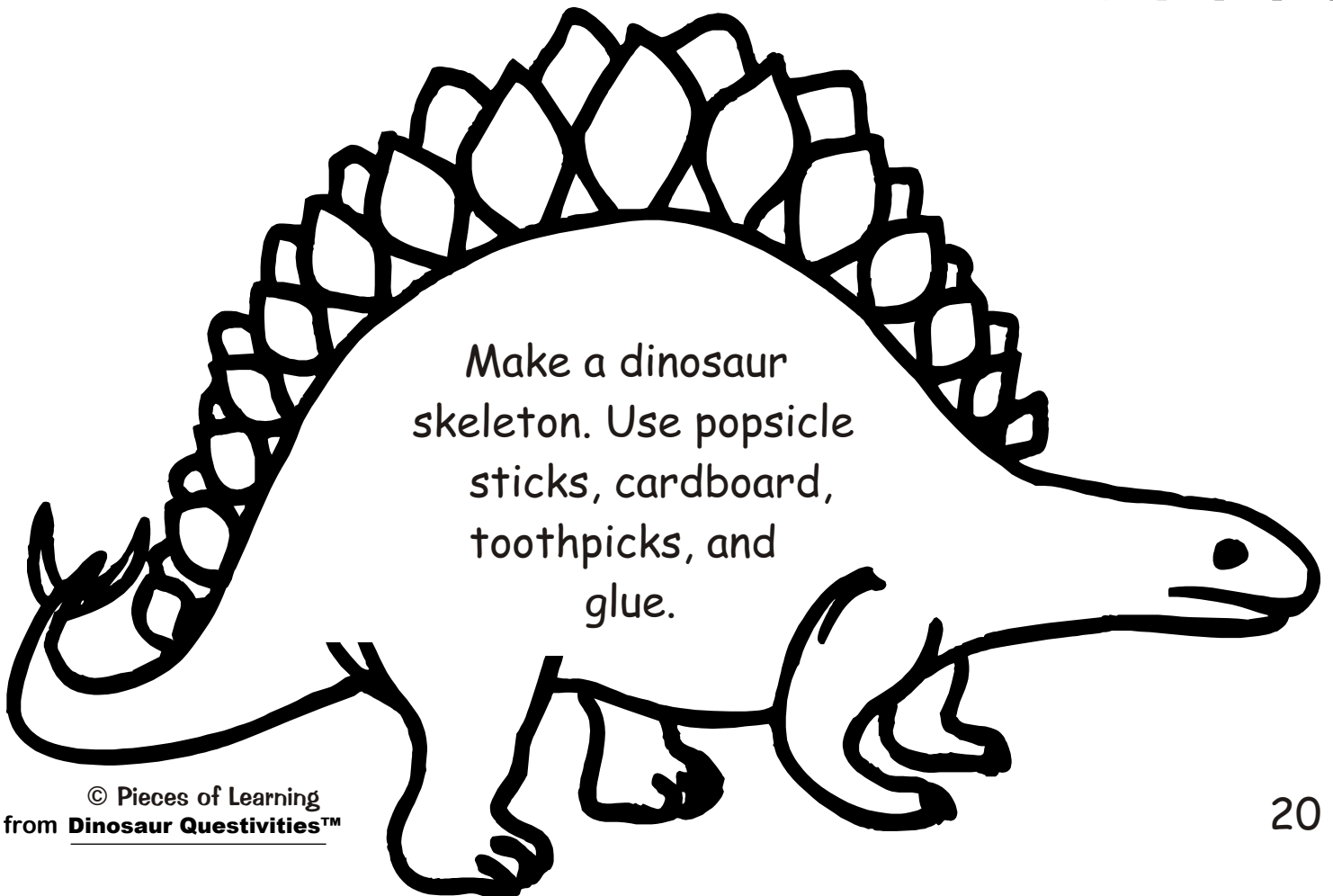
Make a list of questions a dinosaur of the past would ask a present-day bird.

Project Activity





Make clay models of 5 dinosaurs. Identify each by name, and tell what other animals lived with that dinosaur.



Make a dinosaur skeleton. Use popsicle sticks, cardboard, toothpicks, and glue.



1. Add **SLY** to **CART** and get a gemstone.
 2. Add **RAN** to **SHEDS** and get a scale for measuring qualities of rocks and minerals.
 3. Add **RAN** to **SMILE** and get raw materials.
 4. Cross out the letter that is before the middle letter in **FAULT**.
 5. Add **TOIL** to **TRIBE** and get little old animal.
 6. If Mercury is the planet that has three rings around it, cross out the first and last letters of **MERCURY**. If not, then write the third letter of the correct planet on this line. _____
 7. If asteroids have glowing heads and long wispy tails, then cross out the letters in **ASTEROID** that come before the letter R in the alphabet. If not, circle the letters in **ASTEROID** that are also in the word COMET.
 8. In Martian language, “gro suf wert” means old green food and “gif wert” means green hands. “gif suf tri” means old hands rest. How would you say “rest” in Martian language?
 9. On Jupiter “loo nag wo” means good hot water. “Trag Loo” means bath water and “trag nag ki” means good cold bath. What does “wo trag” mean?
 10. On Venus “Sti ya vel” means slide in mud. “Vel fo” means black mud and “purt ya fo” means dress in black. How do you say black dress in Venus language?
 11. Add **CAL** to **TIME** and get a type of weather. _____
-



Little Red Riding Hood #2

The wolf swallowed the grandmother and Little Red Riding Hood.

How big is the average stomach? How much can it stretch?

Science Spark How much food can your stomach hold?

Make a hypothesis: Make a statement that explains how far you think your stomach could stretch. How flexible is it?



My hypothesis:

Your stomach is a muscular sac shaped like the letter J. It is very flexible. In this activity you will try to see just how much a stomach can stretch each time you eat!

An adult stomach is about 25 cm long. Your stomach is probably a third of that size, or about 8–10 cm long. When the stomach is empty, the space inside is about 0.08 liters. Your teacher will give you and a partner a balloon. Measure the balloon's width. Is it 8–10 cm? It's just like your empty stomach! How far do you think your stomach will stretch? Let's see!

1. Stretch the end of the balloon over the end of the funnel.
2. Hold the neck of the balloon where it meets the funnel. Hold the funnel upright.



Little Red Riding Hood #2

3. Spoon sand into the funnel a little bit at a time. With a free hand, stretch the balloon and move the sand around so more can fit in (but don't let go of the balloon's neck.)
4. Keep adding sand until you think you have stretched the balloon as far as your stomach could actually stretch. When you decide to stop, ask your teacher to tie the top of the balloon in a knot.

Measure your balloon's width. **We think our stomach would stretch to _____ cm.**

Listen as your classmates share how far they stretched their balloons. Record some of their measurements:

Group member names

length of balloon in cm
amount of sand in cups



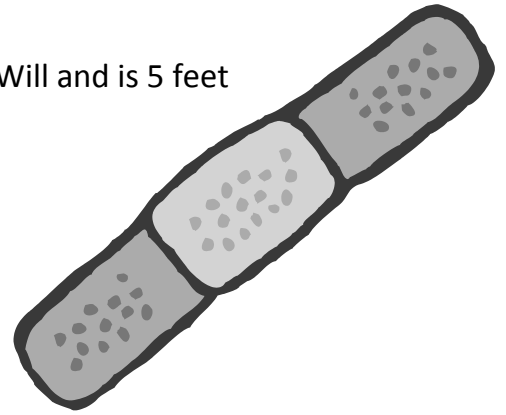
Watch as your teacher shows you just how far the stomach **can** actually stretch.

Report and reflect on your findings. Was your hypothesis correct? Were you surprised by how much a stomach can stretch? Describe your conclusions on another sheet of paper.

Band-Aid® Business

Five students are waiting in the School Nurse's office and are sitting on a bench from left to right. Can you determine the position of each student along with his or her age, height, weight, and ailment?

1. The person on the far right is 8 years older than Will and is 5 feet tall.
2. Will weighs 33 pounds more than his height.
3. Jake weighs 44.9 kilograms and is 72 inches tall.
4. David has a bloody nose and weighs 60 pounds more than Will.
5. The person in the center is 9 years old and has a swollen eye from a bee sting and weighs 1,200 ounces.
6. Ashley, who is first, is 36 inches tall and weighs 9 more than her height.
7. The student who has a broken toe is 8 years older than the person to the left of him.
8. Courtney is 15 years old.
9. The student with the cut is 10 years younger than Courtney and not next to the student with the swollen eye.
10. The student who is next and to the right of the 9 year old, but not next to the person who is 36 inches tall, has a cough and weighs 103 pounds.
11. The girl with the cough is 4 feet tall.



____ 1st ____ 2nd ____ 3rd ____ 4th ____ 5th

Human Body
Tic-Tac-Toe Student Choice Activities

Standards/Objectives: Identifies major body systems and their functions
Names and describes important parts of the body

<p>1. Create a two minute public service announcement that addresses things people can do to their bodies that have a negative influence on the skeletal or muscular system or both. Make this announcement in your class or to the entire school during the time for school wide announcements.</p> <p>(Skeletal & Muscular systems)</p>	<p>2. Make a poster showing five different exercises that address five different muscles. For each exercise include:</p> <ul style="list-style-type: none"> - Name of exercise - Name of muscle - Illustration of muscle - Illustration of exercise - Written steps to perform the exercise <p>(Skeletal & Muscular systems)</p>	<p>3. Visit www.medtropolis.org. Click on the Skeletal System section and put together a virtual skeleton successfully. Print out your work.</p> <p>(Skeletal & Muscular systems)</p>
<p>4. Make a graph showing the percentages of red blood cells, white blood cells and platelets in blood. Write an explanation of the function of each.</p> <p>(Circulatory system)</p>	<p>5. Draw a diagram showing how the circulatory system works. Label all major parts.</p> <p>(Circulatory system)</p>	<p>6. Research diseases of the circulatory system such as angina, high blood pressure, heart disease, or heart attacks. Do a three minute oral report explaining the causes of these diseases and how they can be prevented.</p> <p>(Circulatory system)</p>
<p>7. Write a paragraph explaining how the digestive and excretory systems are related to one another. Include a diagram.</p> <p>(Digestive & Excretory systems)</p>	<p>8. Write a short story describing life without teeth or gums. Include effects on the digestive and excretory systems.</p> <p>(Digestive & Excretory systems)</p>	<p>9. Create a set of ten interview questions about the digestive and excretory systems. Interview a doctor or nurse and write down their answers to your questions.</p> <p>(Digestive & Excretory systems)</p>

I/we chose activities # ____, # ____, and # ____.

Name _____ Due dates _____, _____, _____

Human Body

The game is played in 3 rounds. Cover up columns 2 and 3. Set a timer for 2 minutes. Quickly fill out a category list with answers that begin with the same letter that matches the far left column. When the timer goes off, stop writing. Score one point for each answer that no other player has. Record your scores and go on to the next round or column. No peeking! Score the most points to win the game.

	Diseases	American Idol	Things on a playground
H			
E			
A			
R			
T			
	Total points _____	Total points _____	Total points _____

	Halloween costume	Jewelry	Transportation
O			
R			
G			
A			
N			
	Total points _____	Total points _____	Total points _____

Learning Style/Modality

Verbal

Taxonomy Level

Comprehension

Multiple Intelligence

Verbal/Linguistic

Bodily/Kinesthetic

Visual/Spatial

Assessment Mini-Rubric

1. flow of presentation
2. accuracy of information presented
3. visuals complement oral material
4. follows Oral Report criteria card

Project Question

What is the life cycle of an insect??

Questivities™ Thinking Questions

List at least 5 insects and how long each lives.

Compare/contrast the life cycle of a cicada and a mosquito.

What would happen if an insect lived for several years?

Would you rather be a roach or a yellow jacket? Why?

How would you feel if you were caught in a spider's web?

How do larva become adult insects?

If you had 6 legs, how would your life be different?

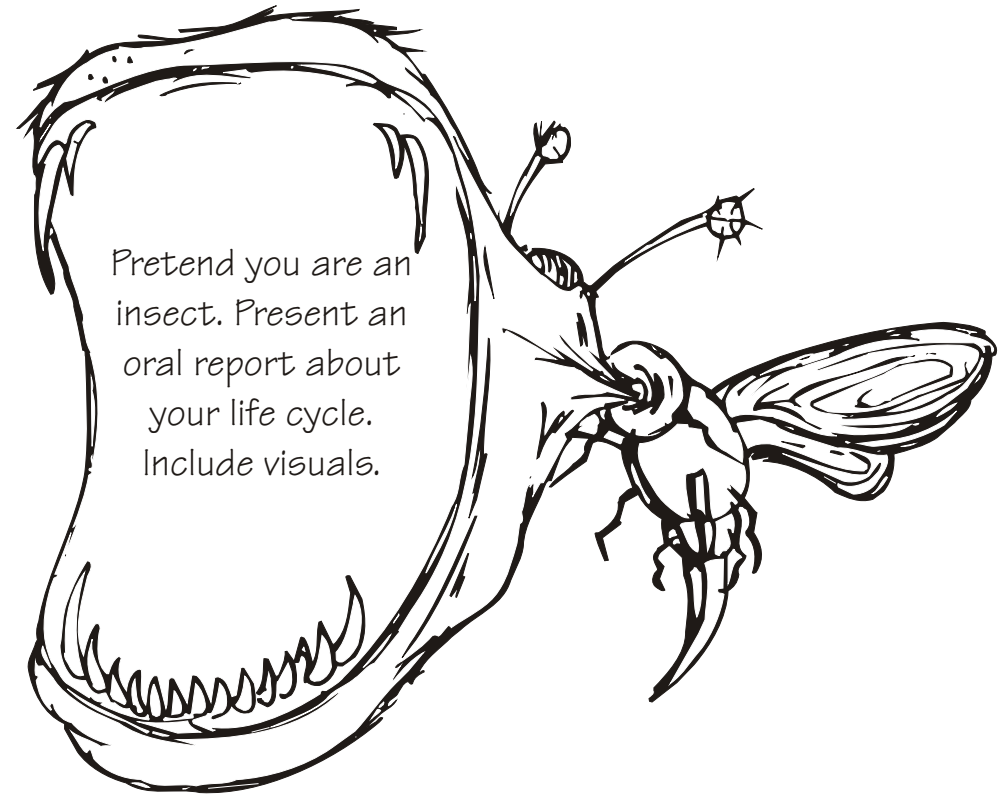
Imagine you have a mark on a body that tells people you are dangerous. How would you make friends?

Active Question

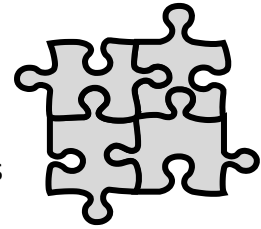
Make a list of questions a fly swatter might ask a fly.

Insects - 7

Project Activity



Wuzzles



Wuzzles are a combination of words, pictures, or symbols that exercise both sides of the brain simultaneously. To solve the Wuzzles you must try to discover the familiar word, phrase, saying, or name represented by each arrangement of letters, pictures, or symbols in the boxes.

spe cccccc

O²

My+  +sister-ter

DNA=DNA

little plates

BRID

PICK A NOBEL WINNER!

Who Got What Prize?



Gerty Cori

PRIZE FOR PHYSIOLOGY

In studying the role of insulin in diabetes, this scientist identified the enzyme responsible for the body's production of energy.



Alexander Fleming

NOBEL PEACE PRIZE

"For a life dedicated to humanitarian work in Africa as a doctor and missionary"



Marie Curie

TWO NOBEL PRIZES

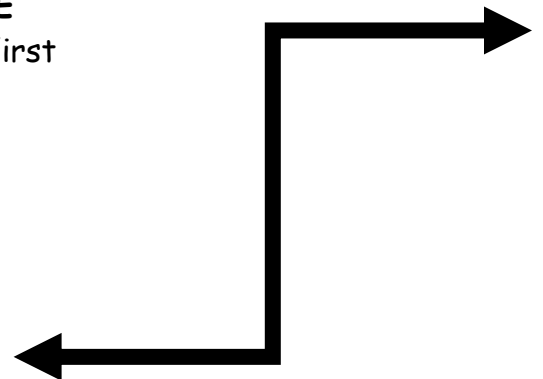
Physics and Chemistry
"For the discovery of radium and of radioactivity"

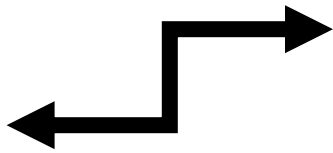


Albert Schweitzer

PRIZE FOR MEDICINE

"For the discovery of the first major antibiotic, penicillin"





NOBEL PRIZE WINNERS

MARIE CURIE 1867-1934

A girl to study the sciences? Ridiculous! Those were the words Marie heard in her native Poland so off she went to Paris to study at the Sorbonne, to marry Pierre, a noted scientist, and to embark on experiments with radium which won her the Nobel Prize in Physics in 1903. After Pierre's death she continued working with radio-activity and won the Nobel Prize in Chemistry in 1911. Her work eventually caused her death from over exposure to radioactive materials.

ALBERT SCHWEITZER 1875-1965

He performed in his father's church at the age of nine and became internationally known as a concert organist. He earned degrees as a Doctor of Philosophy and as a Doctor of Medicine. He left fame and fortune to spend his life as a medical missionary, establishing his own hospital in darkest Africa, leaving for brief periods to perform concerts to raise money for his hospital which grew to 70 buildings caring for 500 patients at any given time. He was a doctor, a surgeon, a pastor, an administrator, a historian, a musician, and host to many visitors. He received the Nobel Peace Prize in 1953.

ALEXANDER FLEMING 1881-1955

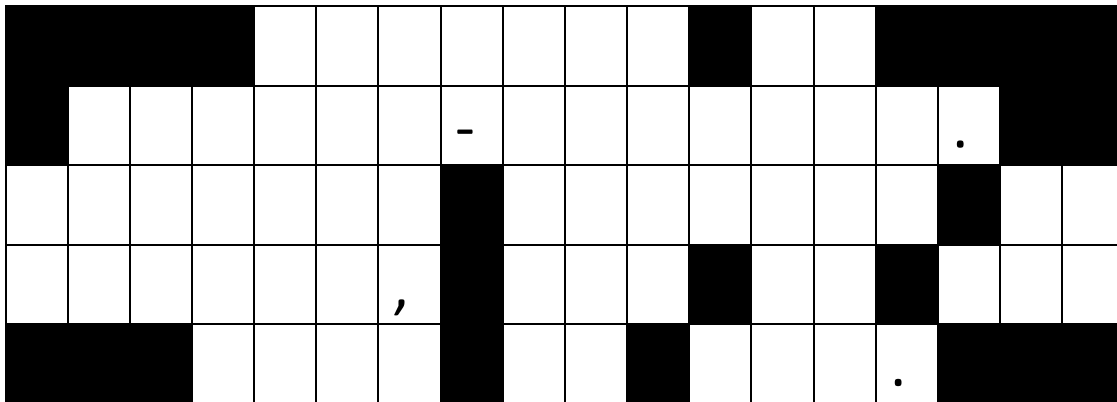
He began as a shipping clerk, went to medical school, was an army captain in World War I, and devoted the rest of his life to researching substances which would fight illness-causing bacteria. In 1928, his curious nature led him to wonder why the mold that formed on an influenza virus over a weekend created a bacteria free circle. His further experiments led to the discovery of the antibiotic that has saved millions of lives. He named it penicillin. He received the Nobel Prize for Medicine in 1945.

GERTY CORI 1896-1957

In 1914, in Prague, girls were banned from higher education but Gerty taught herself and passed all the exams for medical school. She and her researcher husband spent their lives studying the role of insulin in diabetes and identified the enzyme responsible for the body's production of energy, although she was paid only 10 % of the salary he made. Until she became the first American woman to win the Nobel prize in Chemistry she was not offered a professorship in any university. In her St. Louis laboratory she trained six future Nobel prize winners.

The Nature of Physics

A fallen phrase puzzle shows the spaces for a statement or phrase. The letters are directly below the column in which they will fit, but jumbled within the column.



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

Maria Goeppert-Mayer 1906-1972 was the second woman to receive the Nobel Prize in 1963 in physics, following Marie Curie. She developed the explanation of how neutrons and protons within atomic nuclei are structured. Called the "nuclear shell model," her work explains why the nuclei of some atoms are more stable than others. She believed that the nucleus is like a series of closed shells and pairs of neutrons and protons like to couple together in what is called spin orbit coupling. These pairs (either protons or neutrons) are called "magic numbers". Find out about magic numbers. What do they tell us?

STATES of MATTER

Each of the nine words must appear once and only once in each row, each column, and each 3 by 3 block.

	Temperature		Freezing		Vaporization		Condensation	
	Vaporization	Melting				Temperature	Pressure	
				Pressure				
	Evaporation	Vaporization				Boiling point	Melting	
		Thermal energy	Condensation		Boiling point	Vaporization		
	Freezing	Boiling point				Thermal energy	Evaporation	
				Temperature				
	Boiling point	Freezing				Pressure	Vaporization	
	Pressure		Boiling point		Melting		Thermal energy	

Design an experiment using a plastic cup and a balloon.

Snake

Scientific name: _____

Description:

Color/s: _____

Length: _____

Special markings/designs: _____

Distinguishing features: _____

Poisonous: ☐ yes ☐ no

Habitat: _____

Range: _____

Diet: _____

Endangered: ☐ yes ☐ no

Unique behaviors: _____

Fun Facts: _____

Working Backwards

Read about volcanoes, and find a term that fits the definitions given. Then make a crossword puzzle.

1. Finest pyroclast
2. Most deadly volcanic phenomena
3. Volcanic glass
4. Opening at volcano summit
5. Hydro volcanic vent
6. Volcanic mudflow
7. SiO_2
8. Molten rock is transported through shallow conduit
9. Direction of an eruptive column
10. Molten rock on the earth's surface
11. Hawaiian Goddess of rife
12. Mt. St. Helens is one
13. Pyroclastic fragments that accumulate a liquid droplets
14. Mt. Pelee is located here
15. Site of the on-going Hawaiian eruption that began in 1983
16. Volcanoes composed entirely of solidified lava
17. The molten state of rock deep within volcanoes
18. Large and boulder-like ejecta
19. A volcano formed from alternate layers of lava and volcanic
20. The location of Krakatoa. This eruption was heard 3,000 miles away.

A belt of volcanic activity, the "Ring of Fire," runs from Antarctica up the west coasts of South and North America, and down through Japan to New Zealand. Locate and map the major volcanoes in the "Ring of Fire."



Weather

Overview: *These learning profile-based RAFT assignments give students an opportunity to apply their knowledge of weather conditions and phenomena that occur across the planet and to examine how these conditions and phenomena can be measured and predicted.* Students may complete their chosen tasks either individually or with partners, and it is left to the teacher to decide how many tasks each student must complete over the course of a unit on weather.

Standards:

- Investigate and understand basic types of, changes in, and patterns related to weather
- Investigate and determine how temperature, wind direction and speed, precipitation, cloud cover, and air pressure are affected by predictable patterns of weather
- Identify and explain the use of weather measurements and meteorological tools
- Describe and analyze the formation of various types of clouds and their relationship to weather fronts and storms

Objectives:

The students will **KNOW**

- The Earth's weather changes continuously from day to day.
- Extreme atmospheric conditions create various kinds of storms.
- Cloud formations are varied and can be used to predict short term weather conditions.

The students will **UNDERSTAND THAT**

- Changes in the weather are characterized by daily differences in wind, temperature, and precipitation.
- Weather data is collected and recorded using instruments that provide information useful for predicting weather and determining weather patterns.
- Meteorologists use data to predict weather patterns.
- Weather influences human activity.
- Extremes in the weather, such as too little or too much precipitation, can result in droughts or floods.

The students will **BE ABLE TO**

- Measure and record weather data using a variety of weather instruments, including (dependent upon grade level) a thermometer, rain gauge, weather vane, barometer, and anemometer.

- Differentiate between cloud types and the weather associated with each.
- Recognize a variety of storm types, describe the weather conditions associated with each, and explain when they occur.
- Compare and contrast droughts and floods.
- Identify common types of storms.

Materials:

- Reference materials about weather and storms
- Internet access for research and to download pictures
- Art materials to create picture books, including textured materials such as cotton or cloth
- Magazines with weather-related images and/or weather visuals downloaded from the Internet

Closure: Create mixed-learning profile groups, including a variety of different RAFT options in each group, and allow time for the students to share their work in these smaller groups.

Weather

ROLE	AUDIENCE	FORMAT	TOPIC
Mother Nature	All types of weather	Song or rap	Love Us or Hate Us, You Can't Live without Us
Temperature	Thermometer	Friendly email	Ways We Influence the Human Population Every Day
Hurricane	Tornado	Debate	I'm More Powerful Than You Are!
Severe Drought	Farmers	Letter of apology	Reasons Why You Are Not Getting Any Rain
David Letterman	Late Night TV Audience	Top Ten List	The Most Destructive Storms on Earth in the Last 100 Years
Artist	Visitors to an Art Gallery	Collage	Weather, Weather Everywhere!
Weather Instruments	Meteorologist	Conversation	Without Us, You Wouldn't Have a Job
Clouds	Earth's Human Population	A Picture Book	How to Visually Identify Our Types and Predict the Weather Conditions that Follow Us