

What is Biology?

Workbook



Table of Contents

Lesson 1

Worksheet 1.1— 1.4 1

Lesson 2

Worksheet 2.1— 2.4 5

Lesson 3

Worksheet 3.1— 3.4 9

Lesson 4

Worksheet 4.1— 4.4 13

Lesson 5

Worksheet 5.1— 5.4 17

Lesson 6

Worksheet 6.1— 6.4 21

Lesson 7

Worksheet 7.1— 7.4 25

Lesson 8

Worksheet 8.1— 8.4 29

WiB Worksheet 1.1

Circle It

1



Materialism Dualism

2



Empirical Sci. Historical Sci.

3



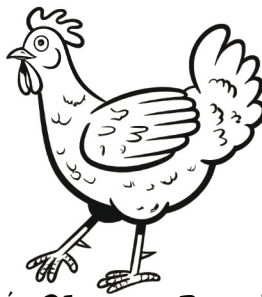
Bacon Sausage

4



Materialism Dualism

5



Bacon's 21st Experiment Bacon's 1st Experiment

6



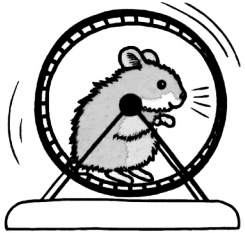
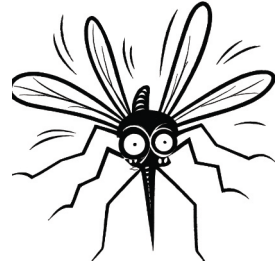
Empirical Sci. Historical Sci.

Matching - Process of Elimination

- | | |
|------------------|--|
| A. Science | 7. ____ The variable that is changed by the person doing the experiment. |
| B. Dualism | 8. ____ The variable that is potentially effected by the manipulated variable. |
| C. Empirical | 9. ____ The belief that only the physical things are real. |
| D. Experiment | 10. ____ A way of knowing things about the natural world. |
| E. Historical | 11. ____ Hard science |
| F. Observation | 12. ____ A thing that can change. |
| G. Francis Bacon | 13. ____ The belief that there is a physical and a spiritual reality. |
| H. Manipulated | 14. ____ Soft science |
| I. Materialism | 15. ____ The father of empirical science. |
| J. Responding | 16. ____ Doing a controlled test and observing what occurs. |
| K. Variable | 17. ____ A fancy name for watching what happens. |

WiB Worksheet 1.2

Identify the Variables

Experiment		Manipulated Variable	Responding Variable
1 Different types of music are played to see if it makes a pet hamster run faster on its wheel.			
2 Different types of bubble gum are chewed to see which makes the biggest bubble.			
3 Different materials are used to build a boat to see which holds the most pennies before sinking.			
4 Different numbers of mentos are added to a bottle of diet coke to see which creates the tallest geyser.			
5 Mosquito repellent is sprayed on one arm and the other arm is not sprayed. The number of bites on each arm is counted after two hours.			
6 One set of pigs is given steroids, another set of pigs is not. The average weight of the two sets of pigs is compared after 6 months.			

WiB Worksheet 1.3

Circle the Best Answer

1.

Experiments Require

A) True Love
C) Opinion

B) Observation
D) Ninja Squirrels

2.

Materialism Rejects

A) Observations
C) Spiritual Realities

B) Natural Laws
D) Measurable Facts

3.

Historical Science

A) Smart Guesses (Inference)
C) Experimentation

B) Philosophy
D) Feelings

4.

Empirical Science

A) Smart Guesses (Inference)
C) Experimentation

B) Philosophy
D) Feelings

5.

Dualism Accepts

A) No Truth
C) Only Science

B) No Soul
D) Both Realms

6.

Variables Are

A) Constants
C) Facts

B) Changeable
D) Unchanged

7.

Bacon Valued

A) Stories
C) Data

B) Dreams
D) Opinions

8.

Science Should Help Us

A) Doubt
C) Drift

B) Fear
D) Worship

9.

Faith & Science

A) Conflict
C) Clash

B) Agree
D) Diverge

10.

God's Creation Shows

A) Chaos
C) Confusion

B) His Glory
D) Emptiness

WiB Worksheet 1.4

Francis Bacon - Finish the Sentence

Word List	philosophy	experiments	chicken
	empirical	1500's	

1. "A little _____ (which in his day included science) inclines man's mind to atheism, but depth in philosophy brings men's minds about to religion." - Francis Bacon
2. Francis Bacon lived in the _____, when most philosophers followed Aristotle's method of deductive reasoning, which didn't require a person to go out and collect data.
3. Bacon argued for inductive reasoning, and suggested scientists needed to do _____ and collect data, or new information, about the nature of the world.
4. Because of the change that Bacon's 'experimentation over speculation' push brought to the scientific community, he is known as the father of _____ science.
5. Bacon was more of a philosopher than a scientist. Legend has it, that when he set out to do his first ever experiment, stuffing a _____ with snow to test meat preservation, he caught pneumonia which led to his death.

The Scientific Method - Finish the Sentence

Word List	observation	experiment	responding
	empirical	manipulated	

6. In an _____, the person running the investigation collects information, also known as data, about how things behave in the natural world.
7. These data are collected through a process known as _____ where the person running the investigation closely watches events unfold as the experiment proceeds.
8. In a controlled experiment all variables are kept constant except for one, which is known as the _____ variable, this is actually changed by the observer.
9. The observer then watches for changes to occur in a second variable, known as the _____ variable, as a result of what was done to the first variable.
10. Through this process, known as _____ science, or 'the scientific method', a cause and effect relationship can be determined between two things.

WiB Worksheet 2.1

Lesson 1 Review - Circle It

1 You Have A Soul Materialism Dualism	2  Materialism Dualism	3 Historical Science Inference Observation
4  Materialism Dualism	5 Variables Are Unchanging Changable	6  Empirical Sci. Historical Sci.

Matching - Process of Elimination

- | | |
|----------------------|---|
| A. Biology | 7. ____ The blood that goes to the lungs. |
| B. Vivisection | 8. ____ The blood that goes to the whole body. |
| C. Heart | 9. ____ The blood pumper. |
| D. Medicine | 10. ____ The study of how living things work. |
| E. Systemic Circuit | 11. ____ Harvey emphasized the importance of this in studying physiology. |
| F. Vesalius | 12. ____ The father of modern physiology. |
| G. Anatomy | 13. ____ A dead human body used for research and education. |
| H. Observation | 14. ____ Vesalius emphasized the importance of this in anatomy. |
| I. Pulmonary Circuit | 15. ____ The study of the structure and organization of the body. |
| J. Cadaver | 16. ____ The father of modern anatomy. |
| K. Harvey | 17. ____ The science of diagnosing, treating, and preventing disease. |
| L. Physiology | 18. ____ The study of life. |

WiB Worksheet 2.2

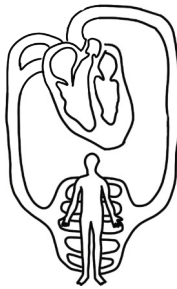
Circle It

1



A) Cadaver B) Autopsy
C) Vivisection D) Dissection

2



A) Pulmonary Circuit
B) Systemic Circuit

3



A) Cadaver B) Tune Up
C) Vivisection D) Surgery

4



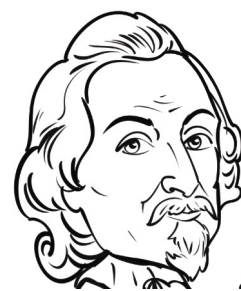
A) Harvey B) Newton
C) Bacon D) Vesalius

5



A) Pulmonary Circuit
B) Systemic Circuit

6



A) Harvey B) Newton
C) Bacon D) Vesalius

Identify the Variables

Experiment		Manipulated Variable	Responding Variable
7 After measuring baseline pulse rate, participants' faces are submerged in cold water while the breath is held and the pulse is measured.			
8 After measuring baseline pulse rate, participants drink energy drinks and measure their pulse again to see how it affects their heart rate.			
9 After measuring baseline pulse rate, participants' perform different levels of physical activity to see how long it takes for their heart rate to return to normal.			

WiB Worksheet 2.3

Circle the Best Answer

1.

Biology

- A) Rock Science B) Space Science
C) Life Science D) Chemical Science

2.

Vesalius's Focus

- A) Emotions B) Chemistry
C) Anatomy D) Physiology

3.

Harvey's Focus

- A) Emotions B) Chemistry
C) Anatomy D) Physiology

4.

Vesalius & Harvey Lived

- A) 1100s B) 1500s
C) 1700s D) 900s

5.

Vesalius Studied

- A) Animals B) Dead Bodies
C) Statues D) Textbooks

6.

Harvey Studied

- A) Animals B) Dead Bodies
C) Statues D) Textbooks

7.

Used in Dissection

- A) Toys B) Paintings
C) Live People D) Cadavers

8.

Used in Vivisection

- A) Toys B) Paintings
C) Live Animals D) Dead Bodies

9.

Lungs

- A) Systemic B) Capillary
C) Pulmonary D) Circuit

10.

Body

- A) Systemic B) Capillary
C) Pulmonary D) Circuit

WiB Worksheet 2.4

Andreas Vesalius - Finish the Sentence

Word List	structures	Galen	cadavers
	Human Body		Israel

1. "I give endless thanks to Almighty God who has chosen me to reveal the intricate and marvelous _____ of His most divine Handiwork." - Andreas Vesalius
2. Andreas Vesalius lived in the 1500s when most doctors used the traditional medical teachings of _____, a Greek doctor, who based much of his anatomy on dissections of monkeys.
3. Vesalius challenged this tradition and instead suggested that doctors should learn from their own dissection of human _____.
4. Possibly his greatest achievement was the publication of his ground breaking work, 'On the Fabric of the _____' which contained extremely detailed and accurate depictions accompanied by exquisite illustrations.
5. Vesalius was a devout Christian, and died while traveling home from _____ to see the places Jesus taught, performed miracles, was crucified and resurrected.

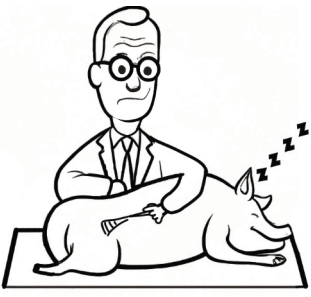
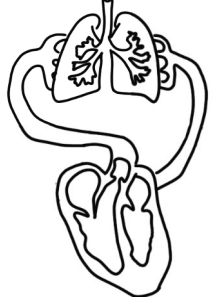
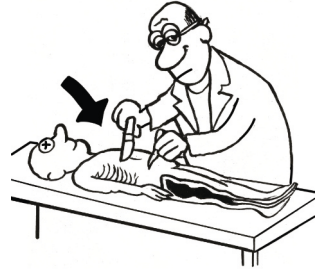
William Harvey - Finish the Sentence

Word List	circulates	Galen	empirical
	physiology		circulatory system

6. William Harvey is most famous for discovering the _____, which he detailed in his 1628 book, 'On the Motion of the Heart and Blood in Animals.'
7. He demonstrated that blood _____ continuously through the body, disproving the long held belief that blood was created continuously in the liver and consumed by the body.
8. The idea that blood was created in the liver and consumed by the body was another bad idea that had been promoted by _____, the ancient Greek doctor whose ideas had ruled for 1000 years.
9. Harvey's approach to research was _____ and experimental, setting him apart from many from his time who relied more on theoretical speculation.
10. His work fundamentally changed our understanding of human _____ and influenced countless other scientific advancements, in addition to establishing the modern scientific method.

WiB Worksheet 3.1

Lesson 2 Review - Circle It

1 Lungs Systemic Pulmonary	2  Cadaver Vivisection	3 Harvey's Focus Anatomy Physiology
4  Pulmonary Circuit Systemic Circuit	5 Vesalius's Focus Anatomy Physiology	6  Vivisection Cadaver

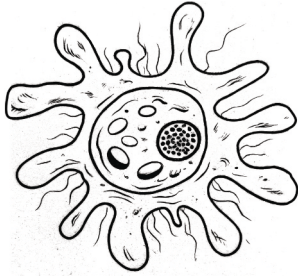
Matching - Process of Elimination

- | | |
|---------------------------|---|
| A. Microorganisms | 7. ____ The study of tiny life forms. |
| B. Leeuwenhoek | 8. ____ Tiny living things too small to be seen with the naked eye. |
| C. Microscope | 9. ____ Single cellular living things that lack a nucleus. |
| D. Fungi | 10. ____ The key device of microbiology that was greatly improved by Leeuwenhoek. |
| E. Semmelweis | 11. ____ Single cellular living things that have a nucleus. |
| F. Protist | 12. ____ The 'Savior of Mothers', who worked to reduce death rates of moms. |
| G. Germ Theory of Disease | 13. ____ Single cellular or multicellular living thing that have a nucleus. |
| H. Bacteria | 14. ____ The idea that many diseases are caused by microorganisms. |
| I. Semmelweis Reflex | 15. ____ The father of microbiology who was the first to observe microscopic organisms. |
| J. Microbiology | 16. ____ The tendency of a group to reject a new idea because it goes against the currently held norms or ideas of the group. |

WiB Worksheet 3.2

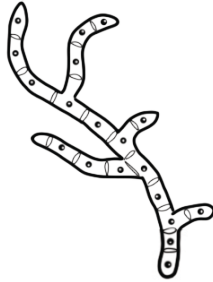
Circle the Best Answer

1



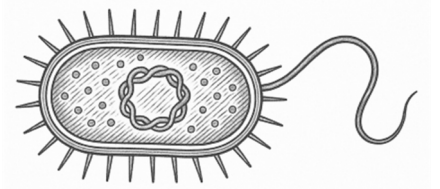
- A) Bacterium B) Fungus
C) Microsquirrel D) Protist

2



- A) Bacterium B) Fungus
C) Microsquirrel D) Protist

3



- A) Bacterium B) Fungus
C) Microsquirrel D) Protist

4



- A) Semmelweis B) Newton
C) Vesalius D) Leeuwenhoek

5



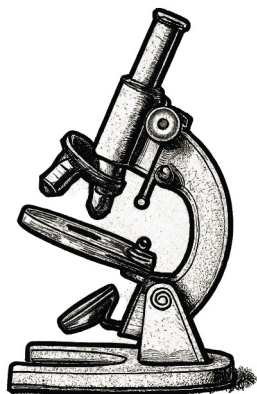
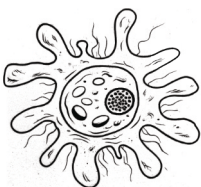
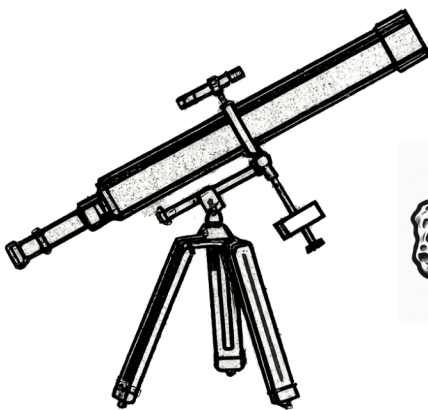
- A) Semmelweis B) Newton
C) Vesalius D) Leeuwenhoek

6



- A) Semmelweis B) Bacon
C) Vesalius D) Leeuwenhoek

Microscope or Telescope?



	Object	Microscope	Telescope
7	Bacterium		
8	Black Hole		
9	Star		
10	Protist		
11	Yeast Cell		
12	Moon		
13	Algae		
14	Comet		
15	Asteroid		

WiB Worksheet 3.3

Circle the Best Answer

1.

**The Study of
Tiny Lifeforms**

- A) Medicine
C) Science

- B) Ecology
D) Microbiology

2.

**Single Celled Things
With a Nucleus**

- A) Bacteria
C) Fungi

- B) Protists
D) Slime Squirrels

3.

**Single Celled Things
Without a Nucleus**

- A) Bacteria
C) Fungi

- B) Protists
D) Slime Squirrels

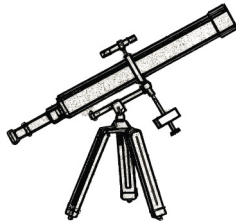
4.

**Multi-Cellular Things
That Are Microscopic**

- A) Bacteria
C) Fungi

- B) Protists
D) Amoebas

5.



- A) Telescope
C) Selfie Scope

- B) Microscope
D) Endoscope

6.



- A) Telescope
C) Selfie Scope

- B) Microscope
D) Endoscope

7.

**Greatly Improved
the Microscope**

- A) Semmelweis
C) Vesalius

- B) Van Leeuwenhoek
D) Harvey

8.

The Savior of Mothers

- A) Semmelweis
C) Vesalius

- B) Van Leeuwenhoek
D) Harvey

9.

**The Father of
Microbiology**

- A) Semmelweis
C) Vesalius

- B) Van Leeuwenhoek
D) Harvey

10.

**Laid Ground Work for
Germ Theory of Disease**

- A) Semmelweis
C) Vesalius

- B) Van Leeuwenhoek
D) Harvey

Wib Worksheet 3.4

Anton van Leeuwenhoek - Finish the Sentence

Word List	animalcules	90	270
	blood cells		lens

1. Van Leeuwenhoek was the first person to observe and describe microorganisms, which he called _____.
2. He had no formal scientific training, but had become interested in _____ making to inspect the quality of fabrics in his profession of being a draper, which is a person who sells cloth.
3. The key to a good microscope is the lenses. He was able to grind lenses that could magnify objects up to _____ times their normal size, far surpassing the magnifying power of other microscopes of the day.
4. He was able to observe and document a wide variety of specimens under his microscopes, including pond water, dental plaque, his own _____, muscle tissue, and even the eyes of fleas!
5. Van Leeuwenhoek lived to the age of _____, which was quite remarkable for the 1700s, and continued his work into his elderly years, always driven by his curiosity and wonder for God's creation.

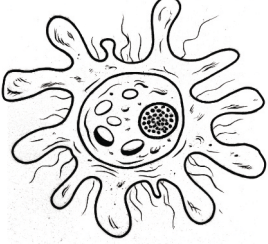
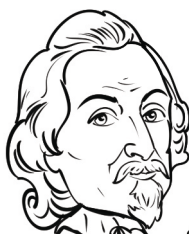
Ignaz Semmelweis - Finish the Sentence

Word List	germ theory	sepsis	hand washing
	cadavers	'cadaverous particles'	

6. Ignaz Semmelweis is best known for his discovery that _____ could drastically reduce a deadly infection following childbirth if practiced by hospital staff.
7. Semmelweis noticed that the ward where doctors who had often come from autopsies on _____ had a much higher death rate than the ward staffed by midwives.
8. From this observation he made the educated guess that _____ were being transmitted by the doctors to the patients, and that these particles were causing the disease.
9. Sadly, when the medical community rejected Semmelweis's correct findings, he became increasingly isolated and suffered from mental health issues. Ironically, after being committed to an asylum, he died from _____, a disease just like the one that was killing as those new mothers after child birth.
10. Only 15-20 years after his death, Semmelweis's ideas gained acceptance when the _____ of disease was popularized. Today he is celebrated as a hero of public health.

WiB Worksheet 4.1

Unit Review - Circle It

1  Leeuwenhoek Semmelweis	2 Laid Ground Work For Germ Theory Harvey Semmelweis	3  Bacon Newton
4  Protist Fungi	5 The Study of Tiny Life Forms Medicine Microbiology	6  Leeuwenhoek Semmelweis
7  Harvey Vesalius	8 Single Celled Things Without a Nucleus Fungi Bacteria	9  Harvey Vesalius

Matching - Process of Elimination

- | | |
|------------------|---|
| A. Trap | 10. ____ The branch of medicine that studies disease. |
| B. Cells | 11. ____ A chemist who criticizes the claim that life arose by abiogenesis. |
| C. Pathology | 12. ____ The part of Pasteur's flask that caught the bacterial spores. |
| D. Abiogenesis | 13. ____ Microscopic organisms that can eat leftover food. |
| E. Louis Pasteur | 14. ____ A mummified version of a bacteria that can re-animate when wet. |
| F. James Tour | 15. ____ This is the only known place cells come from. |
| G. Bacteria | 16. ____ He conducted experiments in pathology and contributed to the germ |
| H. Life Friendly | theory of disease. |
| I. Spore | 17. ____ Chemistry does not naturally move in this direction. |
| J. Spontaneous | 18. ____ The old name for the idea that life can come from non-life. |
| Generation | 19. ____ The modern name for the idea that life can come from non-life. |

WiB Worksheet 4.2

Identify the Variables

Experiment		Manipulated Variable	Responding Variable
1 Pasteur injected some sheep with a weakened form of anthrax bacteria and then exposed all the sheep to a stronger strain of anthrax. The sheep that received the weakened bacteria survived, while those that did not died.			
2 Pasteur tested different temperatures and times for heating milk to kill harmful bacteria without ruining it, measuring whether the milk spoiled afterward to see if the bacteria were killed. This process became known as pasteurization.			
3 Pasteur developed a vaccine for swine erysipelas by using a weakened form of the bacteria. When pigs were vaccinated they became immune, while unvaccinated pigs could still become sick from the disease.			
4 Pasteur tested how yeast helps turn sugar into alcohol, like grape juice to wine, in a process called fermentation. He found that fermentation only happened when yeast was present, not because of random chemical processes.			
5 Pasteur studied two silkworm diseases, and discovered that both were caused by parasites. He showed that eliminating infected worms could prevent the spread of the diseases.			
6 Pasteur gave some rabbits a weak form of the rabies virus to see if it would protect them from getting sick when they later got the real virus. Rabbits given the weak virus stayed healthy when exposed to rabies, while regular rabbits got rabies.			

WiB Worksheet 4.3

Circle the Best Answer

1.



A) Harvey
C) Pasteur

B) Tour
D) Vesalius

2.



Used in What Experiment?

A) Rabies
C) Fermentation

B) Spontaneous Generation
D) Vaccination

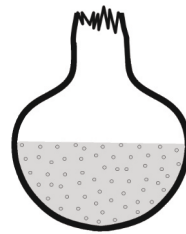
3.

Study of Disease

A) Immunology
C) Microbiology

B) Pathology
D) Biology

4.



Bacteria Come From

A) Broth
C) True Love

B) Spores
D) Space Dust

5.



A) Harvey
C) Pasteur

B) Tour
D) Vesalius

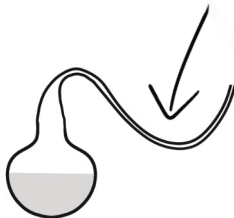
6.

Life From Non-Life

A) Mutation
C) Fermentation

B) Spontaneous Generation
D) Photosynthesis

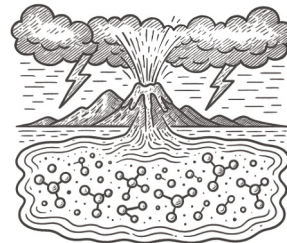
7.



A) Flow
C) Trap

B) Loop
D) Dent

8.



A) Big Bang
C) Primordial Soup

B) Natural Disaster
D) ProtoSquirrel

9.

Life Can Come From Non-Life

A) True
C) Pasteur Proved It

B) False
D) Tour Proved It

10.

Life Only Comes From Life

A) True
C) Pasteur Denies It

B) False
D) Tour Denies It

WiB Worksheet 4.4

Rabies Treatment - Finish the Sentence

Word List	developed	virus	9 year old
	immunity	effective	

1. Rabies was, and still is, almost always fatal once symptoms appear, making it a terrifying disease. Before Pasteur, there was no _____ treatment, and rabies often led to death through severe symptoms.
2. Pasteur used a technique of passing the virus through multiple rabbits and drying out their spinal cords at each step to weaken the _____ to develop his treatment, which was a weakened form of the virus.
3. He would then infect healthy rabbits with this weakened form of the virus, which would cause the rabbits to develop _____ to rabies, without bringing on the severe symptoms that lead to death.
4. Pasteur didn't seek out his first human trial. When a _____ boy in his country was bitten by a dog with rabies, the boy's parents came to Pasteur and pleaded with him for help.
5. Pasteur agreed to treat the boy because of the certainty of death without treatment. Since rabies has a long incubation period, the boy had not yet developed symptoms. Pasteur gave the boy 13 injections of increasing strength over the course of several days, and the boy never _____ rabies.

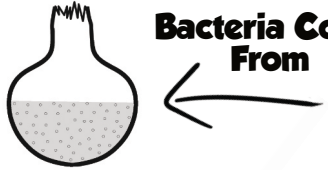
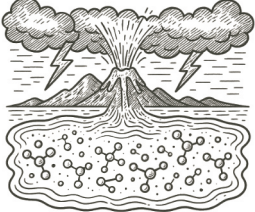
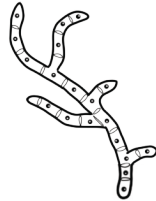
James Tour - Finish the Sentence

Word List	bendable	nanometers	materials
	scaffolds	carbon nanotubes	

6. Dr. James Tour has developed a method to create _____ (CNTs) by heating a carbon source, which causes carbon atoms to form tiny cylindrical shapes.
7. These tubes are are strong, flexible, and conductive, making them useful in electronics and medicine. For example they are one of the key components in _____ smart screen cell phones.
8. These nanotubes are so small that they are measured in _____, which is one billionth of a meter, or 1/100,000th the diameter of a human hair.
9. Nanotubes are also used in the medical field, for example, CNT-based _____ can help regenerate damaged tissues, such as bone or cartilage, by providing support for cell growth.
10. Today, carbon nanotubes are helping make advances in many industries, and Tour's work is at the forefront of making these _____ more accessible and practical for use in everyday life.

WiB Worksheet 5.1

Unit Review - Circle It

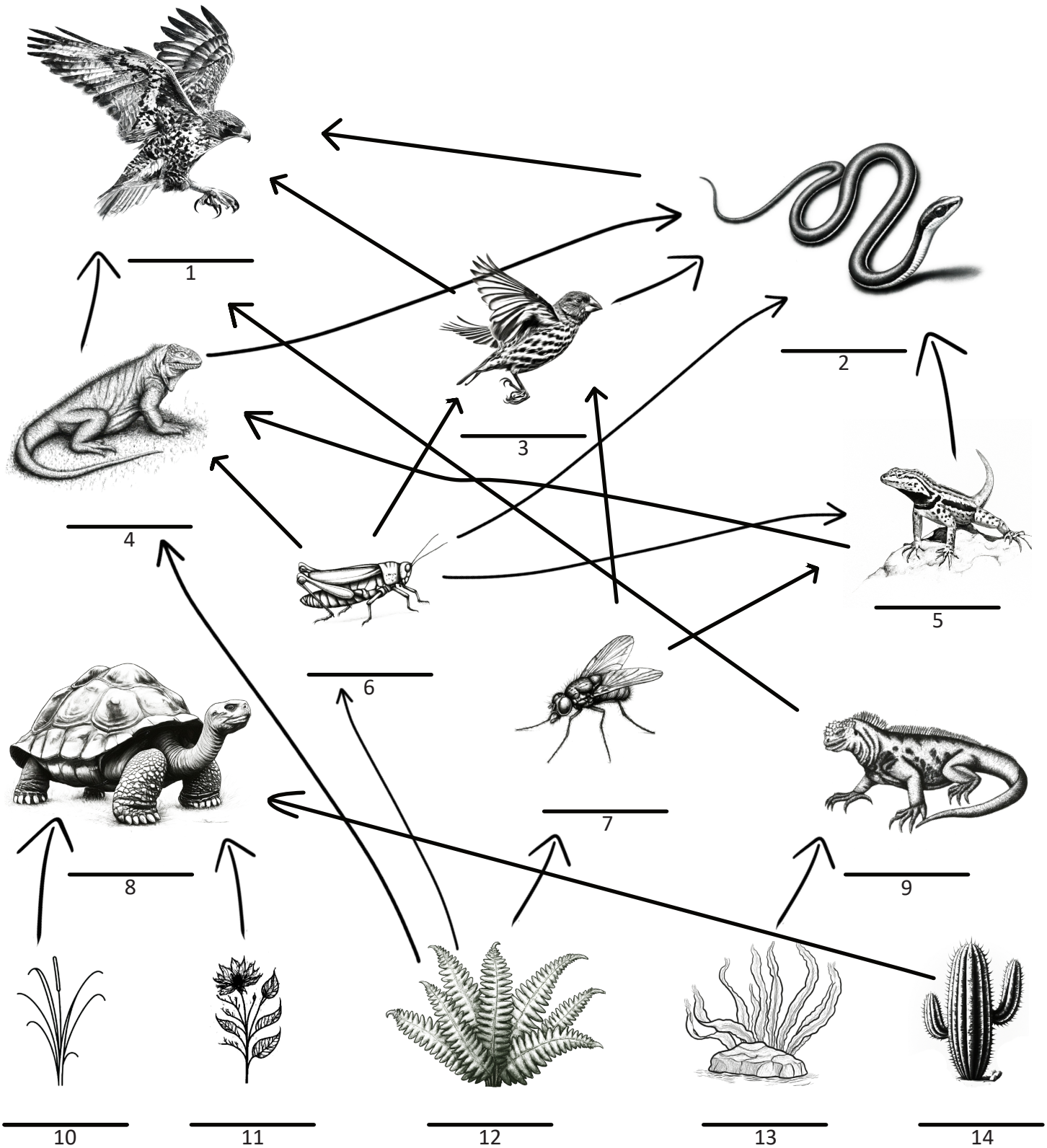
1  Pasteur Tour	2 Pasteur's Brand of Science Historical Science Empirical Science	3  Bacon Spores
4  Primordial Soup Slime Mold	5 The Study of Treating and Preventing Disease Medicine Biology	6  Pasteur Tour
7  Vivisection Cadaver	8 The Study of Life Medicine Biology	9  Fungus Bacterium

Matching - Process of Elimination

- | | |
|----------------------|---|
| A. Galapagos | 10. ____ The idea that complex design implies an intelligent designer. |
| B. Watchmaker | 11. ____ A set of islands 1000 miles west of South America |
| Argument | 12. ____ The idea that species cannot change or evolve in anyway. |
| C. Fixity of Species | 13. ____ The largest plant eating animal native to the Galapagos. |
| D. Tortoise | 14. ____ The first guy to make an attempt at a theory of evolution. |
| E. Lamarck | 15. ____ The only lizard on earth that feeds in the ocean, that is only found in the Galapagos. |
| F. Marine Iguana | 16. ____ The scientific study of interactions between organisms and their environment. |
| G. Use and Disuse | 17. ____ The way Lamarck thought evolution happened. |
| H. Paley | 18. ____ The gradual process of change in an ecosystem after a disturbance. |
| I. Ecology | 19. ____ The man who argued for fixity of species and God as a watchmaker. |
| J. Succession | |

WiB Worksheet 5.2

Label the Galapagos Food Web



*** Use more than once**

Producer*	1° Consumer*	2° Consumer*	3° Consumer*	4° Consumer*	5° Consumer
-----------	--------------	--------------	--------------	--------------	-------------

WiB Worksheet 5.3

Circle the Best Answer

1.



A) Harvey
C) Paley

B) Lamarck
D) Darwin

2.



A) Harvey
C) Paley

B) Lamarck
D) Darwin

3.

**Watch Mean
Watch Maker**

A) Harvey
C) Paley

B) Lamarck
D) Darwin

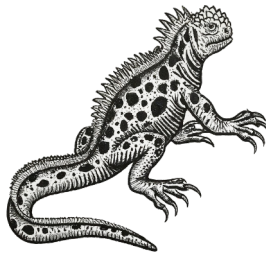
4.



A) Hawaii
C) Galapagos

B) Madagascar
D) Arctic

5.



A) Giant on Land
C) Ancient Fossil

B) Feeds in Ocean
D) Scratchy Squirrel

6.

**Use and Disuse
Causes Evolution**

A) Harvey
C) Paley

B) Lamarck
D) Darwin

7.



A) Harvey
C) Paley

B) Lamarck
D) Darwin

8.



A) Harvey
C) Paley

B) Lamarck
D) Darwin

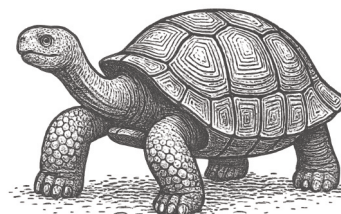
9.



A) Microbiology
C) Succession

B) Medicine
D) Evolution

10.



A) Giant on Land
C) Ancient Fossil

B) Feeds in Ocean
D) Climbs Buildings

WiB Worksheet 5.4

William Paley - Finish the Sentence

Word List	complexity Darwinian	evolution intelligent design	philosopher
------------------	---------------------------------------	---	--------------------

1. William Paley was a _____, clergyman, and theologian best known for his arguments for the existence of God.
2. Paley is most famous for his 'watchmaker analogy,' which he presented in his book 'Natural Theology', in which he argued that just as a watch, with it's complex and purposeful design implies the existence of an intelligent watchmaker, so too the _____ of life implies an intelligent creator.
3. Charles Darwin, the father of the theory of _____ was very familiar with Paley's arguments.
4. While Darwin originally admired Paley's views, he would later reject them in favor of a theory that still fails to adequately account for the _____ evident in living organisms.
5. Paley's ideas have had a lasting influence on both philosophy and science. Even today, many find his reasoning more compelling than _____ explanations, which rely on chance over purpose.

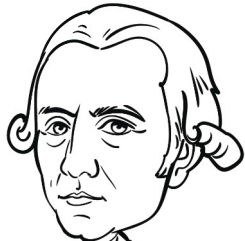
Jean-Baptiste Lamarck - Finish the Sentence

Word List	'Biology' fixity of species	'use and disuse'	change attempt
------------------	--	-------------------------	---------------------------------

6. Jean-Baptiste Lamarck is best known for proposing the first _____ at a theory of evolution.
7. In this first theory of evolution, he proposed that animals evolved by _____, whereby traits acquired during an organisms lifetime could be transferred to their offspring.
8. Although this 'use and disuse' concept was later discarded, it was the first early attempt to explain how species might _____ over time.
9. Interestingly, Lamarck is also credited with coining the term _____ as a distinct scientific discipline that is focused on the study of living organisms.
10. Although Lamarck's specific ideas about how evolution happens were replaced by Darwin's theory, his work was influential in challenging Paley's ideas of _____. The debate between Paley and Lamarck played a role in shaping young Darwin's thoughts.

WiB Worksheet 6.1

Unit Review - Circle It

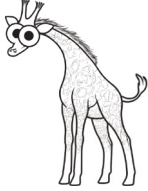
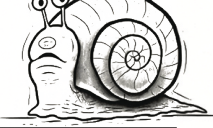
1  Paley Lamarck	2 Interaction of Creatures w/ Their Environment Pathology Ecology	3  Paley Lamarck
4  Design Evolution	5 Science Involving Observation and Experiment Historical Empirical	6  Design Evolution
7 Life from Non-Life Vivisection Abiogenesis	8  Evolution Succession	9 Science Involving Intelligent Guesses About Past Events Historical Empirical

Matching - Process of Elimination

- | | |
|------------------------------------|---|
| A. Natural Selection | 10. ____ A geologist who popularized uniformitarianism and greatly influenced Darwin. |
| B. Charles Lyell | |
| C. Universal Common Descent | 11. ____ Darwin's most controversial proposal, that came out in his book the Descent of Man. |
| D. Geology | 12. ____ The study of earth's composition. |
| E. 3.5 - 4.0 Billion | 13. ____ Darwin's method for how evolution is thought to happen. |
| F. Uniformitarianism | 14. ____ The geologic principal that the forces we observe today, have operated in the same manner, gradually shaping the planet's surface. |
| G. Charles Darwin | 15. ____ Darwin's idea that all living things came from one common ancestor. |
| H. <i>On the Origin of Species</i> | 16. ____ The father of the theory of evolution. |
| I. Human Evolution | 17. ____ This is how many years ago most scientists think life appeared. |
| | 18. ____ The title of Darwin's book; which revealed his ideas about evolution. |

WiB Worksheet 6.2

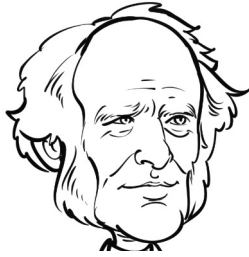
Circle the Fittest

Scenario		Option 1	Option 2
1 Green bugs and yellow bugs live in green grass, and need to avoid a predator who hunts by sight.		Green Bug	Yellow Bug
2 Tall plants and short plants compete for sunlight in a shady forest.		Tall Plants	Short Plants
3 In a cold environment, thick furred and thin furred wolves compete to survive the winter.		Thin Fur Wolves	Thick Fur Wolves
4 Tall giraffes and short giraffes eat leaves from trees of different heights.		Tall Giraffes	Short Giraffes
5 Plants with short roots and plants with deep roots compete for water during a drought.		Short Roots	Deep Roots
6 Thick shelled and thin shelled snails live in a stream where birds try to crack them open for food.		Thin Shell Snail	Thick Shell Snail
7 Deer with larger antlers and deer with smaller antlers try to win mates during the breeding season.		Large Antler Deer	Short Antler Deer
8 Bright butterflies and dull butterflies cross through a forest where birds are searching for food.		Bright Butterflies	Dull Butterflies

WiB Worksheet 6.3

Circle the Best Answer

1.



A) Lyell
C) Paley

B) Lamarck
D) Darwin

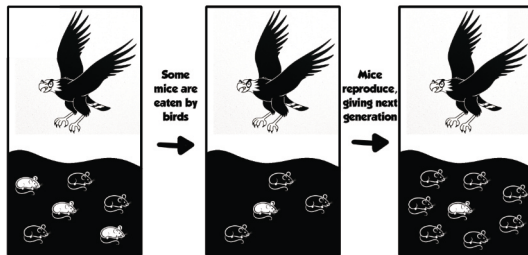
2.



A) Lyell
C) Paley

B) Lamarck
D) Darwin

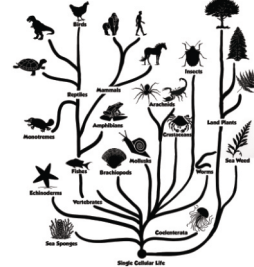
3.



A) Universal Common Descent
C) Uniformitarianism

B) Evolution
D) Natural Selection

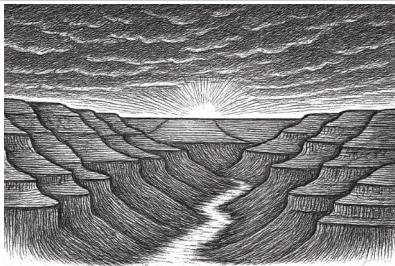
4.



A) Universal Common Descent
C) Uniformitarianism

B) Evolution
D) Natural Selection

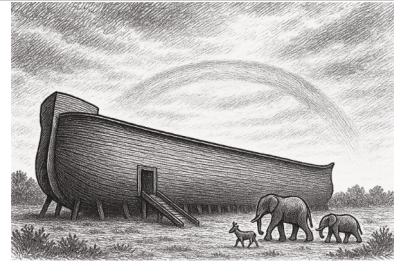
5.



A) Uniformitarianism
C) Natural Selection

B) Squirrel-ism
D) Catastrophism

6.



A) Uniformitarianism
C) Natural Selection

B) Squirrel-ism
D) Catastrophism

7.

**First Proposed
Natural Selection**

A) Harvey
C) Paley

B) Lamarck
D) Darwin

8.

**Gave Darwin the
Idea of Slow and
Gradual Processes**

A) Lyell
C) Hutton

B) Lamarck
D) Darwin

9.

**Darwin and Lyell Did
This Kind of Science**

A) Empirical
C) Historical

B) Pathology
D) Physiology

10.

First Proposed Evolution

A) Lyell
C) Hutton

B) Lamarck
D) Darwin

WiB Worksheet 6.4

Charles Lyell - Finish the Sentence

Word List	evidencecatastrophismChristian acknowledgingcreation
------------------	--

- Before Lyell, many geologists believed in _____, the idea that many of the Earth's formations, such as the Grand Canyon, were made by massive catastrophes like floods, volcanic eruptions, mudslides, and an ice age.
- While Lyell called himself a Christian, there is no strong _____ that he truly loved God or wanted his work to honor Him.
- It is possible he identified as a _____ partly out of personal belief, but also because it was the cultural norm and expected in society.
- When people are taught to study the world without _____ God's truth, it becomes easy for them to trust human ideas more than God's Word.
- Over time, this way of thinking can weaken their faith and make them forget that all _____ points to a wise and powerful Creator.

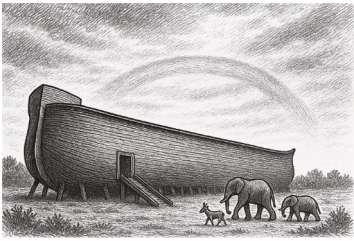
Charles Darwin - Finish the Sentence

Word List	struggledhonoringabandon reasoningevolution
------------------	---

- Although Darwin was raised in a Christian home, he later popularized the idea of _____, teaching that all living things came from a common ancestor through slow, natural changes over time.
- As Darwin developed his ideas, he began to _____ more and more of what the Bible taught about creation.
- His theory gave people a way to understand creation without _____ the Creator who made them.
- Later in his life, Darwin no longer considered himself a Christian, as he _____ with doubt and rejected the Lord Jesus as his Savior.
- Darwin's ideas helped shift many cultures toward trusting human _____ over God's Word, leading to growing doubt and disbelief.

WiB Worksheet 7.1

Unit Review - Circle It

1	 Darwin Lyell	2	Darwin's Good Idea Human Evolution Natural Selection	3	 Darwin Lyell
4	 Catastrophism Uniformitarianism	5	Darwin and Lyell's Brand of Science Historical Empirical	6	 Catastrophism Uniformitarianism
7	 Semmelweis Pasteur	8	Pasteur & Semmelweis' Brand of Science Historical Empirical	9	 Semmelweis Pasteur

Matching - Process of Elimination

- | | |
|--------------------------|---|
| A. God | 10. ____ He is known as the father of modern genetics. |
| B. Specified Information | 11. ____ The shape of the DNA molecule. |
| C. Stephen Meyer | 12. ____ The 'gene' that takes over when both are present. |
| D. Double Helix | 13. ____ A modern scientist, author, and leader in the ID movement. |
| E. Nucleotides | 14. ____ The 'gene' that hides when both are present. |
| F. Watson and Crick | 15. ____ Meyer argues that our repeated and uniform experience is that this always comes from a mind. |
| G. Dominant | 16. ____ These two were the first to publish the correct structure for DNA. |
| H. Recessive | 17. ____ This genetic information must have come from an intelligent designer. |
| I. Gregor Mendel | 18. ____ The Cs, Gs, As, and Ts that make up the DNA molecule. |
| J. DNA | 19. ____ This is who Meyer believes the intelligent designer to be. |

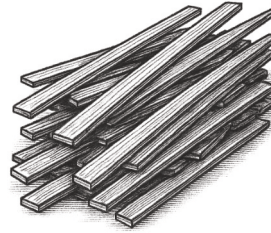
WiB Worksheet 7.2

Circle the Object with the Most Specified Information

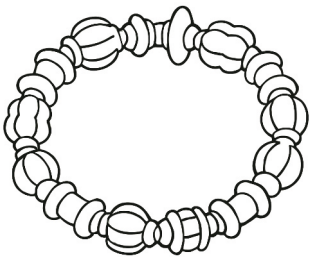
1.



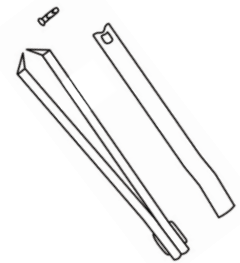
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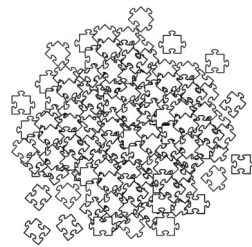
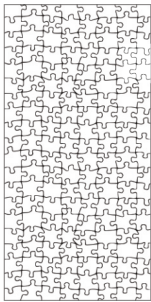
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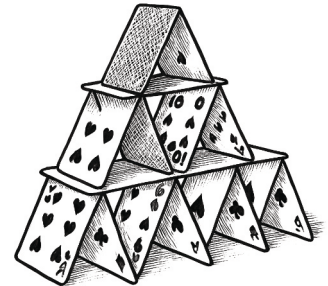
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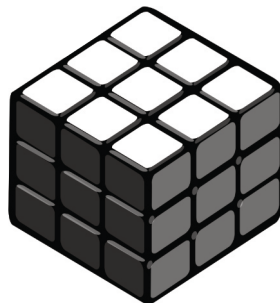
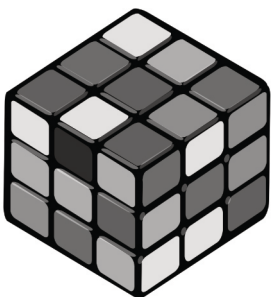
5.



6.



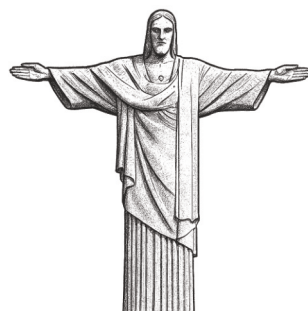
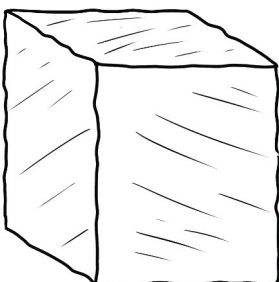
7.



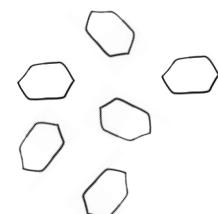
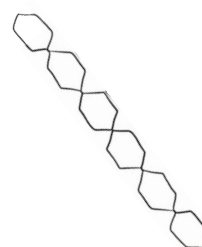
8.



9.



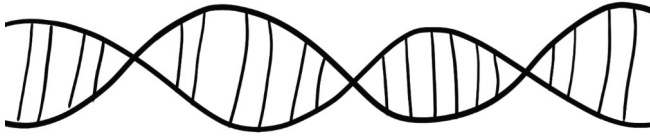
10.



WiB Worksheet 7.3

Circle the Best Answer

1.



A) Nucleotide
C) Double Helix

B) Chromosome
D) RNA

2.



A) Nucleotide
C) Double Helix

B) Chromosome
D) RNA

3.



A) Watson
C) Meyer

B) Mendel
D) Crick

4.



A) Watson
C) Meyer

B) Mendel
D) Crick

5.

Bb ←

A) Dominant Allele
C) Intermediate Allele

B) Recessive Allele
D) Squirrel Allele

6.

→ **Bb**

A) Dominant Allele
C) Intermediate Allele

B) Recessive Allele
D) Squirrel Allele

7.



A) Watson
C) Meyer

B) Mendel
D) Crick

8.



A) Watson
C) Meyer

B) Mendel
D) Crick

9.

Circle the Letter That Isn't a Nucleotide

A) G
C) A

B) C
D) F

10.

Circle the Letter That Connects with T

A) G
C) A

B) C
D) F

WiB Worksheet 7.4

Gregor Mendel - Finish the Sentence

Word List	theistic inheritance	pollen	Pea plants 28,000
------------------	---------------------------------------	---------------	------------------------------------

- From 1856-1863 a catholic friar named Gregor Mendel did meticulous experiments using _____ pea plants to develop the basis of modern genetics.
- _____ were the perfect organism to study because they have many traits that are controlled by a single gene with only a dominant and a recessive allele.
- Mendel would manually cross pollinate the pea plants by using a paint brush to transfer _____ from the stamen of one plant to the pistil of another.
- By carefully controlling the pollination process this way, Mendel was able to study the _____ patterns of specific traits, and develop his laws of inheritance.
- Mendel's life, profession, and assumptions about science were deeply _____ and Christian. His faith wasn't flashy or outspoken — it was quiet, steady, and lived out daily.

Stephen Meyer - Finish the Sentence

Word List	God four letter code	specified information intelligent designer	mind
------------------	---------------------------------------	---	-------------

- From the late 1990s to today, a philosopher of science named Stephen Meyer has made a strong case for intelligent design based on the discovery of _____ in DNA.
- DNA is the molecule that stores biological information using a _____ to form meaningful instructions for building life.
- Meyer argues that our repeated experience shows that information with high specificity and complexity, like that found in DNA, always comes from a _____.
- Since chance and natural processes can't explain where this information came from, Meyer believes the best explanation is that it came from an _____.
- Meyer's writing reflects a belief that science, when honestly followed, points beyond itself to a wise and purposeful _____ as the designer behind the universe.

WiB Worksheet 8.1

Unit Review - Circle It

1



Meyer Mendel

2

Stores Genetic Information

Protein DNA

3



Meyer Mendel

4

Bb ←

Dominant Recessive

5

Information From A Mind

Spontaneous Specified

6

→ **Bb**

Dominant Recessive

7



Watson Crick

8

DNA's Shape

Double Helix Beta Sheet

9



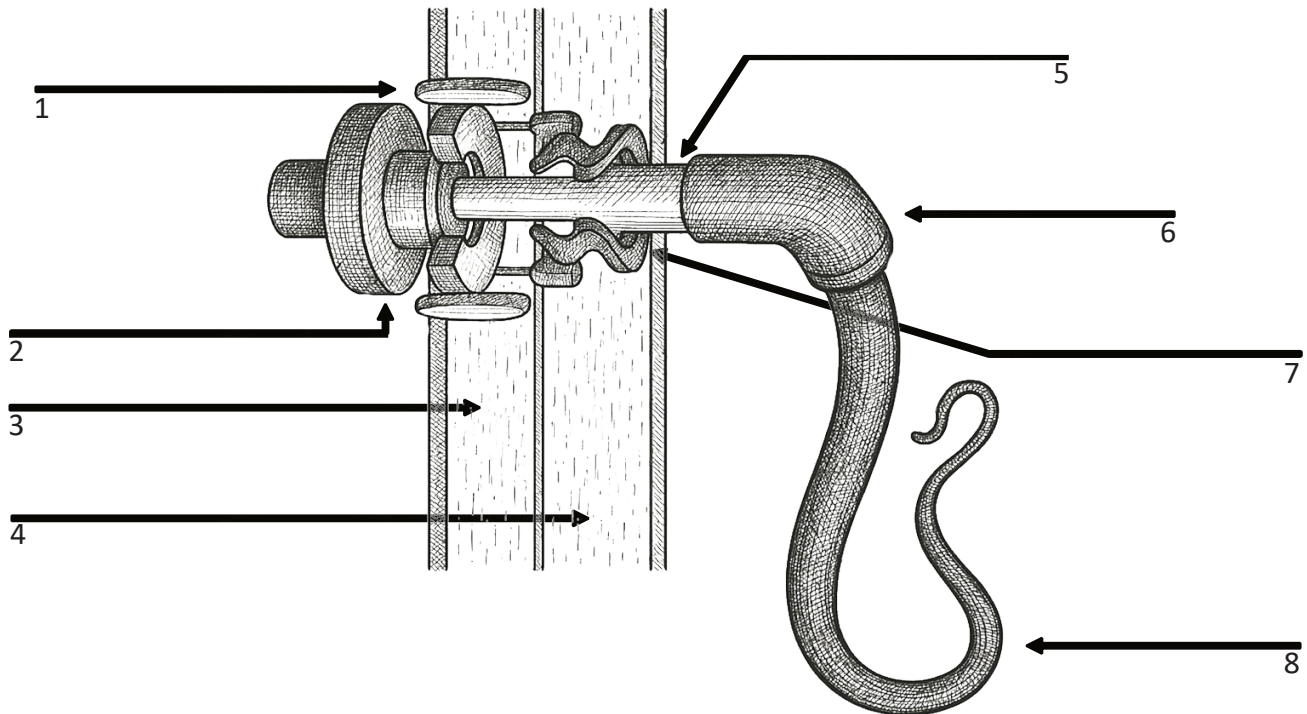
Watson Crick

Matching - Process of Elimination

- | | |
|---------------------------|---|
| A. Irreducible Complexity | 10. ____ The object Behe uses as a simple example of irreducible complexity. |
| B. Bushings | 11. ____ One of the founding fathers of cell biology. |
| C. Theodore Schwann | 12. ____ A layer around a cell. |
| D. Flow of Acid | 13. ____ The cell that insulates neurons. |
| E. Mouse Trap | 14. ____ The stationary part of the flagellar motor that lets acid through. |
| F. Michael Behe | 15. ____ The branch of cell biology on which Schwann focused. |
| G. Flagellum | 16. ____ This is what powers a flagellum to spin. |
| H. Animal Cells | 17. ____ These act as protective bearings in the spinning flagellum. |
| I. Stator | 18. ____ The ID researcher who developed the idea of irreducible complexity. |
| J. Membrane | 19. ____ The idea that certain machines cannot evolve step by step because all of their parts must be present at once in order to function. |
| K. Schwann Cell | 20. ____ The microscopic motor used as an example of irreducible complexity. |

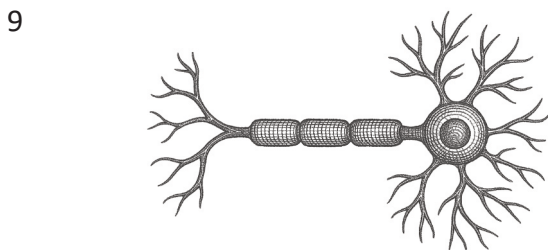
WiB Worksheet 8.2

Label It



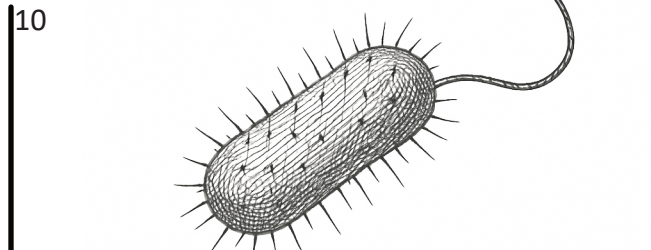
Word List	Filament	Stator	Hook	Outer Membrane
	Bushing	Secretory System	Inner Membrane	Rod

Circle the Best Answer



A) Bacterium
C) Protist

B) Neuron
D) Flagellum



A) Bacterium
C) Protist

B) Neuron
D) Flagellum



A) Pasteur
C) Behe

B) Schwann
D) Meyer



A) Pasteur
C) Behe

B) Schwann
D) Meyer

WiB Worksheet 8.3

Circle the Best Answer

1.

**A Founding Father
of Cell Biology**

A) Behe
C) Schwann

B) Meyer
D) Pasteur

2.

Irreducibly Complex

A) Rock
C) Mouse Trap

B) Skin
D) Bookshelf

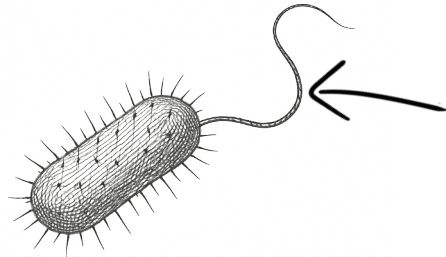
3.

**Man Who Developed
Irreducible Complexity**

A) Behe
C) Schwann

B) Meyer
D) Pasteur

4.



A) Cilia
C) Squirrelium

B) Plasmodium
D) Flagellum

5.

Schwann's Tool

A) Mousetrap
C) Telescope

B) Microscope
D) Computer

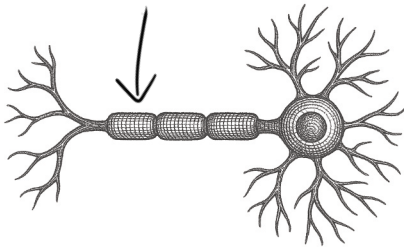
6.

Irreducibly Complex

A) Water
C) Hair

B) Bacterial Flagellum
D) Brick Wall

7.



A) Merkel Cell
C) Hepatocyte

B) Schwann Cell
D) Gangliocyte

8.

Behe's Example

A) Mousetrap
C) Telescope

B) Microscope
D) Computer

9.

Creature with Flagellum

A) Duck
C) Bacterium

B) Yeast
D) Insect

10.

Irreducibly Complex

A) Chair
C) Toe

B) Pocket Watch
D) Ice Cube

WiB Worksheet 8.4

Theodor Schwann - Finish the Sentence

Word List	universal patterns	frogs and pigs	pepsin
	purposeful	cell theory	

1. Theodor Schwann was a German scientist and devout Christian who helped develop _____ by showing that all animals are made of cells.
2. He compared plant and animal tissues under the microscope to find _____, especially the presence of cells.
3. Schwann also discovered _____, a digestive enzyme made by the stomach, and proved that digestion was a chemical process, by showing that proteins could be broken down outside the body.
4. He likely used _____ in his experiments because their tissues were accessible and useful for studying nerves and digestion.
5. Like Mendel, Schwann's faith inspired his curiosity and confidence that nature was orderly, _____, and designed by God.

Michael Behe - Finish the Sentence

Word List	Darwinism	irreducibly complex	evolved
	bacterial flagellum	mousetrap	

6. Michael Behe is a biochemist, researcher, and professor who argues that some biological systems are _____, meaning they could not function if any part were missing.
7. He uses a _____ as a simple example — if you remove even one piece, it won't work at all.
8. In living organisms, Behe points to structures like the _____, a tiny motor that allows bacteria to swim, which needs all its parts to function.
9. He makes a strong case that such complex systems could not have _____ step-by-step and instead point to an intelligent designer.
10. Behe's ideas challenge the claim that _____ alone can explain life's complexity, and instead point to the wisdom and power of God as the true designer of nature.