

Let's Draw: Cell Parts and their Function

Name _____

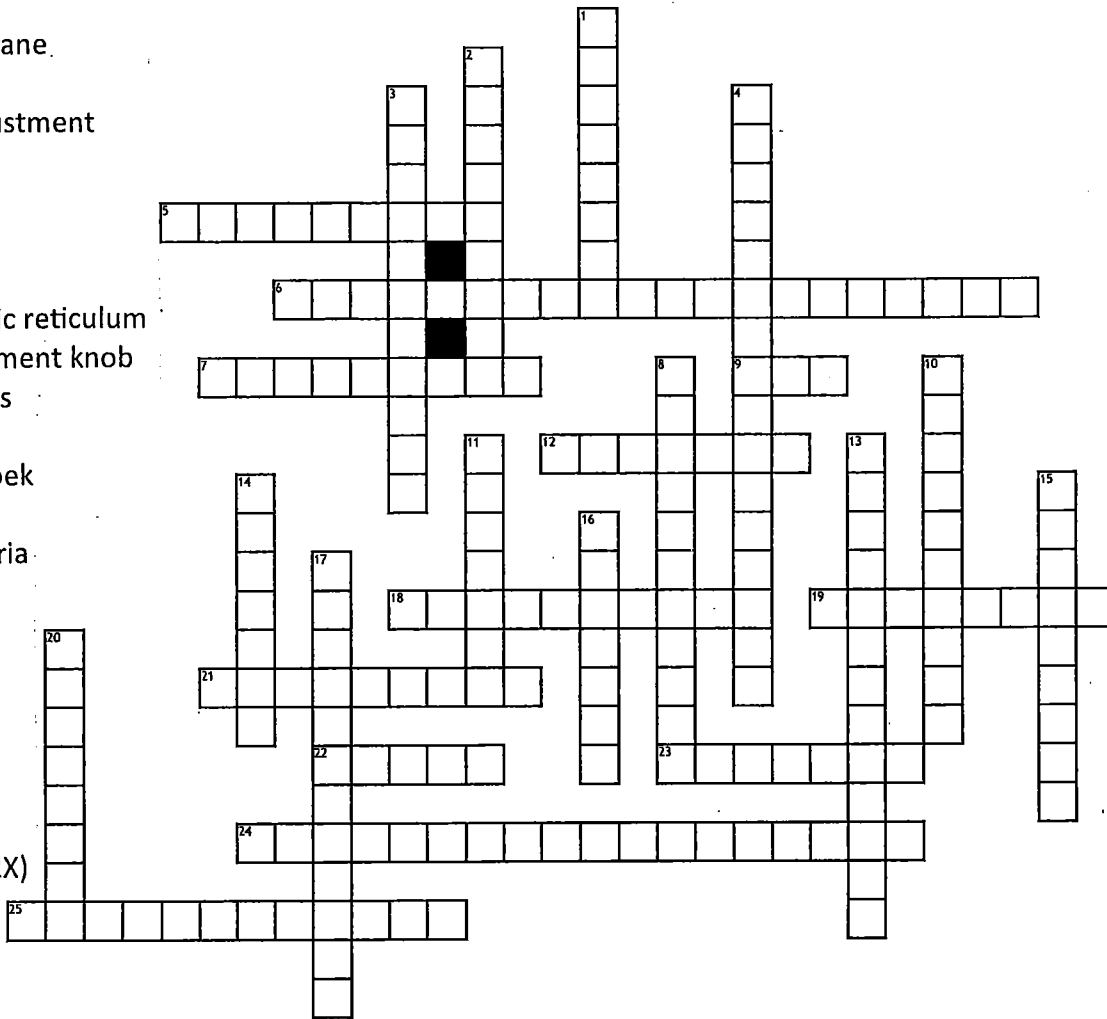
Organelles and Other Parts	Labeled Sketch
<p style="text-align: center;">Nucleolus</p> <p>Found within the _____</p> <p>An area where the _____ are assembled.</p>	
<p style="text-align: center;">Nucleus</p> <p>Contains _____</p> <p>DNA Controls the _____ of the cell.</p>	
<p style="text-align: center;">Nuclear Membrane</p> <p>Controls movement of _____ in/out of the _____</p>	
<p style="text-align: center;">Ribosome</p> <p>Builds _____</p>	
<p style="text-align: center;">Vesicle</p> <p>A _____-bound container that _____ materials around the cell.</p> <p>_____ vesicles and _____ are examples.</p>	
<p style="text-align: center;">Rough Endoplasmic Reticulum (ER)</p> <p>A _____ that is continuous with the _____.</p> <p>Has _____ sitting on the outside.</p> <p>Provides _____ for moving materials and aids the _____ in making proteins.</p>	
<p style="text-align: center;">Golgi Body</p> <p>Modifies _____ made by ribosomes.</p> <p>_____ and _____ modified proteins in secretion _____.</p>	

<p style="text-align: center;">Cytoskeleton</p> <p>_____ that strengthen and _____ shape of a cell</p>	
<p style="text-align: center;">Smooth ER</p> <p>Produces lipids (fats) and breaks down _____.</p> <p>Provides _____ for moving materials through the _____.</p>	
<p style="text-align: center;">Mitochondria</p> <p>Generates _____ for the cell by breaking down sugar (_____) molecules.</p>	
<p style="text-align: center;">Vacuole</p> <p>Single, large vesicle in _____ cells for _____ storage</p> <p>Small _____ in _____ for storing a variety of materials.</p>	
<p style="text-align: center;">Cytoplasm (cytosol)</p> <p>Gel-like _____ in the cell.</p> <p>Supports and _____ organelles.</p> <p>Contains the _____ fibers.</p>	
<p style="text-align: center;">Lysosome</p> <p>Contains digestive _____ to breakdown large _____ into smaller molecules or to _____ the cell</p>	
<p style="text-align: center;">Cell Membrane</p> <p>Controls _____ of materials in and _____ of the cell.</p>	
<p style="text-align: center;">Chloroplast</p> <p>Uses _____ from sun to make _____ (glucose) for the plant</p> <p>Found in _____ and plant-like _____</p>	

Cells Crossword

Cell crossword word bank

- Cell wall
- Cell membrane
- Chloroplast
- Coarse adjustment
- Cytoplasm
- DNA
- Diaphragm
- Eukaryote
- Endoplasmic reticulum
- Fine adjustment knob
- Golgi bodies
- Hooke
- Leeuwenhoek
- Lysosomes
- Mitochondria
- Protein
- Prokaryote
- Organelles
- Ribosomes
- Schwann
- Schleiden
- Virchow
- Vacuoles (2X)



Across

- 5. cells with nuclei
- 6. membrane system
- 7. jelly-like part of cells
- 9. carrier of genetic information
- 12. controls cell's activity and contains DNA
- 18. cells without nuclei
- 19. supports plant cells
- 21. make proteins
- 22. first to see dead cells
- 23. discovered all animals are made of cells

- 24. slowly focuses on scanning power
- 25. protects the cell and controls what enters and leaves it

Down

- 1. controls the amount of light going towards the specimen
- 2. makes ribosomes
- 3. contain chlorophyll
- 4. quickly focuses on high and low power
- 8. packages proteins
- 10. parts of cells

- 11. stores water and salts
- 13. First to discover single-celled organisms
- 14. a macromolecule that has amino acids as its monomer
- 15. Discovered all plants are made of cells
- 16. discovered that cells are made from pre-existing cells
- 17. converts chemical energy into ATP
- 20. digestion center

Name: _____ Date: _____

CELL WORD SEARCH

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

deoxyribonucleic acid

ribonucleic acid

nucleic acid

mitochondria

chloroplast

chromatin

organelle

cytoplasm

lysosome

division

membrane

plastid

vacuole

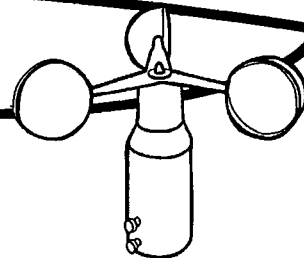
nucleus

cell

Directions: write the letter of the definition that matches each word.



Weather matching vocabulary



1. Air pressure _____

2. Anemometer _____

3. Atmosphere _____

4. Axis _____

5. Barometer _____

6. Climate _____

7. Drought _____

8. Forecast _____

9. Front _____

10. Thermometer _____

11. Humidity _____

12. Meteorologist _____

13. Temperature _____

14. Precipitation _____

15. Season _____

16. Solar _____

A. one of four annual patterns of weather that include winter, spring, summer, and autumn, that results from the Earth's tilt on its axis and its orbit around the Sun

B. the amount of water vapor in the air

C. a tool used to measure wind speed

D. a prediction of weather conditions in the near future

E. a tool used to measure air pressure

F. describes anything relating to the Sun

G. a tool used to measure how hot or how cold something is

H. any form of water (rain, snow, sleet, ice) that falls from clouds to Earth's surface

I. the measure of how hot or cold something is

J. weather conditions in a region over a long period of time

K. the weight of the air at any particular point on Earth

L. the imaginary line around which an object, like Earth, rotates

M. a period in which less precipitation than average falls

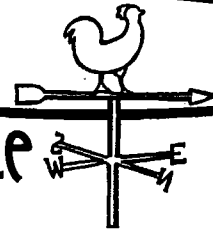
N. the blanket of air that surrounds Earth

O. a region where two air masses of different temperatures meet

P. a scientist who works to understand, explain, and predict weather

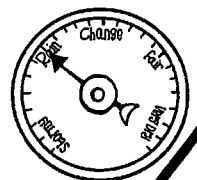
Directions: write the letter of the definition that matches each word.

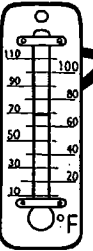
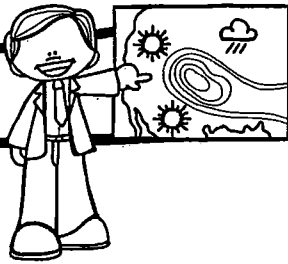
Weather Word Scramble



1. isurrpraese _____
2. cldsuo _____
3. sipnrg _____
4. ixsa _____
5. cfestraao _____
6. rotib _____
7. msermu _____
8. onws _____
9. pesrhotmae _____
10. ueoratq _____
11. neiptpoitinca _____
12. eitnrw _____
13. anri _____
14. ctaieml _____
15. unmuat _____
16. twaereh _____
17. tletsiae _____
18. moreeamnte _____
19. goutrdh _____
20. lrtigosmeooet _____
21. atrmpeturee _____
22. mrortteehm _____
23. oneremabt _____
24. oseans _____
25. indw _____
26. sltee _____

- EQUATOR
- SLEET
- ANEMOMETER
- ORBIT
- FORECAST
- WIND
- SUMMER
- SNOW
- AXIS
- AIR PRESSURE
- PRECIPITATION
- WINTER
- RAIN
- CLIMATE
- SPRING
- WEATHER
- TEMPERATURE
- AUTUMN
- DROUGHT
- METEOROLOGIST
- ATMOSPHERE
- THERMOMETER
- BAROMETER
- SEASON
- SATELLITE
- CLOUDS





Weather

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

AIR PRESSURE

ANEMOMETER

ATMOSPHERE

AXIS

BAROMETER

CLIMATE

CLOUDS

DROUGHT

EQUATOR

FORECAST

COLD FRONT

WARM FRONT

HUMIDITY

METEOROLOGIST

PRECIPITATION

ORBIT

SEASON

AUTUMN

SPRING

TEMPERATURE

WINTER

SUMMER

WIND

WEATHER

VANE

THERMOMETER

RAIN

SNOW

SLEET

SATELLITE

Across

1. In mitosis, An exact copy of the cells _____ material is made.
3. A _____ is one copy of a duplicate chromosome, which generally is joined to the other copy by a centromere, for the process of cellular division (mitosis).
4. Name for when one cell divides into two?
5. The region of a chromosome to which the microtubules of the spindle attach, via the kinetochore, during cell division.
7. -Chromosomes get pulled at centromere
-The two identical copies get pulled apart
-Sister chromatids get pulled apart
9. -Chromatin draws together to create chromosomes. -Spindle fibers form.
10. Cell breaks into two.
11. A minute cylindrical organelle near the nucleus in animal cells, occurring in pairs and involved in the development of spindle fibers in cell division
12. -Nuclear envelope breaks down.
-Centrosomes are positioned at opposite poles of the cell. -Spindle fibers attach to chromosome at the kinetichore.

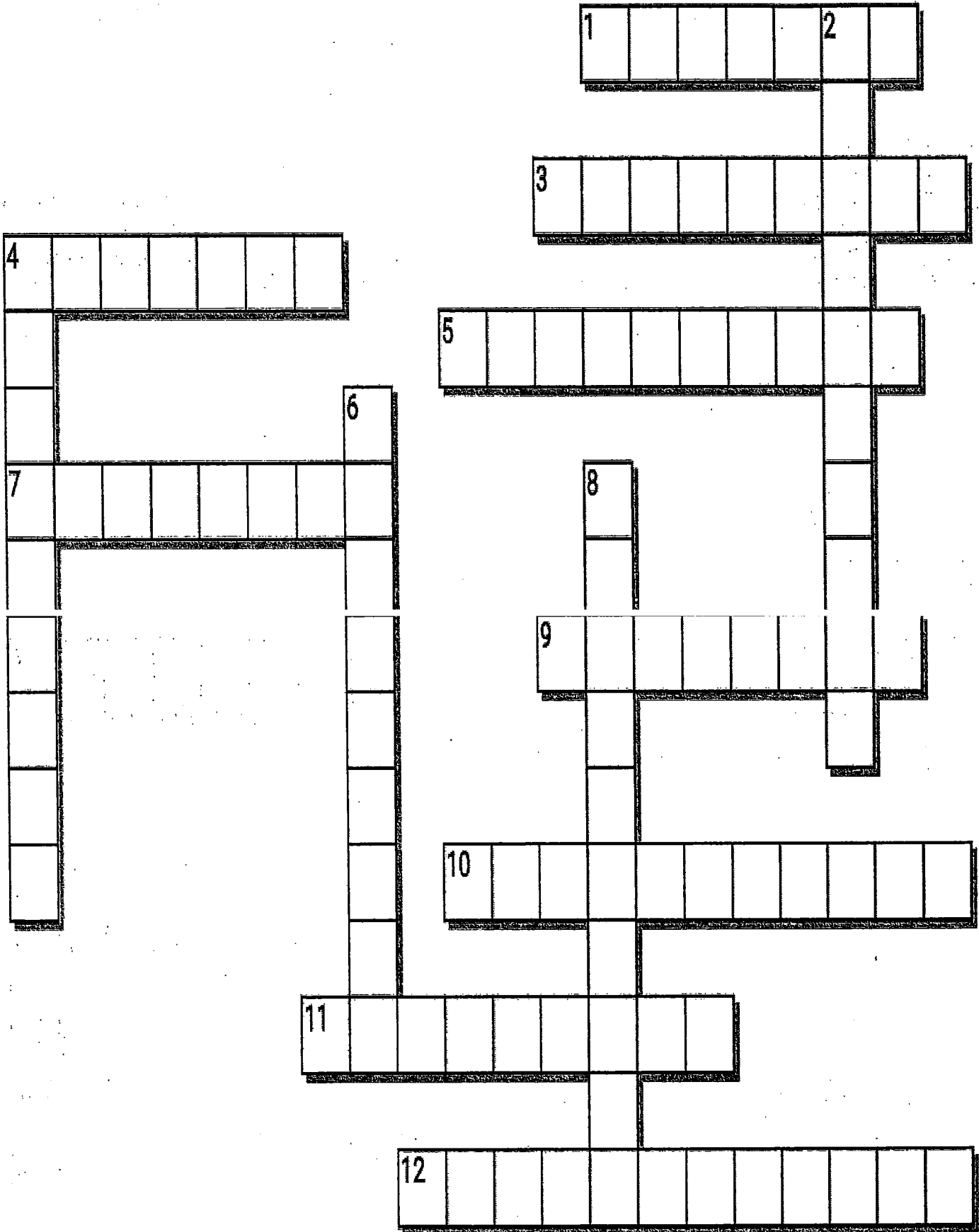
Down

2. -Most of cell cycle (90%) -Cell grows and develops -Chromosomes not visible -Nucleus intact -DNA is copied
4. -Chromosomes line up on the equator of the cell.
6. -Chromosomes reach poles. -Nuclear membrane begins to form. -Cleavage furrow forms pinching cell into two. -Chromosomes begin to unwrap.
8. An organized structure of DNA and protein that is found in cells.

-----Word bank can be removed to make more challenging-----

Possible Answers

ANAPHASE, CENTRIOLE, CENTROMERE, CHROMOSOME, CYTOKINESIS, GENETIC, INTERPHASE, METAPHASE, MITOSIS, PROMETAPHASE, PROPHASE, TELOPHASE, CHROMATID



●SCIENCE●
UNIT 4:REPRODUCTION
WORKSHEET 5 : ASEXUAL REPRODUCTION



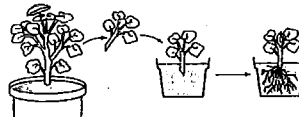
Asexual Reproduction refers to an organism capable of asexual reproduction is able to produce offspring in the absence of a mate. There is only one parent

New organisms made this way are exactly the same as the parent. This is because the genetic message is from just one parent. It is different from sexual reproduction where the new organisms have a genetic message from two parents.

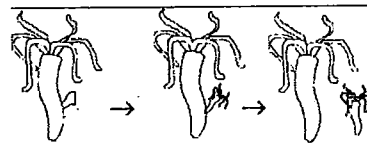
Types of asexual reproduction in plants and animals

There are many different types of asexual reproduction in plants. Some of them are:

1. **Fragmentation(Cuttings):** This is simply taking a small piece of a plant, putting it in some potting mix and waiting for it to grow. You might like to try this at home with a small piece of geranium plant.

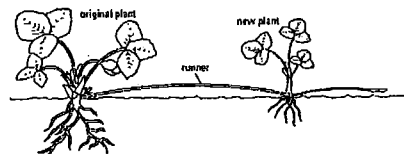


2. **Budding** occurs when part of the cell pushes outward to form a growth or bud. Pinches off from the parent cell to form a new organism identical to the parent. Example: yeast, hydra, sponges

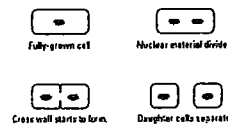


Budding in Hydra

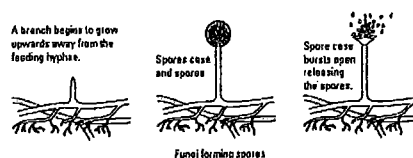
3. **Vegetative Reproduction (Runners)** are long thin stems that run underground and new plants form at the end of these. Strawberries reproduce like this.



4. **Binary fission:** A single parent cell reproduces itself and divides into two equal parts. Some bacteria can do this every 20 minutes and so can grow very quickly. This is one of the reasons why some bacteria can cause disease.



5. **Spore Formation .** A spore is a reproductive cell that grows into a new individual by mitosis. Fungi reproduce by making spores that grow into new hyphae.

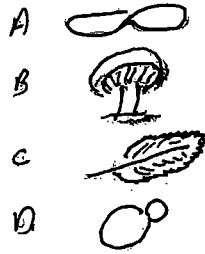


The advantages and disadvantages of asexual reproduction:

Advantages Of Sexual Reproduction	Disadvantages Of Sexual Reproductions
Large numbers of offspring are reproduced quickly	Offspring are genetic clones. A negative mutation can make asexual reproduced organisms more apt to disease and can destroy a large number of offspring
Does not require a lot of Energy is not required to find a mate	extreme temperatures can wipe out entire colonies
Very little or no Parental care needed for offspring	offspring compete for food and space
Able to reproduce from one offspring organism	

- Asexual reproduction requires
 - only one parent to produce offspring
 - two parents to produce offspring
 - a combination of parents to produce offspring
 - two clones to produce offspring
- Which of the following is definitely not an example of a asexual reproduction?
 - Breeders cross different dogs to develop a new breed of dog
 - Geneticists grow a field of blight-resistant wheat using the cells of a single plant
 - Bread mould spreads on a slice of bread at the back of the fridge
 - new raspberry shoot sprouts in the lawn near the raspberry patch
- A horticulturalist takes small pieces of tissue from a prized orchid and grows them into one hundred new orchid plants. These new plants
 - will be immortal.
 - will be at the same stage of maturity as the identical plant.
 - will likely mature to be twice the size of the original plant.
 - will exhibit identical flowers to the original plant.
- Some bacteria that do not have a nucleus and cannot undergo mitosis use which reproductive method?
 - Binary fission
 - Budding
 - Sexual reproduction
 - Fragmentation
- If an organism breaks apart as a result of injury and each fragment develops into a new individual, this is called
 - binary fission.
 - budding.
 - spore formation.
 - fragmentation.
- Which of the following is an example of vegetative reproduction?
 - A single lily bulb once planted becomes a large colony of identical lilies in three summers
 - A new baby fern shows up your back yard, just like the fern your neighbours have next door
 - A new starfish grows from the severed tip of a tentacle
 - Strep throat bacteria quickly colonize in your body and make you sick

Use the following diagram to label the different forms of asexual reproduction for question 7 to 11.



7. Which form of asexual reproduction does A represent?
- (A) vegetative reproduction
 - (B) budding
 - (C) spore formation
 - (D) binary fission
8. Which form of asexual reproduction does B represent?
- (A) vegetative reproduction
 - (B) budding
 - (C) spore formation
 - (D) binary fission
9. Which form of asexual reproduction does C represent?
- (A) vegetative reproduction
 - (B) budding
 - (C) spore formation
 - (D) binary fission
10. Which form of asexual reproduction does D represent?
- (A) vegetative reproduction
 - (B) budding
 - (C) spore formation
 - (D) binary fission
11. Bacteria reproduce asexually by
- (A) budding
 - (B) fragmentation
 - (C) binary fission
 - (D) cloning
12. One of the key advantages of asexual reproduction is
- (A) offspring compete for food and space
 - (B) large numbers of offspring reproduce quickly
 - (C) extreme temperatures can wipe out entire colonies
 - (D) offspring are genetic clones
13. One of the disadvantages of asexual reproduction is
- (A) species cannot survive when predators increase
 - (B) large colonies can out-compete other organisms for nutrients and water
 - (C) large numbers of offspring reproduce very slowly
 - (D) extreme temperatures can wipe out entire colonies

PART B: FILL IN THE BLANK

Use the terms in the vocabulary box to fill in the blanks. You can use each term more than once. You will not need to use every term.

asexual reproduction binary fission budding
clone cuttings spore formation
DNA fragmentation
vegetative reproduction

1. In _____ only one parent is required to produce offspring.
2. _____ is a method of reproduction for some types of bacteria.
4. Some simple organisms, such as hydras and sponges, are able to reproduce asexually by _____.
5. Certain species of sea stars, corals, and mosses can reproduce asexually by _____.
6. _____ occurs when special cells in the stems and roots divide repeatedly to form structures that eventually develop into a plant identical to the parent.
7. Some bacteria can reproduce asexually when their single cells split in two, forming new individuals in a process called _____.

PART C: MATCHING

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

1. _____ asexual reproduction	A. reproductive cells that develop into new individuals by repeated mitosis
2. _____ binary fission	B. a group of rapidly dividing cells develops on an organism and breaks away to become a new organism
3. _____ budding	C. a form of asexual reproduction in which each fragment of an organism develops into a clone of its parent
4. _____ fragmentation	D. single parent cell splits into two equal parts that have the same copies of genetic material
5. _____ spores	E. reproduction that requires only one parent
6. _____ vegetative reproduction	H. root cells divide repeatedly to form structures that develop into a plant that is identical to the parent