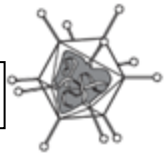
TEKS 4C – compare the structures of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza

1. Which of the following is a virus?

A 

B 

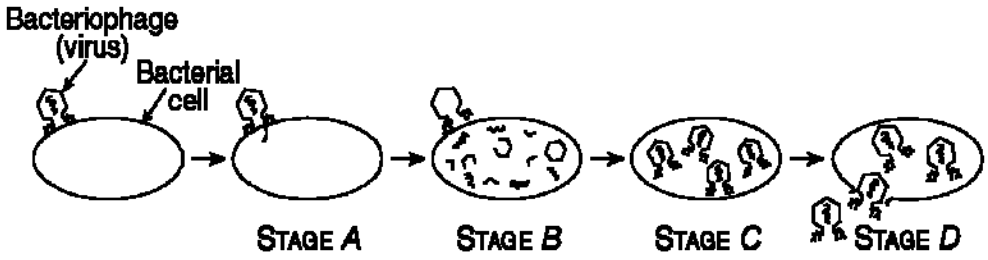
C 

D 

2. Which of the following is found in both cells and viruses?

A Mitochondria
B Genetic material
C Chloroplast
D Nucleus

The diagram below represents the stages of reproduction of a common virus. Use the diagram to answer question 3-6.



Match each stage with its description below:

A. Using the host cell to synthesize viral proteins and nucleic acids
B. Host cell breaks open and new viruses are released
C. Injection of viral genetic material injected into the cell
D. Assembly of new viruses for release

3. Stage A is _____
4. Stage B is _____
5. Stage C is _____
6. Stage D is_____

7. How does a virus cause disease?

A It disrupts homeostasis and equilibrium in the body.
B It produces toxic substances that harm the body.
C It rapidly undergoes mitotic cell division that quickly smothers nearby cells.
D It form endospores in the body.

Viral Disease	Common Method of Transmission
Smallpox	Direct contact
AIDS	Exchange of body fluids
West Nile virus	Mosquito vector
Influenza	Deposition of airborne droplets

8. Viruses can be transmitted in a variety of ways. The virus that causes SARS (severe acute respiratory syndrome) can be transmitted when an infected person coughs or sneezes. This virus is transmitted in a manner most similar to the transmission of—

A Smallpox
B Aids
C Influenza
D West Nile

9. People infected with the human immunodeficiency virus (HIV) have an increased risk of dying from secondary infections. Which of these best explains how HIV increases the danger of secondary infection?

A HIV produces antigens that damage red blood cells
B HIV adds genetic material from harmful microbes.
C HIV destroys helper T cells
D HIV consumes beneficial microbes in the body

TEKS 8A – define taxonomy and recognize the importance of a standardized taxonomic system to the scientific community

10. The science of classifying living things according to their similarities is called:

A Physiology
B Zoology
C Taxonomy
D Taxidermy

11. What is the importance of a standardized taxonomic system to the scientific community?

A To have many different common names for one species.

B To organize species cells, tissues, organs, and organ systems.

C To have a universal scientific naming system.

D To analyze species genetic information.

Bluebells in Different Locations

Plants known as bluebells exist in England, Scotland, and the United States. In each of these locations, however, the plant known as a bluebell is very different from the plants called bluebells in the other two locations.

12. Which of these is demonstrated by the information above?

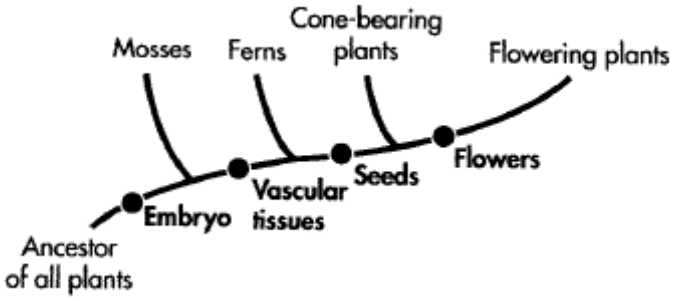
A The need for controlling variables in experiments

B The need for classifying and naming organisms scientifically

C The importance of predicting trends from scientific data

D The importance of questioning experimental evidence

TEKS 8B – categorize organisms using a hierarchical classification system based on similarities and differences shared among groups



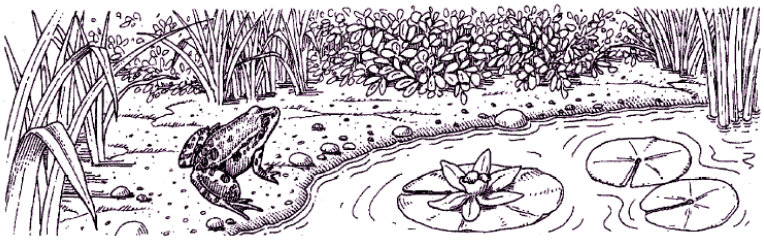
13. As shown in the cladogram above, what characteristic do ferns, cone-bearing plants, and flowering plants all have in common?

A Vascular tissues
B Seed production
C Flower production
D All developed at about the same time

Category	Organism *A*	Organism *B*	Organism *C*	Organism *D*
Kingdom	Plant	Animal	Animal	Animal
Phylum	Tracheophyta	Chordata	Chordata	Chordata
Genus	*Taxacarum*	*Canis*	*Canis*	*Homo*
Species	*officinale*	*familiaris*	*lupus*	*sapiens*

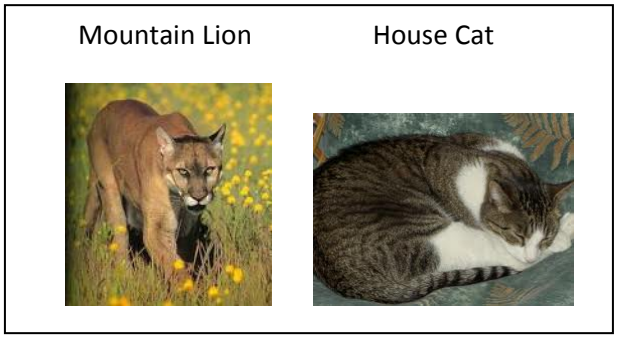
14. Which organism in the chart above is most distantly related from the other organisms?

A A
B B
C C
D D



15. The bullfrog, *Rana catesbeiana*, is most closely related to the –

A Spotted chorus frog, *Pseudacris clarki*
B Asian flying frog, *Polypedates leucomystax*
C Northern leopard frog, *Rana pipens*
D African bullfrog, *Pyxicephalus adspersus*



16. The scientific name of a mountain lion is *Felis concolor* and a house cat is *Felis catus*. Based on the names, you can determine that these two animals belong to the same:

A Species but a different genus
B Species but a different family
C Family but a different order
D Genus but a different species

17. A dichotomous key is used to –

A make cladograms
B identify derived characteristics
C trace evolutionary development
D identify the species of an organism

Use the information below to answer question 18.

An entomologist collected several insect specimens from a local meadow. She assigned each specimen a number, and recorded her observations in the dichotomous key shown below.

1a. wings exposed; easily seen when at rest ....*go to 2* 1b. wings covered; hidden from view when at rest.....*go to 3*	
2a. wings pointed away from the sides of the body.....number 123 2b. wings pointed towards the back of the body..number 145	
3a. body round; with a rigid shell .....number 232 3b. body elongated; longer than it is wide.....number 256	

18. What is the specimen number for the following insect?

A Number 145
B Number 256
C Number 232
D Number 123

TEKS 8C – compare characteristics of taxonomic groups, including archaea, bacteria, protists, fungi, plants, and animals

19. Correctly identify the kingdom whose members exhibit these traits: most are multicellular, eukaryotic, possess cell walls, do not perform photosynthesis, non-mobile representative organisms include mushrooms and mold.

A Kingdom Protista
B Kingdom Fungi
C Kingdom Plantae
D Kingdom Eubacteria

20. To which kingdom do the prokaryotic, single-celled microorganisms that survive the extreme temperatures in geyser, the very cold habitats of the Arctic, or the highly salty habitats of the ocean belong?

A Eubacteria
B Fungi
C Archaebacteria
D Protista

21. “I am a single-celled organism that often lives in or on your body. Only a few of me cause disease, but mainly I help with food digestion. Human sometimes use me to process foods like yogurt. In addition, I have a cell wall but I do not have a nucleus.” To which kingdom does this organism belong to?

A Eubacteria
B Fungi
C Plantae
D Protista

22. All plants and fungi are similar in that they both always -

A have stems.
B have cell walls.
C grow from the soil.
D perform photosynthesis.

23. Which of the following is an example of how eubacteria and archaebacteria differ in their structure?

A Chemical makeup of their cells walls.
B Presences of a nucleus in one cell but not other.
C Eubacteria are multicellular and archaebacteria are unicellular.
D Both live in extreme environments

24. Multicellular eukaryotes that are usually mobile and obtain food from other organisms probably belong to the kingdom –

A Plantae
B Fungi
C Animalia
D Protista

- It is a single-celled organism
- Has a flagellum and is able to move
- It contains a cell membrane
- It contains chloroplasts

25. You are given the above information about cell. What conclusion can be drawn from this information?

A It is a single plant cell.
B It is a fungal cell.
C It is a protista cell.
D It is an animal cell.

26. Which is a characteristic of members of the plant kingdom that distinguishes them from members of the animal kingdom?

A Storage of energy in chemical bonds
B Exchange of water with the environment
C Use of mRNA during protein synthesis
D Use of chlorophyll for solar energy transformation