CONCEPT: ANIMAL VIRUSES: 2. ENTRY & UNCOATING IN THE HOST CELL

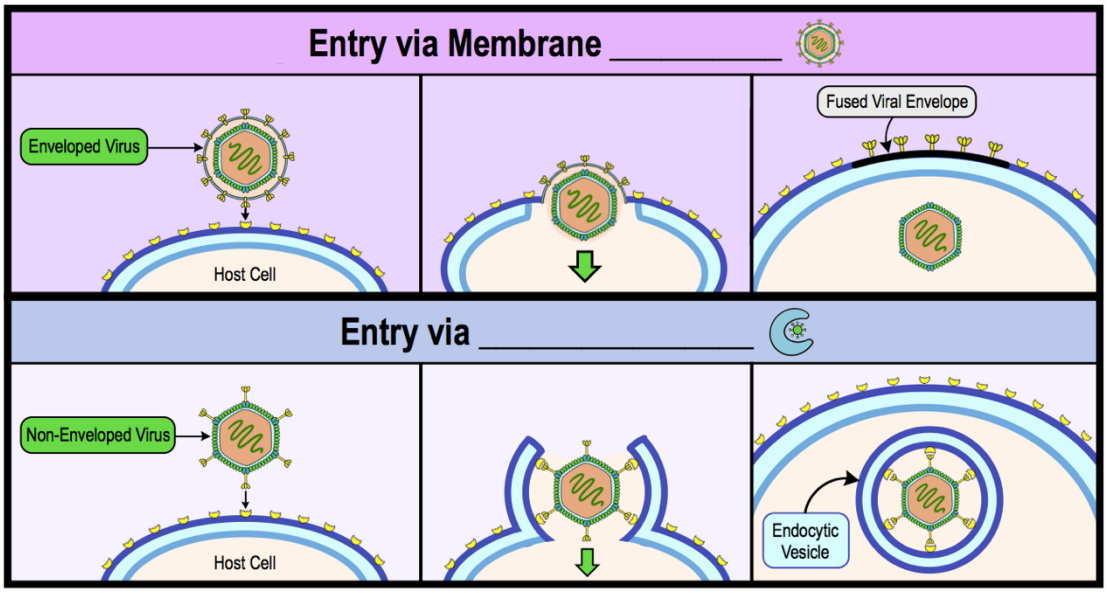
●After a virus has attached to the surface of a host cell, it begins the process of _____ & uncoating.

●*Enveloped* viruses enter their host cell in one of 2 ways:

1) **Membrane Fusion:** lipid envelope _____ with host cell's cytoplasmic membrane.

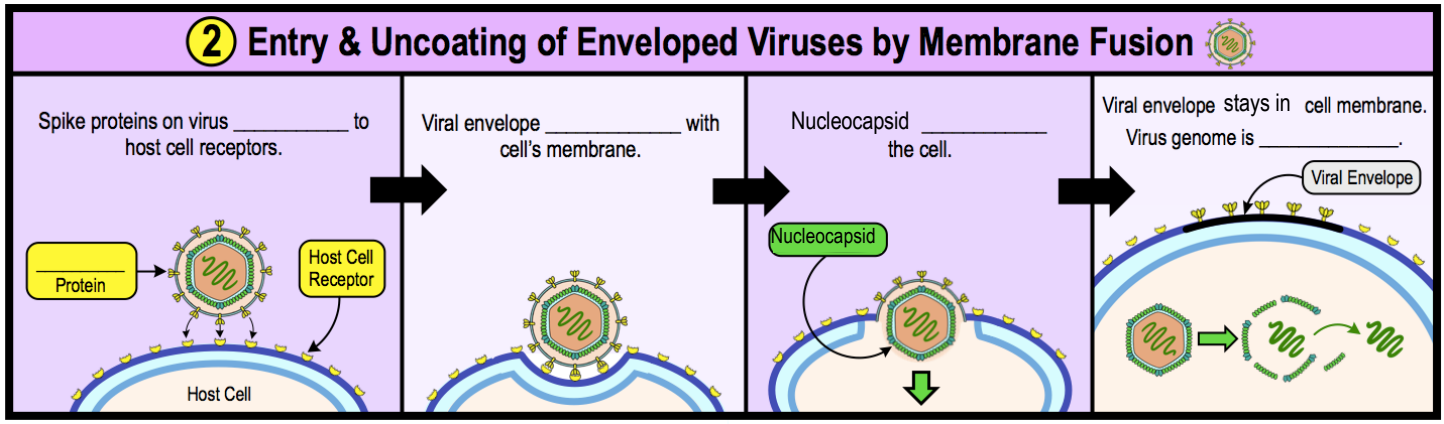
2) **Endocytosis:** involves the mechanism of _____-mediated endocytosis (recall from past videos).

□ _____-*enveloped* viruses can ONLY enter cells by endocytosis.



1) Entry & Uncoating of Enveloped Viruses by Membrane Fusion

●Entry of an enveloped virus into a host animal cell by membrane fusion occurs in a series of steps:



PRACTICE: There are two ways a virus can enter an animal cell. Which method is unique to enveloped viruses and why?

a) Entry via membrane fusion. Enveloped viruses have an outer member which fuses with the host cell's membrane.

b) Entry via endocytosis. Enveloped viruses have surface proteins which start endocytosis while naked viruses do not.

c) Both entry methods are unique to enveloped viruses, naked viruses cannot enter animal cells.

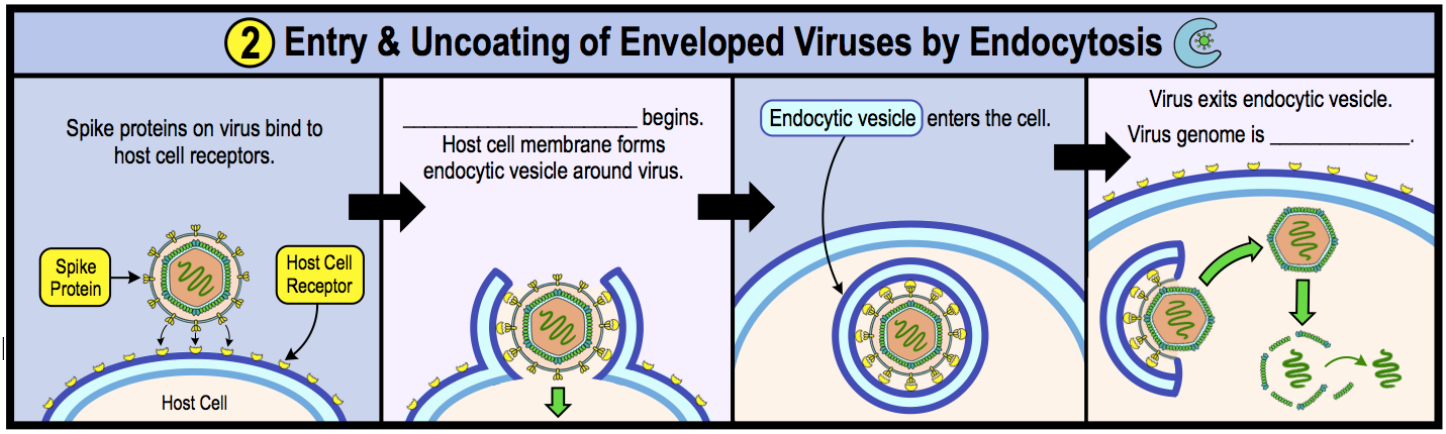
CONCEPT: ANIMAL VIRUSES: 2. ENTRY & UNCOATING IN THE HOST CELL

PRACTICE: Which method of entry is used by non-enveloped or "naked" viruses to enter animal cells?

a) Entry via membrane fusion.
b) Entry via endocytosis.
c) Entry via exocytosis.
d) Entry via viral absorption.

2) Entry & Uncoating by Endocytosis

●Entry of an enveloped virus into a host animal cell by endocytosis occurs in a series of steps:



PRACTICE: All of the following are major differences between the entry of viruses into animal cells via membrane fusion and via endocytosis except which of these answers?

a) During entry via endocytosis the virus enters the host cell within an endocytic vesicle.
b) Non-enveloped viruses can only enter animal cells via endocytosis.
c) During entry via membrane fusion the viral DNA is released into the cytoplasm in a step called uncoating.
d) During entry via membrane fusion the viral envelope fuses with the host cell's membrane.

PRACTICE: Once a virus has entered an animal cell, what step must occur before the viral DNA is replicated and new viruses are created within the host cell?

a) The virus must bind with the host cell's surface receptors to initiate endocytosis.
b) The viral envelope must fuse with the host cell's plasma membrane.
c) The capsid proteins around the viral DNA must be removed in a process called uncoating.