**Activity Plan Draft 2**

Lytic Cycle Activity Plan

11-5-12

**Preplanning**

Long-term Objective: TEKS 4C – Describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza

Activity Description: The lytic cycle of viral replication is broken down into six stages, each stage has its own card with a visual description of that stage. There is a board where there is a place in order for each stage. Students will have to use their knowledge and their partner’s knowledge to put the stages into the correct spot on the board.

Activity Rationale: Viruses attack our cells by using them as hosts in their reproduction process. Without our cells viruses could not replicate. Todays activity will demonstrate the reproduction processes of viruses and help us understand how diseases are caused by viruses.

Prerequisites: knowledge of viruses from previous lessons, including both the lytic and lysogenic cycles.

Key Terms:

* Virus – non-living molecule that is composed of protein, genetic material, and possibly lipids
* Prophage – viral DNA that is embedded in the host cell’s DNA
* Lytic cycle – viral reproductive process where virus enters a cell, makes copies of itself, and then lyses (bursts the cell) and destroys cell
* Lysogenic cycle – viral reproductive process where the viral DNA is infused with the host’s DNA and replicates along with the host cell.
* Capsid – the protein coat surrounding the genetic information core of a virus.
* Bacteriophage – a virus that only infect bacterial cells.

Critical Management Skills: Students will work in pairs with their desk buddies already assigned to them. Students are expected to discuss with each other how the stages occur.

**Activity Beginning**

Gaining Attention: “pineapple”

Behavior Expectations: Say “Be sure to stay with your desk buddy at your desk and participate in discussion with one another about the activity. If you need help, raise your hand and I will come to help.”

Opening: The lytic cycle is the way in which viruses reproduce by using a host cell, this is the only way viruses can reproduce because they cannot reproduce on their own.

* Has anyone ever gotten the flu or a stomachache?
* What do you think causes this?
* Today we will find out the reason for our flu and stomachache

**Activity Middle**

Description of what: Students will need to put the pieces in order correctly and then have the teacher view them, giving the teacher a description of what is taking place in each stage. One stage will be represented by two pieces, so they both will go in that stage’s place on the board.

Description of how: the teacher will need to explain and demonstrate with a student how the partner cooperation should take place. Also, need to demonstrate to the students how to give a description of the stages to the teacher once they believe they’re finished.

Description of Critical Management Skills: Walk around the classroom to make sure the students are on task. Compliment students who are discussing the activity with their partner. Compliment correct work and good descriptions if they are given. If students are missing information in their description then acknowledge their correct information and then tell them what more they could add to that, possibly in question form.

Possible probe questions

* What must the virus first do to begin reproduction? Find a host cell
* Why do they need a host cell? Viruses are not living
* In the lytic cycle, what happens after the viral DNA is injected into the host cell? Uses the cell to replicate viral pieces
* What will happen when there are too many viruses in the host cell? They will burst the cell
* What will all the new reproduced viruses do next? Find other cells to infect
* What would happen if the viral DNA injected into the host cell did not immediately replicate viral parts? It would fuse with the host cell’s DNA and become a prophage

**Activity Closing**

Call on individual pairs to fill in a black spot on the board, asking them to give a description for the class over that stage. Briefly cover the importance of the host cell to the virus and ask questions over what other rout of replication might the virus take (lysogenic cycle).