1 | **Virus Infections and Lifecycle**

1.1 | **Viral Life Cycle, an Overview**

1. **Attachment** => protein contact between virus and host

2. **Viral entry** => entering the cell

3. **Uncoating** => shedding the protein layer

4. **Biosynthesis** => make baby viruses

    (a) Genome Replication: transcribe DNA/RNA
    (b) Genome Expression: read DNA/RNA to make proteins

5. **Genome integration** => retrovirus only — put the viral gene into the genetic sequence of the actual cell

6. **Assembly** => put it all together

7. **Viral Exit** => mature virons leave

1.2 | **Viral attachment**

To be able to enter a cell, viruses have to do something to stick to it. B/c otherwise they would just be stuck in the bloodstream and be very sad.

See KBhBIO101ViralAttachment

1.3 | **Viral Entry**

In this step, the sticky virus on the surface of the cell gets into the cell. There are three different types of mechanisms by which this is achieved.

See KBhBIO101ViralEntry

1.4 | **Uncoating**

After the virus enters the cell, the lipid/protein shell on the outside must be shred to be able to release the additional DNA inside.

See KBhBIO101ViralUncoating

1.5 | **Viral Replication**

Now, with the viruses's DNA out on full display inside the cell, how do we make another virus? There are two key questions that must be asked to answer this:

• **How are viral mRNAs produced from the viral genome?** => virus will hijack the ribosomes in the host cells. So, it is more important to ask how the mRNAs are produced to tell ribosomes what to do

• **What serves as the template for viral genome replication** => replication will need a polymeraese; but the source and mechanism is dependent on viral genome structure/composition
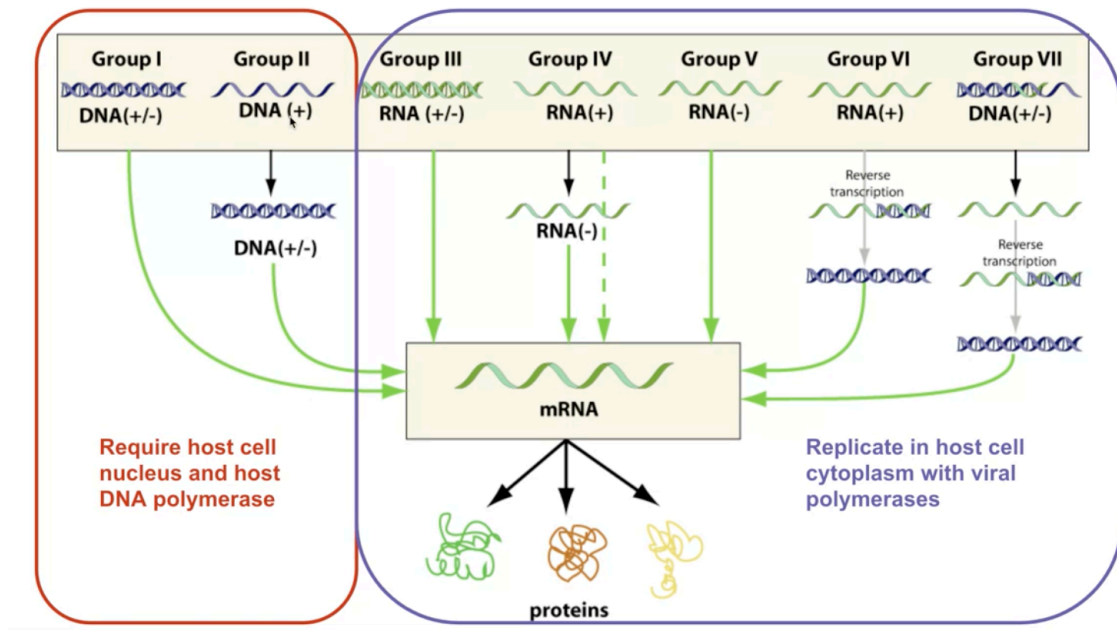
See KBhBIO101ViralReplication

Figure 1: Screen Shot 2020-10-12 at 11.04.53 PM.png

1.6 | **Packaging**

"Viral self-assembly" — make the protein, and, without ATP, just seal the newly-formed virus DNA in.

1.7 | **Viral Exit**

This is the process by which mature viron exit the host cell. See KBhBIO101ViralExit