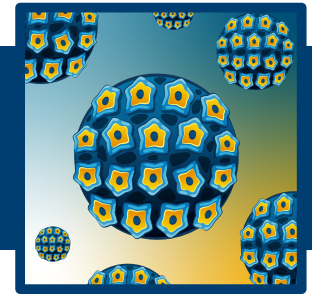


Teacher Directions

UNIT: GOING VIRAL!

LESSON 1: SILENT SABOTAGE

Activity 1B: FROM CODE TO CANCER



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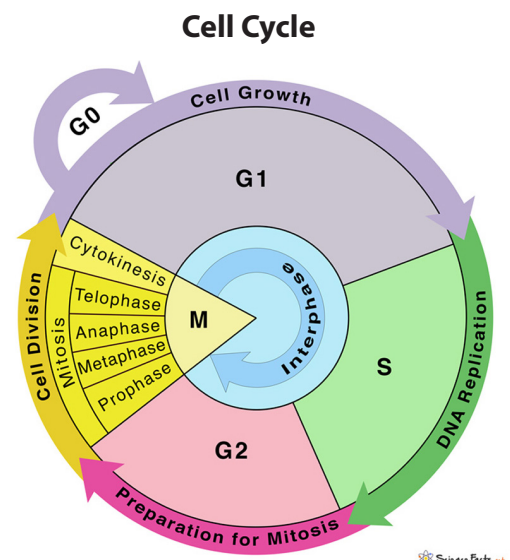
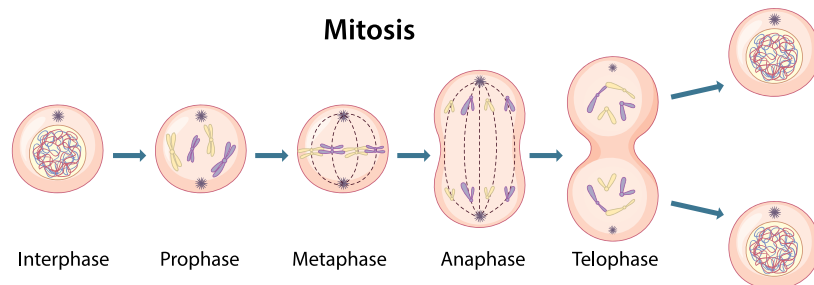
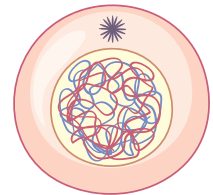
Round 1: Ink (cell cycle section including mitosis figure)

Organize students into their public health committees of 3-4.

Place butcher paper over desks to create table covers for students to draft their ideas.

Provide students with the following prompt:

- In your groups, sketch the cell cycle.
 - ➔ Students start to discuss the cell cycle and its steps.
 - ➔ Students draw on the butcher paper covering their table.
- Circulate between groups, giving minimal feedback, but keeping groups on track.



MIDDLE & HIGH SCHOOL LEVEL

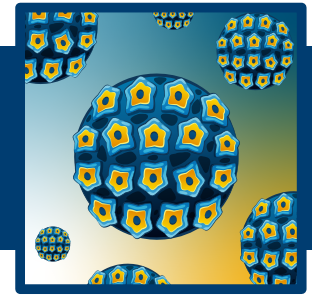
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Teacher Directions

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Round 2: Think

Students travel with their committee to a new table.

Students look at the sketch that was done and give feedback.

Suggestions:

- › Did the group label all the steps?
- › Are they missing any important steps?
- › Do you need to change anything about the sketch?
- › What could be improved?

Provide a new prompt:

› How could a viral infection disrupt the cell cycle?

- Students brainstorm ideas with their committees.
- Using their understanding of the cell cycle and viral replication, students will draft and write a response on the same butcher paper.



Round 3: Link

1. Travel with your committee to a new table.
2. Consider the information on the butcher paper. Analyze evaluate the information and responses provided by previous groups.
 - What additional information can your committee provide? Write any thoughts on the butcher paper.
3. Discuss the final prompt provided by the teacher with your committee.
4. Use everything on the table (the sketch, responses, and information sheet) to write a thoughtful response to the final prompt and generate new questions the committee needs to consider.

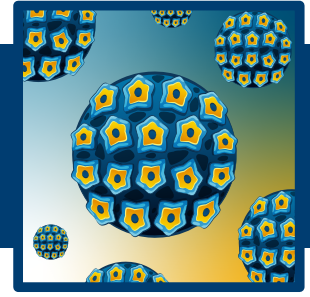


Teacher Directions

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LESSON 1: SILENT SABOTAGE

Activity 1B: FROM CODE TO CANCER

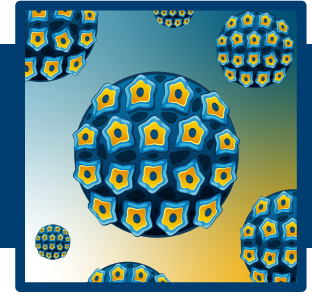


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PLAIN LANGUAGE FUNCTION CARDS



Note: These cards are not in any order.

Helps start viral DNA copying by supporting E1. Controls which virus genes get turned on or remain off.	Builds the outer shell (capsid) of the virus. The naming structural protein.
Also helps build the virus shell. Works with L1 but is a smaller part.	Acts like a DNA “unzipper” to unbind DNA and recruits DNA polymerase to help the virus copy its own DNA.
A cancer-causing gene. It helps shut off the p53 “guardian” protein, which normally protects cells from turning cancerous. Without p53 protein, the cells keep dividing.	Another cancer-causing gene. Pushes cells to keep dividing when they shouldn't.
May help start the process of cells turning cancerous. Not fully understood yet.	Found in skin cells. Helps the virus get out of the cell after it finishes making copies.



cut line

Part 3:

6. Have them place each gene card next to the correct region on the genome map.
 - Check Point: Teacher checks for correct placement on diagram. If incorrect, students go back to their placement of cards on Table 1. The amount of information or guidance provided is up to the teacher.

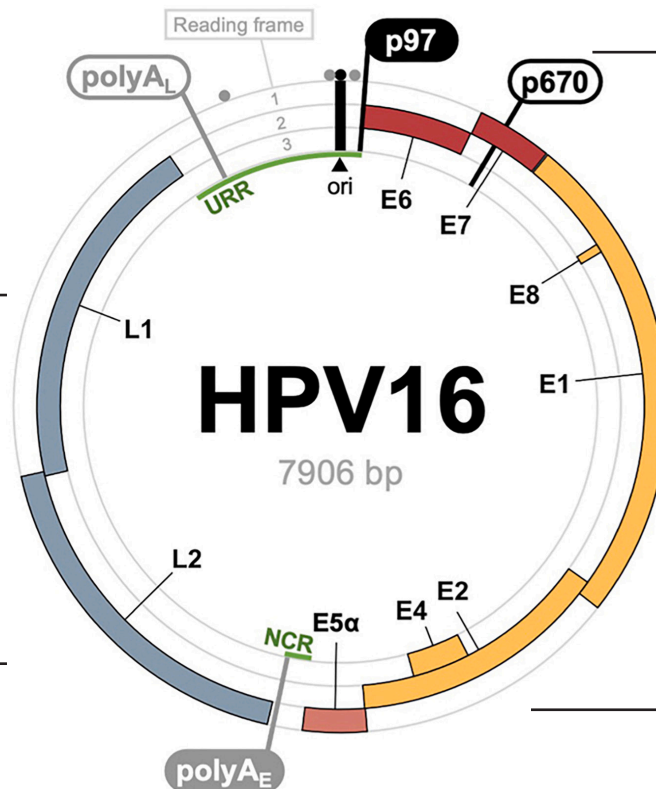
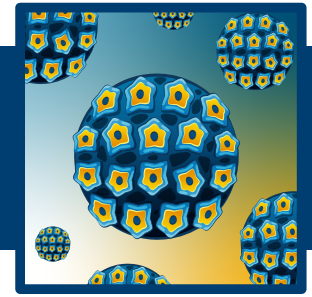
MIDDLE & HIGH SCHOOL LEVEL

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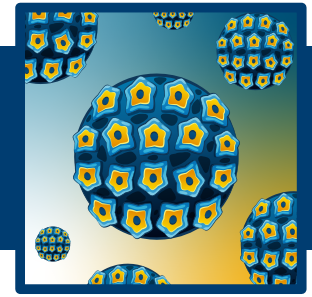
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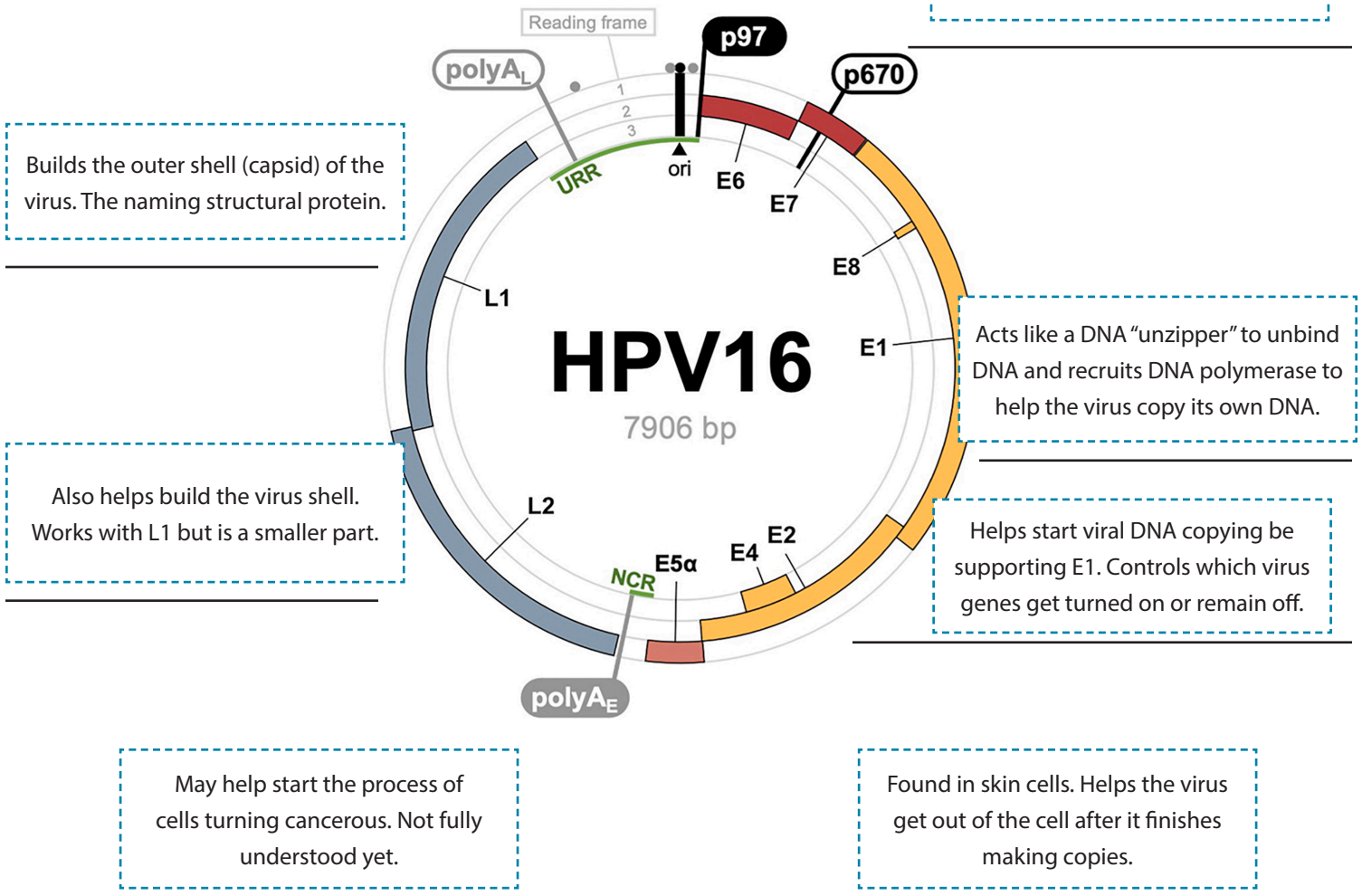
Activity 1B: FROM CODE TO CANCER



Teacher Key

A cancer-causing gene. It helps shut off the p53 “guardian” protein, which normally protects cells from turning cancerous. Without p53 protein, the cells keep dividing.

Another cancer-causing gene. Pushes cells to keep dividing when they shouldn't.



MIDDLE & HIGH SCHOOL LEVEL