

RNAi Viewing Guide

<http://www.pbs.org/wgbh/nova/body/rnai.html> and launch the video.

1. How does this video characterize RNA's role in cells?
2. What does the video use as an analogy for the nucleus?
3. How is information transferred from the nucleus into the cytoplasm?
4. What does the video use as an analogy for RNA?
5. What does the video use as analogy for ribosomes?
6. What was Richard Jorgensen tasked with making for a biotech firm?
7. What was Jorgensen's prediction about putting in an extra gene for 'purple' in petunias? How does this compare to what actually happened?
8. What does the video use as an analogy for viruses?
9. Why are the viral 'recipes' not good for cells?
10. What is the role of 'the cop' in preventing viral infection of cells? What criteria does the 'cop' use to determine if a recipe will harm the cell?
11. What happens if the 'cop' determines a 'recipe' is harmful?
12. How does this 'cop' system relate to the purple petunia?
13. What is RNAi?
14. How can RNAi be used in cases such as those of macular degeneration?
15. What is the likely cause of Marty's macular degeneration?
16. How can RNAi be used to shutdown a gene? How did scientists make the 'cop' work for them?
17. Which diseases beyond macular degeneration are candidates for RNAi therapy?
18. How could RNAi be used to characterize individual genes' functions?

Go to: <http://www.pbs.org/wgbh/nova/body/rnai-explained.html> and launch the interactive.

1. Sequence the flow of information from gene to RNA to protein.
2. What about viral RNA distinguishes it from cellular RNA?
3. Describe the role of Dicer and the RISC in RNAi.
4. How do Dicer and RISC shut down production of a specific protein?
5. How could RNAi be used to stop HIV infection? Use your knowledge of retroviral infection to propose how RNAi could be used to combat HIV.