



## **FAULT IN OUR STARS VIDEO DISCUSSION QUESTIONS**

### **Dr. Narayan Hosmane: Killing Cancer with Chemistry**

1. Dr. Hosmane discusses how his favorite silicon elements change colors when they are burned. Can you think of any other elements that have these properties? One appears in a common storefront sign.
2. The video discusses covalent bonding between elements. Can you think of another form of bonding that elements do?  
Do you think that the boron drugs introduced into the cancer cells will appear in mitosis, making the replicated cell also carry the boron drug? Why or why not?

### **Gaylen Kapperman on Blindness Part 1: Retinitis Pigmen-what?**

1. Dr. Gaylen Kapperman discusses how victims of retina deterioration rarely realize their field of vision is slowly getting smaller. Why do you think this is?
2. Because Dr. Kapperman is blind, he must go out of his way every day to do the things most people take for granted, like read a sign or appreciate fine art. Luckily, inventions like the brail address book exist to help people with disabilities. If you had the financial and scientific resources to invent something for people with disabilities, what would you invent? Why?
3. Due to his family's medical history, Dr. Kapperman knew he would one day lose his vision. If you knew you were going to lose your vision as soon as tomorrow, what would you do differently today?
4. Please explain how each one of the five senses (touch, taste, sight, hearing and smell) is important to your day to day activities.
5. If you had to live without one of your senses, which would you give up? Why?

## Gaylen Kapperman on Blindness Part 2: Blind as a Bat

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1. Although the optometrist could tell that Dr. Kapperman had problems with his retinas, the optometrist was unable to voice this concern because of ethical and legal reasons. He instead had to refer the family to an ophthalmologist. Do you believe optometrists should be able to voice medical concerns, or because they are not as medically versed as ophthalmologists they should not be able to voice concerns such as these? Why or why not?
2. Dr. Kapperman explains that some parents wish to withhold that their child will become blind from the child. Why do you think this is? If you were going to have a child go blind would you tell them or not? Why or why not?
3. The ophthalmologist recommended rushing Dr. Kapperman through middle school and high school in order to “beat the clock” on their estimated timeline of vision loss. Why is this problematic?

## Gaylen Kapperman on Blindness Part 3: You See With Your Brain

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1. Although the eye is one organ, it is made up of multiple parts. What is another organ that has multiple working parts?
2. The iris is the colorful part of the eye. If you could have any colored iris, what color would you want? Why?
3. According to Dr. Kapperman you see with your brain not your eye. Do you think this applies to other 4 senses? Why or why not?
4. Dr. Kapperman’s retinas are destroyed, therefore his nerve impulses do not “start up”. Pick another portion of the eye and describe what you think would happen if your selected portion of the eye was damaged.
5. On the back of this paper, draw and label an eye.

## Gaylen Kapperman on Blindness Part 4: The Fault in Our Stars and a Talking Computer

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1. Issac’s cancer is able to travel from his retinas through the optic nerve and into his brain. This is called a metastatic cancer. What are other places cancer can metastasize?
2. If you knew your eyes had a high-chance of developing cancer, but were given the chance to potentially try and save one of your eyes like Issac, would you take it? Why or why not?
3. If you had totally lost your eyesight what would be the most difficult adjustment for you personally? Why?

*STEM Read and SmartSpace@NIU are part of Northern Illinois University’s STEAM Works Initiative.*

