



## ENDER'S GAME VIDEO DISCUSSION QUESTIONS

### Bugging Out Part 1: Insects Rule the World!

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1. An entomologist can specialize in many scientific fields on their career path. If you could specialize in one scientific field, what scientific field would it be? Why?
2. Few insects are harmful to humans, but those that are can be lethal. Imagine we lived in a world that was the reverse. Most insects are harmful; mankind must adapt to living with millions of tiny organisms that could potentially kill them. How would life on Earth change?
3. The honey bee was not native to the Americas, instead European settlers brought the honey bees over with them when they migrated. What are some other animals or plants that exist in the United States, but were not native to the land?
4. Which of the insects that you learned about interested you the most? Were you surprised to learn that some insects that appear bad are good and vice versa?

### Bugging Out Part 2: The Anatomy of a Bugger

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1. Prior to watching the video, define how you currently identify what is and is not an insect?
2. Assume you can only see the outside of an insect. What would you be looking for on the outside to identify that it is an insect?
3. Assume you can only see the inside of an insect. What would you be looking for on the inside to identify that it is an insect?
4. What insect fact that you learned from the video surprised you the most? Why?

### Bugging Out Part 3: Name That Bug

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1. Lots of insects are grouped into categories such as "flies," however, not all insects with 'flies' in the name are "true" flies. What are some other examples of words, people, things, animals being grouped into categories and accepted in said categories even though they do not actually adhere to the 'guidelines' of the category they were placed in?
2. Follow along with the video! Attempt to do the assigned math 'homework'.
3. The video asks for an essay based on whether or not you believe that insects can live somewhere besides Earth. Give a short two sentence explanation that states your opinion and why.

## Ender's Day: Bugging Out Highlights

1. Based on the video, insects are proven successful because they are small, have flight abilities, and are able to survive with limited resources. Using this description of a successful species, what are some other species or animals that you believe could do well, such as insects?
2. Killer bees are able to swarm and sting at a rapid rate. What are some ways to prevent or escape a bee attack?
3. If you had the option to wear a 'bee-beard' as shown in Dr. Miller's slide show, would you? Why or why not?
4. Of everything you learned about termites today, what surprised you most?

## A Brief History of Space Travel: From Science Fiction to a Man on the Moon

1. Astronomy requires a lot of physics. What other scientific knowledge do you believe one would need to become an astronomer?
2. Astronomy was propelled forward by the Cold War. Why do you think this is?
3. The first rocket that went to space was originally from Nazi Germany and was originally used as a missile. What are some other materials or objects that are currently not used for science, but you believe could be? Why?
4. Imagine you were the first person on the moon, not Neil Armstrong, what would you have named your landing site. What might have your first words on the moon been?

## A Brief History of Space Travel: From Mars to the Space Station

1. Mars looks very similar to Earth. Pick three other planets and describe what you would expect the view of the sunset from their surface would look like.
2. Space shuttles caused two major, tragic accidents that resulted in the death of multiple cosmonauts. What do you believe has changed due to the two disasters?
3. Currently the USA does not have means to get a person to space. NASA'S funding has been significantly cut, and astronauts almost seem as though they are a thing from the past. Why do you think this is? Do you believe we should be putting more time, money, and effort into the space program? Why or why not?

## A Brief History of Space Travel: To Infinity and Beyond

1. A trip to Mars may be only a one-way trip. If given the opportunity to travel to Mars, would you take it?
2. The idea of vacationing to the moon sounds like something straight out of a science fiction film, but in reality we may not be that far off from it. What is your opinion on the privatization of trips to the moon? What political conflicts could trips to the moon cause?
3. What do you believe are the pros and cons to sending humans to Mars? Why?

## Ender's Day: Your Body in Space

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1. Going to space requires a lot of flexibility and strength, often meaning that astronauts in training must prepare their cardiovascular system, musculoskeletal system, and sensorimotor system. Why do you think this is?
2. Horizontal treadmills are just one way astronauts prepare for weightlessness in space. What are some other activities they could do to prepare themselves for feeling weightless?
3. If you were given a chance to participate in the vomit comet, would you? Why or why not?
4. Between the ergometer bike, the treadmill, and the resistive force machine, which of the three pieces of equipment do you believe is the most similar its Earth counterpart? Which do you feel is the least similar? Why?

## The Art of Alien Life: When Science Meets Art

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1. Famous illustrator and NIU Professor Emeritus Yale Factor worked as a scientific illustrator. If you were able to illustrate whatever you liked, what would you illustrate? Why?
2. Yale learned a lot about science as he worked as a scientific illustrator. If you had the chance to draw and learn about one specific kind of science, what kind of science would you select? Why?
3. The scientific illustrator before Yale was fired because he prioritized artistic liberties over scientific research. If you were expected to illustrate, do you believe you would find it hard to draw as things truly appeared rather than how you believed they should appear? Why or why not?

## The Art of Alien Life: "If You Can Draw It You Can Do It"

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1. In the video it is expressed that "artists collect stuff" as inspiration. Talk about something you have "collected" and how you later used it for inspiration.
2. Which of the illustrations shown grabbed your attention the most? Why?
3. If you were to create an opening image for Orson Scott Card's *Ender's Game* what would you create? Why?

## Ender's Day: Drones and the Future of Unmanned Flight

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1. Before watching the video, how do you believe drones work? What is your opinion on the ethics of drones? Why?
2. If someone was raised like Ender, sent to military school at age six, what kind of psychological damage do you think they would suffer from?
3. In order to work on an unmanned flight vehicle one must pass a test called the ASVAB. Sgt. Baker suggests practicing online to prepare for it. What are some preparation and study tactics you use in your day to day life, be it for sports, tests, arts?

## Ender's Day Panel: Drones

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1. Do you believe drones should be allowed in national airspace? Why or why not?
2. After hearing the potential benefits and downfalls of unmanned flight vehicles, what are you most excited for with the advancement of drone technology? What are you most worried about?
3. Laws set in place to prevent the military from spying on civilians also blocks them from being able to apprehend criminals who they witness committing crimes. Do you believe the law should stay as is or should it be changed to permit military officers to intervene in the event of an emergency?

## Ender's Day Panel: Video Games

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1. Before Military officers are allowed to pilot a plane they must go through numerous flying simulations. Do you believe simulations like these should be required of beginning drivers before they can obtain a permit? Why or why not?
2. Sgt. Baker believes that in some cases video games can also be used to develop and strengthen leadership. Do you believe this idea is possible? Why or why not?
3. Video game simulations are used to help pilots and officers make decisions in a quick, pressurized situation. Do you believe this is effective? What are some benefits of this kind of set up? What are some drawbacks?

## Ender's Day Panel: Bullying

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1. Some of the panelists struggled to reach a conclusion as to whether or not they believed Ender was a bully. After reading the book, what was your opinion on Ender? Did you believe he was a bully at any point?
2. Many characters in the novel *Ender's Game* allow bullying to occur without intervening. This lack of action permits bullying to grow at an alarming speed. What are some ways you could intervene when bullying occurs?
3. Isolation is a symptom of bullying. What are some ways you can reach out to a victim of bullying? Why is it important that you reach out?

## Ender's Day Panel: Aliens, Science Fiction and the Future

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1. Consider Dr. Smaldino's first question. Where do you think we are going with all of our recent technological advances? Scientists come closer and closer every day to creating a more human-like AI. Slowly, but surely self-driving cars are coming into reality. What do you think would be some of the potential benefits and consequences of recently discovered technologies?
2. What would you do in the event of an alien invasion like that seen in *Ender's Game*? Why?
3. Dr. Gunkle explains that sci-fi writers often times take modern, every day conflicts and project them into the future to make known or explore the potential consequences of modern day conflicts. If you were to write a sci-fi novel, what modern day conflict would you explore? Why?

## Ender's Day Panel: Audience Q&A and Final Thoughts

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1. The panelists explore the technology seen in the Ender's Game book and film. They express that although we are not close to having this technology they sure would love to see it. What is a technology that has not yet been invented that you would like to see? Why?
2. Officers with a STEM background are in high demand at military bases. If you had the opportunity to study a STEM field, what STEM field would you study? Why?
3. Science and Math are both critical to work on AI type robotics and drones. What are some other valuable skills someone who wanted to work on AI type robotics and drones may need?

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

