

October Sky (Rocket Boys)

Discussion Questions

Answer each of the following discussion questions in complete sentences and as a cohesive paragraph.

Chapter 1

One of Homer's favorite pastimes growing up was reading. He particularly liked books by Jules Verne because they were filled "with not only great adventures but also scientists and engineers who considered the acquisition of knowledge to be the greatest pursuit of mankind." (p. 13). Do you agree or disagree with this belief? Explain.

Chapter 2

What significant event took place on October 5, 1957? How did this event impact the people of Coalwood?

What rocket scientist did Homer idolize? How did he inspire Homer?

After Homer saw Sputnik as it flew over, he stated that "I was a boy in Coalwood, West Virginia. All of a sudden, that wasn't good enough." What do you think he meant by this statement?

Describe Homer's first attempt at building a rocket.

Chapter 3

How did Homer's mother and father each respond to the destruction of the rose-garden fence? Why do you think they had such different responses?

Chapter 4

Describe the United States' first attempt to put a satellite into orbit. Did this event encourage or discourage Homer in his rocket building attempts? Explain.

Chapter 5

Describe the brief history of rocketry that Quentin shared with Homer.

Identify and explain the basic scientific principle that explains how a rocket works.

Describe the chemicals that Quentin suggested Homer use as fuel for his rocket.

Although Homer was certain that his earliest attempts would fail, he stated that "Failure, after all, just added to our body of knowledge." (p.84). Discuss what he meant by this statement and how it relates to scientific study.

Chapter 6

What was the BCMA? Who were the members and what were their jobs?

What name was given to Homer's rockets? What do you think is the significance in choosing this name?

What problems did the boys encounter in flying Auk I-IV?

Chapter 7

The boys conducted pop bottle experiments in an attempt learn more about their black powder samples. Discuss why their approach in carrying out these experiments was not scientific and what despite their approach, they were able to learn about their fuel.

Describe the event that changed Homer's father's mind about the rocket building. How did he show his support of Homer after this event?

Chapter 8

Describe the two major changes that occurred at school at the end of Homer's sophomore year. Discuss the impact that each of these changes had on Homer and his rocket building attempts.

Chapter 9

Homer's father said that the hardest thing that he ever learned was entropy. Define entropy and explain what he meant.

Chapter 10

Discuss the discovery that Homer made about learning and explain how this discovery was exemplified by his failures and successes in math.

Discuss the differences between slow and rapid oxidation. Give an example of each and explain how Homer used this knowledge in his rocket building.

Chapter 11

Describe how the boys demonstrated correct laboratory safety.

Describe Quentin's invention he called a "theodolite". How was it constructed, and what was its purpose?

Show the equation and calculation that Quentin performed in determining the height that Auk XII achieved. Convert the height from feet to meters.

Chapter 12

According to their calculations, Auk XIV achieved a height of 3000 feet. Convert this measurement to miles.

Chapter 13

Miss Riley gave Homer the book, Principles of Guided Missile Design. When Homer tried to thank her she stated, "All I've done is given you a book. You have to have the courage to learn what's inside it." (p. 232). Discuss what you think she meant by this statement.

Chapter 14

Luna I, the first man made object to break away from Earth's gravity, traveled at a speed of 25,500 miles/hour. Convert this speed to meters/second.

Explain the concept behind the DeLaval nozzle. (See page 344 for an additional explanation by Homer.)

Chapter 15

The police accused the rocket club of starting a forest fire with their rockets. When the police were asked where the fire occurred, they replied "Davy Mountain. Between Coalwood and Welch by the way a crow flies." (p. 259). Discuss the differences between distance and displacement and identify the term to which the above statement refers.

Describe the new propellant that the boys wanted to begin using. Include in your discussion the reason why a new fuel was needed.

Chapter 16

When Quentin saw all of the changes that the machinist had made to the rocket when building Auk XX, he stated, "He may be a first class machinist, but he knows nothing about scientific principles." (p. 268). Discuss whether or not Quentin was justified in his criticism.

Chapter 18

Describe the event(s) that caused Homer to lose interest in building his rockets. Why do you think he had this response?

Chapter 19

In Miss Riley's attempts to motivate Homer to continue work on his rockets, she tells him that it is his "job to build your rockets...because it honors you and this school." (p.297). Discuss what you think she meant by this statement.

Chapter 21

When the boys first attempted to use the zinc-sulfur powder mix as a fuel, it didn't work. Discuss what problem(s) they encountered and the solution(s) they came up with in order to overcome the problem(s).

Auk XXII-A was in the air for 38 seconds. What initial velocity must the rocket have had in order to achieve this altitude? (Write the equation and show all work involved in your calculation.)

Discuss what is meant by specific impulse and describe how the boys attempted to measure it. (See p.396 for an additional explanation by Homer.)

Chapter 22

Duplicate the calculations that Homer performed in order to determine what initial velocity would be required for a rocket to achieve an altitude of 2 miles. (Write the equation and show all work involved in your calculation.)

What was Quentin's definition of a "great rocket"? (p. 340). Discuss whether or not you agree with his definition.

Auk XXIII was in the air for 42 seconds. Calculate how high (in meters) the rocket went.

Chapter 25

Describe Homer's experience at the National Science Fair. What do you think these experiences taught him?

Chapter 26

As Homer encourages his father to launch the final rocket, he tells him "A rocket won't fly unless someone lights the fuse." (p. 419). O'Dell made a similar statement when they launched their first rocket. (p. 105). What do you think is the significance of this statement?