

# ***Have Spacesuit, Will Travel* Lesson Plans**

by  
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## **Introduction:**

*Have Spacesuit, Will Travel* is widely regarded as one of the finest books Robert Heinlein ever wrote (which is to say, one of the finest works of science fiction, and one of the finest books ever written for young adults, particularly teenage boys). Repeatedly, I have been told by students and fans that this was their favorite of all the Heinlein juveniles (the series of [] novels Heinlein wrote for what was then called the juvenile market, published by Scribners between [] and ended by their rejection of *Starship Troopers*). In terms of sheer readability, this is more than likely the best entry point for a reader who has never encountered Robert Heinlein; for readers who may not have the vocabulary and reading level required for many of his other juveniles, this is the easiest of the juveniles to read. *Have Spacesuit, Will Travel* is as close to a perfect book for all ages as any writer has ever reached.

We hope you find the following lesson plans helpful, and that you will choose *Have Spacesuit, Will Travel* or another Heinlein work to use in your classrooms. We would like to hear from you about your own experiences using Heinlein's works. Please email us at [www.heinleinsociety.org](http://www.heinleinsociety.org)!

## **Edition Used:**

These lesson plans are keyed to the Del Rey / Ballantine paperback edition, as that is the most readily available.

## **Date of Publication / Dedication:**

*Have Spacesuit, Will Travel* was published in 1958; it was completed in August 1957.

The novel is dedicated to Harry and Barbara Stine, who were friends of the Heinleins; Harry Stine was a science fiction writer, who, like Heinlein, wrote juveniles.

## **Chapter Summaries / Discussion Notes:**

Each chapter will be summarized, and pertinent details and issues explicated. Any of the details might be turned into extra credit questions, which require the student to do research on the internet or in a library. Heinlein often inserted historical, scientific, and literary references into his novels, as a way of gently urging the reader to explore these references. Vocabulary words which students may have difficulty with will be suggested, with particular attention paid to words Heinlein invented (which, unless we've adopted the word, won't be found in a dictionary).

I strongly urge that students learn vocabulary not by checking the dictionary, but by the following procedure: 1) say the word aloud (this begins to fix the word in long-term memory); 2) look for roots (Spanish speakers often have an advantage here, since the longer Latinate words in English often have a simple Spanish root, as in the word "facilitate"); 3) use context to make TWO guesses as to what the word means; 4) then, and only then, check the dictionary. Students need to be reminded to learn new vocabulary words, because they will often choose to simply

skip the word they don't know, or in running to the dictionary, will fail to permanently learn the new word as they only place the definition into short-term memory. I require my students to learn at least seven new words a week; in this, Heinlein is very helpful, because he actually used a more sophisticated vocabulary in his juveniles than in his adult fiction [get quote from Grumbles]. If teachers do not encourage students to acquire the new vocabulary, students often have a hard time with Heinlein's juveniles for precisely that reason: they are more difficult than today's more controlled, simplistic vocabulary in most young adult novels.

## CHAPTER ONE:

The novel opens with Kip casually saying: "You see, I had this space suit."

Stylistically, this sentence displays Heinlein's gift at introducing us into a future quickly and effectively, while maintaining a breezy tone. Nobody has a space suit; in 1958, having one would create a shiver of delight among any reader interested in the future, and outer space (and it still works fairly well in the 21<sup>st</sup> century, as I have seen in the eyes of teenage boys to whom I've read that first line.) The certitude of a future in which one can own a space suit (and by extension, go to outer space) provides a considerable flair to impressionable readers – which, was, of course, much of Heinlein's mission: to create support for a space program. (The title also plays off a famous western TV series of the day, *Have Gun, Will Travel*; by inverting the idea of a spacesuit for a gun, Kip's essential character of the hero is suggested, but on another frontier: that of space.)

Kip then relates "how it happened..."

Heinlein introduces one of his more effective father-figures (who happens, unlike many of his father figures, to actually be a father...). The father, Dr. Russell, represents the voice of experience, pragmatism, and insight in the novel. One of the uses to which Heinlein puts the character is to introduce hints to his audience as to what other books they ought to be reading: specifically, Jerome K. Jerome's classic comic novel, *Three Men in a Boat (To Say Nothing of the Dog!)*.

Much of the beginning of this novel also suggests many of Heinlein's ideas about parenting and education, a subject he wrote about repeatedly in the late fifties and early sixties, as he came to believe changes in parenting and education were creating problems for our future (see *Starship Troopers* and *Podkayne of Mars* for other extensive discussions on the same topic). Dr. Russell is more than willing to allow his son to take risks and try new things; he is also of the opinion that Kip needs to take responsibility for those challenges, and that Kip should do the work himself.

Kip wants to go to the moon (so did Heinlein, for most of his life; go read "Requiem" or "The Man Who Sold the Moon" for other examples of this passion, as well as Heinlein's film *Destination Moon*).

Dr. Russell also has some rather odd ideas about money, as he leaves it in two baskets: one for family use, and one for taxes. The idea of money in a basket on your way out also occurs in *Stranger in a Strange Land*, which Heinlein was working on around the same time as this juvenile.

Dr. Russell may or may not have been a spy; the tongue is firmly planted in the cheek here. As with the opening sentence, this is a good opportunity to discuss tone.

Kip (given name: Clifford) then has to figure out a way to get to the moon. He retreats to his workshop in the barn to figure it out. (One of the saddest realizations I had in teaching this novel is the degree to which American teenagers rarely, if ever, have a workshop in the 21<sup>st</sup> century. The era of the tinkerer seems to be dead, largely due to the advanced technology required to build and fix things today. Fewer and fewer teenage boys even work on their cars anymore, because of the computer systems involved; ten years ago, most of my students were able to take apart an engine and put it back together; in 2005, few of them have more than a rudimentary knowledge of auto mechanics. Heinlein would have been appalled, given his belief in each individual being capable of a wide variety of skills and knowledge.)

One of the unique qualities of Heinlein's protagonists in the juveniles and many of his other writings is their general lack of genius; they are often bright, but not as bright as other people in the narratives. Kip is smart, but as we will see later on, Pee-Wee is much, much smarter. Given that Heinlein has a reputation for writing novels about impossibly gifted people, it might be useful to realize that more often than not, they're just people who are on the upper edge of the bell curve, and not the curve-busters; their abilities tend to come more from a willingness to take chances, and to do the hard work needed to make those risks pay off, than from some unlikely superiority (although there are characters with extreme gifts, like Andrew Jackson Libby's mathematical ability in "Misfit" and Starman Jones' eidetic memory; I would argue that Heinlein used characters with whom we could identify far more often than he did characters with superhuman traits; even Michael Valentine Smith isn't particularly exceptional, save in his upbringing).

What follows is an exploration on the value of real education, as opposed to what the public schools were doing in the name of education. In a flashback, Dr. Russell orders Kip to bring home all of his textbooks, which Dr. Russell then reads, in their entirety, in a single night. (Heinlein also inserts mention of a number of different ways to run a family, including the somewhat loose structure of Kip's family). Dr. Russell then visits Kip's school repeatedly, which worries Kip (...when parents get overactive they are always up to something"; this is a role reversal, since it is usually the parent who suspects their child is up to something...). Dr. Russell then challenges Kip with the most important question he can think of: "Kip, do you intend to go to college?" Dr. Russell suggests that the courses Kip has been taking are less than useless (the list of classes are clearly satirical of American Education, a subject Heinlein would return to with disgust and gusto in *Expanded Universe*). When Kip tries to defend himself, Dr. Russell stops him cold by asking him to define a dangling participle, explain Van Buren's failure to get re-elected, and the means to extract a cube root. Dr. Russell finally sums up modern education as "occupational therapy for morons!" Dr. Russell ponders solutions, including private school (rejected for its "nutty ideas" that Dr. Russell himself had to get rid of himself); it is revealed (here and elsewhere) that the Russells moved to a small town to raise Kip, in the belief that it was the best possible place to raise a child.

Kip thinks about it, and realizes his father is right; he switches classes to much harder subjects ("algebra, Spanish, general science, English grammar and composition") even though those courses are still "watered down." His real education comes from reading, at his father's instigation: "I almost bogged down – those books were *hard*, not the predigested pap I got in school." Kip's education soars; he speaks Spanish fluently, along with Latin; he gets hooked on math (...math is worse than peanuts"; try eating just one!). He sets up a lab in the barn, and pursues chemistry and physics and photography, and electronics, and radio.

Throughout the first chapter are scattered little notes about the forays into outer space in Heinlein's future. Readers are often in a future without being told directly how they got there; this stylistic invention was one of Heinlein's greatest contributions to science fiction when he invented it in the late thirties and early forties. Rather than being lectured, the future is just assumed, and deft insertions accomplish all the benchmarks we need to have as readers.

Kip remembers his father earning royalties.

Kip begins to look for engineering schools to apply to for his college education, as a means to get to the moon, along with other possibilities.

His father then shows him an ad for a soap contest; whoever writes the best slogan can win a trip to the moon. Students may need to have the concept of these sorts of contests explained to them; for the most part, they have never heard of these.

Kip gets so excited he spills his cereal into his lap. (This foreshadows and ironically parallels the end of the novel, as Kip dumps the chocolate malt on Ace).

## CHAPTER TWO:

Kip begins to feel as if he couldn't possibly win; Dr. Russell tells him there is no such thing as luck (a philosophical argument over whether or not luck exists usually follows this comment in my class), and that Kip needs to make a "systematic effort."

Dr. Russell makes sure that Kip has continued to keep up his education and applications to college. In an inside joke, he hands Kip a biochemistry textbook authored (in part) by science fiction writer Isaac Asimov (a real textbook).

Kip's boss at the pharmacy, Mr. Charton, helps him with his contest by selling Skyway Soap cheaply, and by getting him almost all the wrappers; Kip's parents help out as well.

Ace, an "over-age juvenile delinquent" in the town, makes life rough on Kip by ridiculing his efforts in the contest, and burning the wrapper. (Ace also calls Kip a "space cadet" – which is another inside joke, since Heinlein's novel *Space Cadet* had coined that phrase, and then the TV series loosely based on that novel, "Tom Corbett: Space Cadet" had been a fairly successful series in the early fifties, popularizing the phrase.)

Kip turns in a grand total of 5,782 slogans.

Kip graduates.

On July 4<sup>th</sup>, they are awaiting the results. Dr. Russell reveals that they were once involved in political campaigns (as were the Heinleins).

Dr. Russell announces (incidentally) that Kip has grown up: "He is not a boy; he is a man." This alone announces that the bildungsroman (the novel of education) format that Heinlein has followed in previous novels is complete by the end of the second chapter (normally, the boy's education and maturation is not completed until the end of the novel, but Heinlein is after different game in this book, I would argue).

They announce the winning slogan; Kip is convinced that he has won.

## CHAPTER THREE:

It turns out Kip has not won, because somebody else had the slogan entered before he did. Kip's award is delivered, but he is not happy about it: the box "looked like a coffin and I could have used one." It is his space suit.

Kip tries on the space suit, and gets his picture in the paper. The space suit Heinlein describes is based on his own sense of what a space suit would be like, which is heavily based on the research into high pressure suits his fellow science fiction writer L. Sprague de Camp worked on during WWII, at a naval research center where Heinlein and Isaac Asimov also did work. To this day, space suits contain de Camp joints to maintain “constant volume” and allow movement (Heinlein describes them in this chapter).

Kip has the chance to sell the suit for \$500 (a much higher sum when the book was written than now). He considers it, to help pay for college, but then his father gives him some excellent advice: “Find out what you want to do, then do it. Never talk yourself into doing something you don’t want.”

Heinlein proceeds to describe the space suit in loving detail. Science teachers should seriously consider having students research real space suits, and see what features Heinlein got right in 1958, and what we could still learn from his suggestions. Kip then cleans up and restores the space suit; in the process, Heinlein explains how a space suit would actually work, including the concepts of vacuum and what food actually does in your body. Kip tests the spacesuit, which he has named Oscar. Kip puts Oscar on, repeatedly, to get used to it; finally, he tests it with the helmet on, and full air pressure. Oscar works; Kip wouldn’t sell him for five thousand dollars.

Kip proceeds to upgrade the electronics on Oscar, particularly the communication equipment. Mr. Charton helps Kip to fill up all of the consumables for Oscar (food, medicines, etc.) By the end of the summer, Oscar has been fully restored, and Kip realizes it is time to give up daydreaming and head off to college (this is another sign that Kip has already reached adulthood: he is ready to assume responsibility). In order to afford college, Kip will have to sell Oscar. Kip knows that he can’t assume that some *dues ex machina* will come in and rescue him from his financial troubles (“Skull-and-Bones” is a rich boys’ secret society, to which more than one U.S. president has belonged).

Kip appeared on TV for the \$50, but they tricked him by playing some space opera nonsense over his silenced microphone, and Ace bullies him endlessly about it. Mr. Charton tells him he no longer needs to serve Ace, whom he calls one of “Nature’s obvious mistakes.” Kip goes home, and prepares to ship Oscar off to be dismantled for the money.

At this point, Kip starts to talk to Oscar, who “answers” back (some students actually may need to be told that it’s imaginary, and not the suit really talking...I have used this as an opportunity to discuss why authors sometimes have inanimate objects speak, or have characters speak to some unintelligent creature or object, as a way of dramatizing a situation. Examples might include James Stewart’s portrayal of Charles Lindbergh in *The Spirit of St. Louis*, wherein he talks to a fly, and the recent *Are We There Yet?*, where Ice Cube carries on conversations with a Satchel Paige bobble head). Kip decides to put on the suit one last time, fully loaded as if he were going out into a vacuum.

Out walking, he talks to an echo of his own voice, whom he calls “Pee Wee.” Kip then hears from someone referring to themselves as Pee Wee, who asks for a homing signal.

Then, a “spaceship almost landed on me.” (This is another example of Heinlein’s mastery of the surprise event, related in normal tones, which intensifies the surprise).

#### CHAPTER FOUR:

Kip has to move quickly to avoid getting squashed; a second space ship lands nearby. He sees two figures run out of one of the space ships, and he hears a cry of pain, and runs to help.

He sees what he refers to as a “bug-eyed monster” – and tries to take it back, as he realizes an “unprejudiced mind (which mine wasn’t) would have said that this monster was rather pretty.” Here we have one of the hallmark Heinlein themes: that we see the world in very prejudiced terms, determined by our culture, and that the proper way to truly mature is to divest ourselves of those culturally determined shortcomings, in favor of an open mind and clear thinking. Repeatedly throughout the Heinlein canon, Heinlein challenges our preconceptions and urges us to see things in a new light, and to judge a culture by the pragmatic outcomes, and not by a set of unexamined standards. Kip is one of many Heinlein protagonists who learn to see the world in a new, uncluttered fashion (which leads the reader to surrender some of his unthinking beliefs – which is, of course, the entire point of this constant subversion. Heinlein was out to educate entire generations in clear, unmuddied thinking).

Kip tries to help the alien (we later learn this is the Mother Thing) and gets knocked out by a blow into his back.

Kip wakes up in a cell, accompanied by a ten-year old girl (he has trouble telling the gender of the child, until he sees the rag doll). This is Peewee; she says that she is “surviving.” This is the primary characteristic of all of Heinlein’s respected characters; survival is what we humans do best; any behavior that interferes with survival is often cast as immoral; any behavior that helps us survive (as a species, more than as an individual) is seen as moral in Heinlein’s work. So Peewee is marked by intelligence from the very beginning (along with being cheerful and polite).

It turns out space pirates have captured them. In effect, Heinlein is taking every cliché of pulp science fiction (the bug-eyed monster, the girl who needs to be rescued, space pirates, flying saucers) and turning them on their ear. Heinlein made a career out of doing this; he was still doing this to very late in his career, as we can see from the “mad scientists” in both *I Will Fear No Evil* and *Number of the Beast*.

Peewee explains that she thought it was her father who had arranged a rescue when she heard Kip’s radio call. Kip has to ask if she’s a boy or a girl; Peewee warns him that he’ll regret it when she’s older (she’s now 11, going on 12).

Peewee explains how she landed, and about the Mother Thing. Peewee can correct the subjunctive tense in Kip’s “like she was dying” to the correct “as if she were dying” (good grammar is a Heinlein signal for intelligence and education). Peewee reveals that they are halfway to the moon (be careful what you wish for...). Peewee calmly asserts that she’s a genius. She also explains that the Mother Thing is a cop (although Peewee says that is a “Semantic inadequacy”; Heinlein had been well trained in semantics by Alfred Korzybski, who was a lifelong influence; googling Heinlein and Korzybski should lead to any number of websites that describe Korzybski’s influence, and Heinlein’s use of semantics).

Peewee is so smart, that she has calculated when the ship is going to flip over as it reaches the halfway point of the trip (this is but the first example of Peewee leading Kip, and saving him considerable harm and suffering. Critics who complain about Heinlein’s women being sexist have clearly never paid attention to his books, especially his juveniles, which have very strong, bright, capable women, who often outshine the male protagonist, as Peewee often outshines Kip in intelligence and foresight). Kip asks all kinds of questions about the trip and the ship. Peewee’s doll is named Madame Pompadour (a very bright and talented woman, mistress of Louis XIV, who was a patron of the arts and a political insider; in short, Heinlein may be suggesting this is the role that Peewee will play for Kip, and somewhere down the line, may end up his sexual partner as well – this is a rather roundabout way to insert sex into a novel

for juveniles, which Heinlein sometimes did surreptitiously as a way to tweak the conventions of the day).

Kip is starting to get annoyed, not the least of which causes is the fact that Peewee is smarter than he is: “I was beginning to think that little girls who were geniuses ought to have the grace not to show it.” Kip is showing his cultural training here; this note of sexism, as Rod Walker displays in *Tunnel in the Sky*, will have to be grown out of at some point as part of the continued growth of the character.

Peewee then instructs Kip in the logical tool of Occam’s Razor (a basic scientific premise, in which one chooses the least complicated answer to any problem, if no other evidence allows for discretion).

Peewee realizes Kip is getting annoyed (clearly, she has a high emotional intelligence as well), and says that she is a “pest”; Kip “didn’t argue it.” Later, she says she “can be an awful nuisance when I put my mind to it...I have talent for it. Daddy says I’m an amoral little wretch.” (In this, she prefigures the more troubling figure of Clark in *Podkayne of Mars*, which helps reveal that Heinlein liked the idea of a younger character showing up the older protagonist).

Peewee recalls the Hayden Planetarium taking reservations for trips to the moon back when her father was a boy (the Hayden Planetarium is part of the American Museum of Natural History in New York City, and when they had a show based on Chesley Bonestell’s paintings that showed a trip to the moon, the first thing visitors saw when they entered was a desk taking reservations for the trip to the moon). Peewee took her father’s place, and then proceeded to get captured while she was “poking around where I shouldn’t, doing things they told us not to. I always get around; it’s very educational.” She had been taken in order to try and get her father, “the biggest man at the Institute for Advanced Study” (this was where Albert Einstein taught at Princeton, and would have signaled to an audience in the fifties how bright Peewee’s father must have been).

A blue light bathes them, and they are immobile. Peewee tells Kip not to resist and don’t make “him” angry – whoever that is. Kip is bound by two human thugs he will later label “Fatty” and “Skinny” and taken to see “him” – the alien leader who truly repulses human beings: “He wasn’t human but that wasn’t what hurt. Elephants aren’t human but they are very nice people...he dominated us the way a man dominates a horse.” In short, a true bug-eyed monster, right out of the pulp science fiction covers, snake arms, oily skin, mouth like worms, and big bulging eyes. Kip gets grilled for hours, and tells all. Kip is returned to the cell with Peewee, and they review the events thus far. Peewee is afraid that this terrifying alien race wants to eat them (which is another cliché from pulp science fiction). Peewee recalls her father telling her about the radio broadcast which frightened everybody (this is the Orson Welles *War of the Worlds* broadcast from 1938). Kip argues that there must be a way to kill these aliens, and that they can’t be all-powerful, or they would have conquered humanity already. Peewee suggests not coming to any conclusions: “Daddy always warned me not to be cocksure when data was incomplete...Don’t make so much stew from one oyster” (this is another Heinlein warning he makes repeatedly throughout the canon).

Peewee’s father is Professor Reisfeld; her full name is Patricia Wynant Reisfeld. Her father won the Nobel Prize: “He thinks better than anybody...except me, possibly.” Kip ruefully reflects on his relative lack of intelligence: “...if I had found out anything, it was that they could print it faster than I could study it.”

They land on the moon. (Students can be told how to figure out how much they would weigh on the moon (about 1/6 of their weight on Earth), or can go figure it out for themselves as an extra credit question).

#### CHAPTER FIVE:

Kip realizes he must be on the moon, from his weight. He enjoys bouncing around the room. Kip and Peewee discuss what can be done about the alien menace; Peewee suggests sleeping. Kip gets upset at all her quotes, but Peewee reminds him (in yet another of those teaching moments) that “We’re simply trying to survive – and the first principle of survival is not to worry about the impossible and concentrate on what’s possible.” While an argument could be made that this is all part of Kip learning how to grow up, I would argue that he already has attained his adulthood; what is going on here is a completely different issue: Kip is learning about leadership, which is another of Heinlein’s frequent concerns. One of the needs of a society composed of individuals pursuing their own needs and freedoms has to do with what needs to occur during a crisis, when the need for a strong leader, and the willingness to obey commands, becomes a primary concern. Heinlein himself abhorred the military draft, because he despised being forced to serve; but a man or woman who voluntarily chooses to follow is a force to be reckoned with in his opinion. Many of his novels and stories reflect this concern over leadership and voluntary obedience, and more often than not, the person who needs to be followed is precisely the one society would least like to follow. In *Number of the Beast*, the most capable leader turns out to be Hildy, who as a woman was not the expected leader; here, Peewee clearly is in the position of capable leadership, and what Heinlein is showing us is Kip’s difficulty in accepting that a child, and a girl at that, knows more than he does. Eventually, Kip will figure that out (and when the situation changes, will assume the leadership role himself). In Heinlein’s work, leadership is often fluid, depending on the situation (in his autobiographical travelogue, *Trampe Royale*, Heinlein as the husband argues with his wife, until he “firmly gave in.”; clearly, the wife Ticky is more of the leader in that situation than he is, despite his presumed role as the expected dominant figure in fifties America).

Peewee goes to sleep; Kip sees that she had cried at some point, and does what an adult is supposed to do: he accepts responsibility for those around him in need: “But I had to take care of her...or die trying.” Kip goes to sleep too, and has a dream full of heroic imagery and nonsense.

Peewee wakes Kip up and suggests that they should try and escape. They try to listen, and hear nothing (Kip uses bone conduction to try and hear through the walls). Peewee explains that she stuck a piece of gum in the door when they removed Kip before, in an attempt to change the workings of the door: “Daddy says that, in a dilemma, it is helpful to change any variable, then reexamine the problem.” When Kip gets mad about her not telling him, he threatens to spank her; she promises to bite if he tries. Peewee didn’t want Kip to try and escape as long as the alien Wormface was on board. Kip realizes she was probably right: “Maybe she was a genius. Compared with me.” They try to open the door, and get it open an inch. They try to ram the door, but the gravity on the moon makes that very difficult. They work together, and get the door open.

They leave, but Peewee goes back for her doll (“I have to have her to get to sleep at night. It’s my one neurotic quirk – but Daddy says I’ll outgrow it.” It’s a “conditioned reflex. I’m aware that it’s just a doll...”



Kip wants to fly the ship, but Peewee wants to find the Mother Thing; Kip says they can look after they're in space. They break into the control room, and Kip goes into a reverie when he sees the Earth for the first time from space. Peewee recognizes where they are, about forty miles from Tombaugh Station, 200 miles from Lunar Base. Peewee tries to fly the ship, but the "brain" of the ship is missing; without it, the ship won't move. Kip wants her to show him the airlock, then they'll look for the Mother Thing.

Peewee suggests using their spacesuits to walk to Tombaugh Station. Kip points out that air pressure will prevent Wormface from coming back into the airlock with the inner door blocked open. Kip wrecks most of the doors in the ship. They find the Fatty and Skinny's disgustingly dirty room, and take some food, water, and air.

Kip finds their spacesuits. Peewee still insists on finding the Mother Thing, and Kip is getting exasperated, because he just wants to escape. She goes on looking, over Kip's objections ("I should have used force. But I am handicapped by training from early childhood never to strike a female, no matter how richly she deserves it...") This is another example of Kip's sexism, which he will have to overcome). Kip eats the rest of the food Peewee started eating. He salvages nylon rope, a hammer, and batteries.

Peewee finds the Mother Thing, and Kip opens the door. Peewee reunites with the Mother Thing, joyously. The Mother Thing sounds like a mockingbird, and Kip can understand her. Kip becomes just as happy with the Mother Thing, and just as reassured, as he would be with his own mother, whom he now describes: "I have talked more about my father but that doesn't mean that Mother is less important – just different. Dad is active, Mother is passive; Dad talks, Mother doesn't. But if she died, Dad would wither like an uprooted tree. She makes our world." Peewee explains that they're going to walk to Tombaugh Station; the Mother Thing explains that her own "vacuum gear" has been destroyed. The Mother Thing wants them to go without her; Peewee refuses. Kip finally figures out how to carry the Mother Thing with them, in his suit. The problem is, Peewee's suit doesn't have enough air, and the connections are wrong for the bottles of air they have.

They leave the ship, but not until Kip formally recognizes Peewee as the leader: "I wasn't making fun, Peewee. You're boss."

## CHAPTER SIX:

Kip and Peewee walk across the moon's surface, while Kip explains the problems involved. They stop and communicate by touching helmets (conduction again). Kip checks Peewee's air, and begins to worry. He finds out she has no water, as she is only wearing a tourist suit. Kip and Peewee start carping at each other, and the Mother Thing calms them down. Kip and Peewee start moving faster; Kip starts to worry about her suit tearing, and going through explosive decompression. They stop, and Kip checks her air: Peewee simply doesn't have enough to make it. Kip jury-rigs a way to transfer some air, using adhesive tape from the first aid kit. She gets almost half a tank of air from the transfer. They get moving again; when Kip tries to do all the work, Peewee berates him: "Oh, quit being big and male and gallantly stupid, Kip! You've got four big bottles and the Mother Thing and you're topheavy and I climb like a goat."

They have gone the wrong way, and have to backtrack. Kip gets a Shakespeare reference correct, while Peewee has it wrong (nobody's perfect...).

Peewee is not an adult: “Peewee had had the optimism of a child.” Kip is the adult here, and sees the world in ways Peewee’s age prevent her from perceiving.

The going is difficult.

Kip has to give her air again; like Achilles and the tortoise, one of Zeno’s paradoxes, he can never quite give her more than half of what he’s got.

The Mother Thing cheers him on.

The going continues to be tough; Peewee is getting less and less air.

They finally get to a point where they can see Tombaugh Station. Peewee collapses on the way there. Kip does his best to help her, but now the bottles are tied where he can’t reach them. He finally manages to get her some air, after various complications. Peewee simply can’t walk anymore, so Kip carries her.

Kip’s own air is finally on empty, but they reach Tombaugh Station; they call for help, and help is on the way.

But Fatty and Skinny get there first, and capture them again.

## CHAPTER SEVEN:

Fatty and Skinny start feeding Kip drugs, which are needed for the trip they’re going on. Kip doesn’t know where Peewee and the Mother Thing are. Then the acceleration hits. For five days at eight gravities, he weighs eight times what he normally weighs.

Fatty massages him, to help him recover.

They’re on Pluto.

Kip puts on Oscar, which has been recharged.

Kip sees several wormfaces.

Kip contemplates Pluto, and what conditions exist there.

He sees Wormface again, who forces him to take off Oscar, then jump into a hole for his jail cell. Kip gets angry, and starts thinking about ways that he could kill Wormface. He wonders where Peewee and the Mother Thing are. Food gets tossed in once a day, and he drinks and bathes in the water provided. He takes stock of everything he possesses. Unlike the pulp stock situations that Heinlein has been having fun playing with, Kip can’t rearrange what he possesses into a “miracle weapon” that would allow him to escape.

He wakes up from a nightmare, and tries to plan. He tries to flood the room, and only gets wet for his trouble.

Kip gets fed again, and assumes a day has passed.

Heinlein takes a moment to teach his readers how to remember the order of the planets – “Mother very thoughtfully made a jelly sandwich under no protest.” – and the distances to the sun, using money values. Kip tries to figure out the acceleration rates. He rhapsodizes over his slide rule (“the slide rule is the greatest invention since girls”). A slide rule is a tool none of my students have ever seen, much less heard about. Calculators have erased them from our knowledge.

Kip figures out that the wormfaces can travel from star system to star system.

Kip wishes his father were there, so they could figure out the likelihood of the wormface’s origins together. He also remembers his father correcting a mistake in one of his math books.

Kip believes Pluto is their advance base for the invasion of earth.

They toss down another can of food; Kip uses it as a hammer to turn one of the other cans into a dagger, then eats and sleeps well: “Getting a problem analyzed is two-thirds of solving it.”

The wormfaces throw Fats and Skinny into the cell with Kip.

Kip resuscitates Fats.

Kip finds out Peewee is on Pluto as well, and being treated like a princess by Wormface.

When the next feeding time comes around, Fats tries to keep Kip’s food, and sell it to him; Kip threatens him with the dagger, and Fats hands it over.

Kip says they’re like the “Lion and the Lamb” exhibits from traveling zoos, where a lion and a lamb are in the same cage. Only problem is, “the lamb has to be replaced frequently.” Kip finds out their names – Fats is Jock and Skinny is Tim. Jock reveals how they tricked Peewee into wandering off from the tour group, by enticing her with word of uranium to be found. Wormface also has other humans working for him on the moon. Wormface was trying to capture Peewee’s father; Tim convinced him Peewee could be traded.

Kip wants to know why they did what Wormface wanted; Jock asks Kip how Wormface could ever be denied. Wormface found them out prospecting; they cut a deal with him (but have yet to be paid). Jock tries to argue that the best choice anybody can make is to hook up with the winning side, when the losing side has no chance; Kip points out that that was still no reason to hurt a little girl. When Jock tries to argue that he had no way out, Kip points out that he could have escaped when he was sent to Luna City to find Peewee in the first place. Then Jock reveals that he and Tim have bombs planted in their heads, which means they can never escape – or defy Wormface – without being killed for it. But Tim’s reaction to that makes Kip think that Jock is lying about the bombs.

Tim is then taken; Jock is convinced that the wormfaces have eaten him. Jock suggests Kip commit suicide rather than be eaten.

Jock is taken the next night; Kip never sees them again.

Kip actually misses them; Jock and Tim were at least human. But then Kip argues against sympathizing with criminals: “...I don’t hold with the idea that to understand all is to forgive all; you follow that and first thing you know you’re sentimental over murderers and rapists and kidnappers and forgetting their victims. That’s wrong...I missed Jock’s talk but if there were some way to drown such creatures at birth, I’d take my turn as executioner.” This kind of ideology gets fuller expression in the next two books Heinlein wrote: *Starship Troopers* and *Stranger in a Strange Land*. Kip’s final judgment about Jock and Tim: “As soup, they probably had their finest hour.” This entire passage leads directly to the question of the trial being held for humanity as a whole at the end: are we, as a species, about to be drowned by executioners?

## CHAPTER EIGHT:

Some explosion or earthquake occurs; Kip isn’t sure. Peewee shows up, to rescue him (again, this shows that the rescuing is not one-way). Peewee is afraid the Mother Thing is dead; they were talking until the explosion. Peewee thinks the wormfaces are all dead, because the Mother Thing found a way to kill them. Kip isn’t so sure, so he arms himself (“First things first.”).

Kip keeps Peewee from seeing a human skeleton (“...although it would not have affected her much; Peewee was sentimental only when it suited her.”).

A wormface attacks from behind; Peewee launches herself at him “in the gallant audacity and utter recklessness of a kitten.” Again, Peewee’s action saves the day. Kip then stomps on his head, smashing it like a lobster shell. It gets up and walks away, falling into one of the cells. They take its weapon, and experiment with it (it’s a “death ray”, yet another pulp sf device).

The Mother Thing was going to signal her people; Kip wants to put on Oscar and go find her. The Mother Thing tricked the wormfaces into letting her use their labs, because they were greedy for her technology. As she made things for them, she slowly built what she needed to be able to communicate with her people, and to make two bombs. The Mother Thing set the bombs, then went outside without a spacesuit to set the communicator. But if she took longer than ten minutes, Peewee was to find her own suit and go do it herself. As of this moment, there were only twenty minutes left to use the communicator to signal. Kip wants to know where his suit is, so he can go do it.

Kip gets Oscar on, along with insulating slippers. Kip then starts to wonder why he’s going outside; the Mother Thing is probably dead, and setting off a communications beacon won’t get help to Pluto for at least four years, in his calculations. But his reasons are emotional: “You’re in bad shape when your emotions force you into acts which you know are foolish...No matter how you figured, planting that beacon was merely ‘carrying out the deceased’s last wishes’ – words you hear at funerals. Sentimental folly.”

Kip finds the Mother Thing, frozen solid. He picks up her device and promises to set it where it needs to be and set it off. Kip wonders if he hears her voice, and dismisses it (“I don’t believe in ghosts.”). Kip succeeds, despite the horrendous cold. Kip gets momentarily blinded by the device; then, his safety rope freezes and shatters. Kip crawls back towards the tunnel. On the way, his air hoses freeze. He manages to reach the Mother Thing. Peewee comes out and rescues him (again...). Peewee rescues the Mother Thing, then begins to cry, then stops.

Kip’s hands and feet are frozen. Peewee’s suit had been inside Jock’s suit (referencing the Poe story, “The Purloined Letter” wherein the stolen letter is laying out in plain sight).

Kip takes some water and codeine; they realize the pressure is dropping in the station. Peewee asks if Kip has had fun; he agrees. She is glad he doesn’t blame her (for what is their apparently ensuing death).

The Mother Thing’s people arrive and save them.

Peewee tells Kip they’re going to Vega, and Kip passes out.

## CHAPTER NINE:

Kip wakes up in a duplicate of his bedroom at home (“You needed your own nest...”); the Mother Thing is there, alive (“I am not as frail as you seem to think me.”).

Kip can’t move his arms and legs; he is being healed.

Peewee comes in; she and Kip banter a bit. Peewee reminds him they’re on Vega. Kip wants to use his slide rule to see how many miles that is; Peewee does it in her head (“I can’t help being a genius.”). Kip sees how unhappy she is, and remembers his Dad talking about how most people ridicule intelligence and ability (“They delight in clipping wings because they themselves can’t fly.”); Kip tries to make her feel better, by saying that he “can’t help not being one...any more than you can help being little, or I can help being big.”

Kip worries about his parents, because relativity will have aged them. Peewee explains that the same amount of time has passed for his parents, as for them. The Mother Thing was upset because it took the rescuers half an hour to get ready; Peewee explains how their travel

sidesteps the rules Einstein set up for the universe. Kip gets upset that Peewee knew that the Mother Thing's people could be there very quickly, because she thought he might not believe her by getting "all masculine and common-sensical and father-knows-best." Kip asks her, if the situation occurs again, "...will you take a chance that I'm not wedded to my own ignorance?" Kip wants to know why they didn't take him back to an Earth hospital; Peewee explains that if they had, Kip would have had no arms or legs.

They had to cut off Oscar to save Kip, but they repaired it for Kip.

Kip's body is regrowing itself.

Kip realizes that as much as he'd like to understand what's going on around him, he simply doesn't have the education or experience to even begin to comprehend. So, he mostly hears "noise" (I've managed to get this across to students by asking them to remember back when they were kids, and their parents would talk, and they didn't understand most of it, even though it was in words they knew, because the concepts were beyond their age.)

Kip is asked to explain everything he knows about Earth and its history (which isn't very much). Peewee and Kip's father both have perfect recall (eidetic memory). Kip isn't sure of all the reasons the Mother Thing wants to know these things. A "Professor" mother thing named Joe comes and helps grill Kip. Kip gets to visit one of their libraries ("Dad claims that library science is the foundation of all sciences just as math is the key – and that we will survive or founder, depending on how well the librarians do their jobs." This is a note Heinlein hit in several other works, so he clearly meant it, but it's also a good marketing tactic when library sales can make or break a juvenile novel).

Joe creates a translator device for Kip.

Joe describes democracy as a "very good system, for beginners." This is a note Heinlein would hit quite hard in the following year's *Starship Troopers*. It also marks one of the notes Heinlein presumably got from Henry David Thoreau's classic essay, "Civil Disobedience", wherein Thoreau calls for a better government than the democracy we currently had, and questions the value of majority voting.

The mother things want to know what Kip and Peewee know about medicine and chemistry. A "father thing" visits Kip. Peewee shows off her new space suit.

Kip heals, and is even to turn over in bed and sit up. Kip's scars and tattoo are gone, as are his calluses; his missing nail has regrown. Kip gets dressed; Peewee comes, and says he needs a haircut. Peewee had shaved him, and cut his nails the night before while he slept. Kip offers to pay her. Kip feeds himself for the first time on Vega; then Peewee wants to take Kip for a walk.

Kip sees Peewee's room; they visit the Mother Thing's home.

They go above the city, and Peewee's suit polarizes (it looks like a "polished chrome basketball").

The Mother Thing returns, and tells Kip and Peewee they must now go someplace else, to "attend a gathering. Questions will be asked and answered, decisions will be made." Kip gets a little miffed at Peewee, who explains that she wasn't allowed to tell Kip until he healed. She explains that this is going to be a "sort of a court. A criminal court." Kip likes the idea of Wormface being tried; Peewee then shocks him by revealing that humanity is going to be on trial too. Finally, Peewee reveals that they are now headed to a different galaxy entirely: the Lesser Magellanic Cloud. (The novel thus moves into four separate arenas, as well as beginning and ending on Earth: Earth, the Moon, Pluto, Vega, and the Lesser Magellanic Cloud, and back to Earth again. In this, *Have Spacesuit* is similar to several other juveniles, along with a few other

Heinlein novels, in constantly moving to a larger stage and different challenges for the protagonists.)

#### CHAPTER TEN:

The Mother Thing pilots them to the Lesser Magellanic Cloud. She knows Kip is afraid and resentful; she promises to protect them. Kip gets homesick when he sees the night sky in this new galaxy. The symbol on the Mother Thing's jewelry is repeated on the buildings: "Three Galaxies, One Law." A kind of United Nations runs the whole shebang. Robots are all over the planet. Kip and Peewee have their same rooms again, reproduced. The Mother Thing tells them that there are two other humans next door to them: a caveman in a diorama scene, and a Roman legionary. Kip can speak a rudimentary Latin, so they can communicate. The Roman is quite vulgar in his language; he even offers to buy Peewee. Kip finds out all about his life and attitudes: "Iunio was pleasant – as long as you agreed with him, ignored insults, and deferred to him." In other words, he's like most "older people." Kip knows how to deal with him. Kip comes back "home" to find Peewee crying.

A robot comes to fetch them; they don't want to go, but the Mother Thing speaks through the robot and tells them to come. They go to the court, where the wormfaces are on trial. The Mother Thing is testifying; Kip is called on to testify, then Peewee. Their taped testimony has been edited to remove their opinions; they are simply suppose to verify its accuracy. The wormfaces offer their defense. They deny the court has jurisdiction over them; they deny any crime has been committed whatsoever (humans being merely animals...). Then the wormfaces go on the attack, and argue that they were the Only People, and everybody else was food, or vermin.

The Mother Thing says the whole race is "quite naughty." She is not allowed to speak for them, because she is opposed to them. Nobody else speaks up for them either. Kip thinks about it, then rejects the idea: "But when I see a black widow, I step on it. I don't plead with it to be a good little spider and please stop poisoning people. A black widow spider can't help it – but that's the point."

The courts pass judgment: their entire species will be sent into another dimension, by 'rotating' their planet. Kip thinks they are being sent to "Coventry" (see Robert Heinlein's famous story of the same name for more on the concept). Then the Mother Thing explains that they don't get to take their sun with them, so this is a death sentence. The sentence has already been carried out, even as they speak.

Now it's the human race's turn to be on trial.

Kip contemplates what would happen if Earth was rotated. The Mother Thing tries to make them feel better, by promising to always care for the two of them.

#### CHAPTER ELEVEN:

Kip, Peewee, and the other two humans face the court. Peewee tells Kip to do the talking, because he doesn't get mad "as fast as I do."

We learn this is now the third time that human beings have been tried, and the third examination is far sooner than scheduled: "They are developing with unexpected speed." The judge is part computer, part multiple citizens: "Today I am two hundred and nine qualified beings." The Neanderthal is rejected as a witness, as he is not human; only a "cousin."

Iunio is examined. He gets angrier and angrier, and finally hurls his javelin. Kip finds himself “cheering.” But then Iunio takes up the same argument that the wormfaces did: they’re not Romans, they’re “not even *barbarians!*” Iunio threatens them with “Caesar’s vengeance in gruesome detail.” Kip starts to grow “proud”; Iunio isn’t evil, as the wormfaces were. He had “courage, human dignity, and a basic gallantry. He might be an old scoundrel – but he was *my* kind of scoundrel.” He offers to fight them all, one at a time, or as a group. Kip and Peewee cheer. Iunio is returned to his time. (A few students think Iunio is an idiot, and Kip and Peewee are acting out of character for cheering him on, as this behavior could lead to humanity’s death. I usually let the class argue this out, and egg on both sides to see where they take it. Eventually, the idea that we have to face all challenges, and not back down, tends to take hold as what Heinlein was suggesting. Not always, however. People, as Heinlein often argued, are individualists who like to argue...).

Kip begins by arguing that they don’t have “enough to go on.” In essence, to use Peewee’s phrase from earlier in the book, they haven’t got enough oysters for the stew. Kip argues that he and Peewee aren’t typical, “as far from average as any specimen can be.” Kip argues that all humans are individuals; the court argues they’re “parts of a single organism.” Kip is mistaken as to the point of the court; it’s not about justice – it’s about security. The court says its “sole purpose is to examine your race and see if you threaten our survival. If you do, I will now dispose of you.” After the testimony, the court passes a frank appraisal of the human race: “...these are a savage and brutal people, given to all manner of atrocities. They eat each other, they starve each other, they kill each other. They have no art and only the most primitive of science, yet such is their violent nature that even with so little knowledge they are now energetically using it to exterminate each other, tribe against tribe. Their driving will is such they may succeed.” Finally, the indictment is “your own savagery, combined with superior intelligence.”

Kip argues they do have art: the Parthenon; Shakespeare. Then Kip breaks down. He argues that the human race isn’t governed by them, and has never bothered them (Heinlein always felt as the Founding Fathers did: power comes from the people, and if we didn’t make the government, it’s not legitimate). One of the members of the judge wonders if humans could be part of the “Old Race”. Kip asks Peewee if she has anything to add, and she suggests that Kip saved the Mother Thing; she is told that is “irrelevant.” Peewee explodes with outrage; Kip soon follows: “It’s not a defense; you don’t *want* a defense. All right, take away our star – You will if you can and I guess you can. Go ahead! We’ll *make* a star! Then, someday, we’ll come back and hunt you down – *all of you!*”

Peewee cheers, but Kip “suddenly felt like a kid who has made a horrible mistake at a party and doesn’t know how to cover it up.” The important thing is that trying is what we do: “Die trying” remains Heinlein’s ethics, and “the proudest human thing.”

The Mother Thing steps forward and defends them; human violence is due to our youth (in a way, this whole novel is a bildungsroman for the human race, more than it is for Kip. Kip has acted brashly, but that brashness is the mark of humanity under pressure, in Heinlein’s view.

Another race stands up for human beings.

Finally, Kip asks that he and Peewee be returned home, before their planet is rotated (assuming it is): “We’d rather be home, that’s all – with our people.”

The verdict is to allow humanity to continue, with the assistance of the Mother Thing. Humanity will be reexamined after a “Dozen half-deaths of radium” (about 19,200 years).

Ultimately, the novel suggests that we all represent the human race; Kip's education has not resulted in much of anything he didn't already know about himself at the beginning of the book (which is NOT true of any of the other juveniles, I would argue). Kip has been an adult, called upon to be an adult, and has acted as an adult. What little he has learned how to do has more to do with recognizing that he is already an adult (e.g., how to treat Peewee) than it does in learning how to be an adult. What he does learn is that the universe is a bigger place than even he'd imagined – but that the way to deal with it is to be a responsible adult, and to stand up for himself. When he returns home, it is with the full confidence of the independent adult.

## CHAPTER TWELVE:

Kip and Peewee are returned to Peewee's home in Princeton. They share all the technological goodies they've brought back with them: Peewee's space suit, two beacons, the metal paper with mathematical equations designed to teach humanity advanced math, two "happy things" and two silvery spheres. The "happy things" make Kip and Peewee feel the presence of the Mother Thing. The silvery spheres contain one-shot recordings, so they tape them. When Dr. Reisfeld examines the math, he gets very excited.

Other professors arrive, and begin to argue over the math. Days go by, and Kip hasn't called home (he doesn't want them to upset them further – which confuses me as a reader, because wouldn't he want his parents to know he's not dead?). Dr. Reisfeld knows Kip's father's work, as do the other adults.

The professors begin to interpret the math, which includes a way to stop nuclear explosions, anti-gravity, time travel, matter conversion, and who knows what else.

Kip, apparently, is the owner of this page of math. Kip wants it published.

The government sends a military force to the moon to wipe out the wormface base.

Dr. Reisfeld arranges a free ride to MIT for Kip to study mechanical engineering; Kip wants to improve spacesuits.

Dr. Reisfeld drives Kip to the airport, and asks him how he feels about Peewee; her father says she is "twenty years old intellectually and six emotionally." Dr. Reisfeld approves of Kip, and everything he's done: "... 'The best things in history are accomplished by people who get tired of being shoved around.' ... I'm glad she has gained a friend who is smarter than she is..." Dr. Reisfeld insists that Kip is smarter than he thinks he is: "The greatest mathematical psychologist of our time, a man who always wrote his own ticket even to retiring when it suited him – very difficult, when a man is in demand – this man married his star pupil. I doubt if their offspring is less bright than my own child." Kip is flabbergasted: "How many kids really know their own parents?"

Kip has much to think about; perhaps part of what he must still learn is the value of who and what he is – which is something that most adults don't learn until they're much older than Kip.

When he returns home, his parents have been told about what happened. His father is wistful over what Kip got to see. Kip hears his mother – and her voice reminds him of the Mother Thing.

Kip goes to work for Mr. Charton, who offers to pay for his education. Kip's father also revealed that he had made arrangements to pay for his education the day he was born – "he had been waiting to see what I would do on my own."



Ace shows up, as annoying as ever: “There was no use fretting about Ace; his world was as narrow as the hole between his ears, no deeper than his own hog wallow.”

Kip ends the book by throwing a chocolate malt into Ace’s face.

Essentially, Kip is going to display human brashness wherever appropriate; having faced down an entire galactic judiciary, he’s not about to lay down for a small-town bully.

### **Chapter Quizzes/Tests:**

Personally, I do not care for many published textbook tests/quizzes, as I often find them to not fit what we have actually discussed in class, or what the students have themselves found in the text. I therefore tend to make up my own quizzes and tests, and I also rely heavily on questions about relationships, more than I do questions about specific details of the books. I teach very poor readers, and I am far more concerned that they understand what is happening between the characters, than I am in what color shirt a particular character is wearing, or some other pithy little detail that teachers dealing with very good readers might ask to make sure that their students have read. I check to make sure they’ve read by insisting that they answer the following kinds of questions using specific details (and by always asking a question about the end of the chapter), but I allow them to choose the details themselves to fit the question. I train them to answer questions this way by giving them several sample questions, then answering them on the board, using their input to craft a model response.

I hope that the following questions are useful for quizzes and tests, as well as for classroom discussion. Again, I expect students to use specific details from the novel to answer these questions. If the extra credit questions seem appropriate for your class, you can add them to the quizzes, or use them as extra credit homework assignments.

#### CHAPTER ONE:

1. Why does Kip want to go to outer space so badly?
2. What is Kip’s relationship with his father like?
3. What does Kip’s father think is wrong with Kip’s school?
4. How does Kip’s father help “fix” Kip’s education?
5. What opportunity presents itself to let Kip go to the moon very soon?

#### CHAPTER TWO:

1. How does Kip go about winning the soap contest?
2. What is Kip’s relationship with Ace like?
3. What happens at the end of the chapter?

### CHAPTER THREE:

1. What did Kip actually win?
2. What does he end up doing with his prize?
3. What happens at the end of the chapter?

### CHAPTER FOUR:

1. What is Kip's relationship with Peewee like in this chapter?
2. What is the Mother Thing's job?
3. Why has Peewee been kidnapped?

### CHAPTER FIVE:

1. How does Kip figure out that he's on the moon?
2. How do Kip and Peewee escape?
3. Who gets put in charge at the end of the chapter? Why?

### CHAPTER SIX:

1. What problems do Kip and Peewee face on the journey, and how do they overcome them?
2. What unexpectedly happens to their escape at the end of the chapter?

### CHAPTER SEVEN:

1. What does Kip learn about the wormfaces in this chapter?
2. What happens to Fats and Skinny in this chapter?
3. What moral judgments does Kip make upon the two humans who have helped the wormfaces?

### CHAPTER EIGHT:

1. How do Kip and Peewee escape?
2. What heroic deed does Kip have to perform in order to signal the Mother Thing's people?
3. Where are they going at the end of the chapter?

#### CHAPTER NINE:

1. What has happened to Kip in the previous chapter, and how are they fixing the problem on Vega?
2. What does Kip do with the “Professor”?
3. What is the trial going to be about?

#### CHAPTER TEN:

1. What does the Mother Thing promise to do for Kip and Peewee?
2. What two new inhabitants of Earth do they meet?
3. What happens to the wormfaces during and after their trial?

#### CHAPTER ELEVEN:

1. What arguments does Iunio present during humanity’s trial?
2. What arguments does Kip present during humanity’s trial?
3. What is the verdict on humanity?

#### CHAPTER TWELVE:

1. What gift does the Mother Thing give to humanity? What can human beings learn from it?
2. What are Kip’s plans, and how does Dr. Reisfeld help him?
3. What does Kip learn about his parents?
4. By the end of the novel, how has Kip grown and changed?
5. By the end of the novel, how has Peewee and Kip’s relationship changed?
6. What does Kip do to Ace at the end of the novel? Why?

#### **Extra Credit Questions:**

I use these regularly to encourage students to use the internet and the library, and to help raise their grades; I have also used some of them as discussion questions, where I have provided some of the research for them. Heinlein makes so many references to ideas, concepts, events and people that are no longer common knowledge that this is part of my teaching method for him (of

course, it was probably part of his teaching method: by dropping these into the text, his readers may have become curious enough to go find out for themselves!) I often have students explain these to the class when they've done the assignment.

#### CHAPTER ONE:

1. Why is American Express mentioned in connection with tourism? Who were Thos. Cook & Sons?
2. Define a dangling participle.
3. Why did Van Buren fail to be re-elected?
4. How do you extract the cube root of 87?
5. Why does Kip refer to *The Little Lame Prince*?

#### CHAPTER TWO:

1. What is the game of matching pennies?
2. Explain what Dr. Russell means by: "There is no such thing as luck; there is only adequate or inadequate preparation to cope with a statistical universe."
3. What does the Latin phrase "material medica" mean?
4. Why is the biochemistry textbook by Walker, Boyd and Asimov an inside joke?
5. Come up with your own entries in the "Skyway Soap" contest: "I use Skyway Soap because—"; students can hold their own contest.

#### CHAPTER THREE:

1. Figure out how much \$500 in 1958 dollars would be worth today.
2. What was the "Skull-and-Bones" reference to, as it relates to college?

#### CHAPTER FOUR:

1. What are "bug-eyed monsters"? Bring in illustrations (the internet has many websites dedicated to the old pulp covers) to help the class see Heinlein's point (his fifties audience would have known exactly what he was talking about, since they often saw the pulps on the newsstands, or saw the rash of fifties sf/monster movies; these days, cable, videotapes/dvds, and infomercials have all but wiped out the reruns of these old films, which is how I learned about BEMs in the first place as a child in the seventies, watching movies late at night, and on *Creature Features* on the weekends).

2. Who was Madame Pompadour? Why name a doll after her?
3. What is Occam's Razor? Provide an example of an instance in science history when Occam's Razor has been used (if possible – this example is not all that easy to find, even on the internet).
4. Where is the Hayden Planetarium? Find out, if possible, if they ever actually took reservations to the moon.
5. What is the Institute for Advanced Study? Who was its most famous professor?
6. What was the “invasion-from-Mars radio broadcast” which “scared people silly”?

#### CHAPTER FIVE:

1. How much would you weigh on the moon?
2. Explain the difference between weight, mass and inertia. Alternately, for science classes, this could be a whole essay.
3. Track down the sources of the quotes about sleep: “Sleep, that knits up the ravell'd sleeve of care”; “Tired Nature's sweet restorer, balmy sleep.”; Blessings on him who invented sleep, the mantle that covers all human thoughts.”
4. Who was the “fussy princess” in Hans Christian Anderson's story?
5. Explain the references in Kip's dream: Barsoom; Beowulf; Tristan and Iseult; the better knights *sans peur et sans reproche*.
6. Explain how bone conduction works for hearing (Beethoven may be a good example to use).
7. Explain the reference to Bowie at the Alamo.
8. Explain the reference to the Walrus and the Carpenter.
9. Translate the Latin phrase “Mirabile visu!”
10. Explain the reference to telepathy and Duke University.

#### CHAPTER SIX:

1. Explain the reference to Eliza crossing the ice while being chased by bloodhounds.
2. Explain the reference to Achilles and the tortoise.

#### CHAPTER SEVEN:

1. Why name a school after Horace Mann?
2. What are magic squares? Bring examples for the class to solve.

#### CHAPTER EIGHT:

1. What are the Heaviside layers?
2. What is a “King’s X” or “King’s Cross”?
3. What is the difference between “Roger” and “Wilco” in signing off on a radio?
4. Finish the phrase “Ave. Nos morituri...” Now, what is the translation?
5. Explain the reference to Poe’s story, “The Purloined Letter.”

#### CHAPTER NINE:

1. Bring in a recording of the “cockcrow theme” in *Le Coq d’Or*.
2. Why does Kip worry about his parents being so much older, all of a sudden?
3. What is a coloratura soprano?
4. Who was Novaes?
5. Explain what Kip means by calling Peewee’s new spacesuit “The Emperor’s New Clothes”?
6. Who was Mad King Ludwig?

#### CHAPTER TEN:

1. What is the source and complete quote for “— ’twere well it were done quickly.”
2. What was the DEW line?

#### CHAPTER ELEVEN:

1. Find some piece of art or history that can be used to argue against the summation of the human race by the court, in addition to those Kip mentions.
2. What is “curve-check spacing”?

## CHAPTER TWELVE:

### 1. What is a “great-circle”?

#### Vocabulary Words:

These are all words I’ve had students ask me about; certain words in science fiction novels are imagined, and should not be used as vocabulary building exercises: e.g., “dural” (p. 28) is short for the real “duralumin” a strong, lightweight alloy of aluminum, copper, and magnesium, used in aviation and early rocketry; “bonestelled” (p. 113) is a new coining, to honor the great astronomical artist, Chesley Bonestell, who had done the stars in the sky for Heinlein’s film, *Destination Moon*. Also, Heinlein occasionally uses words that are phonetically recognizable, but students sometimes can’t figure them out, e.g., “shaddap” for “shut up.”

p. 5: remonstrate

p. 6: wangle; billet

p. 7: trundle; excursions

p. 10: pedagogy

p. 12: bogged

p. 13: incognito

p. 14: glamour; atrocious; ulcer

p. 16: nomenclature

p. 17: jobber; spiel

p. 18: facsimile

p. 21: carcinogenous

p. 22: gabble

p. 25: auxiliary

p. 28: asbestos

p. 29: beacon

p. 30: radiates; convection

p. 32: photoelectric; galvanometer

p. 35: oscillator

p. 36: impedance

p. 41: lanyards; squelched; hypoxia

p. 43: nictitating

p. 45: miffed

p. 48: semantic; miscreants

p. 50: oblate; spheroid; hypothesis

p. 51: angstrom

p. 60: inertia

p. 66: hampered

p. 67: propaganda; animism

p. 70: reckoning

p. 73: halitosis

p. 74: stonkered

p. 77: merthiolate

p. 80: shillelagh; girth

p. 87: jigger  
p. 97: trudge  
p. 106: leeway  
p. 112: incidentals  
p. 115: chivvying  
p. 117: canard; bedraggled  
p. 119: louse; lulls  
p. 120: eons  
p. 131: dicker  
p. 134: carnotite  
p. 143: gallant; audacity  
p. 145: chided  
p. 147: parleying; palaver  
p. 148: cupidity  
p. 155: mukluks  
p. 166: purloined  
p. 177: captious  
p. 178: cosmogonists; wavicles  
p. 180: schizoid  
p. 181: paranoid; ubiquitous; telemetered; courier  
p. 182: injunction; trefoil  
p. 184: heterodyning; amino acid; oscillating; highbrow; leitmotif  
p. 185: prussic acid; tariffs  
p. 186: founder; cybernetics  
p. 187: parabolas; unstinting; entasis  
p. 188: curriculum; digitalis; curare  
p. 196: corset  
p. 199: skullduggery  
p. 210: lingua franca  
p. 212: lustrations  
p. 218: mockery  
p. 220: diatribe; invective  
p. 222: dirge  
p. 232: vigilantes  
p. 236: ephemerals  
p. 241: indulgent

### **Essay Questions/ Projects**

1. Go read Jerome K. Jerome's *Three Men in a Boat (To Say Nothing of the Dog!)*, and compare the events in that novel with Dr. Russell's pragmatic attitudes, and the way that he punctures Kip's illusions, in much the same way that Harris punctures the narrator's daydreams. This book will more than likely be challenging for any but very assured readers, but the comic rewards are most fulfilling (as Heinlein himself is suggesting). They might also consider the uses made of the same source material in Connie Willis' fine sf novel, *to Say Nothing of the Dog*. At the 2005 Condorcon in San Diego, sf writer and physicist Gregory Benford made a considerable effort to



showing Heinlein's influence on Connie Willis. High school students may need some specific guidelines as to how to structure these kinds of advanced essays, but English majors and graduate students will be stealing this idea as soon as they read it...

2. Compare the parenting styles in your own family with those of Dr. Russell, or the educational style of your school with that of Kip's school and Dr. Russell's educational advice; other Heinlein novels might also be consulted for other comments on parenting and education (specifically, the Puddin' stories in *Expanded Universe*, *Starship Troopers*, and *Podkayne of Mars*; other comments appear throughout much of his work after WWII). Warning: this is the kind of essay that can rattle some student's cages more than a teacher may want to see...but Heinlein would have loved this essay...

3. Write an essay entitled: "Why I Want to Go to the Moon"; teachers may leave this at the daydream level, or may require research into the current thinking on the value of going to the moon; they may also want the student to read more Heinlein, and write an essay explaining "Why Heinlein Wanted to Go to the Moon." Suggested readings for that essay would include "Requiem" and "The Man Who Sold the Moon", as well as a viewing of the classic Heinlein film, *Destination: Moon*.

4. Write an essay about what it means to be a hero. Do you have to have gifts that normal humans don't have in order to be a hero? This is the old "Batman vs. Superman" argument; Superman has never appealed to me (and many others) as much as Batman, because none of us could become Superman; we could, conceivably, become Batman. What aspects of the hero does Kip display? How does he compare with other heroes in recent science fiction films or novels the students have seen or read?

5. Write an essay, in which you challenge a commonly held belief or custom of your culture and/or society, by showing how another culture, or an imaginary alien visitor, would see that belief or custom. You might think about writing this essay like a short story.

6. Research the concept of General Semantics and Alfred Korzybski; write an essay explaining the basic ideas (there are a number of websites that explain these ideas, which is where I've sent students, rather than to Korzybski's books, which are difficult for most readers to comprehend. S.I. Hayakawa wrote *Language in Thought and Action*, which is a more readable, although still challenging, introduction to the concept. General Semantics was a huge influence on most of the forties sf writers, including Heinlein and A.E. Van Vogt. The issue crops up in most of Heinlein's work, sooner or later.

7. Have someone who can play a musical instrument (preferably a woodwind) go through the book and play the songs that are the Mother Thing's speech. Better yet, make a recording and post it on the internet for others to access.

8. Do research into what it was actually like to walk on the moon, and compare the real experience with the way Heinlein describes it. What did he get right? What did he get wrong?

9. Do research into the most recent findings about Neanderthals: are they our ancestors, or merely cousins. On what basis are scientists making these judgments? Write an essay outlining the history of the subject, the changes in conclusions, and end with an analysis on the reliability of the scientific method, as it applies to the subject.