



The Effect of Gamma Rays On Man-In-The-Moon Marigolds

by Paul Zindel

Teacher's Guide

Written By Matthew Jewell

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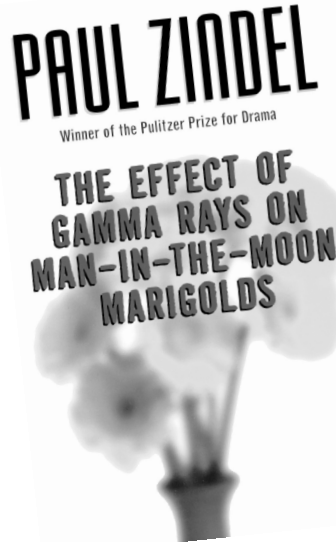
Synopsis

Act I

The play opens with Tillie's recorded voice delivering a monologue about the provenance of the atoms comprising her body. She takes over from the recording, continuing the speech until the phone rings. Beatrice, her mother, grudgingly answers it. Mr. Goodman, the girls' science teacher, is calling to ask why Tillie hasn't been in school. Once Beatrice hangs up, she harangues Tillie, who denies having told Mr. Goodman that her mother forces her to stay home. She begs to go to school to see an experiment Mr. Goodman has planned. Beatrice categorically states that she'll be staying home for "a number of exciting duties," which includes cleaning rabbit droppings. As she's threatening to chloroform the rabbit, Ruth descends the stairs, looking for Devil's Kiss, which is either a lip gloss or lipstick, preparing to go to school. She relates how the whole school laughed at Tillie in an assembly. She was onstage cranking a model of an atom. Beatrice gives Ruth a cigarette in exchange for a back scratch. Their conversation excludes Tillie and ranges from choice of cigarette brand to Mr. Goodman and Ruth's history of mental illness.

The lights go down and Tillie's voice describes watching a science experiment. When they come back up, she has boxes prepared for planting. Beatrice is reading the newspaper and commenting on real estate listings. Tillie has exposed marigolds to Cobolt-60 and is planting them as a science project. Beatrice speculates about converting the room to a tea shop.

Nanny, an ancient and senile woman for whom Beatrice cares for \$50/week, enters. Tillie tries to explain radioactivity to Beatrice as Nanny creeps across the room on her walker. Beatrice addresses Nanny in a "loud, horribly saccharine voice," making her hot water with honey. She offers contemptuous asides between shouts at Nanny, then delivers a long, cynical speech to Tillie, bitterly lamenting her life. She wraps it up by going back to her tea shop idea, once again threatening to kill the girls' pet rabbit, and threatening to evict Nanny. She launches another bitter diatribe. The stage darkens, then lights again.



Beatrice is calling Mr. Goodman, mainly to complain about the radioactive marigolds in her living room. She is concerned that they will make Tillie sterile. He evidently assuages her various neurotic concerns. The stage darkens, then opens on Tillie screaming that Ruth is going to have another convulsive fit, to which she is apparently inclined. Beatrice calms Ruth, who had a nightmare about one of the elderly men her mother cared for. She begs her mother to tell her the

story of stealing her father's vegetable wagon. Beatrice acquiesces to their mutual amusement, then talks about her own bizarre nightmare in which she drives an ornamental vegetable wagon pulled by circus horses down a desolate street. She begins to cry, asking her daughter, "What's left for me?" The stage goes dark.

The scene opens with Beatrice threatening to kill the rabbit again, throwing in a vitriolic evaluation of her life for good measure. Ruth rushes in and breathlessly relates that Tillie has been selected as a finalist in the science fair for her marigold project. The principal calls, requesting Beatrice's presence at the ceremonies and final judging. She becomes agitated, screams into the phone before

slamming it down, then berates Tillie for making her appear in public when she has nothing presentable to wear. She swears that the entire school will laugh at the both of them. The daughters are horrified. In a moment of clarity, she realizes the pain she's just inflicted on Tillie and embraces her as the lights fade.

Act II

About two weeks later, the family is preparing to leave for the science fair ceremony, while waiting on their taxi. Ruth morbidly fixates on Janice Vickery's project, which involved boiling the flesh off a cat. She predicts that everyone will laugh at their mother and describes overhearing people talking about her, referring to her as "Betty the Loon." She takes a vicious pleasure in the revelation. Tillie begs her not to tell their mother. Ruth then wheedles nominal ownership of Peter, their rabbit, from Tillie.

Beatrice appears, her garb odd but less so than Ruth has predicted. Although she complains, she is obviously proud of Tillie. She forbids Ruth from accompanying them, saying she needs to stay home to watch Nanny. As the taxi honks impatiently outside, they argue. Ruth eventually calls her mother "Betty the Loon," which cuts deeply. Beatrice refuses to go, sending Ruth in her place.

The scene cuts to Janice Vickery delivering her speech about her mounted cat skeleton, then cuts back to a drunk Beatrice on the phone, demanding to speak to the principal. She leaves a message for him and the other teachers, thanking them for making her wish she was dead. She then calls Nanny's daughter and demands she come claim her mother the next day. Then she ascends the stairs with Peter and a bottle of chloroform.

The scene cuts to Tillie delivering her speech, then Ruth bursting into the room, shouting that Tillie has won first prize. Beatrice, very drunk, tacks up curtains as she commands Ruth to bury the rabbit, which provokes a convulsive fit. After administering crude treatment to Ruth, she turns to Tillie and says, "I hate the world." As Tillie ascends the stairs, her recorded voice delivers the conclusion of her speech, the last lines of which echo the last lines of her initial monologue that opens the play.

Pulitzer Prize for Drama Timeline

- 1917 (No Award)
- 1918 *Why Marry?* by Jesse Lynch Williams
- 1919 (No Award)
- 1920 *Beyond the Horizon* by Eugene O'Neill
- 1921 *Miss Lulu Bett* by Zona Gale
- 1922 *Anna Christie* by Eugene O'Neill
- 1923 *Icebound* by Owen Davis
- 1924 *Hell-Bent for Heaven* by Hatcher Hughes
- 1925 *They Knew What They Wanted* by Sidney Howard
- 1926 *Craig's Wife* by George Kelly
- 1927 *In Abraham's Bosom* by Paul Green
- 1928 *Strange Interlude* by Eugene O'Neill
- 1929 *Street Scene* by Elmer L. Rice
- 1930 *The Green Pastures* by Marc Connelly
- 1931 *Alison's House* by Susan Glaspell
- 1932 *Of Thee I Sing* by George S. Kaufman, Morrie Ryskind and Ira Gershwin
- 1933 *Both Your Houses* by Maxwell Anderson
- 1934 *Men in White* by Sidney Kingsley
- 1935 *The Old Maid* by Zoe Akins
- 1936 *Idiots Delight* by Robert E. Sherwood
- 1937 *You Can't Take It with You* by Moss Hart and George S. Kaufman
- 1938 *Our Town* by Thornton Wilder
- 1939 *Abe Lincoln in Illinois* by Robert E. Sherwood
- 1940 *The Time of Your Life* by William Saroyan
- 1941 *There Shall Be No Night* by Robert E. Sherwood
- 1942 (No Award)
- 1943 *The Skin of Our Teeth* by Thornton Wilder
- 1944 (No Award)
- 1945 *Harvey* by Mary Chase
- 1946 *State of the Union* by Russel Crouse and Howard Lindsay
- 1947 (No Award)
- 1948 *A Streetcar Named Desire* by Tennessee Williams
- 1949 *Death of a Salesman* by Arthur Miller
- 1950 *South Pacific* by Richard Rodgers, Oscar Hammerstein, 2nd and Joshua Logan
- 1951 (No Award)
- 1952 *The Shrike* by Joseph Kramm
- 1953 *Picnic* by William Inge
- 1954 *The Teahouse of the August Moon* by John Patrick
- 1955 *Cat on a Hot Tin Roof* by Tennessee Williams
- 1956 *Diary of Anne Frank* by Albert Hackett and Frances Goodrich
- 1957 *Long Day's Journey into Night* by Eugene O'Neill
- 1958 *Look Homeward, Angel* by Ketti Frings
- 1959 *J. B.* by Archibald MacLeish
- 1960 *Fiorello!* by Jerome Weidman and George

	Abbott, Music by Jerry Bock and Lyrics by Sheldon Harnick
1961	<i>All The Way Home</i> by Tad Mosel
1962	<i>How To Succeed In Business Without Really Trying</i> by Frank Loesser and Abe Burrows
1963	(No Award)
1964	(No Award)
1965	<i>The Subject Was Roses</i> by Frank D. Gilroy
1966	(No Award)
1967	<i>A Delicate Balance</i> by Edward Albee
1968	(No Award)
1969	<i>The Great White Hope</i> by Howard Sackler
1970	<i>No Place to Be Somebody</i> by Charles Gordone
1971	<i>The Effect of Gamma Rays on Man-In-The-Moon Marigolds</i> by Paul Zindel
1972	(No Award)
1973	<i>That Championship Season</i> by Jason Miller
1974	(No Award)
1975	<i>Seascape</i> by Edward Albee
1976	<i>A Chorus Line</i> by Michael Bennett, James Kirkwood and Nicholas Dante, music by Marvin Hamlisch, and lyrics by Edward Kleban
1977	<i>The Shadow Box</i> by Michael Cristofer
1978	<i>The Gin Game</i> by Donald L. Coburn
1979	<i>Buried Child</i> by Sam Shepard
1980	<i>Talley's Folly</i> by Lanford Wilson
1981	<i>Crimes of the Heart</i> by Beth Henley
1982	<i>A Soldier's Play</i> by Charles Fuller
1983	<i>'Night, Mother</i> by Marsha Norman
1984	<i>Glengarry Glen Ross</i> by David Mamet
1985	<i>Sunday in the Park with George</i> by James Lapine, Music and lyrics by Stephen Sondheim
1986	(No Award)
1987	<i>Fences</i> by August Wilson
1988	<i>Driving Miss Daisy</i> by Alfred Uhry
1989	<i>The Heidi Chronicles</i> by Wendy Wasserstein
1990	<i>The Piano Lesson</i> by August Wilson
1991	<i>Lost in Yonkers</i> by Neil Simon
1992	<i>The Kentucky Cycle</i> by Robert Schenkkan
1993	<i>Angels in America: Millennium Approaches</i> by Tony Kushner
1994	<i>Three Tall Women</i> by Edward Albee
1995	<i>The Young Man from Atlanta</i> by Horton Foote
1996	<i>Rent</i> by Jonathan Larson
1997	(No Award)
1998	<i>How I Learned to Drive</i> by Paula Vogel
1999	<i>Wit</i> by Margaret Edson
2000	<i>Dinner with Friends</i> by Donald Margulies
2001	<i>Proof</i> by David Auburn
2002	<i>Topdog/Underdog</i> by Suzan-Lori Parks
2003	<i>Anna in the Tropics</i> by Nilo Cruz

2004	<i>I Am My Own Wife</i> by Doug Wright
2005	<i>Doubt</i> , a parable by John Patrick Shanley
2006	(No Award)

Author Sketch

Paul Zindel was born in Staten Island, New York in 1936. His father, a New York City policeman, abandoned the family. Zindel and his older sister were raised by their mother, who worked a variety of jobs to support them, ranging from shipyard work to dog-breeding. She also boarded a series of dying patients as a licensed practical nurse. The family generally moved once or twice a year.



His junior year in high school, Zindel contracted tuberculosis and spent a year and a half in a sanatorium, the only adolescent there. He later attended Wagner College, majoring in Chemistry. He earned a B.S. in 1958 and an M.S. in 1959. While a student, he also took creative writing classes. His writing professors included playwright Edward Albee. After school, Zindel worked briefly as a technical writer, then spent ten years teaching high school chemistry, writing in his spare time.

The Effect of Gamma Rays on Man-in-the-Moon Marigolds was first produced in Houston in 1965. It opened off-Broadway in 1970 and on Broadway in 1971. It garnered a number of prestigious awards, including an Obie in 1970 and the 1971 Pulitzer Prize for drama. Charlotte Zolotow, an editor, saw a television production of *Gamma Rays* in 1966 and encouraged Zindel to write for teens. His first young adult novel, *The Pigman*, was astonishingly successful, and he wrote primarily for younger audiences the rest of his career. He died in 2003.

Critic's Corner

Although *The Effect of Gamma Rays on Man-in-the-Moon Marigolds* is often praised for its realistic capture of juvenile speech and thought, Paul Zindel's writing in the play exists on two levels. Every line is weighted, every word counts. "Language in plays has to be loaded. It has so many duties to perform," he claimed, when asked about the difference between his fiction and drama. He consid-

ered *Gamma Rays* to be some of his best work, describing the scene in which Beatrice speaks of half-lives as “proof in spades that I have vision and talent, originality and compassion.” Obviously critics agreed with his surmise. The play garnered a Pulitzer Prize, among other prestigious literary awards.

Bibliography

“Author Paul Zindel Dies at 66.” *School Library Journal*. 49.5 (2003): 19.

Forman, Jack Jacob. *Presenting Paul Zindel*. Boston: Twayne, 1988.

“In Memoriam.” *American Theatre*. 20.6 (2003): 17.

Richards, Stanley, Ed. *Best Plays of the Seventies*. Garden City: Doubleday, 1980.

Zindel, Paul. “Humor, Bathos and Fear: An Interview with Paul Zindel.” Interview. *Teacher Librarian*. 27.2 (1999): 60+.

Zindel, Paul. “Paul Zindel: The Shouting Play, The Whispering Novel.” Interview. *Writing*. 24.5 (2002): 20+.

Zindel, Paul. “The Theater Is Born Within Us” *New York Times*. 26 July 1970. Arts and Leisure: 61.

Selected Other Works by the Author

Fiction

The Amazing and Death Defying Diary of Eugene Dingman, 1987

Attack of the Killer Fishsticks, 1993

A Begonia for Miss Applebaum, 1989

Confessions of a Teenage Baboon, 1977

David & Della, 1993

The Doom Stone, 1996

Fifth Grade Safari, 1993

Fright Party, 1993

The Gadget, 2001

The Girl Who Wanted a Boy, 1981

Harry and Hortense at Hormone High, 1984

I Love My Mother, 1975

I Never Loved Your Mind, 1970

Loch; A Novel, 1994

My Darling, My Hamburger, 1969

Night of the Bat, 2001

Pardon Me, You're Stepping on My Eyeball!, 1976

The Pigman, 1968

The Pigman's Legacy, 1980

Raptor, 1998

Rats, 1999

Reef of Death, 1998

To Take a Dare, 1982

A Star for the Latecomer, 1980

The 100% Laugh Riot, 1994

The Undertaker's Gone Bananas, 1978

When a Darkness Fall, 1984

Plays

Amulets against the Dragon Forces, 1989.

And Miss Reardon Drinks a Little, 1972.

The Secret Affairs of Mildred Wild: A Comedy in Three Acts, 1973.

Media Versions

DVD

The Effect of Gamma Rays on Man-in-the-Moon Marigolds, 20th Century Fox, 1972 Not Yet Released

Literary Terms and Application

Characterization: the assembly of actions, speech patterns, attitudes, and habits that defines a character. Ruth and Beatrice are strongly characterized, each written into a distinct personality. Nanny's characterization takes place entirely in stage notes and in speech about her. Tillie is characterized by the distance between the content of her recorded speeches and her actual dialogue on-stage.

Setting: the location in which a piece of literature is set. *The Effect of Man-in-the-Moon Marigolds* is set entirely in a single room. The setting creates a strong inside/outside dichotomy and also serves as a barometer of the action. The condition of the set reflects the condition of the characters.

Staging: the actual production of a play on stage. Staging involves placement of characters, design of the set and stage, movement of actors, lighting, sound, and costuming. Zindel's stage directions include extensive use of lights and music to set the mood/tone and to break scenes, indicating a passage of time.

Cross-Curricular Sources

Internet

Glossary of Technical Theatre Terms
<http://www.theatre crafts.com/glossary/glossary.shtml>

The Official Paul Zindel Website
<http://www.paulzindel.com/>

20th Century American Drama

Edward Albee, *Who's Afraid of Virginia Woolf?*, *The Sandbox*
Lorraine Hansberry, *Raisin in the Sun*
William Inge, *Come Back, Little Sheba*
David Mamet, *American Buffalo*
Arthur Miller, *All My Sons*, *Death of a Salesman*
Eugene O'Neil, *Long Day's Journey into Night*, *Mourning Becomes Electra*
Sam Shepard, *Buried Child*
Thornton Wilder, *Our Town*
Tennessee Williams, *The Glass Menagerie*, *A Streetcar Named Desire*
August Wilson, *The Piano Lesson*

Teaching

The Effect of Gamma Rays on Man-in-the-Moon Marigolds: A Unit Plan
by Marion B. Hoffman. CD-ROM.

Reference

The Oxford Encyclopedia of Theatre and Performance, Oxford University Press
The Oxford Illustrated History of Theatre, Oxford University Press

General Objectives

1. To read an example of modern drama
2. To understand and employ theatrical terminology
3. To develop critical reading, thinking, and writing skills
4. To visualize the staging of a play
5. To gain an appreciation of literature through close reading
6. To track and discuss significant themes
7. To investigate implied action
8. To evaluate the veracity of claims made by characters
9. To discuss the difference between public and private life
10. To analyze the use of scientific concepts in literature

Specific Objectives

1. To analyze the metaphorical significance of Tillie's science project
2. To discuss the use of Tillie's recorded voice
3. To account for Beatrice's behavior toward her daughters
4. To contrast the daughters' life outside and inside their home
5. To track the effect physically absent characters have on the plot
6. To evaluate the importance of setting in the play
7. To unravel conflicting explanations of the same event
8. To contrast Beatrice's and Tillie's worldviews
9. To investigate Peter's thematic relevance to the play
10. To note significant shifts in tone and mood

Themes and Motifs

Themes

- despair
- bitterness
- cruelty
- hope
- science
- appearances
- family
- dreams
- illness

Motifs

- contrast between public and private life
- dark humor
- alternation between cruelty and warmth
- persistence in the face of opposition
- fear of public humiliation

Meaning Study

1. TILLIE'S VOICE: And this small part of me was then a whisper of the earth. When there was life, perhaps this part of me got lost in a fern that was crushed and covered until it was coal. And then it was a diamond millions of years later—it must have been a diamond as beautiful as the star from which it had first come. (p.6)

(Tillie's recorded voice opens and closes the play, bracketing the main action. These lines come from the opening sequence. That the voice is recorded places it outside the immediate context of the play's events, just as the content places Tillie in a context beyond her immediate environment, which is hostile and cruel. Literally, Tillie is speculating on the provenance of the atoms that comprise her body. Thematically, she is finding parts of her that are beautiful and important. Her mother's insistence that she is neither beautiful nor important forces Tillie to find these qualities at a level beyond her mother's scrutiny, the atomic level.)

2. BEATRICE:

Do you want me to chloroform that thing right this minute? (p. 13)

(Throughout the play Beatrice threatens to kill Peter, the girls' pet rabbit, eventually chloroforming it near the end of the play. The threats are a type of pacing, a thread that binds the play together. They also characterize Beatrice. The threats appear to be idle comments, examples of her offhanded cruelty and bitter humor. Her killing Peter marks her bottom point in the play, the lowest she descends.)

3. BEATRICE:

Science, science, science! Don't they teach our misfits anything anymore? Anything decent and meaningful and sensitive? Do you know what I'd be now if it wasn't for this mud pool I got sucked into? I'd probably be a dancer. (p. 32)

(Beatrice's denigration of science here is ironic because science is clearly deeply meaningful and sensitive to Tillie. Her lines about the atom that open and close the play are among the play's most charged, verging on prose poetry. Partly, these lines are another example of the basic disconnect between Beatrice and Tillie. Beatrice is too absorbed in her self-pity to notice that which is important to her daughter. Ruth's material demands for cigarettes and lipstick make sense to the mother; Tillie's love of science is alien to Beatrice, who pleads headaches when she tries to explain basic concepts. Gender may be an issue in this disconnect. She substitutes dancing, a stereotypically female pursuit, for science, a stereotypically male pursuit.)

4. BEATRICE:

One mistake. That's how it starts. Marry the wrong man and before you know it he's got you tied down with two stones around you neck for the rest of your life.

When I was in that lousy high school I was one of the most respected kids you ever saw. (p. 32-33)

(Beatrice is lamenting her life, attributing her misery to a single mistake: her marriage. One assumes that the "two stones"

around her neck are her daughters, although it is unclear how having daughters is a direct consequence of marrying the wrong man. Her claim that she was "one of the most respected kids" in high school is later shown to be false by Ruth's "Betty the Loon" and Beatrice's reaction. Her falsehood here may not be intentional prevarication. They may instead illustrate her capacity for self-delusion and wishful thinking, similar to her musings while reading the real estate listings. Ruth's proclivity for exaggeration is in this same mold, an inability to distinguish between fantasy and fact, rather than calculated lies.)

5. TILLIE:

But . . . nobody laughed at me. (p. 61)

(Instead of praising Tillie for being selected as a finalist in the science fair, Beatrice berates her for causing the principal to call the house, calls Tillie ugly, and predicts that everyone will laugh at the both of them. Tillie's reply that no one laughed at her when she was announced both replies to Beatrice's immediate lines and recalls Ruth's account at the beginning of the play of how an assembly laughed at Tillie as she cranked a model atom. This scene is emotionally charged because Tillie's accomplishment has given her some modicum of the acceptance she desperately lacks, but her mother projects her own insecurities onto Tillie, reversing the expected reaction. Realizing the pain she's causing Tillie, she embraces her. This abrupt change is indicative both of Beatrice's violent mood swings and the affection she feels for her daughters underneath her bitter, cruel surface. This oscillation prevents her from being a villainess and adds a layer of complexity to the character.)

6. RUTH:

She didn't tear it. She boiled it off.

BEATRICE:

You just told me upstairs that girl tore the skin off with an orange knife and . . . do you know, sometimes you exasperate me? (p. 75)

(Because the conversation occurs off stage, it is impossible to know exactly what Ruth told Beatrice. This small exchange can be read two ways. First, Beatrice could have been half-listening and misinterpreted Ruth's statements in the worst possible way, which would be in character, since Beatrice has a penchant for exaggeration and is often inattentive to her children. However, Ruth does offer several conflicting accounts of the cat's death, none of which match Janice Vickery's "official" version. So Ruth could very well have told her mother one version, then is here rescinding it. Which miscommunication has occurred here is immaterial; it remains an example of how Ruth's similarities to Beatrice, her tangential relation to reality, her self-absorption, and her cruel streak, "exasperate" her mother. Similarly, the fact that Ruth morbidly fixates on the cat's death illustrates her somewhat vicious temperament.)

7. BEATRICE:

Because this is the first time in my life I've ever felt just a little bit proud over something. (p. 80)

(Beatrice is speaking to Ruth about attending Tillie's presentation ceremonies, saying that her accomplishment is the first thing of which she had ever been genuinely proud, which may or may not be an exaggeration. Ruth refuses to stay home to tend Nanny so that Beatrice can go, and Beatrice accuses her daughter of begrudging her this, her one moment of pride. This one line is the only direct vocalization of the stage direction claim that "though her words say she is greatly annoyed with having to attend the night's function, her tone and direction show she is very, very proud" (p. 73-74).

8. RUTH:

Goodnight, Betty the Loon. (p. 81)

(Ruth, in a jealous rage because she is not to be allowed to attend the function, reels off this parting shot. Beatrice is crushed and refuses to go, sending Ruth instead. Beatrice's reaction and subsequent actions, particularly her phone call to the school, confirm Ruth's claim to Tillie that she had been known as "Betty the Loon." Ruth's motivation here seems to be petty spite and jealousy, an attempt to gouge as deeply as she can.)

9. TILLIE:

The seeds which received little radiation have grown to plants which are normal in appearance. The seeds which received moderate radiation gave rise to mutations such as double blooms, giant stems, and variegated leaves. The seeds closest to the gamma source were killed or yielded dwarf plants. (p. 88-89)

(Tillie's science fair project serves a metaphor for her life. The experiment is about charting the damage done by and deviations caused by exposure to gamma rays. If one considers Beatrice as the metaphorical source of radiation, then the daughters are analogous to the seeds. Ruth, who is closer to the mother emotionally and in temperament, is warped the most, while Tillie, more distant, escapes similar damage. Another possible read is to consider The World as the force that twists individuals and the family as examples of varying degrees of exposure and damage.)

10. BEATRICE: I hate the world. (p. 97)

(The repetition of this line echoes the repetition of "What's left for me?" in Act I (p. 53). Although Beatrice is displeased with her home life, "the world" here seems to specifically refer to the external world, that which exists outside the confines of their domestic space, which is the original source of any misery in the internal space. Although she references having been outside,

Beatrice is never shown exiting the house. The entire action of the play takes place in the one room. The outside world, though phone calls and her daughters' reports, is consistently depicted as a source of anxiety and discomfort for her.

The final act, in which Beatrice kills Peter and begins tearing down the paper covering the windows represents a blurring of the line between inside and outside. Peter, the least mobile and thus most representatively internal of the residents, the one who marks rooms and thus defines the space, who never leaves, is dead. The paper covering the windows is torn down, opening the membrane between inside and outside. This transformation can be read as a note of hope, of opening and beginning.)

Comprehension Study

1. Describe Tillie's relationship to science. *(Science is a private retreat for Tillie. It is an interest wholly her own, something foreign and incomprehensible to her mother. Her aptitude for the subject allows her a sense of accomplishment otherwise unavailable to her, and also grants her some form of acceptance. Her specific interest in atoms, radiation, and mutation is partially escapist. It allows her to recontextualize her life and self on different scales and reinterpret her life as being important and beautiful.)*
2. Why does Beatrice kill Peter? *(On the surface level, Beatrice appears to kill Peter out of simple malice, a vindictive act in retribution for Ruth's cutting "Betty the Loon." It is thus significant that Ruth wheedles nominal ownership of the rabbit from Tillie early in Act II. Beatrice is specifically targeting Ruth with the act. On a thematic level, killing the rabbit is analogous to destroying the room's claustrophobic interiority. Peter is the most domestic of the characters. He never leaves the house and marks and defines the space. Killing him and tearing down the paper in the windows is symbolic of opening the space and thus their lives to the outside, a new beginning.)*
3. Analyze the writing and function of the phone conversations. *(Beatrice's phone conversations are written in a natural, believable style, but her side of the conversations includes enough information to allow the audience to deduce the other side. They are largely transparent. Functionally, they define her and her relationship to the external world. Beatrice is never shown leaving the living quarters. Her entire contact with the outside world comes in the form of these phone conversations, which are depicted as unwelcome intrusions.)*
4. Discuss the structure of the play. *(The play is divided into two acts, the second one being significantly shorter than the first. This length discrepancy recalls the*

concept of half-life introduced in Act I. Act II largely destroys the picture of life presented in Act I. Tillie transforms from the girl everyone laughed at in an assembly to the student of honor in the awards ceremony. Ruth begins the play portrayed as the most socially successful of the daughters, but is slowly displaced by Tillie. Beatrice kills Peter and discontinues Nanny's stay.)

5. Characterize the dialogue of the play.
(Zindel's dialogue is natural, reflecting real speech patterns, with the exception of the taped monologues that bracket the play. The phrasing and diction is realistic, with replies indicative of the characters' personalities and perspectives. Zindel uses several typographic effects to shape pronunciation. Italics are used to denote emphasis, all capitals are used to show raised volume, ellipses refer to pauses, and a dash at the end of a line shows that the thought has been interrupted. Stage directions are used to append additional emotional information, though often the tone is implicit in context and wording.)
6. Contrast female and male characters in the play.
(The play centers around female characters. Male characters are absent, remote, present only the subject of conversation, like Beatrice's husband and father, or at the other end of the telephone, like Mr. Goodman and the principal. If one considers Peter to be a male character, he is present but silent and eventually killed. Mr. Goodman, the only male character with a positive impact on the family's life, is feminized by Beatrice. She calls him "effeminate" and a "hermaphrodite." The other male characters are sources of terror. The principal sends Beatrice into a frenzy, she blames her husband for ruining her life, and Mr. Mayo appears in Ruth's nightmares.)
7. Characterize Beatrice's feelings for her daughters.
(It is important to note that Beatrice is not villainized. She is often offhandedly cruel, but her character is tempered by moments of pride and tenderness. Beatrice alternates between scorn, cruelty, malice, pride, and genuine affection. Her actions towards her daughters appear to have more to do with herself than with them. She projects her own experiences and fears onto them. Though she claims to consider them "stones" around her neck, she obviously maintains moments of maternal affection. When she appears to revile them, it is when she sees herself in them.)
8. Compare Nanny to Beatrice.
(Nanny's presence is an indictment of Beatrice's life. Nanny's daughter represents the life Beatrice thinks she could have lived. Nanny represents the other end of the spectrum and is more closely tied to the realities of Beatrice's life. Nanny's daughter is outside, successful, the possible life. Nanny is inside, failing, the actual life. Beatrice's decision to stop caring for her is a rejection of her life in general, a turning point.)

9. Discuss the relationship between Ruth and Tillie.
(Ruth consistently tries to usurp her sister's place. When Tillie becomes favored by Mr. Goodman, Ruth becomes his personal secretary. She wheedles nominal ownership of Peter from Tillie. Jealous of their mother's attention, she viciously reminds Beatrice of her school nickname, supplanting the mother at the science fair awards ceremony. It is significant that she essentially denies her sister after watching her be laughed at in an assembly and then claims her after she is selected as a finalist in the science fair. Tillie, by contrast, is largely self-contained and distant. She stoically endures her sister's ridicule and her mother's harangues. Tillie is essentially absent. Her successes and interests are rooted off stage. Ruth is essentially present. She is immediately interested in what's occurring right now. Tillie rhapsodizes about atoms and stars. Ruth searches for lipstick and begs cigarettes.)
10. Comment on the detail and function of the stage directions.
(There are two basic kinds of stage directions in the play: the theatrical and the literary. Stage directions describing the music and lighting are almost purely theatrical. They would translate to the stage but have little impact on the reading experience. Stage directions describing actions, tones, and emotions, however, are essential to the reading experience. Often, they carry information that could not be inferred from dialogue alone.)

How Language Works

1. Beatrice is never shown leaving the house, but she maintains an obsessive interest in outside opinions of her: "the way Mr. Goodman spoke, he must think I'm running a concentration camp." (p. 10) Her characterization of her initial conversation with Mr. Goodman is also indicative of her propensity for exaggeration.
2. Beatrice is contemptuous of Nanny's daughter: "She came in pretending she was Miss Career Woman of the Year. She said she was in real estate and such a busy little woman" (p. 31) It is apparent that her hostility towards the woman is rooted in jealousy.
3. Beatrice's eventual killing of Peter and refusal to continue caring for Nanny in order to open the tea shop is predicted early in the play, but the warning appears false, another example of her hyperbole: "You know, I ought to kick you right out and open that tea shop tomorrow."

row. Oh, it's coming. I can feel it. And the first thing I'll do is get rid of that rabbit." (p. 34) That her plan has been stated and dismissed makes the eventual execution doubly surprising.

4. The moments of humor are mostly dark, generated by Beatrice's casually exaggerated pronouncements and predictions: "Where's Ruth? She's probably running around the school-yard in her brassiere." (p. 54)
5. Ruth's jealousy of her sister's success and the subsequent attention from Beatrice foreshadows her later fit: "I wish she'd give me the money it costs for a taxi—and for all that cardboard and paint and flowerpots and stuff. The only time she ever made a fuss over me was when she drove me nuts." (p. 73)
6. In the action of the play, Tillie has the simplest lines, contrasting sharply with her lyrical descriptions of atoms in the recordings and presentation. At the end of the play, her reaction to the death of Peter is simple: "I'd better bury him in the backyard . . . I'll do it in the morning." (pp. 95-96) Shortly after, her recorded voice delivers a long detailed monologue: "my experiment has made me feel important—every atom in me, in everybody, has come from the sun—from places beyond our dreams." (p. 98) The stylistic difference emphasizes the escapist nature of her interest in science. In conversation, Tillie is almost a blank. In the recordings, she is the most loquacious character.

Across the Curriculum

Drama

1. Act out scenes from the play. Discuss the difference between reading the play and experiencing it. Identify elements of the play that seem primarily literary or theatrical.
2. Choose one character and read her lines aloud. Make a list of defining characteristics and discuss the character in relation to the themes of the play and the other characters.

3. Mark every section in which Tillie speaks about science. Have one person read aloud these passages as a continuous monologue and make notes on recurring imagery, themes, and language. Compare these passages to her other lines. Is there a significant difference in tone or wording?
4. Choose one character and, selecting from her lines in the play, splice together a continuous monologue that exemplifies that character. Perform your monologue in class and justify your selections.

Art

1. With a group, design a poster advertising a performance of *The Effect of Gamma Rays on Man-in-the-Moon Marigolds*. Include graphic art, as well as performance information like location, dates, times, a cast list, and admission prices.
2. Transform a scene from *The Effect of Gamma Rays on Man-in-the-Moon Marigolds* into a comic strip. Incorporate stage directions into the drawings.
3. As a group, sketch a set for a performance of the play. Include exact dimensions, scenery, and major props.
4. Sketch drawings of what you consider to be the most significant moments of the play. Indicate the significance of each drawing in its title. Present and discuss the drawings in class.

Social Studies

1. Construct a timeline of Paul Zindel's life. Include birth and death dates, education, academic appointments, publication dates, play openings, relationships, and other significant events.
2. Make a business plan for Beatrice's tea shop. Include start-up costs, menus, prices, overhead, advertising, expected volume, etc.

Cinema

1. Selecting from contemporary movie stars, choose a cast for *The Effect of Gamma Rays on Man-in-the-Moon Marigolds*. Justify each selection with references to their previous performances.

2. Watch the film version of *The Effect of Gamma Rays on Man-in-the-Moon Marigolds*. Make note of deviations from the original script and discuss possible reasons for them.

Science

1. Make a guide to types of radiation. Include: Alpha, Beta, Cherenkov, Delta, Electromagnetic, Epsilon, Gamma, Gravitational, Hawking, Ionizing, Neutron, Non-Ionizing, Particle, Synchrotron, Solar, and Thermal radiation.
2. Choose one figure from the history of radiation research and make a presentation on his or her life and contribution. Possible figures include: Antoine Henri Becquerel, Niels Bohr, James Chadwick, Arthur Holly Compton, William David Coolidge, Pierre and Marie Curie, George de Hevesy, Thomas Alva Edison, Robley Evans, Gioacchino Failla, Enrico Fermi, Otto Hahn, Victor F. Hess, Jean Frédéric and Irène Joliot-Curie, Ernest O. Lawrence, Lise Meitner, Hermann Joseph Muller, Herbert Parker, Edith Quincy, Wilhelm Conrad Röntgen, Ernest Rutherford, Glen Seaborg, Lauriston S. Taylor, Joseph John Thompson.

Language

1. Keep a reading journal as you read. List every phrase that seems important or particularly aesthetically appealing. Discuss your selections with your classmates.
2. Keep a vocabulary journal as you read the play. Note every word you do not know. At the end of every scene, look up the words and write their definitions as used in context.
3. Using a computer art program, illustrate a glossary of theatre terms. Include act, actor, backstage, baffle, black box, blackout, casting, centre stage, character, comedy, company, dénouement, deus ex machina, dialogue, director, downstage, dramatic irony, dramatis personae, dress rehearsal, ensemble, entrance, epilogue, exit, exeunt, flashback, forestage, groundling, in the round, melodrama, mime, monologue, morality play, offstage, plot, producer, prologue, props, raked stage, repertoire, satire, scene, scenery, set, soliloquy, stage, stage directions, stage hand, stage left, stage right, theatre of the absurd, tragedy,

tragic-comedy, upstage, and wings.

4. Choose your favorite passage and rewrite it in five different styles or accents. Share your rewrites and discuss how the changes affect the meaning and what technically distinguishes one style from another.

Journalism

1. Compose a review of the play. Examine online and print literary reviews and mimic the general format. Include a plot summary, comparisons to other literary works, and a judgment of its literary merit.
2. Summarize the main events of the play in a news article as if they had recently happened.

Composition

1. Write a short story about Janice Vickery set after the events of the play. What does she think about Tillie's having won the science fair? Where had she really acquired the cat, and how did it die? Will she follow through with her plans to use a dog next year?
2. Choose two characters from the play and write an essay comparing/contrasting them. Be sure to consider their personalities, relationships with other characters, family affiliations, actions, attitudes, and functions in the plot.
3. Select what you consider to be the most significant scene in the play and write an essay explaining it. Incorporate direct quotes, paraphrases, and MLA style citations.
4. Compose a set of journal entries from Tillie's perspective. Include her thoughts and feelings about: her family, her mother's boarders, science, Mr. Goodman, her science fair project, Peter, school, her peers, etc.
5. Write a poem from Nanny's perspective. Is she actually as unaware as she seems? Does she think of her daughter? How does she feel about Beatrice, Tillie, and Ruth? Does she like the honey and hot water Beatrice gives her?

6. Using what you know of Ruth from the play, create her "file" from school. Format the writing as you imagine evaluative reports to be and include her personal history, diagnosis, behavioral problems, recommendations, etc.

Literature

1. Make a *dramatis personae* list, including notes for each character and relationship between characters. Include: Beatrice, Ruth, Tillie, Peter, Nanny, and Janice Vickery.
2. Compose an essay in which you track the changes in a single character. Begin by an introduction to the character, proceed to a characterization of her, then track her changes throughout the play. Include MLA in-text citations.
3. Make a list of the play's themes. Label them major or minor and provide lists of page numbers of examples of each theme. Discuss your selections in groups and reach a consensus on a list of major themes.
4. Research and make an oral report on American theatre in the 1960s and 1970s. Which plays received major awards? Who were the dominant playwrights? What literary movements were active? What were their literary agendas and characteristics?

Alternate Assessment

1. Attend a performance of *The Effect of Gamma Rays on Man-in-the-Moon Marigolds*. Discuss how the director's interpretation of stage directions and characters changed your understanding of the play.
2. Read another work by Paul Zindel and compare it to *The Effect of Gamma Rays on Man-in-the-Moon Marigolds* based on themes, literary technique, structure, characters, intended audience, genre, setting, action, and your personal reactions.
3. Rethink the play as having all male characters, maintaining the general relations and action. Make notes for names, characterization, and how the play would be transformed.

Write samples of dialogue to reflect your changes.

4. Recreate Tillie's science fair poster board, using what you know about materials and design from the play. Include three sections: The Past, The Present, and The Future.

Standardized Assessment Preparation

Vocabulary

1. Keep a vocabulary journal while you read the play. Note at least ten words in each Act that you do not know, look them up, and write their definitions. Then add a list of synonyms and antonyms for each word.
2. Choose a word from the play and make a word-tree for it by diagramming the word, its synonyms and antonyms, the synonyms and antonyms of those words, and so on for at least five generations.

Grammar and Mechanics

1. Choose five different punctuation marks in the play and list examples of their usage. Make notes on 1) its proper mechanical usage 2) how it is used in the play and 3) how it translates into speech.
2. Choose a dialogue of at least ten lines and rewrite it. Exclude the present punctuation in each line, while preserving the meaning. For example, if one line uses a comma in a compound sentence, rewrite the line as two separate simple sentences.

Critical Thinking

Using the following list of common analogy patterns, create a test of twenty analogies from the stories. Trade tests with a partner, take them, and then switch back to grade.

Action and Meaning (shiver : cold), Age (puppy : dog), Antonyms (large : small), Cause and Effect (explosive decompression : pulmonary embolism), Class and Member (rodent : rat), Defining Characteristic (genius : intelligence), Definition (visage : expression), Degree (angry : livid), Function (keyboard : typing), Group and Member (pod : whale), Location (sunset : west), Manner (laugh : snicker), Part and Whole (lens : glasses), Relation (father : son), Sex (bull : sow), Symbol and Symbolized (heart : love), Synonyms (happy : merry), Time Sequence (incubate : hatch), Tool and Purpose (knife : cut), Worker and Work (engineer : build), Worker and Place (sailor : ship), Worker and Product (photographer : photograph), Worker and Tool (photographer : camera)

ex: Tillie : Marigolds

- a) Mr. Goodman : Lobster
- b) Beatrice : Rabbit
- c) Janice : Cat
- d) Ruth : Rabbit

The correct answer is c. Tillie experiments on marigolds, just as Janice uses a cat in her science fair project. The basic pattern of analogy is Worker and Product.

Writing

1. Choose a character and quickly sketch the outline of a paper explaining their characteristics, their relation to other characters, and their role in the play. Your outline should follow this basic template:

Introduction

I: Characteristics

- A. Main Point 1
 1. Supporting Evidence
 2. Supporting Evidence
- B. Main Point 2
 1. Supporting Evidence
 2. Supporting Evidence
- C. Main Point 3
 1. Supporting Evidence
 2. Supporting Evidence

II: Relations

- A. To Character X
 1. Supporting Evidence
 2. Supporting Evidence
- B. To Character Y
 1. Supporting Evidence
 2. Supporting Evidence
- C. To Character Z
 1. Supporting Evidence
 2. Supporting Evidence

III: Significance and Meaning

- A. Main Point 1
 1. Supporting Evidence
 2. Supporting Evidence
- B. Main Point 2
 1. Supporting Evidence
 2. Supporting Evidence
- C. Main Point 3
 1. Supporting Evidence
 2. Supporting Evidence

IV: Conclusion

2. Write an argumentative essay in which you identify and interpret what you think is the main theme of the play. You should begin with an introduction in which you state your thesis, present at least three main ideas with supporting evidence from the play, entertain a counterargument, respond to it, and then present a conclusion. Use MLA style citations for any quotes.

Vocabulary Test

Identify the definition that best fits the word.

- ____ 1. incipient
A.) just beginning to exist
B.) already in place
C.) possessing a hereditary quality
D.) handed down
- ____ 2. resilient
A.) air-tight
B.) recovering quickly
C.) malleable
D.) untested, unstable
- ____ 3. eccentric
A.) unconventional, off-center
B.) incorrigible
C.) operating under false pretenses
D.) mentally incapacitated
- ____ 4. retrospect
A.) clear vision
B.) contemplation of the past
C.) precise understanding
D.) cosmopolitan sensibilities
- ____ 5. primeval
A.) original sin
B.) improbably large
C.) dating to the earliest times
D.) first in a series
- ____ 6. effeminate
A.) possessing attributes common to women
B.) attracted to women
C.) attractive to women
D.) possessing attributes common to men
- ____ 7. hermaphrodite
A.) person of ambiguous gender
B.) animal able to slowly transform from one gender to the other
C.) person possessing female features but male sexual organs
D.) person, animal or plant having both male and female sexual organs
- ____ 8. gravely
A.) threateningly
B.) solemnly
C.) slowly
D.) raspy

- ____ 9. saccharine
A.) artificial
B.) sickly, weak
C.) overly sweet
D.) sticky
- ____ 10. momentous
A.) very brief
B.) sharply etched in the mind
C.) dull, uninteresting
D.) very important
- ____ 11. exasperate
A.) to take the breath from someone
B.) to exhale loudly
C.) to rub against
D.) to irritate or frustrate
- ____ 12. variegated
A.) divided into segments
B.) unique
C.) marked with different colored spots or streaks
D.) moist
- ____ 13. commence
A.) to begin
B.) to grant permission
C.) to discuss
D.) to attend a ceremony
- ____ 14. desiccated
A.) decayed
B.) completely dried out
C.) smelling strongly of decomposition
D.) sick
- ____ 15. preposterous
A.) dating to before the invention of the printing press, handwritten
B.) acting under a false identity
C.) absurd
D.) livid

Comprehension Test A

Part I: Character Identification (30 points)

Name the character(s) who fits these descriptions.

- _____ 1. dreams about Mr. Mayo
- _____ 2. dreams about a wagon
- _____ 3. drinks hot water with honey
- _____ 4. irradiates marigolds
- _____ 5. calls to ask why one of the daughters hasn't been in school
- _____ 6. finalists at the science fair
- _____ 7. wants to open a tea shop
- _____ 8. offers to bury Peter
- _____ 9. demonstrates the cloud chamber
- _____ 10. Betty the Loon
- _____ 11. science teacher
- _____ 12. wins the science fair
- _____ 13. skinned a cat
- _____ 14. science teacher's personal secretary
- _____ 15. chloroforms Peter

Part II: Fact or Opinion (20 points)

Mark the following statements either T for true, F for false or O for opinion.

- _____ 1. Beatrice was warped as a child.
- _____ 2. Mr. Goodman chloroforms a cat.
- _____ 3. Ruth likes to wear feathers.
- _____ 4. Tillie is often poorly dressed.
- _____ 5. Beatrice goes to the library to research radiation.
- _____ 6. Beatrice receives \$50/week for caring for Nanny.
- _____ 7. There is a file on Ruth at school.
- _____ 8. Janice Vickery is insincere.
- _____ 9. Most of the marigolds die.
- _____ 10. The principal is relieved at Beatrice's absence at the ceremony.

Comprehension Test A (Page 2)

Part III: Stage Directions Identification (20 points)

Name the character to whom the stage directions apply.

- _____ 1. her recorded voice takes over
- _____ 2. She holds a pot of boiling water.
- _____ 3. appears on the landing and releases another scream which breaks off into gasps
- _____ 4. commences tacking up one of the curtains
- _____ 5. gently lays the rabbit near the door
- _____ 6. enters at a gallop, throwing her books down and babbling a mile a minute
- _____ 7. She pervades the room with age.
- _____ 8. is standing in the spotlight holding the skeleton of a cat
- _____ 9. preparing boxes of dirt in which to plant seeds
- _____ 10. Her costume is strange, but not that strange

Part IV: Essay Questions (30 points)

Choose two and answer in complete sentences.

- 1. Contrast Tillie and Ruth.
- 2. Argue that this play concerns, as the author claims, "the triumph of youth."
- 3. Describe Beatrice's behavior toward her daughters.
- 4. Discuss the importance of setting in the play.
- 5. Analyze the role of science in the play.

Comprehension Test B

Part I: Identification (30 points)

Identify speakers of quotations.

- _____ 1. I'm saving it for that Angora manure machine
- _____ 2. She's my sister!
- _____ 3. And he called this bit of me an atom.
- _____ 4. it looks good on college applications to show you did something else in school besides dating
- _____ 5. zero zero zero zero zero zero zero zero
- _____ 6. Mother ... aren't you proud of her?
- _____ 7. I'd better bury him in the backyard.
- _____ 8. I found rabbit droppings in my bedroom even.
- _____ 9. I mean it. Give Peter to me.
- _____ 10. DO YOU WANT THEM TO LAUGH AT US?
- _____ 11. The half-life of Radium-226 is one thousand five hundred and ninety years.
- _____ 12. perhaps I'll do the same thing with a dog
- _____ 13. Can I earn a cigarette this morning?
- _____ 14. No. It's "Apples! Pears! *Cucum* ... bers!"
- _____ 15. She was just like you and everybody thought she was a big weirdo.

Part II: Short Answer (20 points)

Provide an answer to each of these questions:

- _____ 1. What does Beatrice threaten to do throughout the play?
- _____ 2. Who accompanies Tillie to the ceremony?
- _____ 3. What profession is Nanny's daughter in?
- _____ 4. What did Beatrice steal as a child?
- _____ 5. What was wrong with Mr. Alexander Brougham?
- _____ 6. Where did Beatrice see Mr. Goodman?
- _____ 7. To what material were the marigolds exposed?
- _____ 8. What was Tillie doing when the students laughed at her?
- _____ 9. Which part of the newspaper does Beatrice comment upon?
- _____ 10. How does Tillie get to the ceremony?

Comprehension Test B (Page 2)

Part III: Fill-in (20 points)

Fill in the words that complete each statement.

1. The marigolds that received moderate radiation had _____ blooms and giant _____.
2. _____ initially refuses to go to the final judging because she thinks that everyone will _____ at them.
3. Ruth _____ Beatrice's back in exchange for _____.
4. Beatrice laments not finishing her _____ course or _____ school.
5. Tillie plans to transplant the _____ from boxes to the _____.

Part IV: Essay Questions (30 points)

Choose two and answer in complete sentences.

1. Describe the use of telephone conversations in the play.
2. Contrast Janice's presentation with Tillie's.
3. Characterize Beatrice.
4. What is the significance of the recorded voices?
5. Discuss the influence characters who are never present on stage have on the plot.

Answer Key

VOCABULARY TEST

- | | | |
|------|-------|-------|
| 1. A | 6. A | 11. D |
| 2. B | 7. D | 12. C |
| 3. A | 8. B | 13. A |
| 4. B | 9. C | 14. B |
| 5. C | 10. D | 15. C |

COMPREHENSION TEST A

Part I: Character Identification (30 points)

- | | |
|------------------------------|--------------------|
| 1. Ruth | 8. Tillie |
| 2. Beatrice | 9. Mr. Goodman |
| 3. Nanny | 10. Beatrice |
| 4. Tillie | 11. Mr. Goodman |
| 5. Mr. Goodman | 12. Tillie |
| 6. Tillie and Janice Vickery | 13. Janice Vickery |
| 7. Beatrice | 14. Ruth |
| | 15. Beatrice |

Part II: Fact or Opinion (20 points)

- | | |
|------|-------|
| 1. O | 6. T |
| 2. F | 7. T |
| 3. F | 8. O |
| 4. T | 9. F |
| 5. F | 10. O |

Part III: Stage Directions Identification (20 points)

- | | |
|-------------|--------------|
| 1. Tillie | 6. Ruth |
| 2. Beatrice | 7. Nanny |
| 3. Ruth | 8. Janice |
| 4. Beatrice | 9. Tillie |
| 5. Tillie | 10. Beatrice |

Part IV: Essay Questions (30 points)

Answers will vary.

COMPREHENSION TEST B

Part I: Identification (30 points)

- | | | |
|-------------|--------------|--------------|
| 1. Beatrice | 6. Ruth | 11. Tillie |
| 2. Ruth | 7. Tillie | 12. Janice |
| 3. Tillie | 8. Beatrice | 13. Ruth |
| 4. Janice | 9. Ruth | 14. Beatrice |
| 5. Beatrice | 10. Beatrice | 15. Ruth |

Part II: Short Answer (20 points)

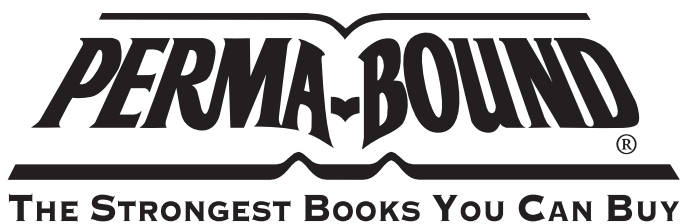
1. chloroform Peter
2. Ruth
3. real estate
4. her father's vegetable wagon
5. He had worms in his legs.
6. the A&P by the lobster tank
7. cobolt-60
8. cranking a model of an atom
9. real estate listings
10. a taxi

Part III: Fill-in (20 points)

1. double, stems
2. Beatrice, laugh
3. scratches, cigarettes
4. real estate, beauty
5. marigolds, backyard

Part IV: Essay Questions (30 points)

Answers will vary.



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