Matilda Wormwood is a gifted girl with unpleasant parents. From a young age she can speak like an adult. Since her parents don't pay much attention to her, Matilda teaches herself to read. Before she has even been to elementary school, she has already read many books in the local library. She spends her afternoons at the library where a friendly librarian helps Matilda choose classic novels. Matilda's parents think she should read less and watch more television.

Matilda's father, Mr. Wormwood, is a dishonest car salesman. He uses several illegal tactics to trick people into buying cars that are complete junk. He regularly tries to prepare Matilda's brother, Michael, to follow him into the car salesman business. Matilda tells her father that he is dishonest, but it only makes him mad.

Matilda decides to punish her parents for the way they treat her. She hopes that it will make them less selfish and mean. She tricks her father into gluing his hat to his head, borrows a neighbor's parrot to convince the family that there is a ghost in the dining room, and swaps her father's hair tonic for dye that bleaches his hair. None of these pranks have a lasting effect on her parents, but they help train Matilda to deal with bullies.

When Matilda is old enough to go to school, she finally meets an adult who cares about her future. Her teacher, Miss Honey, is thoughtful and understanding. She quickly notices that Matilda is very smart. Miss Honey tries to get Matilda moved to a higher grade, since she can read and write better than children several years older. Miss Honey is unsuccessful because the Headmistress of the school, Miss Trunchbull, refuses and believes Miss Honey is just trying to get rid of Matilda.

Miss Trunchbull is mean and abusive to students. She grabs a student by her hair and throws the girl over a fence, just because Miss Trunchbull does not like the girl's pigtails. She also forces a student to eat an entire cake in front of all the students, hoping that it will make him sick. Matilda wants to punish Miss Trunchbull for being a bully. Matilda and another girl in her class, Lavender, become friends. Lavender is also rebellious and wants to punish Miss Trunchbull.

When Miss Trunchbull comes to teach Matilda's class, she is mean to the students and even Miss Honey, who tries to defend the students. Lavender puts a newt into Miss Trunchbull's water jug, causing her to scream and jump back. While Miss Trunchbull is yelling at the students, Matilda stares at the glass that holds the newt and uses her mind to knock it over onto Miss Trunchbull. Matilda speaks with Miss Honey about what she has done. Miss Honey has Matilda push the glass over using her mind again and is amazed at Matilda's power. They go to Miss Honey's small home to have tea and discuss Matilda's powers.

Matilda notices that Miss Honey is very poor and asks her why she cannot afford a nicer home or proper furniture. Miss Honey tells her that she was raised by a very mean aunt who took her father's home and keeps almost all of Miss Honey's money

when she gets paid by the school. This makes Matilda upset, since Miss Honey has been so nice to her, and Matilda does not like bullies. Miss Honey then reveals that her aunt is Miss Trunchbull.

Matilda spends the next week practicing her mind powers and comes up with a plan. While Miss Trunchbull is teaching her class, Matilda lifts a piece of chalk and writes a message on the blackboard, making it seem as if the message is from the ghost of Miss Honey's father. Miss Trunchbull faints. After she recovers, she leaves town. Miss Honey receives a letter with her father's will that Miss Trunchbull had kept from Miss Honey. She gets ownership of her father's house and savings account. Matilda visits Miss Honey at her new house and they grow their friendship. Matilda also gets moved into a much higher grade at school and loses her mental powers, since she now has schoolwork that challenges her mind.

Matilda returns home one day to find her family frantically packing the car. Her father tells Matilda that they are moving to Spain and not coming back. Matilda runs to Miss Honey, who tells Matilda that her father is in business with criminals, and it was only a matter of time before he would flee the country. Matilda brings Miss Honey back to her house and asks her father if she can stay behind and live with Miss Honey. Matilda's father agrees and the family leaves her behind.