**H**arry Potter has been spending another unhappy summer with the Dursleys. When Aunt Marge Dursley insults his parents, he loses his temper and accidentally causes her to inflate like a balloon and float away. Fed up, Harry then flees the Dursleys with his broom and trunk. The Knight Bus arrives and takes Harry to the Leaky Cauldron, where he is pardoned by Minister for Magic Cornelius Fudge for using magic outside of Hogwarts. After reuniting with his best friends Ron Weasley and Hermione Granger, Harry learns that Sirius Black, a convicted supporter of the dark wizard Lord Voldemort, has escaped Azkaban prison and intends to kill him.

The trio return to Hogwarts for the school year on the Hogwarts Express train, which is suddenly boarded by dementors, ghostly prison guards that are searching for Sirius. One enters the trio's compartment, causing Harry to pass out, but new Defence Against the Dark Arts teacher Remus Lupin repels the dementor with a Patronus Charm. At Hogwarts, headmaster Albus Dumbledore announces that dementors will be guarding the school until Sirius is captured. Hogwarts groundskeeper Rubeus Hagrid is announced as the new Care of Magical Creatures teacher; his first class goes badly when Draco Malfoy deliberately provokes the hippogriff Buckbeak, who then attacks him. Draco exaggerates his injury, and his father Lucius Malfoy later has Buckbeak sentenced to death.

The Fat Lady's portrait, which guards the Gryffindor rooms, is found ruined and empty. Terrified and hiding in another painting, she tells Dumbledore that Sirius has entered the castle. During a stormy Quidditch match against Hufflepuff, dementors attack Harry, causing him to fall off his broomstick which lands at the Whomping Willow, where it is destroyed. At Hogsmeade, Harry is shocked to learn that not only had Sirius been his father's best friend and apparently betrayed them to Voldemort, but is also Harry's godfather. Lupin privately teaches Harry to defend himself against dementors using the Patronus Charm.

After Harry, Ron, and Hermione witness Buckbeak's apparent execution, Ron's pet rat Scabbers bites him and escapes. When Ron gives chase, a large dog appears and drags both Ron and Scabbers into a hole at the Whomping Willow's base. This leads the trio to an underground passage to the Shrieking Shack, where they discover that the dog is actually Sirius, who is an Animagus. Lupin arrives and embraces Sirius as an old friend. He admits to being a werewolf, and explains that Sirius is innocent. Sirius was falsely accused of betraying the Potters to Voldemort, as well as murdering twelve Muggles and their mutual friend, Peter Pettigrew. It is revealed that Scabbers is actually Pettigrew, an Animagus who betrayed the Potters and committed the murders.

Severus Snape arrives to apprehend Black but Harry knocks him unconscious with the Expelliarmus charm. After forcing Pettigrew back into human form, Lupin and Sirius prepare to kill him, but Harry convinces them to turn Pettigrew over to the dementors.

As the group departs, the full moon rises and Lupin transforms into a werewolf. Sirius transforms into his dog form to fight him off. In the midst of the chaos, Pettigrew transforms back into a rat and escapes. Harry and Sirius are attacked by dementors, and Harry sees a figure in the distance save them by casting a powerful Patronus spell. He believes the mysterious figure is his deceased father before passing out. He awakens to discover that Sirius has been captured and sentenced to the Dementor's Kiss.

Acting on Dumbledore's advice, Harry and Hermione travel back in time using Hermione's Time Turner, and watch themselves and Ron repeat the night's events. They save Buckbeak from execution and witness the Dementors overpower Harry and Sirius. The present Harry realises that it was actually himself who conjured the Patronus, and does so again. Harry and Hermione rescue Sirius, who escapes with Buckbeak. Exposed as a werewolf, Lupin resigns from teaching to prevent an uproar from parents. He also returns the Marauder's Map to Harry, as he no longer has the authority to confiscate contraband. Sirius sends Harry a Firebolt broom, and he happily takes it for a ride.