

Brunelleschi's Dome: How a Renaissance Genius Reinvented Architecture Study Guide

Brunelleschi's Dome: How a Renaissance Genius Reinvented Architecture by Ross King

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Contents

Brunelleschi's Dome: How a Renaissance Genius Reinvented Architecture Study Guide.....	1
Contents.....	2
Plot Summary.....	3
Chapters 1 and 2.....	4
Chapters 3 and 4.....	8
Chapters 5 and 6.....	11
Chapters 7 and 8.....	14
Chapters 9 and 10.....	16
Chapters 11 and 12.....	18
Chapters 13 and 14.....	20
Chapters 15 and 16.....	22
Chapters 17 and 18.....	24
Chapter 19.....	26
Characters.....	28
Objects/Places.....	36
Themes.....	39
Style.....	41
Quotes.....	44
Topics for Discussion.....	46



Plot Summary

This work of non-fiction describes the history of the city of Florence and life at the end of the Middle Ages through the genius of Filippo Brunelleschi. The book describes the building of Santa Maria del Fiore and the numerous competitions held to find the best designs for her dome and its construction. It also tells of the lives of those connected with this project and its main capomaestro, Filippo Brunelleschi.

The book begins by giving information about the historic competition that led to the impressive dome that sits atop Santa Maria del Fiore. It then gives an account of the history of Florence in the late 1300s and early 1400s and the building of the cathedral and the initial competition for the dome's design. This initial design is treated as a religious artifact, and therefore is an important feature throughout a majority of the book. After providing information about Florence and the cathedral, Ross King gives background information about about Filippo Brunelleschi, his experiences as an artist and scientist in both Florence and Rome, and insight into the architect's personality and rivalry with Lorenzo Ghiberti. Filippo Brunelleschi is a known, hot-headed trickster is a master of illusion that spends almost thirteen years in Rome studying the ruins; this study is significant in the designs of the dome he later builds. King then allows the reader to visualize life on the work site and the magnificent machines and designs created by Filippo to build the dome. His designs revolutionize the the world of science and architecture.

This is a work of non-fiction, and life does not exist without hardships and disappointment. Kings tells stories of Filippo's failed designs and tainted reputation, as well as aspects of Filippo's personality that are less than appealing. His design for a boat to bring marble down the Arno and his plan to surround the town of Lucca with water are both monumental failures. Although he gains many critics, he is able to rebuild his reputation with more innovations for the cathedral and is successful at building the entire dome without centering.

Ultimately, Filippo's life and work is triumphant, and that is how the book ends. Filippo is the first architect who receives recognition as a genius in a time when architects and most artists were simply skilled laborers. Poems, books, and art are created to honor him, and artists such as Michelangelo come to study his dome. King ends the book by reminding the reader of the work done on the dome and describing in detail a visitor's experience traveling up the enormous dome, a work of genius that the author believes in nothing short of miraculous.



Chapters 1 and 2

Chapters 1 and 2 Summary

"Brunelleschi's Dome" tells the story of the designer of the dome of Santa Maria del Fiore, Filippo Brunelleschi. This artisan and master problem-solver is the one person able to design and construct the massive, and what many thought to be impossible, dome for Santa Maria del Fiore, a Florence cathedral that had been under construction for more than a century.

Chapter One begins with the original announcement for the August 19, 1418, competition for the design of Florence's magnificent cathedral, Santa Maria del Fiore, which had been under construction for more than a century. The winner of the competition would receive two hundred florins, which was a good deal of money for that time and more than a skilled craftsman could make in two years of work. Artisans from across Tuscany enter the competition and are given six weeks to build a model of, create a design for, or make suggestions for the dome of this cathedral, which has a variety of structural problems that need to be solved.

Although Florence in the early 1400s has a population of 50,000 residents, similar to London, it still retained its rural heritage, with various fields inside its walls and sheep being led to market through its streets. The new cathedral is intended to reflect Florence's large and powerful mercantile industry. This prosperous European city must credit its wealth to the wool industry, which produces the most expensive and desired cloth in all of Europe. Because of Florence's tremendous growth in the 1300s, Florence undergoes a building boom that rivaled the development seen in the time of the Ancient Romans. Dozens of buildings and monuments are erected. By 1418, the largest project in Florence is yet to be completed, the new cathedral of Santa Maria del Fiore. The builders would face major obstacles throughout the construction of the structure that would continue to escalate as the cathedral grows closer to completion, although a thirty-foot model had been constructed and sat in the south aisle of the cathedral for the past fifty years. The problem is an enormous dome that no one in all of Italy had a clue as to how to erect, and many experts considered to be impossible to build.

The foundation for this cathedral was laid in 1296, with the original designer and architect being the master mason named Arnolfo di Cambio. Although Cambio dies during construction, the masons continue working on this massive structure, evicting not only those living in the vicinity of the building site, but also those buried a few feet west of the site. One of many problems for the construction of the cathedral is the arrival of the Black Death, brought to Italy by the Asian black rat, which kills as much as four-fifths of the population of Florence over a one-year period. Slaves have to be brought in to assist in the building. A decade later, however, the city recovered and this building project finally began to accelerate. By this time, the cathedral is ready for its dome.



Since the 1330s the Wool Merchants, who run the Opera Del Duomo, have been responsible for the building of this cathedral. Since they are not knowledgeable in design or architecture, they must hire a capomaestro, or architect-in-chief, to create the models and designs for the cathedral and deal with the workers and artisans working on the site. Although Giovanni di Lapo Ghini is the capomaestro of Santa Maria del Fiore, the wardens of the Opera decide to have a second model created by another master mason, Neri di Fioravanti. This type of competition has been a tradition since at least 448 B.C.

Giovanni di Lapo Ghini's design is a fairly traditional, Gothic structure. Neri di Fioravanti, with his experience in vaulting, the most difficult and dangerous architectural structure, created a design without the structural support of the external buttresses required in Ghini's design, which many in Florence find to be ugly and a reflection of one of their enemies, France. The wardens of the Opera del Duomo debate the two designs, fearing the stability of each, since it is not uncommon for buildings during this time to fall down soon after construction is complete. Questions about these designs is raised in a meeting in August of 1367, and a referendum of Florence's citizens endorse Neri di Fioravanti's design. His dome will be the widest and highest, even exceeding that of the Roman Pantheon. Fioravanti's dome would consist of an outer dome that would give impressive height and protection for an inner shell that would be more proportionate to the interior of the cathedral. It would also be pointed rather than hemispheric. This shape is called a *quinto acuto*, or "pointed fifth." This highly-venerated dome would cause many problems when construction is begun fifty years later. When the 1418, competition begins, more than a dozen models are submitted to the Opera, but only one has promise. This brick model is constructed by the goldsmith and clockmaker named Filippo Brunelleschi.

Chapter Two describes the goldsmith from San Giovanni, Filippo Brunelleschi. From a young age, Brunelleschi has an uncanny ability to solve mechanical problems. Although his father, Ser Brunellesco di Lippo Lippi, hopes he would follow in his footsteps as a civil servant, Filippo apprentices to a goldsmith at the age of fifteen. This is a good choice, since there is much need for a goldsmith, and some of the best artists in Florence had originally trained as goldsmiths.

Although goldsmithing is a dangerous profession, both because of the mechanics of the field and the location of the workshops, Filippo thrived. One of his first of many innovations is the alarm clock, and at the age of twenty-four, as a prominent master goldsmith, he enters a competition that rivals the one between Giovanni di Lapo Ghini and Neri di Fioravanti. This famous competition is for the bronze doors of the Baptistery of San Giovanni. This competition comes about because of another outbreak of the Black Death, which returns approximately one summer every decade for fifty years. To appease the god who must be angry with the citizens of Florence, the Guild of Cloth Merchants decide to sponsor a competition for a new set of bronze doors for San Giovanni. With thirty-four judges and seven goldsmiths and sculptors, the competition begins.



During this competition, a new threat is headed towards Florence in the form of an autocratic ruler, Giangaleazzo Visconti, the duke of Milan. This cruel and malicious tyrant desires to unite the entirety of northern central Italy under his rule. The competitors are given one year to construct a trial panel 17 inches high by 13 inches wide. Although this may seem like an extensive amount of time, bronze casting is not an easy art form, with multiple steps in a process giving the artist many chances for mishap. The trial pieces are completed and judging begins in 1402, as the Milanese troops camp outside the city.

Of the seven artists, only Filippo Brunelleschi and Lorenzo Ghiberti are worthy contenders. Lorenzo, rumored to be the illegitimate child of a goldsmith, Bortoluccio Ghiberti, is only twenty-four years old, has no major works to his credit, and is not a member of a guild. He and Filippo are in all ways complete opposites, both in upbringing and artistic technique. Lorenzo asks the advice of anyone who would give it, while Filippo works in isolation. The surprising end result is a tie between these two very different artists, with a dramatic panel by Filippo and a graceful and elegant one by Lorenzo. They are asked to work together, but, according to Filippo's first biographer, Filippo is unable to work with Lorenzo and withdraws from the competition.

Filippo renounces sculpture and leaves for Rome to make clocks and study Roman ruins, while Lorenzo spends the next twenty-two years working on the bronze doors, which are considered among the great masterpieces of Florentine art. Giangaleazzo Visconti, duke of Milan, dies before the year is out, and the siege is lifted.

Chapters 1 and 2 Analysis

In Chapter One, the author begins the book with the announcement of the 1418, competition to design the dome for Santa Maria del Fiore, as well as the details of the competition, which draws the reader into the story. He then gives details of the construction of this cathedral, listing the various craftsmen, including the men who sell wine to the workers and the daily sights and sounds taking place around the work site.

King then describes the city of Florence from its start, which gives the reader an overall view of the city itself, to add to the description of the workers in the city. It also explains the importance of the wool industry, which will become relevant when the reader learns about the powerful Wool Merchants Guild. As the city prospers, the construction industry begins to boom, as well as Florentine pride. The monumental new cathedral, Santa Maria del Fiore, is to be a testament to Florentine power, ingenuity, and religious faith.

The obstacles standing in the way of the completion of this enormous cathedral takes up the brunt of these two chapters. The spread of the plague slows progress of the building of the cathedral, but it has also brought about new art projects, such as the bronze door competition which was created to appease a wrathful god. At the same time, the city was under siege by the duke of Milan, which added to the urgency and fervor of the bronze door competition and slowed work on the cathedral. The largest



problem is the design and construction of an enormous vaulted dome for the cathedral. The author goes into great detail about the possible ways to construct a dome and why those many ways will be difficult.

He then makes a connection between the initial competition for the design of the cathedral's dome to the bronze door competition. The reader realizes later in the book that both Brunelleschi and Ghiberti are the connection. They are both the victors in the bronze door competition, which foreshadows the 1418 competition to design a dome, similar to the first, that can actually be built, in which they are, once again, the victors.

The dynamics between Filippo and Lorenzo is very intriguing. The contrast in their personalities must have led to some heated debates and major disagreements. Seeing that in Lorenzo's biography, he asserts that he was the winner of the bronze door competition, and Filippo's biography clearly states they tied, there seems to have been major misunderstandings and disagreements from the beginning. Also, Filippo's lack of trust and arrogant self-confidence played a significant role in his withdrawal from the competition, leaving Lorenzo to complete the doors. This attitude of Filippo's will continue to be a theme frequently repeated throughout his lifetime.

Although the inability of these two artists to work together will cause many problems later in the book, it also leads Filippo to a city where he is free to study architecture and leaves Lorenzo to build up his resume and connections in Florence.

At the end of Chapter Two, Giangaleazzo Visconti, the duke of Milan, falls ill with fever and dies just outside the city. This specific obstacle in the building of the cathedral is removed, but the challenges faced in the construction of this structure are only going to become worse.



Chapters 3 and 4

Chapters 3 and 4 Summary

In Chapter Three, the citizens of Florence incorrectly believe their city is founded by Julius Caesar and filled with ancient Roman ruins. Many of these so-called Roman remains date much later; Lucius Cornelius Sulla established the city twenty years before Caesar's rule during the heyday of the Roman Republic.

When Filippo travels to Rome, he finds a city that was once the home of a million people dwindled, due to the Black Death of 1348, down to 20,000. The number of residents has only risen slightly by the time Filippo arrives. The once "Eternal City" is now a very dangerous and lawless place. The only industry is that of pious Christians on pilgrimages to see the bones of saints. To these travelers, the ancient ruins are signs of the devil and idolatry. Some of ancient Rome does survive, such as the Via Appia, a high road from the south, sepulchers of the many who could not be buried inside the walls of Rome, and aqueducts.

Filippo remains here on and off for thirteen years. Originally he comes to Rome with a young sculptor named Donatello, who is even more hot-tempered than Filippo, which seems to have made them a good pair. They live like vagabonds and become known as the "treasure hunters." The locals fear them, both because they are suspected of practicing geomancy (knowing the future by interpreting the scattering of a handful of earth) and the ancient ruins the men study are considered bad luck because they are not from the Christian religion.

It is not known for sure what Filippo was doing in the ruins. He uses a secret code, similar to Leonardo da Vinci's reversed handwriting, to keep his thoughts and ideas secret. This is a necessity before the creation of patents and copyrights. Manetti, Brunelleschi's biographer, claims he is surveying the ruins. He studies the measures of various columns and determines there are three types (Doric, Ionic, and Corinthian). He may have had a special interest in these columns knowing a dome is planned for the cathedral in Florence. The Domus Aurea, or the Golden House of Nero shows the use of a strong Roman concrete to create new architectural designs. The octagonal-shaped room in the east wing with a roofed dome must have been especially intriguing to Filippo, knowing the cathedral in Florence is also eight-sided and needing a dome. Another important display of Roman architectural achievement is the Pantheon with a dome that is still the largest, thirteen years after construction. This dome shows no sign of support, which is a testament to the Romans' knowledge of compression and tension in building. Although their knowledge is extensive, cracks do appear in their structures, so even the Romans could not provide Filippo with a perfect solution.

Filippo's quest is one of the first examples of a new type of pilgrimage. Tourists soon began arriving in Rome seeking relics rather than the bones of saints. Rome's image continued to change through the Renaissance. These artifacts that are found in Rome



link the ancient with the modern, and the world would begin to see the arts and sciences from a new perspective.

In Chapter Four, Filippo returns permanently to Florence in probably 1416 or 1417. Much work has been completed on the new cathedral, including its name change from Santa Reparata to Santa maria del Fiore, "Our Lady of the Flowers." Filippo, like so many artists of this time, is unattractive, unkempt, and unmarried. Although it is typical of Florentine men to remain as bachelors into their forties, Filippo never married. Some artists have a negative view of women and marriage, believing they compromise the artists' abilities.

Despite Filippo's training in his youth and study of Roman vaulting techniques, he has accomplished very little in his lifetime. By 1418 he is best known for his study and experimentation with linear perspective (the representation of three-dimensional space on a two-dimensional plane). This technique existed in Rome but had been lost or abandoned with the decline of the Roman Empire. These methods begin to reappear with Giotto's use of chiaroscuro (the use of light and shadow to create depth in a two-dimensional work of art). Filippo's experiment may have originated with his surveying of Roman ruins and consisted of a trompe l'oeil, an optical illusion, painting. This work has since vanished, most likely with many of works when Charles VIII of France occupied Florence in 1494.

The 1367 model of Santa Maria del Fiore's dome is still considered sacrosanct, but the problem is still how to erect it using invisible supports. A central wooden support seemed essential, which would be both costly, due to the number of trees needed, and the removal of the wood, called decentering, once the dome is complete. Barely two weeks into the competition, Filippo has begun his brick mode, with the assistance of two gifted artists, Donatello and Nanni di Banco. They spend ninety days creating a model that spans over six feet and is twelve feet tall. Two months after the models are to be complete, the judging begins. According to Filippo's biographers, the judges are not kind to his design, especially considering he wants to completely do away with a center support, which many found to be insane, and he refuses to give the committee the details of his plans, because he fears having his plans stolen. They become so upset with him that, according to Vasari, he is called "an ass and a babbler."

Vasari relates an anecdote about an egg, in which Filippo tells the judges that whoever can set an egg on its edge will win. The other competitors are unable to do it, but Filippo cracks the egg and sets it on its edge. This probably did not take place, but there is relevance to the egg. The strength of the eggshell has fascinated and intrigued scientists for years, and Vincenzo Vivani speculates that half of an eggshell is the inspiration for the domed vault.

The panel of judges narrow down the competition to two artists. The first is, of course, Filippo Brunelleschi. The second is the model by an artist previously mentioned, Filippo's former adversary, Lorenzo Ghiberti.



Chapters 3 and 4 Analysis

Chapter Three shows the reader how Florence is influenced by Rome. Although a significant amount of the architecture cannot be considered a Roman ruin, the people of Florence seem to take pride in the fact they were once part of the Roman Empire, even believing Julius Caesar had founded their city. This admiration in all things Roman contrasts with a description of Rome in the early 1400s. Once again the Black Death plays a significant role in a civilization, but, unlike Florence, Rome is hit particularly hard by this devastating plague.

This dangerous city draws Filippo, which makes sense once the reader learns about Filippo's background in goldsmithing and the slums in which the workshops existed. Besides the Black Death, earthquakes, and endless wars, this city draws pilgrimages by pious Christians, who are so devout, they destroy anything that might be a relic of pagan Rome. This shows a glimpse of what Christianity and its followers were like at this time in history. It contrasts with the changes that take place a few years later and throughout the Renaissance.

Fortunately, many of the Roman ruins survived this period of history and reflect the confidence, ingenuity, and understanding found in ancient Rome but lost to the world of Filippo Brunelleschi. Luckily, Brunelleschi had renounced sculpture and left Florence to study these amazing Roman buildings and monuments.

Filippo returns to Florence and becomes one of many unkempt and unattractive artists. This description of artists at this time gives the reader an impression of the artisans and the odd connection between ugliness and genius. Many of these ugly artists, like many men in Florence, spent a long time as bachelors, with some choosing to never marry. These older men marrying younger women or choosing to never marry because women can hinder study gives the reader a clear view of the interaction between men and women and the role of women in this society.

Later in Chapter Four, the author returns to the discussion of the construction of the dome, with a focus, again, on the obstacles. Another challenge is the construction of an armature for the dome. The author then goes into a detailed description of a wooden centuring for the dome to reinforce how difficult this dome challenge will be. It is then even more surprising when Filippo's design does not require a centuring, but it also explains why the Great Council chooses both Filippo and Lorenzo's designs. They cannot believe that the dome can be built without a centuring.

Now, at the end of Chapter Four, both Filippo and Lorenzo are back where they were over a decade before, unhappily tied in a competition. The author brings these artists full-circle, which is even more impressive and surprising due to the detailed descriptions of what has taken place since their last meeting.



Chapters 5 and 6

Chapters 5 and 6 Summary

Chapter Five begins with a review of Lorenzo Ghiberti's life since the competition for the bronze doors. He has been prosperous and married, in the Florentine tradition, a sixteen-year-old named Marsilia, who quickly gives birth to two children. Although he is still busy casting the bronze doors, he has also received other commissions. Lorenzo's simple and small model for the dome competition shows his lack of experience in architecture, but his might have been chosen because it does show a need for centuring, with which the judges feel more comfortable.

Although the competition has ended, no one has been awarded as the winner. This is due to a crack found in the cathedral, a need for a new capomaestro, and Pope Martin V arrives in Florence. During the lull, Filippo refines his model, receives four architectural commissions, and adopts a seven-year-old boy named Andrea Cavalcanti who becomes his apprentice. Two of the architectural commissions seem to be tests for Filippo because they are overseen by members of the judging panel and require domes. Unfortunately neither exist today, so it is impossible to know if he uses same techniques on the projects as he later does for Santa Maria del Fiore.

Finally, toward the end of 1419, the Wool Guild appoints four men, called the Uffitiales Cupule, or Four Officials of the Cupola, to choose a new capomaestro; their choice is thirty-eight-year-old Battista d'Antonio. He spends so much time at the cathedral he earns the nickname "hunchback of the Duomo." He is the on-site supervisor and translator of the architect's plans, but due to his lack of training, two more capomaestros are hired, Filippo and Lorenzo. A fourth architect is chosen, a humanist philosopher by the name of Giovanni da Prato, who grows to hate Filippo because his mental image of the dome is very different from Filippo's. His hatred grows when the Opera rejects his suggestion for windows at the base of the dome.

Three months after these architects are chosen, the wardens and four officials choose Filippo's plan as showing the best method of vaulting, although he is never officially named the winner of the competition. No one is awarded the prize money, but Filippo does not seem to mind; his model is displayed, almost as a shrine, in the Piazza del Duomo.

Chapter Six begins with the celebration held on the morning of August 7, 1420, for the first day of construction to begin on the dome, after more than fifty years of planning. Life on this site would not be easy; the hours are long; the work is grueling, and the pay is poor. The workers only enjoyed a full day of rest on Sundays and religious holidays. The men awoke to church bells and had lunch when the church bells chimed again. By 1400, the structure of time had changed, so now the hour is broken down into sixty minutes and the minutes divided into sixty seconds, and life has begun to speed up. When a worker dies, the funeral was paid for, but that was it. There is no assistance



given to widows and children, and a worker who is injured on the job also receives no help from the Masons Guild or the Opera.

The stonemasons must have thought about the difficult work ahead of them, not knowing if the dome could even be completed as planned. The design incorporates details from the pantheon and Neri di Fioravanti's first design. With Filippo's detailed dome design there still are aspects that are uncertain, so the wardens allow Filippo to build scaffold-free up to one-fifth of the dome. After that is successful, he will have to fight to build the rest in the same way. Since models are poor guides to know what will actually happen when the proportions are greater, Filippo may have also feel relieved that he has more time to decide how to complete the dome. As this chapter ends, the trial and error begins.

Chapters 5 and 6 Analysis

Chapter Five describes Lorenzo Ghiberti's life. He, like many men, marries late to a very young woman, who subsequently bears him children. This detail of his life, once again, reveals what family life might have been like. It is hard to imagine what it would be like to be sixteen and married to a thirty-seven-year-old man. It is intriguing to know what this woman thought of her marriage and the birth of two sons soon after.

Lorenzo has been kept busy with commissions but has very little experience in architecture. He seems to have been chosen simply for the fact that his design has a center support; this is ironic, because at the end of the chapter, the officials choose Filippo's design, which does not require centering. So, what is the point of having Lorenzo on the project, if the dome will not resemble his design? It is known how the fourth architect, Giovanni da Prato, feels about Filippo and his design; his detest for Filippo foreshadows problems between the two of them, and possibly Lorenzo as well.

While it is not known how Lorenzo spends his time during the lull in the competition, Filippo is busy with significant architectural commissions. This shows his desire to be prepared for the dome project, both in architectural knowledge and experience, as well as giving proof to the judges that he is capable of executing his plans.

Chapter Six beautifully details life on a building site, with descriptions of the food eaten, supplies loaded and unloaded, and the work that was asked of these men. The guilds did not act like unions of today; they did not regulate hours or pay and did not support families in times of tragedy. Most workers came from poor families, so it is understandable they would be willing to work under such harsh conditions. Some of these workers were called *uomini senza nome e famiglia*, "men without name or family." They worked from Monday to Saturday, with Sundays and religious feasts being their only time off. The author says the men acted on these solemn feast days as if they were in a tavern.

Each day of these long weeks began with the ringing of the church bells to wake to workers. A sense of time in the way we know it has just begun in the 1400s, with the



division of the hour into minutes and seconds; prior to this the hour was synonymous with prayer and was divided into four parts of ten minute intervals and each minute was divided into forty moments. During working hours the men provided their own tools and noon meal. Shocking to a contemporary reader, the men quenched their thirst with flasks filled with wine. This may seem unsafe, but water in the 1400s was filled with bacteria and disease, and the wine may have made life-threatening work such as this tolerable.

The wardens, and possibly Filippo, seem to have also realized the dangers ahead. Filippo is only allowed to build so much of the dome without scaffolding, which seems to work in his favor, because he took up until the month before building was to continue to add onto his plan. He also builds another model to reflect his new plans. This reveals the uncertainty in Filippo. Even with all his arrogance and self-confidence, he realizes what he is doing is very experimental and will require a process of trial and error.



Chapters 7 and 8

Chapters 7 and 8 Summary

Chapter Seven begins with a philosophical essay about the various methods of overcoming depression, spoken by the statesman Agnolo Pandolfini and written by Leon Battista Alberti the architect and philosopher. According to this treatise, the most effective tactic is to fantasize about the construction of machines powerful enough to erect fantastic structures. This machine would rid builders of the problem of transporting heavy loads of building materials above the ground and into position with accuracy. Filippo designs and builds a hoist that becomes one of the most exciting machines of the Renaissance.

At the time of the 1418 competition, the Opera del Duomo also requests models of machines for lifting the heavy supplies required for building the dome, but none are adequate. One of Filippo's first acts as capomaestro is to design a hoist powered by two oxen. This design is accepted and built by the spring of 1421, consisting of many parts including an elm tree five feet in diameter and a 600-foot rope weighing over a thousand pounds. This hoist is not only impressive because of its size but also because of its intricacy. It is built to be able to lift and lower supplies without having to turn the oxen around, which saved a great deal of time. This machine is high-tech for its time, but it does not come without problems. Friction could easily cause a fire, so the ropes have to be wetted with sea water, vinegar, or spoiled wine, so as not to rot the rope. Also, this machine could only move supplies vertically, not horizontally.

After Filippo has requested and received 100 florins for his design, a design that was possibly inspired by the equipment he had seen around the cathedral as a child and his experiments as a clock maker, a competition is held for the design of a machine to move supplies laterally. Filippo took advantage of the hard winter and hiatus from building to design a crane for this competition. His design is selected in April 1423, and three months later it is built and ready for use. This machine, called a castello, resembles a gallows. As soon as the ox-hoist has lifted supplies to the working level, an operator turns the screw to move the supplies along laterally and then lowered into place. Filippo is fortunate with both of his machines, because stress tests did not exist until 1813 through the work of French engineer Claude-Louis Navier. Filippo's crane is so durable, it stays in the cathedral even after Filippo's death and places the bronze ball created by the sculptor Andrea del Verrocchio, Leonardo da Vinci's master. Leonardo made sketches of Filippo's machines, and is often credited as being their designer.

Chapter Eight discusses the chain placed in the cement to be invisible supports for the dome. The final design is chosen, and a carpenter named Jacopo di Niccolo creates a wooden model demonstrating how the beams would be connected. Sandstone is used for most of the chains; it is extracted by stonemasons and checked for imperfections by checking its sound, which should ring like a bell, and smell, which is that of sulfur. The pieces required for these rings were highly specialized and even difficult for the master



artisans who were creating them to understand what to do. Besides these sandstone chains, a fifth wooden one is also installed in 1424. It may have been added for political as well as structural reasons. By adding this chain, Filippo exposes Lorenzo's lack of knowledge in architecture and engineering. The battle between these two artists will continue to escalate.

Chapters 7 and 8 Analysis

The treatise at the beginning of Chapter Seven illustrates the desire of the artists and scientists of this time to create powerful tools that could be used to create magnificent structures. In a sense they seem to want to play god and see how far their power can go—maybe even to the heavens. Filippo is one ingenious man who creates two such machines. He may have learned some of the skills needed for these designs from studying the structures in Rome and from growing up near the cathedral, but much must have been from his own natural abilities at problem solving. A few years later, Greek writings are discovered that assist Italian architects and scientists, but these are unavailable at the time Filippo's designs are created. Also, the Greek instructions may not have done much for him, since he spoke very little Latin and no Greek.

The highly-detailed descriptions aid the reader in visualizing not only the massive scale of the machines, but the ingenuity behind them, as well as the enormous structure for which these machines were used. Living in a time of gas-powered, electric, and pneumatic tools, it difficult to imagine and amazing to think about what Filippo and his contemporaries are able to accomplish.

After Filippo's death, the sculptor Andrea del Verrocchio uses Filippo's machines to complete the dome, and his young apprentice, Leonardo da Vinci would make sketches of these amazing tools. Ironically, considering how paranoid Filippo had been about others stealing his designs, many later believe Leonardo had been the designer of these fantastic machines.

These machines had to lift and move many supplies, including stone and wooden beams. These beams were so intricate that even the master artisans creating and working with them had difficulty understanding Filippo's plans. This reinforces Filippo's genius and uncanny abilities to solve mechanical problems. He also must have realized he had a gift because it seems he had the wooden beam added to expose Lorenzo's ignorance in the fields of architecture and design, as well as for structural purposes. It is intriguing to wonder what Lorenzo thought of all of this. Did he realize what Filippo was doing? The battle between these two artists escalates, so Lorenzo must have been able to see through Filippo's plan.



Chapters 9 and 10

Chapters 9 and 10 Summary

Chapter 9 tells a story that reveals more of Filippo's personality. It begins with explaining how the rivalry between Filippo and Lorenzo had been going on for years, and Filippo had quickly become the top designer for the dome. Unfortunately for Filippo, Lorenzo has the same salary and could possibly share credit with Filippo. The wooden chain in the dome would give Filippo a chance at exposing his rival's ignorance.

In 1423, when Filippo's design is selected, a disaster seems to strike; Filippo takes to his bed, seemingly very ill. When it seems he is not to recover, Lorenzo is forced to take over on this project, about which he knew very little. Suddenly, after Lorenzo puts the men back to work, Filippo miraculously recovers. He returns to the work site, exposes Lorenzo's incompetence and is rewarded with a salary that is almost triple the original amount.

If Filippo had been pretending to be sick, it would not be the first time he had played a trick on someone. He is a well-known trickster, with his most famous trick being against a master carpenter named Manetto di Jacopo. This man, known as Il Grasso, or "the Fat Man," had missed a social gathering held by Filippo, which upsets Filippo to the point he decides to play a mean trick on this man. He breaks into Manetto's house, and when Manetto is locked out, Filippo impersonates Manetto's voice from inside the house, telling him to go away. He is so convincing that Manetto becomes confused and leaves. This poor man spends the rest of the night being convinced by civilians around town that he is a man named Matteo. After being thrown in jail, liberated by Matteo's own brothers, taken to Matteo's home, and drugged and returned to his own home, he wakes in the morning quite traumatized. Even the real Matteo is on this ruse. Manetto emigrates to Hungary, where, fortunately for him, he becomes very wealthy.

Chapter Ten begins with the tale of an aqueduct that is being built from either side of a mountain, and the men, due to a slight miscalculation, do not manage to meet in the middle. Fortunately the engineer is able to rectify the situation, or there would have been two tunnels through the mountain. This story reflects the problems that exist for the dome project. Two teams of masons are working on either side of the dome, but with the basic tools they have for measuring, it is not known if the two sides will grow equally. Many builders plot the design to scale on a special tracing floor that is covered in plaster of Paris. They use these floors to create a wooden template that would be used to guide the stonemasons in their work. This to-scale drawing could also be drawn in soil near the building, which is what Filippo chooses to do.

Another problem that needed solving is how to keep the ever-increasing angles of brick and stone even around the cupola, and it is not sure exactly how Filippo is able to do this. A historian hints that he might have used a cord from the center of the dome outward as a guide for the bricks, although it would have been nearly impossible to



attach the cord at the peak of the dome, and the cord would have to be at least seventy feet long.

Whatever his method, he has critics in Lorenzo and Lorenzo's deputy, Giovanni da Prato. They claim Filippo is not building the dome to the original plan, but there is no basis for his claims. Giovanni also attempted to have his earlier idea of adding windows accepted again, but, again, it is ignored. Giovanni may not have succeeded this time, but he will try again with more success.

Chapters 9 and 10 Analysis

Chapter Nine reveals how cunning and vengeful Filippo can be. His prank even runs a man out of town because he had not attended a party held by Filippo. This shows how truly egotistical and self-centered Filippo is, as well as how easily he can get others to follow his plans. Not only is he talented at trickery, he seems to enjoy the fear he inflicts on others. This is reflected in his relationship with Lorenzo.

The story of the wooden chain is explained, and it is revealed that the chain may have not been needed in the first place, possibly being an elaborate ruse to expose Lorenzo's incompetence. It is not surprising that in Chapter Ten that both Lorenzo and his friend and fellow capomaestro, Giovanni, want to try to find some fault in Filippo and his design. Unfortunately for them, Filippo's design is basically a work of genius. It includes his own plans and ideas, yet follow the original design by Neri di Fioravanti. The Opera will not even listen to Giovanni's ideas; it is quite obvious that Filippo is the favored capomaestro with his large salary and chosen designs. This must have made both Lorenzo and Giovanni very angry and jealous.

According to the end of the chapter, Giovanni will find fault in Filippo. So, he may be a talented trickster, but one of his victims will get his revenge.



Chapters 11 and 12

Chapters 11 and 12 Summary

Chapter Eleven begins with the moment when the wardens needed to meet again to decide if Filippo should be allowed to complete the dome without centering. They decide to allow him to continue without centering but make an amendment saying that parts of the cupola would be built using a variety of differently-shaped bricks in a fishbone pattern. As with everything, Filippo is very specific about the quality of these bricks, as well as the mortar used to hold them together. Typical mortar took awhile to dry and would keep the bricks in place at the angles at which they are set, so it can only be speculated that the drying process is sped up, possibly by the ancient Roman cement called pozzolana.

Besides the quality of materials, Filippo is also very concerned with the safety of the workers; he builds a parapetto, or balcony, in order to calm the masons high in the air, and implements other safety measures, such as leather harnesses, and diluted wine. These safety precautions worked, as only three men die during the building of the dome. Another problem with which Filippo has to deal is unemployment, which leads to labor disputes and strikes. Filippo does not tolerate this behavior, and although he rehires the men who go on strike, he pays them a lower wage.

The unique brick pattern used by Filippo keeps the bricks from falling inward and is necessary for the structure of this dome without centering; it is not known for sure where Filippo learns this technique, although it is used for decoration in Rome and England and for structural purposes in Persian and Byzantine domes. What is known is that no masonry dome has been built to the magnitude of Santa Maria del Fiore's.

Chapter Twelve begins with the telling of the story of the Tower of Babel, which is, according to the Bible, never finished, because God instantly made those working on the tower speak in different languages. Unable to understand each other, they had to quit working. Modern historians believe this story is used to explain the ziggurats, or stepped pyramids, built by the Sumerians. The author compares it to the Fall of Man; like the forbidden knowledge in the Garden of Eden, the building of a structure to the heavens would make God and man equals. The parable of the Tower of Babel shows one of many reasons why people have had moral dilemmas regarding the building of large structures. Surprisingly, a man who is often a critic of large buildings, Beon Battista Alberti, is very positive about Filippo's dome.

The dome has been described as circular by several writers, although from the outside, it looks octagonal; it is both. The structure on the inside of the dome consists of circular rings, or horizontal bridges, but the outside is built to appear, by that master of illusion, as octagonal.



Chapters 11 and 12 Analysis

Chapter Eleven describes the building of the dome after the height of 30 braccia. The fishbone pattern used by Filippo is yet another example of his genius. Other examples of this pattern existed at the time but not in Florence; most that did exist were for decorative purposes alone. How he decided that this would be the best way to support the dome and keep it from collapsing is not known. He may have traveled east to view the Persian and Byzantine domes or talked to merchants from these lands, but that is all the author and other historians can assume. This assumption, if true, also shows how dedicated Filippo is to this building project. He is willing to travel to far off places or talk to and trust strangers regarding their architecture. If this assumption is incorrect, then Filippo had to come to the conclusion that this pattern could not only be for decoration but could be supportive as well.

Once the design was created and approved, Filippo kept a close eye on the preparation of the bricks and mortar. This also shows his dedication to this project and to his reputation as an architect. It also reflects his self-centered and suspicious personality; he could not trust someone to follow his instructions without checking up on them. Although it is known that he was hot-tempered and full of pride, he also must have had a caring and kind side. He implemented new safety measures, not only to physically protect his workers, but also to keep them mentally healthy for the grueling tasks that lay ahead.

The author discusses causes of unemployment, which must happen today as well. As the dome grows smaller, there are less workers needed, so many had to be laid off. This, not surprisingly, led to worker strikes, but, unlike strikes today, there was no union to support the workers during their strike. Some strikes became very violent but the one at Santa Maria del Fiore was never permitted to grow, for Filippo responded quickly and harshly. By firing the masons and replacing them, they quickly found themselves unemployed. Upon apologizing for their behavior, Filippo does give them their jobs back but with lower salaries. This must have shown all the other workers that complaining would get them no where but worse than where they were. This action by Filippo shows how quick-thinking he is and is a reminder of his abilities to manipulate others.

Chapter Eleven begins with the parable of the Tower of Babel, which reflects the beliefs of many of that time that large buildings are excessive, both in size and the expense needed to build them, and examples of selfishness. Surprisingly, this is not the effect Santa Maria del Fiore had on others, including Alberti, who saw it as evidence of the intelligence and power given to man by God.

The author spends the rest of the chapter describing the circular skeleton of the dome, which reinforces Filippo's skills as an illusionist. This dome that is built "circle by circle," as described by the writer Giovanni Battista Strozi, alludes to the paradise described in Dante's "Divine Comedy." The nine horizontal arches could also signify the nine rings of Dante's hell; this comparison foreshadows the hellish events to come in Filippo's life.



Chapters 13 and 14

Chapters 13 and 14 Summary

In Chapter Thirteen, the cupola is progressing smoothly in the spring of 1428, but this would be the first year of failures and setbacks for Filippo. The marble needed for the dome is expensive due to the difficulty in excavating it and safely shipping it many miles to Florence. Filippo thought he could find a cheaper and faster way to transport the marble, the Arno River. This shallow and tempestuous river easily upended Filippo's raft-like invention called *Il Badalone*, "the Monster." Filippo had been teased and ridiculed for this invention, but he thought it would be no different than when he was thought to be insane for his dome design. Unfortunately, he was wrong. It is not clear as to why the boat did not make it down the river to Florence. To add to this humiliation, Filippo had funded the entire project out of his own pocket, which totaled ten years of his salary.

Chapter Fourteen details yet another disaster of design. Although Filippo's failed boat design had somewhat tarnished his reputation, the Opera del Duomo still seemed to trust his abilities. The dome continued to grow taller, and the original model by Neri di Fioravanti is now used as a lavatory. Unfortunately, the dome project encounters another setback. Cracks are discovered near the base of the dome, and it is not known if cathedral will be able to support a dome of this magnitude. Filippo believes this would be a time for remodeling and suggests that small chapels be built along the cathedral to act as buttresses. Before anything is decided, war breaks out in Lucca, a town forty miles away.

Filippo Maria, Giangaleazzo's son, is more insane than his father. He, like his father, wants to rule Italy; a peace treaty is signed, but not long after, the Florentines decide to start a war with Lucca, because it is believed Lucca's ruler, Paolo Guinigi, has secretly been supporting the duke of Milan. Like many architects, Filippo is sent into the field to assist the military in creating a plan to conquer the enemy. Filippo's plan to reverse the Serchio River's course to leave Lucca stranded in the middle of a lake fails; the Lucchese sneak into the Florentine camp, breach the canal that is dug, and flood the camp.

The embarrassed and disheartened Florentines request peace, and a peace treaty is signed.

Chapters 13 and 14 Analysis

As in all lives, disappointment comes to Filippo. His design for a boat to transport marble down the Arno River does not even make it to Signo, and his plan to strand the Lucchese in their town backfires on him. These examples show that, although Filippo is highly skilled, his work is not completely mistake-proof. These disasters probably

boosted the egos of many other artists and architects in Florence and surrounding towns. Finally, this genius of design had failed.

These failures show Filippo's humanity, but they also show that he is not easily discouraged. Work continues on the dome, albeit more slowly, despite his failures. The Opera still trusts him, and, as the rest of the book proves, the dome is completed as he had planned and is a monumental success.



Chapters 15 and 16

Chapters 15 and 16 Summary

The war against Lucca slowed work significantly on the dome, since funds had to be sent to the war effort. The expensive remodel suggested by Filippo is rejected for less expensive iron tie rods. Fioravanti's model is finally destroyed because building can continue without it. Filippo is arrested for failing to pay his annual dues to the Masons Guild. This arrest is unusual, since many artisans were in arrears, so it is believed Filippo's arrest is arranged by a political party opposed to his patron, Cosimo de' Medici, who is in exile. Raynaldo Silvestri, one of the consuls of the Mason's Guild is responsible for his imprisonment, and the author wonders what role Lorenzo Ghiberti or Giovanni da Prato had in his arrest.

The wardens of the Opera come to his rescue; Raynaldo Silvestri is arrested, and a pro-Medici government is elected the following day. Less than two months later, Filippo's adopted son, Il Buggiano, runs away with money and jewels stolen from Filippo's house. Buggiano has become a talented sculptor and had not received his payment from Filippo, so he decides to steal money and jewels from Filippo as his payment. Filippo, who is good at manipulating others, appeals to Pope Eugenius IV for help in returning his son and his stolen money and jewels. The Pope requests that Queen Giovanna of Naples send Buggiano back to Florence immediately. He and the stolen items are returned to Filippo, Buggiano is put back to work as Filippo's apprentice, and, soon afterward, Buggiano is named Filippo's heir.

Chapter Sixteen tells of the consecration of the cathedral and dome. The Feast of Annunciation, celebrating the appearance of the angel Gabriel to Mary to tell her she is pregnant with the Son of God, in 1436 is the day Santa Maria del Fiore is consecrated by Pope Eugenio IV. Five months after the consecration of the cathedral, the almost-completed dome is consecrated, sixteen years and two weeks after construction had begun.

Chapters 15 and 16 Analysis

The war against Lucca takes its toll on the construction of the dome. Money is tight; therefore, Filippo's design for small chapels to act as support for the cathedral is rejected. This marks the first time one of Filippo's ideas has not been accepted by the Opera. Although this was frustrating to Filippo, it shows just how much the Opera trusted and believed in Filippo's abilities as an architect. If the funds had existed, his chapel design probably would have been accepted. The Opera continues to show their support of Filippo by bailing him out of jail and having Silvestri arrested.

Filippo continues to show his powers of persuasion when Pope Eugenio IV aids him in the return of his adopted son/apprentice and his stolen money and jewelry. Since



Buggiano is still considered a minor until the age of at least twenty-four, if not twenty-eight, Filippo legally had the right to have his son, as well as his property, returned to him. What is even more interesting about this event, is that Filippo not only did not have his son arrested, he put him back to work as his apprentice and then named him his heir shortly thereafter. This shows the possibility that Filippo knew he was ultimately at fault for not paying his son the 200 florins he owed him, and he cared for this boy as his own and did not want to see him punished.

Chapter Sixteen brings the arrival of Pope Eugenio IV to the cathedral for its consecration. This special event took place on the day of the Feast of the Annunciation in 1436, and the consecration of the dome took place five months later. After more than sixteen years of work on this dome, Filippo must have been thrilled to see his almost-completed work being celebrated by all. Filippo has succeeded in creating an engineering feat that many thought was impossible and is still an awesome accomplishment by today's standards.



Chapters 17 and 18

Chapters 17 and 18 Summary

Chapter Seventeen describes the final piece to be designed and added to the dome, the lantern. Another competition is announced, and Filippo is assisted by Antonio di Ciaccheri Manetti, a 31-year-old carpenter, in the building of his model. Manetti betrays him, and creates his own model that contains aspects of Filippo's design. Filippo's design still wins. Manetti becomes a new rival because he asks the judges if he may make yet another model, and the judges require Filippo to modify his design, based on Manetti's work. Unfortunately for Filippo, Manetti is the ultimate victor. After Filippo's death, Manetti becomes the capomaestro overseeing the lantern's construction and complete the lantern with many of his own alterations.

Since the cathedral is in use, a competition is held to find a machine to build the lantern. Filippo is granted the commission to build a machine to hoist the marble to the top of the cupola. The carpenter Manetti continues to make himself more indispensable to the Opera, as he is the one who supervises the construction of this new crane. The completed lantern is a success; most lanterns after this time are based on this design, and it serves as a platform for scientific study. Paolo Toscanelli, a great mathematician, turns the cathedral into a giant sundial, and uses it to create maps and tables for explorers such as Christopher Columbus traveling on large bodies of water.

Chapter Eighteen begins with the consecration of the lantern's first stone by Cardinal Antoninus, the new archbishop of Florence, in March of 1446. Filippo dies a month later from a short illness at the age of sixty-nine and is the first of the capomaestri to die. According to Vasari, the people of Florence grieved for Filippo and seemed to appreciate him more in death than in life. Filippo is buried inside the cathedral, but his tomb is so modest that it was not discovered until 1972. Although this man of short stature and an abnormally large cranial capacity's tomb may seem small, it is great in comparison to other artisans and architects of his day. Most died in anonymity, as architecture is considered a low art, not the work of genius. Vasari even compared Filippo's heaven-sent genius to redeem the world's architecture to Christ's redemption of mankind.

Chapters 17 and 18 Analysis

These chapters begin to conclude the work on the dome and Filippo's life. Filippo wins yet another competition, this time for the design of the lantern. Unfortunately, he dies after the consecration of the first stone and does not see that the new capomaestro, Manetti, alters his design. It makes one wonder what Filippo would have done to this man, if Filippo had been alive and able.



Filippo's final victory is the design for the crane that would lift the marble used to create the lantern. It is obvious that age is taking its toll on Filippo, since King states that Manetti, Filippo's new rival, oversees the construction of this crane.

Although alterations are made to the lantern, it is still mostly Filippo's design. It is not surprising that this lantern is the inspiration for most lanterns after this time. Filippo's genius, even after death, cannot be ignored or dismissed. His popularity seemed to grow even greater after death, with the writing of poems and books and the creation of art in his honor. He is even buried in the cathedral in which he spent a quarter of a century and is the first artisan of his kind to receive this kind of recognition and labeling as a genius. Because of this man, the writers of the Renaissance believed modern man is as or more capable than "the ancients from whom they took their inspiration" (King, p. 159).



Chapter 19

Chapter 19 Summary

Chapter Nineteen reviews in detail the painstaking process of building Santa Maria del Fiore's dome. Visitors today can also follow the steps these 15th century masons traveled every day. Tourists climb the 150 steps from the southwestern pier, which led to the firing of capomaestro Giovanni d'Ambrogio because he could not climb the stairs to inspect the work, to the interior balcony where workers ate their lunch. From there visitors to this cathedral go through a small door that leads into the narrowing space between the two shells and up another set of stairs. Inside this narrow space, the techniques of Filippo and his masons can be seen up close, as well as the tiny portholes in the outer shell that allow in light and air. The final set of steps leads to a viewing platform at the base of the lantern, where visitors can take in all of Florence. Today's visitors are not the first to stand on this platform. In the late 1540s, Michelangelo was given three passes for himself and two assistants to inspect Filippo's handiwork, used as inspiration for the dome of St. Peter's. Although many have been inspired by the dome of Santa Maria del Fiore, this dome has never been surpassed.

The dome has had several problems including lightning strikes and cracks due to the expansion of the iron rods in the sandstone caused by moisture. After a particularly bad lightning strike, marble broke off and rolled into the streets towards the villa where Lorenzo is lying ill. He sees this as a sign of his death and dies three days later. The foundations of the cathedral are also very poor, with an underground stream running under the southwest corner of the dome. Heavy traffic has also caused stress to the cathedral and dome, so cars and trucks are now redirected around the cathedral.

Through the centuries and stress on the cathedral, the dome still dominates the skyline of Florence. It is a wonder that such a monumental structure was built by men, amid plagues and war with only limited architectural and engineering knowledge.

Chapter 19 Analysis

Ross King ends the book with a detailed reminder of the work done on the dome. This reinforces the point that this huge building was built at a time of simple tools and limited knowledge, so different from today. He then describes the path a visitor would take to experience a little of what it was like to work on this magnificent structure. The fact that visitors can still climb to the summit of this dome is a testament to the genius of Filippo Brunelleschi. Many centuries later this structure is still sturdy enough to be climbed by visitors from around the world. Even Michelangelo came to study this dome, which he was never able to surpass in size or beauty.

The strength of this dome is continually reinforced in the minds of readers by the mention of all the stress put on this cathedral, from lightning strikes to street traffic. Not

only was Filippo able to build this massive dome, he created a dome that could survive natural disasters and modern technology.

A dialog written by Alberti expresses the title of this chapter, "The Nest of Delights." He writes that outside there may be natural disasters, but inside it is springtime. If delight resides in what nature cannot destroy, then this cathedral and dome must be a "nest of delights." Although this dome is not impervious to the elements and other forces, it is a structure that continues, with little assistance, to stand the test of time.



Characters

Filippo Brunelleschi

Brunelleschi is a goldsmith and clockmaker who wins the 1418 competition for the design of a dome for Santa Maria del Fiore, an impressive cathedral in Florence. This son of a civil servant from San Giovanni has an uncanny ability to solve mechanical problems and, after an apprenticeship, becomes a master goldsmith, like many other significant Florentine artists. His tie in the competition for the bronze doors of the Baptistry of San Giovanni plays an important role in his opportunity to compete for the chance at building Santa Maria del Fiore's dome. When he cannot work with Lorenzo Ghiberti on the design and construction of the bronze doors, he withdraws from the competition, moves to Rome, and works as a clock maker and studies the beautiful ancient Roman ruins.

Filippo remains in Rome on and off for thirteen years. Originally he comes to Rome with a young sculptor named Donatello, who is even more hot-tempered than Filippo, which seems to have made them a good pair. They live like vagabonds and become known as the "treasure hunters." The locals fear them, both because they are suspected of practicing geomancy (knowing the future by interpreting the scattering of a handful of earth) and because the ancient ruins the men study are considered bad luck because they are not from the Christian religion. It is not known for sure what Filippo was doing in the ruins. He uses a secret code, similar to Leonardo da Vinci's reversed handwriting, to keep his thoughts and ideas secret. This is a necessity before the creation of patents and copyrights. Manetti, Brunelleschi's biographer, claims he is surveying the ruins. He studies the measures of various columns and determines there are three types (Doric, Ionic, and Corinthian). He may have had a special interest in these columns, knowing that a dome is planned for the cathedral in Florence. The Domus Aurea, or the Golden House of Nero shows the use of a strong Roman concrete to create new architectural designs. The octagonal-shaped room in the east wing with a roofed dome must have been especially intriguing to Filippo, knowing the cathedral in Florence is also eight-sided and needing a dome.

Filippo returns permanently to Florence in probably 1416 or 1417. Filippo, like so many artists of this time, is unattractive, unkempt, and unmarried. Although it is typical of Florentine men to remain as bachelors into their forties, Filippo never married. Despite Filippo's training in his youth and study of Roman vaulting techniques, he has accomplished very little in his lifetime. By 1418, he is best known for his study and experimentation with linear perspective (the representation of three-dimensional space on a two-dimensional plane).

Barely two weeks into the competition, Filippo has begun his brick model with the assistance of two gifted artists, Donatello and Nanni di Banco. They spend ninety days creating a model that spans over six feet and is twelve feet tall. Two months after the models are to be complete, the judging begins. According to Filippo's biographers, the



judges are not kind to his design, especially considering he wants to completely do away with a center support, which many found to be insane, and he refuses to give the committee the details of his plans because he fears having his plans stolen. They become so upset with him that, according to Vasari, he is called "an ass and a babler." Vasari relates an anecdote about an egg, in which Filippo tells the judges that whoever can set an egg on its edge will win. The other competitors are unable to do it, but Filippo cracks the egg and sets it on its edge. This probably did not take place, but there is relevance to the egg. The panel of judges narrow down the competition to two artists. The first is, of course, Filippo Brunelleschi. The second is the model by an artist previously mentioned, Filippo's former adversary, Lorenzo Ghiberti.

Filippo is a genius at not only architecture, but trickery. He is a vengeful and hot-headed man who will go to great lengths to get revenge. This skill in illusion aids him in his building of the dome. Although he suffers from several failed designs and attempts by others to destroy his reputation, Filippo comes out successful in the end. He is the first architect to receive high amounts of praise and recognition as a genius at a time when architects and many other artists were considered skilled laborers. His death is mourned by many; his life and achievements are honored by the writing of poetry and books and the creation of art.

Lorenzo Ghiberti

Lorenzo Ghiberti is the other possible contender for the competition for the bronze doors of the Baptistry of San Giovanni. He is rumored to be the illegitimate son of his stepfather, Bartoluccio Ghiberti, although officially he is the son of Cione Buonaccorso. At the time of the competition, he is only twenty-four years old, has not major works to his name, and is not a member of a guild. During the competition he proves to be very cunning, asking the advice of both artists and passersby. His graceful and elegant bronze panel ties with that of Brunelleschi. When Brunelleschi quits the competition, Ghiberti is left to construct the doors, which take twenty-two years but are considered to be among the great masterpieces of Florentine art.

Ghiberti does not return to the scene until the end of the competition for the dome for Santa Maria del Fiore. He, once again, is Filippo's competition. They are both appointed capomaestros for Santa Maria del Fiore, along with two other men. Lorenzo does feel jealousy towards Filippo throughout the building of the dome; he assists in overseeing the project but does not have much say in its design. Fortunately, and unfortunately, he has many other commissions that keep him busy and away from the dome's work site.

He becomes a prosperous man with a young wife and two sons. He is a well-respected artist, although he never gains a great deal of knowledge in aspects of architecture. He dies at the age of seventy-seven in 1455, as the most influential sculptor of his age.



Wool Merchants

The wool merchants have been responsible for the building and funding of Santa Maria del Fiore since the 1330s. These wardens of the Opera del Duomo hire Giovanni di Lapo Ghini as the architect-in-chief, or capomaestro, but later choose, with the help of a referendum of Florentine citizens, Neri di Fioravanti's dome design in 1367. They also hold the 1418 competition for the design of a dome model that can be built, which is won by Filippo Brunelleschi.

These wardens hold many more competitions over the years for various aspects of the cathedral's construction. Many of the competitions are won by Filippo, who is a favorite among the wardens. This causes stress between the various capomaestri, but the wardens stand strong in favor of Filippo even after his reputation is tarnished.

Giovanni di Lapo Ghini

Ghini is the architect-in-chief, or capomaestro, of Santa Maria del Fiore and competes against and loses to Neri di Fioravanti for the design of the cathedral's dome.

Neri di Fioravanti

He is the master mason and expert in vaulting that leads a group of artisans to design a model for Santa Maria del Fiore's dome. Their design is selected by the Wool Merchants Guild and a referendum of Florence's citizens. Fioravanti's model becomes an object of veneration in Florence that is displayed in one of the side aisles of the church like a shrine. Every year the architects and wardens of the cathedral are obligated to put their hands on a Bible and swear an oath to build the church as the model portrays.

Giotto

Giotto is a painter who designs the Florence Cathedral's 280-foot campanile. He also is one of the first artists to begin experimenting with perspective since the ancient Romans. He uses chiaroscuro, a technique of light and shadow being used to create three-dimensional effects.

Ser Brunellescho di Lippo Lippi

Ser Brunellescho di Lippo Lippi is Filippo Brunelleschi's father. He is a prosperous and well-known notary who would like his son to follow in his footsteps as a civil servant. When his son desires to be an artist, he respects his wishes and finds him an apprenticeship with a family friend and goldsmith, Benincasa Lotti.



Benincasa Lotti

Benincasa Lotti is the master goldsmith for whom Filippo Brunelleschi works as an apprentice.

Arnolfo di Cambio

Arnolfo di Cambio, a master mason, is the designer and original architect of Santa Maria del Fiore. The foundation stone for this cathedral is laid in 1296, but Cambio dies soon after construction begins. The masons continued to work after Cambio's death for the next few decades.

Giangaleazzo Visconti, duke of Milan

Giangaleazzo Visconti, duke of Milan, is a cruel tyrant who leads his army on a path of destruction. His goal is to rule over all of central and northern Italy. He comes to power by imprisoning and poisoning his uncle, Barnabo Visconti, who is also his father-in-law. He then bribes the emperor Wenceslas IV to grant him the title of duke of Milan. Fortunately for Florence, he dies outside of the city, and the siege is lifted.

Barnabo Visconti

Barnabo Visconti is Giangaleazzo's uncle and father-in-law whom Giangaleazzo imprisons and poisons to seize his power.

Lucius Cornelius Sulla

Lucius Cornelius Sulla is the founder of Florence during the height of the Roman Republic.

Donatello

Donatello is a talented sculptor who travels with Filippo to Rome. He is even more hot-tempered than Filippo, which seems to have made them a good pair. At the age of fifteen, he found himself in trouble with the magistrates for hitting a German over the head and later would chase after a runaway apprentice, intent on killing him. When patrons refuse to pay the full price, he is known to destroy the artwork in a fit of rage.

He and Filippo live like vagabonds and become known as the "treasure hunters." The locals fear them, both because they are suspected of practicing geomancy (knowing the future by interpreting the scattering of a handful of earth) and because the ancient ruins the men study are considered bad luck, because they are not from the Christian religion.



When Filippo begins his model for the dome competition, he hires Donatello, whose carvings had been gilded and painted.

Antonio di Tuccio Manetti and Vasari

Antonio Manetti and Vasari are Filippo Brunelleschi's biographers. Their works are used to try to understand the details of Brunelleschi's life.

Nero

A Roman ruler who, after the fire in Rome of A.D. 64, established regulations for building, including widened streets and a restricted the use of inflammable building materials. This led to the prevalent use of a new invention, concrete. The Domus Aurea, or the Golden House of Nero shows the use of a strong Roman concrete to create new architectural designs. The octagonal-shaped room in the east wing with a roofed dome is especially intriguing to Filippo, knowing that the cathedral in Florence is also eight-sided and needing a dome.

Charles VIII of France

Charles VIII of France occupied Florence in 1494, and it is thought that Filippo's experiment with perspective is lost or stolen at this time, along with many of works of Florentine art.

Giovanni d'Ambrogio

Giovanni d'Ambrogio is an elderly capomaestro who is called out of retirement at the untimely death of his successor, Antonio di Banco. He builds a model for the cupola's scaffolding, but the Opera is apparently not impressed because they request other attempts only two months later.

Antonio di Banco

The successor to Giovanni d'Ambrogio who dies an untimely death while on a trip in search of timber supplies for the centering of Santa Maria del Fiore's dome.

Nanni di Banco

Nanni di Banco, along with Donatello, had sculptures that adorned both Santa Maria del Fiore and Filippo's model for the dome.



Great Council

The Great Council, along with the Wool Guild and various consultants gathered in December of 1418, to discuss the various dome designs.

Vincenzo Viviani

Vincenzo Viviani, Galileo's pupil, speculates that the egg, actually half of an eggshell, is the inspiration behind the building of the domed vault.

Marsilia

Marsilia is the daughter of a wool comber and Lorenzo Ghiberti's sixteen-year-old-wife. She gives birth to two children.

Pope Martin V

Pope Martin V is the first pope in 39 years in which the Catholic Church is not divided between Rome and Avignon, with two popes. The council ousts John XXIII and replaces him with Martin. This new pope stays in Florence for twenty months, while Rome is being restored.

Andrea Cavalcanti

Andrea Cavalcanti is seven when he is adopted and then apprenticed by Filippo Brunelleschi. He is later known at Il Buggiano, after his home town in Tuscany. As a young man he runs away with some of Filippo's money and jewelry but is promptly returned by Pope Eugenius IV. He continues as Filippo's apprentice and becomes Filippo's heir.

Uffitiales Cupules, or Four Officials of the Cupola

These four men are appointed by the Wool Guild to aid them in swiftly fixing the problems involving Santa Maria del Fiore's dome. They hire four new capomaestri, two of which are Filippo and Lorenzo.

Battista d'Antonio

Battista d'Antonio is hired by the officials as the new capomaestro. Due to his lack of formal training, three other men are also appointed as capomaestri, two of which are Filippo and Lorenzo.



Giovanni da Prato

Giovanni da Prato is the fourth capomaestro hired. His hatred for Filippo grows as his image of the dome and ideas are rejected and Filippo's are venerated.

Giovanni Battista Nelli

Giovanni Battista Nelli surveys the cupola over two hundred years later; his study has helped both the author and other historians understand more about the unique brick work in the dome.

Leon Battista Alberti

Alberti's wealthy family is banished from Florence, and he returns in 1428 to find the beautiful cathedral, Santa Maria del Fiore, which he finds to be an example of God's gifts to man and the superiority of Florence's industry and culture. He is known for his physical strength and abilities; he is an accomplished horse tamer, author of many treatises, inventor, and fan of architecture, especially Filippo's.

Giovanni Battista Strozzi

Strozzi, a Florentine poet, describes the dome as being built "circle by circle." This relates to both the interior structure of the dome, as well as Dante's "Divine Comedy." Both Dante's paradise and hell are comprised of nine concentric circles.

Filippo Maria

Filippo Maria is the son of the former duke of Milan, Giangaleazzo. He is even more terrible and insane than his father. He follows in his father's footsteps, attempting to take control over most of Italy. His supposed connection with Lucca's ruler, Paolo Guinigi, is the cause for a war between Florence and Lucca.

Paolo Guinigi

Paolo Guinigi is the ruler of Lucca that supposedly had secretly been supporting the duke of Milan. This causes a war between Florence and Lucca, ending with Florence's defeat and Filippo Brunelleschi's further tarnished reputation.

Bernardino of Siena

Bernardino of Siena, and other Franciscan clergymen, had fought homosexuality from the pulpit. Homosexuality is blamed for many Florentine failures, including the battle



against Lucca. They believed sodomy was destroying the city, and an agency is established to catch and prosecute homosexuals.

Cosimo de' Medici

Cosimo de' Medici is Filippo Brunelleschi's wealthy patron.

Raynaldo Silvestri

Raynaldo Silvestri is the man that has Filippo arrested. He is later sent to jail by the Opera wardens.

Pope Eugenius IV

Pope Eugenius IV is the pope who spends time in Florence after being driven from the Lateran Palace by a mob of desperate Romans. He spends several years in Florence; during that time he consecrates both Santa Maria del Fiore and the dome, as well as returns Filippo's son and stolen property to him.

Michelangelo

Michelangelo visits Santa Maria del Fiore with two assistants in the late 1540s to study the dome. He is preparing to build the dome for St. Peter's. At the completion of his dome, it does not surpass Filippo's in either size or beauty.

Luigi Nervi

Luigi Nervi studied the dome in the 1930s before developing the vaulting techniques he used in the Vatican audience hall and the Palazzo dello Sport in Rome.

Agnolo Pandolfini

Agnolo Pandolfini is the character in Alberti's "Della tranquillita dell'animo" who believes the cathedral "is an example of grace under pressure" and "a nest of delights."



Objects/Places

Santa Maria del Fiore

Santa Maria del Fiore is a Florentine cathedral that is to replace the church of Santa Reparata. This cathedral is to be the largest in the Christian world, with entire forests destroyed, citizens evicted, and even the dead exhumed to make room for this massive structure. Construction began in 1296 with a design by the master mason Arnolfo di Cambio. Although Cambio dies during construction, work continues. The construction of this building is affected by both bouts of the Black Death and an invasion by the Duke of Milan. By the competition of 1418, the church is still incomplete. This competition is held to find a designer and architect who can solve a major problem, the cathedral's dome design by Neri di Fioravanti. The one man whose design shows promise is Filippo Brunelleschi. It takes him over sixteen years and many trials and tribulations, but the dome is finally completed in Filippo's lifetime.

Florence

Florence is a city in Italy that is established by Lucius Cornelius Sulla during the height of the Roman Republic. Although Florence in the early 1400s has a population of 50,000 residents, similar to London, it still retained its rural heritage, with various fields inside its walls and sheep being led to market through its streets. The new cathedral is intended to reflect Florence's large and powerful mercantile industry. This prosperous European city must credit its wealth to the wool industry, which produces the most expensive and desired cloth in all of Europe.

Because of Florence's tremendous growth in the 1300s, Florence undergoes a building boom that rivaled the development seen in the time of the Ancient Romans. Dozens of buildings and monuments are erected. By 1418, the largest project in Florence is yet to be completed, the new cathedral of Santa Maria del Fiore. The builders face major obstacles throughout the construction of the structure that would continue to escalate as the cathedral grows closer to completion, although a thirty-foot model had been constructed and sat in the south aisle of the cathedral for the past fifty years.

Palazzo Vecchio

The Palazzo Vecchio is a Florentine town hall in the late 1300s.

Florence Cathedral's Campanile

The campanile is an impressive 280-foot tower designed by the painter Giotto and completed in 1359, after more than two decades of work.



Baptistry of San Giovanni

The competition for the bronze doors of the Baptistry of San Giovanni plays a pivotal role in Filippo Brunelleschi's career. The Guild of Cloth Merchants decide to hold this competition to try to appease a wrathful god and end the spread of the Black Death. Lorenzo Ghiberti and Filippo Brunelleschi tie in the competition.

Rome

When Filippo travels to Rome, he finds a city that was once the home of a million people dwindled, due to the Black Death of 1348, down to 20,000. This number has only risen slightly by the time Filippo arrives. The once "Eternal City" is now a very dangerous and lawless place. The only industry is that of pious Christians on pilgrimages to see the bones of saints. To these travelers, the ancient ruins are signs of the devil and idolatry. Some of ancient Rome does survive, such as the Via Appia, a high road from the south, sepulchers of the many who could not be buried inside the walls of Rome, and aqueducts.

Filippo remains here on and off for thirteen years. Originally he comes to Rome with a young sculptor named Donatello, who is even more hot-tempered than Filippo, which seems to have made them a good pair. They live like vagabonds and become known as the "treasure hunters." The locals fear them, both because they are suspected of practicing geomancy (knowing the future by interpreting the scattering of a handful of earth) and the ancient ruins the men study are considered bad luck, because they are not from the Christian religion.

Filippo's quest is one of the first examples of a new type of pilgrimage. Tourists soon began arriving in Rome seeking relics, rather than the bones of saints. Rome's image continued to change through the Renaissance. These artifacts that are found in Rome link the ancient with the modern, and the world would begin to see the arts and sciences from a new perspective.

The Domus Aurea, or the Golden House of Nero

The Domus Aurea, or the Golden House of Nero, shows the use of a strong Roman concrete to create new architectural designs. The octagonal-shaped room in the east wing with a roofed dome must have been especially intriguing to Filippo, knowing that the cathedral in Florence is also eight-sided and needing a dome.

Pantheon

An important display of Roman architectural achievement is the Pantheon with a dome that is still the largest, thirteen years after construction. This dome shows no sign of



support, which is a testament to the Romans' knowledge of compression and tension in building.

Santa Reparata

Santa Reparata is the cathedral that is demolished to build Santa Maria del Fiore.

Barbadori Chapel and Ridolfi Chapel

These two chapels act as trial runs for Filippo. They are both commissioned by members of the Wool Guild who are connected with the dome project, and both chapels require domes.

Piazza del Duomo

The Piazza del Duomo is where Filippo's model is put on display and, in a way, becomes a shrine. It is even fenced in to keep vandals out.



Themes

Persistence

A theme running through this book is persistence. Persistence can also be considered self-discipline. Many of the characters in this book are persistent, from the workers all the way up to those commissioning the work. This is an impressive feat, considering how long the cathedral in the story had been under construction.

The workmen at the site are persistent in their work, constantly working long days and six days a week with minimal amounts of breaks. Whether they are so hard-working because they care about the dome project or simply because they need the money is not known. What the author does show through his detailed description is how physically demanding many of the jobs are. Other jobs require both knowledge, training, as well as physical strength and agility. Through all this gruesome and grueling work, the masons and other workers press on.

The workers are not the only ones who are persistent during this project. The Wool Guild, who is in charge of the project, is diligent about making sure the building of the structure is done safely and efficiently. They have many competitions for various designs, ranging from the invention of a machine for lifting supplies to a design for the construction of the dome of Santa Maria del Fiore. They could have easily given the commissions to artists and architects of their choosing, but they are diligent about being fair to all, even though many of Filippo's designs were chosen.

Filippo is the most persistent of all the characters in the story. He oversees the creation and delivery of supplies, the design of machines, as well as the dome for over a quarter of a century. Although he may be hard to work with, his self-centered and arrogant personality makes him a very organized and persistent capomaestro. It is hard to imagine how the dome would have turned out if a less-disciplined architect had been put in charge of this building project. Filippo, as all people, suffered failure, but these failures were just obstacles for him to conquer. He seemed to bounce back with a new design or ingenious invention, rather than wallow in his own pity. Through this self-discipline, he accomplished an amazing feat, the building of the largest and most graceful and beautiful dome of its kind.

Plight of the Worker

The plight of the worker is important to both the author and the men working on this project. Ross King details the struggles and hardships the workers encounter, such as dangerous and frightening working conditions, long hours with low pay, and the constant threat of being laid off. The guilds to which many of them belonged, existed to make the wealthy more prosperous, not to help the poor working class. Strikes were not unheard of, but often did not help the overworked and underpaid.



Filippo both helped and hurt the workers on the dome project. The author explains the safety precautions and order that Filippo be on the site. He provided workers with safety harnesses, balconies to put them more at ease, and diluted wine, usually reserved for pregnant women. As a testament to Filippo's care for his workers, throughout the construction only three men died. Filippo also made sure the workers followed strict hours, and he stopped strikes as soon as they started, so work would not be slowed. He did not even consider their desire for more pay, so it is not known if he truly cared about his workers or only about his reputation and the construction on the dome.

Power of Architecture

Santa Maria del Fiore is on the mind and in view of all those in Florence for over a century. At its completion, it towers over and dominates the skyline of Florence. It also was built using experimental techniques, as well as ancient ones.

One of the necessities of life is shelter, and mankind spends many hours thinking about its shelters. As mentioned in the book, the desire to build taller, bigger, and grandiose structures has existed since Biblical times. From the Tower of Babel to modern-day skyscrapers, man has been intrigued with reaching the heavens.

The focus of the book is on Santa Maria del Fiore, but many structures are mentioned throughout this book. The long list of structures includes the Pantheon, Baptistry of San Giovanni, the Via Appia, the Acqua Claudia, the Domus Aurea, and many more. As the subject of this book, Santa Maria del Fiore's dome, with its innovative designs and architectural feats, according to the author, is the most impressive of all the structures mentioned. This dome not only towers over and dominates the city of Florence, but no other dome of its kind has been able to surpass the size and beauty of this building.



Style

Point of View

This book is a work of non-fiction, so it is written from the author's perspective. At times he is writing from the present, telling the reader what has taken place, and other times he writes as if he is observing a scene first hand. His telling of the story of Filippo Brunelleschi's dome is often scientific and straight forward. At other times he is more narrative and descriptive, describing the sights, sounds, and smells of 14th and 15th century Italy.

His scientific descriptions of Brunelleschi's various machines are highly detailed, serving as a view into the mind and intelligence of Filippo. When he is telling about the various workers on the site, he not only accurately describes their work, he gives details into how they are woken up in the morning, what and where they eat their noon meal, and the clouds of smoke and loud blows seen and heard from the various blacksmiths and masons.

Ross King's book, at times, seems to be a work of fiction with the many details of daily life, but he quotes others and tries to avoid giving his own opinion on a subject or event. When he is expressing his own views, it is often in conjunction with a quote of a similar opinion. Overall, this book is an accurate piece of history, written in a way that is interesting and intriguing.

Setting

The setting for most of the book is Florence, Italy in the 14th and 15th centuries. In the 1300s, this city is still considered rural, with its vineyards and orchards and flocks of sheep being herded through town. It is also a growing industrial town with its wool industry and expensive and highly-desired fabrics.

Most of the story takes place in and around Santa Maria del Fiore, a cathedral built to show the world the power and ingenuity of the people of Florence. It is to have the largest dome of its kind, even surpassing the Pantheon in size; this is an amazing feat since the Pantheon was the largest dome for 13 centuries.

Besides Florence and the cathedral, the author does give a detailed description of Rome at the time Filippo visits. This city has shrunk down to 20,000 citizens from about a million due to the Black Death and has become a dangerous and lawless place. Fortunately for Filippo, many ancient ruins have survived, so he is able to learn from these ancient masters by studying their art and architecture.

King is very descriptive when discussing the various lands from which supplies are sent for the building of the dome. He also describes the structures that might have influenced Filippo, as well as those whose designers were influenced by Filippo.



Most of the focus is on the construction of the dome, from the machines that are built to lift and carry supplies to the lantern at the dome's peak, from which visitors today may view the city. This dome dominates the city of Florence and continues to stand the test of time.

Language and Meaning

The author writes mostly in past tense, describing the details involved in building the dome, as well as the culture of the time the dome is built. His language is very scientific at times, describing in detail how the machines for hoisting supplies were created, the firing of kilns for bricks, and the many other designs and supplies needed to build the dome.

Other times the author is a great historian, detailing the lives of the workers and other involved in the society at the time. His depiction of life during the Middle Ages is accurate and engaging. He talks about the food, tools, and daily life of workers. The Guild meetings about the various competitions are explained in a way that helps the reader visualize what these gatherings must have been like. He also shares with the reader faults found in the various characters and the disputes that take place due to contrasting personalities and jealousy.

Above all, Ross King is a wonderful story teller and knowledgeable historian. He is capable of giving historical facts to the reader in a way that is similar to and engaging as a work of fiction.

Structure

The novel is divided into 19 fairly equally-sized chapters with titles that describe the subjects of each chapter. The novel begins by giving background information about both the 1418 competition for the dome design and a description of Florence in the Middle Ages. It then reveals details about Filippo Brunelleschi's life and personality. In later chapters, the novel also begins to delve more deeply into Filippo's hot-headed and arrogant personality and how his personality affects his relationships with others, especially his rival and fellow artist, Lorenzo Ghiberti.

King shows what life is like for the men that worked under Filippo, as well as the machines created for the work these men had to do. The book then becomes very scientific with detailed descriptions of the obstacles facing the completion of the dome, as well as the steps taken to creating a solid and lasting structure, including the shape of the dome and its skeletal structure, the arrangements of a variety of brick sizes and shapes, and the process of laying these bricks.

Since this is a work of non-fiction and no life exists without some setbacks, the author discusses the failures that took place in Filippo's life. The setbacks do not last long, and the book ends with the details of the finished dome, Brunelleschi's death and those who mourned him. The final chapter reminds the reader of how different it was working on a

building site in the Middle Ages and how visitors can still climb to this magnificent structure's peak.



Quotes

"Bales of English wool - the finest in the world - were brought from monasteries in the Cotswolds to be washed in the river Arno, combed, spun into yarn, and woven on wooden looms, then dyed beautiful colors: vermilion, made from cinnabar gathered on the shores of the Red Sea, or a brilliant yellow procured from the crocuses growing in meadows near the hilltop town of San Gimignano. The result was the most expensive and most sought-after cloth in Europe."

Chapter One, A More Beautiful and Honourable Temple, pp. 2

"From the outset its construction had as much to do with civic pride as religious faith: the cathedral was to be built, the Commune of Florence had stipulated, with the greatest lavishness and magnificence possible, and once completed it was to be 'a more beautiful and honourable temple than any in any other part of Tuscany.'"

Chapter One, A More Beautiful and Honourable Temple, pp. 3

"The unbuilt dome of Santa Maria del Fiore had therefore become the greatest architectural puzzle of the age."

Chapter One, A More Beautiful and Honourable Temple, pp. 5

"...it is normal practice for architects to produce models as a means of convincing patrons or panels of judges of the virtues of their particular designs."

Chapter One, A More Beautiful and Honourable Temple, pp. 6-7

"And it was this vision of a massive dome that seemed to rise heavenward without any visible means of support that for the next half century would both inspire and frustrate everyone involved with the project."

Chapter One, A More Beautiful and Honourable Temple, pp. 8

"The Black Death was a faithful visitor to Florence...in order to appease the wrathful deity, the Guild of Cloth Merchants decided to sponsor a new set of bronze doors for San Giovanni."

Chapter Two, The Goldsmith of San Giovanni, pp. 14-15

"The competitors were given one year to complete their trial panels, which (may)...seem like a long time...but casting in bronze was a delicate operation demanding a high degree of skill."

Chapter Two, The Goldsmith of San Giovanni, pp. 17

"Nevertheless, some of the old pagan glory of Rome persisted despite this new breed of Vandal."

Chapter Three, The Treasure Hunters, pp. 23

'Filippo did himself few favors when he appeared before the Great Council to expound his revolutionary designs...They pressed Filippo to elaborate. He refused. So heated did the exchanges become, according to Vasari, that he was first derided as "an ass and a



babbler."

Chapter Four, An Ass and a Babbler, pp. 41

"Anyone injured on the job would face a grim future, as would his family, because neither the Opera nor the Masons Guild made provisions for either disabled workers or the widows and children of dead ones."

Chapter Six, Men without Name or Family, pp. 53

"...whatever its structural function, the wooden chain ultimately became a means for Filippo to expose Lorenzo's incompetence to both the wardens and the people of Florence."

Chapter Nine, The Tale of the Fat Carpenter, pp. 79

"An innovator in countless other areas, he (Filippo) had also received, in 1421, the world's first patent for invention."

Chapter Thirteen, The Monster of Arno, pp. 112

"...on August 30, five months after Pope Eugenius had consecrated the cathedral, the cupola itself was consecrated - a full sixteen years and two weeks after construction had begun."

Chapter Sixteen, Consecration, pp. 140

"In 1972 Filippo's bones were exhumed from where, for over five hundred years, they had lain beneath the simple tomb slab. By then the skeleton had all but crumbled to dust, poignantly illustrating the bones' stark contrast with the mighty vault looming overhead."

Chapter Eighteen, Magni Ingenii Viri Philippi Brunelleschi, pp. 156-157

"For Vasari, the capomaestro had been a genius sent from heaven to renew the moribund art of architecture, almost paralleling how Christ had come to earth to redeem mankind."

Chapter Eighteen, Magni Ingenii Viri Philippi Brunelleschi, pp. 159

"Between these two tilting walls is a disorienting maze of low doorways, cramped passageways, and irregularly ascending staircases that make the ascent a little like stepping into an Escher lithograph. It seems ironic that the first building built in the 'Renaissance style' - this dome that is outwardly so ordered and graceful - should have at its core such a bewildering labyrinth of musty corridors."

Chapter Nineteen, The Nest of Delights, pp. 162



Topics for Discussion

Discuss persistence. How is persistence a theme in this book? How are the various characters persistent? What is their motivation to continue working? Why is persistence often an important quality to have? How can persistence also be hurtful?

Describe the workers in this book. How does their membership in the various guilds both help and hurt them? Why do the workers go on strike? Would you, if you were one of them? Why or why not? How does Brunelleschi help his workers? What is his motivation for these actions? How do you know this?

Describe the architecture found in this book. Compare and contrast it to architecture of today. Are you impressed by these structures? Why or why not? Do you believe one must be a genius to create structures and inventions such as the ones in this book? Why or why not?

Discuss the legitimacy of art. What makes something a work of art? Why might the artisans during the Middle Ages not have been considered intelligent? Why does this belief change? What role does Filippo play in this change?

Discuss the loss of the knowledge known by the ancient Romans. Why might the people living in the Middle Ages not be as knowledgeable as the ancient Romans, regarding science and mathematics? How does the Black Death affect the fields of science and mathematics in the Middle Ages? What role does Filippo play in reawakening an interest in these fields?

Describe Brunelleschi's personality. How does his personality aid him in his work on Santa Maria del Fiore's dome? How does his personality hurt him during the design and construction of this dome? How does his personality affect his relationships? Is this sort of personality needed in his line of work? Why or why not?

Discuss the idea of genius. What is the definition of a genius? Was Filippo a genius? Why or why not? How are geniuses stereotyped today? Why? Might have the same stereotype existed during the Middle Ages? Why or why not? Are geniuses treated the same way today as they were then? Explain. Would you want to be a genius? Why or why not?