
ENGLISH LEARNING
FOR CURIOUS MINDS

Episode #176
The Space Race - Part One | The Early Years
16th Jul, 2021

Alastair Budge: [00:00:00] Hello, hello hello, and welcome to English Learning for Curious Minds, by Leonardo English.

[00:00:12] The show where you can listen to fascinating stories, and learn weird and wonderful things about the world at the same time as improving your English.

[00:00:22] I'm Alastair Budge and today is the start of another three part series. This time we are going to talk about The Space Race.

[00:00:32] In today's episode, Part One, we are going to be talking about the start of The Space Race, the two decade-long competition between the USA and the USSR that involved sending rockets, dogs, monkeys, humans, and even tortoises up into space.

[00:00:51] Then, in Part Two, we are going to talk about the second half of The Space Race, and focus on one event in particular, The Moon Landing.

[00:01:01] And in Part Three, we will look ahead, talk about what has been called The New Space Race, and ask ourselves why there is a **renewed**[1] interest in what exists beyond the Earth's **gravitational**[2] pull.

[00:01:18] Before we take off and get into today's episode though, I want to remind you that you can become a member of Leonardo English and follow along with the subtitles, the transcript and its key vocabulary over on the website, which is leonardoenglish.com.

[00:01:34] Membership of Leonardo English gives you access to all of our learning materials, all of our bonus episodes, so that's more than 170 different episodes now, as well as two new ones every week, plus access to our awesome private community where we do live events, challenges, and much, much more.

[00:01:54] Our community now has members from over 50 countries, and it's my mission to make it the most interesting place for curious people like you to improve their English.

[00:02:06] So, if that is of interest, - and I can't see a reason why it wouldn't be - then the place to go to is leonardoenglish.com.

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[1] happening again after a pause

[2] relating to the natural force of the earth that attracts other objects

[00:02:16] OK then, The Space Race. It was the great battle in the sky between the USSR and the USA, between East and West, between Communism and Capitalism, between good and evil, or evil and good, depending on whose side you were on.

[00:02:36] Although it might have officially started in 1957, its **roots**[3] go back much further, and indeed back to Nazi Germany.

[00:02:47] Even before the start of World War Two, Nazi scientists had been working on powerful rockets.

[00:02:53] The objective of those rockets wasn't to go into space, but to deliver weapons over greater distances.

[00:03:01] One Nazi scientist in particular was **instrumental**[4] in the development of these rockets, and will turn out to be one of the most important players in The Space Race.

[00:03:13] Wernher von Braun was the genius rocket scientist who developed something called the V2 missile, a rocket that could travel up to 200km, it could travel at **supersonic**[5] speeds, it could travel faster than the speed of sound, and was **thus**[6] very hard to defend against.

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[3] origin, beginning

[4] very important

[5] faster than the speed of sound

[6] as a result of this

[00:03:34] Not only were these rockets fast and **deadly**[7], but they were so powerful that they could travel to the edge of space - in June of 1944 the first V2 crossed something called the Kármán Line, which is the imaginary line 100km above the Earth's surface considered to be the **boundary**[8] between Earth's atmosphere and outer space.

[00:04:01] Germany started to use these V2 rockets in September of 1944, firing them over the sea to London, but also to Antwerp, and Liege.

[00:04:13] Although these rockets were **deadly**, they weren't to **prove**[9] enough to turn the war around for the Nazis.

[00:04:20] As the Nazi regime **collapsed**[10], and there was the **ensuing**[11] **power scramble**[12] in Europe between the USA and the USSR, both powers tried to get their hands on this fantastic but **deadly** German rocket technology.

[00:04:36] Wernher von Braun, the genius creator of the V2 rocket, **handed himself in**[13] to the Americans, and became an incredibly important American **asset**[14].

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[7] likely to cause death

[8] show a particular result

[9] an imaginary line that marks the edge of something

[10] failed completely

[11] happening as a result of something

[12] competition for power and control

[13] gave himself up, surrendered

[14] a valuable person

[00:04:48] The Americans managed to capture most of the top German scientists and the **launch sites**[15], while the Soviets managed to get the German plans and drawings for how to build these rockets.

[00:05:02] They also captured a man called Helmut Gröttrup, who was another top rocket scientist, and would be brought to the USSR and forced to work on the Soviet's missile programme.

[00:05:16] In charge of the Soviet Space Programme was a man called Sergei Korolev, a genius rocket scientist who had spent 6 years in a Soviet **Gulag**[16], a Soviet prison, after being **purged**[17] by Stalin.

[00:05:31] Much as von Braun, the captured Nazi rocket scientist would prove to be **instrumental** to the Americans, Korolev was of **vital**[18] importance to the Soviets.

[00:05:43] For the first almost dozen years after the end of the Second World War, the Space Race was, at least to the public, slow.

[00:05:52] There was no race, there was no public **pledge**[19] to go to outer space, to put a man on the moon, or to do anything unusual.

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[15] areas on which rockets stand before being sent into space

[16] a Soviet prison in which many people died due to severe conditions

[17] got rid off because he didn't agree with the state

[18] great

[19] formal promise

[00:06:02] But behind the scenes, the Soviet and American scientists were working on **recreating**[20] the V2 rockets to use for themselves.

[00:06:13] The Cold War had started pretty much as soon as the Second World War had ended, and both the USSR and the USA were busy building up their military **capabilities**[21].

[00:06:26] It's important to note that, at least **initially**[22], these rocket scientists were part of the military, the rockets were being developed for military purposes.

[00:06:38] As the Nazis had shown back in 1944, the V2 rocket could be **launched**[23] into space.

[00:06:46] If a country could develop the technology to fire rockets into space and programme them to return to Earth, this would mean that a bomb could **theoretically**[24] be fired down from space to land anywhere in the world.

[00:07:02] The Americans had already developed their own atomic weapons, and had shown the world how they worked at Hiroshima and Nagasaki.

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[20] reproducing, creating again

[21] power

[22] at the beginning

[23] sent, set in motion

[24] according to theory and not experience or practice

[00:07:12] The Soviets only developed their own atomic weapons in 1949, but when they did, there was the very real possibility that if the USSR could send rockets into space, it could fill them with atomic weapons which would **rain down**[25] on American cities.

[00:07:32] And, for the Americans, that was obviously a frightening thought.

[00:07:37] So, the post-war period saw both the Soviets and the Americans focusing on developing their rocket **capabilities**. But, again, at this point, there was no public race.

[00:07:50] Indeed, especially for the Soviets, it was incredibly secret.

[00:07:55] But behind the scenes, there was an increasing **push**[26] to be the first country to go to space.

[00:08:01] On August 30th, 1955 Korolev, the chief rocket scientist for the Soviets, managed to convince the Soviet Academy of the Sciences to make beating the Americans into the Earth's **orbit**[27] a priority.

[00:08:17] Not only did this have a military benefit, but it could have a huge **propaganda**[28] benefit, both at home and abroad.

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[25] fall in large amounts

[26] effort to achieve something

[27] the curved path of an object that moves around a planet

[28] the use of an event or information as a means to influence people's opinions

[00:08:27] The battle of Communism vs. Capitalism was also a battle to win over **hearts and minds**[29]. If the citizens of the USSR saw that it was the first country to put an object into **orbit**, this would be a huge source of **pride**[30].

[00:08:46] But, knowledge of this space programme was incredibly **restricted**[31]. **Launches**[32] weren't announced until after they had taken place, and almost all the details were kept hidden from the public.

[00:09:00] Meanwhile, in the USA von Braun and his team were making solid progress. Not only had they managed to **recreate**[33] the V2 rocket, but they had improved the technology **significantly**[34].

[00:09:15] By 1956 they had developed the technology that could send a satellite into **orbit**, but President Eisenhower was **cautious**[35] about being seen to send a military rocket into **orbit**, so he didn't do it.

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[29] people's emotions and reasoning

[30] a feeling of pleasure and satisfaction you get because your country has achieved something good

[31] limited to a small amount of people

[32] the actions of sending rockets into space

[33] reproduce, create again

[34] by a large amount

[35] careful by avoiding risks

[00:09:31] Back in the USSR, Korolev's team knew that the US were getting close. There were **rumours**[36] that the US was planning to launch a satellite to **coincide**[37] with a large conference on October 6th 1957, so there was no time to lose.

[00:09:50] And on Friday, October 4th of 1957, two days before the Soviets believed the Americans were planning to send a satellite into space, the Soviets got the first win.

[00:10:04] The first satellite, Sputnik 1, was **launched** into **orbit**.

[00:10:08] You may have seen images of it, but it was a small, metallic ball, only 58 centimetres in diameter and weighing 83.8 kilos.

[00:10:21] It took just over an hour and a half to **orbit** the Earth's surface, as it **emitted**[38] radio waves that could be picked up by **transmitters**[39] back on Earth.

[00:10:33] It might have only been a metallic ball, but what it represented was of huge importance.

[00:10:40] If the USSR could **launch**[40] a satellite into **orbit**, and it now had atomic weapons, then nowhere was safe.

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[36] unofficial information

[37] happen at the same time

[38] produced, sent

[39] pieces of equipment that send and receive signals

[40] send, set in motion

[00:10:49] This **sparked**[41] what has come to be known as the Sputnik **Crisis**[42], a period of **self-reflection**[43] in the US where it wondered where it had gone wrong.

[00:11:01] For decades the US had been at the **forefront**[44] of science and technology, but it had been beaten by a power that its citizens had been told was **inferior**[45], by a country that was weaker than the United States.

[00:11:17] In the US, directly after the **launch**, the rocket scientists couldn't figure out exactly how the Soviets had done it. The USSR hadn't released any information or images about the rockets that had **launched** the satellite.

[00:11:34] They had **stated**[46] that Sputnik 1 weighed 83 kilos, but the Americans couldn't believe this.

[00:11:40] The Americans had only been planning to **launch** a satellite weighing less than 10kg, and they thought the Soviets must have been lying.

[00:11:50] How could they have **launched** something that was 8 times heavier?

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[41] caused

[42] a time of disagreement and confusion

[43] serious thoughts about their actions

[44] the most important position

[45] not as good, weaker

[46] expressed something officially and clearly

[00:11:55] When it **transpired**[47], when it **came to light**[48], that the satellite was indeed over 8 times heavier than the one the Americans had been planning to **launch**, the true **extent**[49] of how far ahead the Soviets were **came to light**.

[00:12:10] There were articles in American magazines that tried to explain why the Soviets were so far ahead. The theories included that the USSR simply placed a greater **emphasis**[50] on science and technology, and while Americans were busy making cars and microwave ovens, the Soviets were sending objects into space.

[00:12:33] The American reaction to Sputnik 1 was to massively increase the budget **allocated**[51] towards the American space programme, and to try to create a new generation of engineers and scientists.

[00:12:49] Their immediate priority was to show that they too could **launch** a satellite into **orbit**.

[00:12:55] It wasn't a smooth start.

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[47] became known (for a secret)

[48] became known

[49] range

[50] importance or attention

[51] given

[00:12:58] On December 6th, just two months after the **launch** of Sputnik 1, The American Vanguard TV-3 was ready to be **launched** into space. It was **broadcast**[52] on live TV, and millions of Americans **tuned in**[53] to watch.

[00:13:16] The rocket started to take off, but it only managed to go up 1.2 metres before falling back to the ground.

[00:13:25] It was hugely **embarrassing**[54] to the US, and the launch was **mocked**[55] by the national press.

[00:13:33] To make matters worse, a Soviet diplomat even joked that the US should receive financial aid for its Space Programme “under the Soviet program of technical assistance to **backwards**[56] nations."

[00:13:48] The US did manage to launch a satellite into space the following month, on January 31st of 1958, but this was four months after the Soviets, plus their satellite was significantly lighter.

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[52] shown

[53] turned on their TVs

[54] causing shame

[55] laughed at

[56] not developed

[00:14:03] Just playing **catchup**[57] with the Soviets was not a position that the Americans wanted to be in.

[00:14:10] In April 1958, Eisenhower pushed for the creation of a national space agency, and NASA was created on July 29th, of 1958.

[00:14:24] The Soviets were still **powering ahead**[58] though.

[00:14:27] Shortly after the **launch** of the first satellite, in October of 1957, they had **launched** the first animal into space, a dog named Laika.

[00:14:38] Although this was another big **milestone**[59], the story didn't end well for poor Laika, who died **onboard**[60], either when the oxygen ran out or from stress and **overheating**[61].

[00:14:49] Two more **canine**[62] space travellers were created in 1960, when Belka and Strelka travelled into space with Sputnik 5. Although they might not be as famous as Laika, they did manage to come back to Earth alive, although one would imagine they were slightly confused about the whole affair.

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[57] trying to reach their achievements

[58] being more successful

[59] a significant step in the development of something

[60] in the rocket

[61] becoming more hot

[62] dog

[00:15:10] But sending animals into space was easy, **comparatively speaking**[63]. If they died, like poor Laika, it wouldn't be considered a tragedy.

[00:15:21] A person, a human being, was another story altogether.

[00:15:25] Not only was there the complication of keeping them alive when they were in space, but making sure that they would survive the **reentry**[64], the arrival back to Earth, was **no mean feat**[65], it wasn't easy at all.

[00:15:39] The Soviets, as you may probably know, were the first side to manage it, on April 12th 1961 with the **launch** of Vostok 1, the spacecraft with the cosmonaut Yuri Gagarin inside.

[00:15:55] Just on a linguistic note, the Soviets called their space travellers "Cosmonauts", while the Americans called theirs "Astronauts". They're the same thing.

[00:16:05] Although Gagarin was a **distinguished**[66] pilot who had **undergone**[67] months of intense training, he wasn't actually in control of anything on Vostok 1, he wasn't piloting the spacecraft.

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[63] when compared to other similar things

[64] the process of entering the earth's atmosphere again

[65] very difficult to do

[66] respected and admired

[67] experienced

[00:16:18] Doctors didn't know what would happen to the human body in space, and so the entire craft was controlled from down on Earth.

[00:16:27] Gagarin did have an envelope with a code that would unlock the manual controls of the spacecraft if there was a problem, but luckily he didn't need to use them.

[00:16:39] He became the first human being to **orbit** the Earth, which he did in 108 minutes, before returning back to ground.

[00:16:48] Now, the return to Earth was **by no means**[68] simple. The Soviet engineers still hadn't figured out a way to slow the spacecraft down **sufficiently**[69] so that a human could survive the impact when it hit the ground, so Gagarin had to **eject**[70] from the spacecraft at around 6km up from the ground.

[00:17:11] He would open a **parachute**[71], and float back down to Earth.

[00:17:14] He managed it, and he returned to Earth a hero in his native land, and he has, of course, gone down in world history.

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[68] not at all

[69] enough

[70] escape by being mechanically pushed out of it

[71] a cloth piece of equipment which allows safe landing when someone is dropped from an aircraft

[00:17:24] Similarly to the Sputnik 1 satellite, the Soviets had kept very quiet about how they managed to get Gagarin into space. There was huge **secrecy**[72] around the programme.

[00:17:36] What's more, they tried to **confuse**[73] the Americans. The spaceship was displayed publicly at an airshow in 1961, but what was on display wasn't the real spaceship. The Soviets had hidden the **capsule**[74] that Gagarin would travel in inside the spaceship, and they had also added another fake section at the bottom with 8 **fins**[75], 8 small wings.

[00:18:03] They knew that the Americans would be watching, trying to figure out what their competitors were up to, and **deliberately**[76] tried to **confuse** them.

[00:18:13] It worked, or at least it certainly didn't help the Americans.

[00:18:17] The USA only managed to get a man into **orbit** in February the following year, a full 10 months after the Soviets.

[00:18:27] The race wasn't going so well for the Americans.

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[72] the state of something being kept a secret

[73] make it difficult for them to understand

[74] a small case or container

[75] small wings

[76] on purpose

[00:18:30] The Soviets had beaten them in getting the first satellite into space, they had beaten them in getting the first animal into space, they had beaten them in getting the first human into space.

[00:18:42] And if there is one thing that the USA doesn't like, it's coming second. And coming second to your **sworn enemy**[77], a nation built on an economic and political system that your leaders say is **barbaric**[78] and wrong, well, that is **a hard pill to swallow**[79], it was not a comfortable situation for the Americans.

[00:19:06] So, a **bold**[80] move was required.

[00:19:09] In September of 1962, 18 months after he had become the 35th president of the USA, John F Kennedy, JFK, **proclaimed**[81] that the USA would send a man to the moon by the end of the decade, by the end of the 1960s.

[00:19:28] Here's a short clip of him announcing it.

[00:19:31] **John F Kennedy:** [00:19:31] But why some say the moon, why choose this as our goal? And they may well ask why climb the highest mountain. Why 35 years ago, fly

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[77] someone who is hated and always considered an enemy

[78] cruel and extremely unpleasant

[79] difficult to accept

[80] brave but risky

[81] announced officially

the Atlantic. Why does rice play Texas? We chose to go to the moon. We chose to go to the moon.

[00:19:57] **Alastair Budge:** [00:19:57] It was an incredibly **ambitious**[82] plan. Getting up into space was one thing, but going to the moon, well, that was something else.

[00:20:06] The Americans needed not just to **beat**[83] the Soviets, but to **beat** them with something **decisive**[84], something that would be remembered for generations.

[00:20:17] Interestingly enough, putting a man on the moon wasn't the only idea that they had considered.

[00:20:23] In the year 2000 it was revealed that there was another, more destructive plan that the US had been considering.

[00:20:32] It was given the **codename**[85] Project A119, and its objective was to explode a nuclear bomb on the moon.

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[82] difficult to achieve

[83] defeat

[84] producing a definite result

[85] a word used to identify a secret plan

[00:20:42] As the launching of rockets into space was partly as a display of technological **might**[86], of technological power, but also of military strength, the US considered essentially bombing the moon.

[00:20:56] They calculated that the explosion would be visible with **the naked eye**[87] from Earth. It would, obviously, be a large display of strength to the Soviets. If the US was prepared to bomb the moon, well, that was a strong sign of their military advantage.

[00:21:15] But, the plan was **aborted**[88]. It was **deemed**[89], quite rightly I think, that the dangers **outweighed**[90] the benefits.

[00:21:23] If the nuclear bomb missed the moon, then it would be floating around in space. And if there was a problem with the launch of it, it might explode over the USA, or over another country, which would either be highly embarrassing or politically **disastrous**[91], and **deadly** in both cases.

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[86] power

[87] without the help of a telescope or other device

[88] canceled

[89] considered

[90] were greater than

[91] extremely unsuccessful

[00:21:45] Luckily, it was decided that landing on the moon would be a much better **boost**[92] for domestic **morale**[93].

[00:21:51] The Soviets were also **hatching**[94] a similar plan, **codenamed**[95] Project E-4. But they too didn't go through with it, for similar reasons to the Americans.

[00:22:04] So, Projects A119 and E-4 didn't go ahead, but JFK had publicly stated that putting a man on the moon was the next big American goal. Every American knew it, and the Soviets knew it too.

[00:22:20] The race was on, the goal was clear.

[00:22:23] There were 7 years, 3 months and 19 days to send a man to the moon.

[00:22:29] Or just 2,667 days. Not a huge amount of time to manage what would later be called the greatest technological advance in human history.

[00:22:41] And the next stage of the Space Race, the race to the moon, is what we'll learn about in Part Two of this mini-series.

[00:22:50] OK then, that is it for today's episode on the early years of the Space Race.

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[92] improvement

[93] the amount of confidence and enthusiasm

[94] producing, preparing

[95] given the secret name of

[00:22:56] As I mentioned at the start of the episode, this is going to be a three part series on The Space Race.

[00:23:02] Part two, which is going to be one of our member-only episodes, will be on the race to the moon, and part three, the final part, will be on the next Space Race, the race to Mars and beyond.

[00:23:15] And as a final reminder, if you enjoyed this episode, and you would like to listen to all of our bonus episodes, including ones like part two of this mini-series, then I'd love for you to check out becoming a member of Leonardo English.

[00:23:28] Membership of Leonardo English gives you access to more than double the number of episodes, plus the transcripts, subtitles, and key vocabulary, so you can improve your English faster and more effectively as you listen.

[00:23:42] I am on a mission to make Leonardo English the most interesting way of improving your English, and I would love for you to join me, and curious minds from 50 different countries, on that journey.

[00:23:55] The place you can go to for all of that is leonardoenglish.com. You've been listening to English Learning for Curious Minds, by Leonardo English.

[00:24:06] I'm Alastair Budge, you stay safe, and I'll catch you in the next episode.

[END OF EPISODE]

Key vocabulary

Word	Definition
Renewed	happening again after a pause
Gravitational	relating to the natural force of the earth that attracts other objects
Roots	origin, beginning
Instrumental	very important
Supersonic	faster than the speed of sound
Thus	as a result of this
Deadly	likely to cause death
Boundary	an imaginary line that marks the edge of something
Prove	show a particular result
Collapsed	failed completely
Ensuing	happening as a result of something
Power scramble	competition for power and control

Handed himself in	gave himself up, surrendered
Asset	a valuable person
Launch sites	areas on which rockets stand before being sent into space
Gulag	a Soviet prison in which many people died due to severe conditions
Purged	got rid off because he didn't agree with the state
Vital	great
Pledge	formal promise
Recreating	reproducing, creating again
Capabilities	power
Initially	at the beginning
Launched	sent, set in motion
Theoretically	according to theory and not experience or practice
Rain down	fall in large amounts
Push	effort to achieve something
Orbit	the curved path of an object that moves around a planet

Propaganda	the use of an event or information as a means to influence people's opinions
Hearts and minds	people's emotions and reasoning
Pride	a feeling of pleasure and satisfaction you get because your country has achieved something good
Restricted	limited to a small amount of people
Launches	the actions of sending rockets into space
Recreate	reproduce, create again
Significantly	by a large amount
Cautious	careful by avoiding risks
Rumours	unofficial information
Coincide	happen at the same time
Emitted	produced, sent
Transmitters	pieces of equipment that send and receive signals
Launch	send, set in motion
Sparked	caused

Crisis	a time of disagreement and confusion
Self-reflection	serious thoughts about their actions
Forefront	the most important position
Inferior	not as good, weaker
Stated	expressed something officially and clearly
Transpired	became known (for a secret)
Came to light	became known
Extent	range
Emphasis	importance or attention
Allocated	given
Broadcast	shown
Tuned in	turned on their TVs
Embarrassing	causing shame
Mocked	laughed at
Backwards	not developed

Catchup	trying to reach their achievements
Powering ahead	being more successful
Milestone	a significant step in the development of something
Onboard	in the rocket
Overheating	becoming more hot
Canine	dog
Comparatively speaking	when compared to other similar things
Reentry	the process of entering the earth's atmosphere again
No mean feat	very difficult to do
Distinguished	respected and admired
Undergone	experienced
By no means	not at all
Sufficiently	enough
Eject	escape by being mechanically pushed out of it
Parachute	a cloth piece of equipment which allows safe landing when someone is dropped from an aircraft

Secrecy	the state of something being kept a secret
Confuse	make it difficult for them to understand
Capsule	a small case or container
Fins	small wings
Deliberately	on purpose
Sworn enemy	someone who is hated and always considered an enemy
Barbaric	cruel and extremely unpleasant
A hard pill to swallow	difficult to accept
Bold	brave but risky
Proclaimed	announced officially
Ambitious	difficult to achieve
Beat	defeat
Decisive	producing a definite result
Codename	a word used to identify a secret plan
Might	power

The naked eye	without the help of a telescope or other device
Aborted	canceled
Deemed	considered
Outweighed	were greater than
Disastrous	extremely unsuccessful
Boost	improvement
Morale	the amount of confidence and enthusiasm
Hatching	producing, preparing
Codenamed	given the secret name of

We'd love to get your feedback on this episode.

What did you like? What could we do better?

What did you struggle to understand?

Let us know in the forum community.leonardoenglish.com