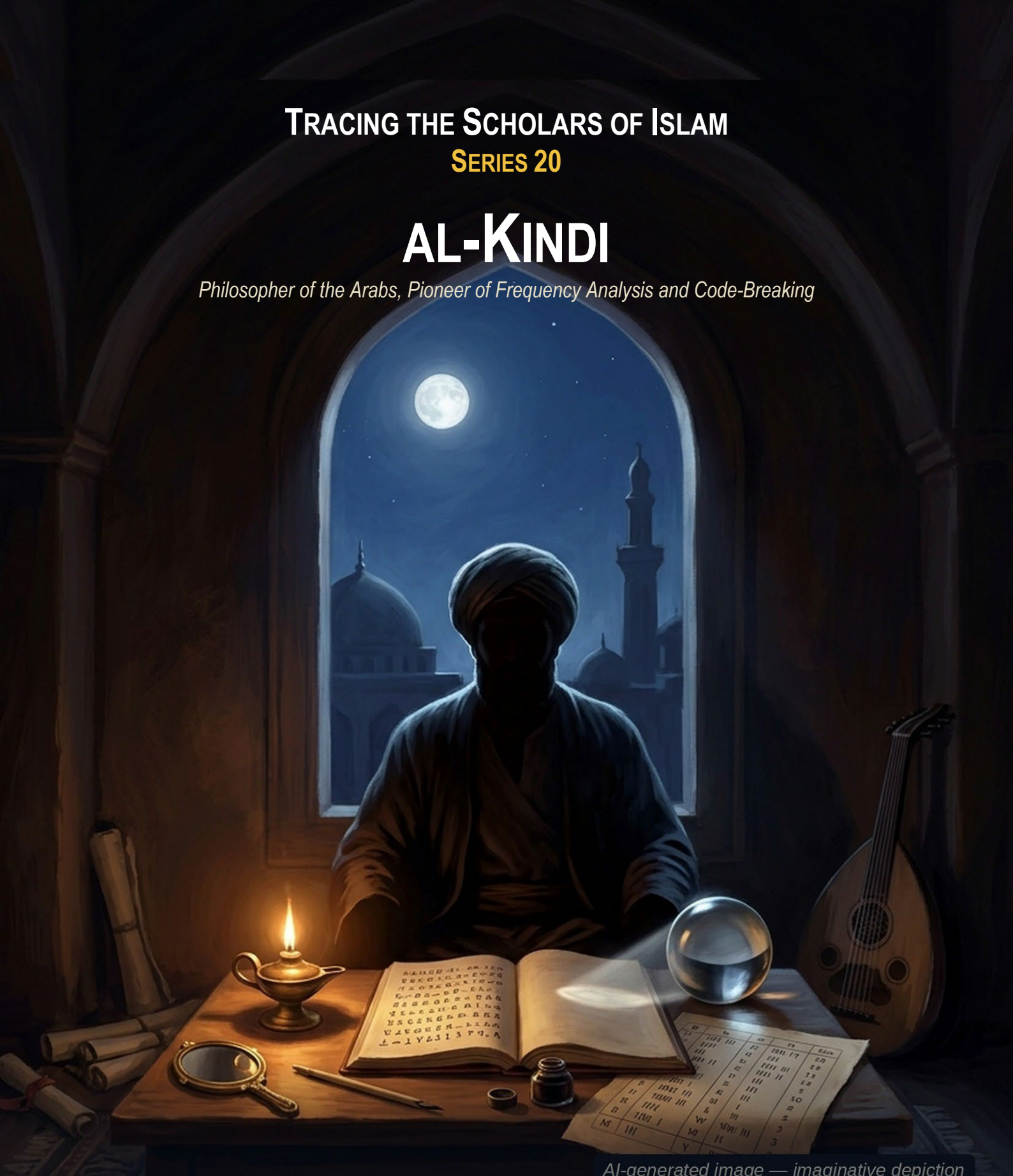
TRACING THE SCHOLARS OF ISLAM

SERIES 20

AL-KINDI

Philosopher of the Arabs, Pioneer of Frequency Analysis and Code-Breaking



AI-generated image — imaginative depiction

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

TRACING THE SCHOLARS OF ISLAM

SERIES 20

AL-KINDI

Philosopher of the Arabs, Pioneer of Frequency Analysis and Code-Breaking

سَنُرِيهِمْ ءَايَٰتِنَا فِي ٱلْءَافَاقِ وَفِيٓ أَنفُسِهِمْ حَتَّىٰ يَتَبَيَّنَ لَهُمْ أَنَّهُ ٱلْحَقُّ ۗ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُۥ عَلَىٰ كُلِّ شَيْءٍ شَهِيدٌ

"We will show them Our signs in the horizons and within themselves until it becomes clear to them that it is the truth. But is it not sufficient concerning your Lord that He is, over all things, a Witness."

SURAH FUSSILAT 41:53

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ACKNOWLEDGEMENT

All praise is due to Allah, who shows His signs in the horizons and within mankind. Blessings and peace be upon the Messenger of Allah ﷺ, and upon his family and his Companions.

This eBook is specially dedicated to my beloved wife,

ZAHARAH MOHD LATIF;

my dear children,

MUHAMMAD HAFIZ, NOOR HAZWANI, ABDUL HAKIM, NOOR HIDAYAH, NOR AQILA and **NOR ATIQAH**;

and my sons- and daughters-in-law,

FAZILAH, MALEK, HANIN, FAIRIZAL and **FIRWAN**.

This twentieth book of Tracing the Scholars of Islam tells the story of a scholar who wrote on philosophy, optics, music, medicine and the breaking of secret codes. May his story teach us to seek the truth honestly, wherever it comes from.

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ABOUT THE COVER OF THIS EBOOK

The cover of this eBook is an **image generated by artificial intelligence (AI)** — an ***imaginative depiction***. This time the style is a **backlit silhouette**: al-Kindi sits with his back to a night window, so all that is visible is **the outline of his figure** — no face.

On the desk is a **manuscript in secret letters** and a **table counting the letters** with tally marks — a symbol of his treatise on ***breaking secret codes***. The **glass sphere** catching the moonlight and the **brass mirror** recall his studies of ***optics***, while the **oud** against the wall recalls his treatises on ***music***.

Outside the window, the **full moon** lights the domes and minaret of **Baghdad**, the city where he worked at the House of Wisdom.

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Colour guide: green box = verses of the Qur'an; gold box = Hadith; brown box = history note (reports from the books of history and biography); blue table = comparison. Underlined blue narrator names can be clicked to open the narrator's page on sunnah.com.

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AL-KINDI

The twentieth book of **Tracing the Scholars of Islam** tells the story of ***Abu Yusuf Ya'qub ibn Ishaq al-Kindi***, whom Ibn al-Nadim called ***"the Philosopher of the Arabs"***. Ibn al-Nadim listed ***about 260 books*** by him on philosophy, mathematics, optics, music, medicine and astronomy.

One of his treatises explains how to ***break secret codes*** by counting how often letters appear — a method now known as ***frequency analysis***, the foundation of cryptography.

This eBook explores ***his lineage and his age***, his role in ***the translation movement***, his philosophy that ***defended the creed***, his contributions to ***cryptography, optics, medicine and psychology***, the trials he faced, and the legacy he left behind.

Note: The translation of Qur'anic verses in this eBook is that of Sahih International. The grading of each Hadith is stated in the Hadith box. Information from books of history and modern research is **biographical report (not Hadith)** *and is placed in the brown "History Note" boxes. The cover image is an AI-generated image. Al-Kindi's years of birth and death are estimates.*

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SIGNS IN THE HORIZONS AND WITHIN OURSELVES

SURAH FUSSILAT 41:53

سَنُرِيهِمْ ءَايَٰتِنَا فِى ٱلْءَافَاقِ وَفِىٓ أَنفُسِهِمْ حَتَّىٰ يَتَبَيَّنَ لَهُمْ أَنَّهُ ٱلْحَقُّ ۗ أَوَلَمْ يَكْفِ بِرَبِّكَ أَنَّهُۥ عَلَىٰ كُلِّ شَىْءٍ شَهِيدٌ ﴿٥٣﴾

We will show them Our signs in the horizons and within themselves until it becomes clear to them that it is the truth. But is it not sufficient concerning your Lord that He is, over all things, a Witness.

Translation: Sahih International — quran.com/41:53

EXPLANATION OF VERSE 41:53

Allah says: ***"We will show them Our signs in the horizons and within themselves"***. Al-Kindi studied ***both***: the world around us (light, sound, the stars) and the human being (the mind, the soul, medicine). Tafsir Ibn Kathir 41:53.

NOT EQUAL ARE THOSE WHO KNOW

SURAH AZ-ZUMAR 39:9

أَمَّنْ هُوَ قَٰنِتٌ ءَانَآءَ ٱلَّيْلِ سَاجِدًا وَقَآئِمًا يَحْذَرُ ٱلْءَاخِرَةَ وَيَرْجُوا۟ رَحْمَةَ رَبِّهِۦ ۗ قُلْ هَلْ يَسْتَوِى ٱلَّذِينَ يَعْلَمُونَ وَٱلَّذِينَ لَا يَعْلَمُونَ ۗ إِنَّمَا يَتَذَكَّرُ أُو۟لُوا۟ ٱلْأَلْبَٰبِ ﴿٩﴾

Is one who is devoutly obedient during periods of the night, prostrating and standing [in prayer], fearing the Hereafter and hoping for the mercy of his Lord, [like one who does not]? Say, "Are those who know equal to those who do not know?" Only they will remember [who are] people of understanding.

Translation: Sahih International — quran.com/39:9

Allah asks: ***"Are those who know equal to those who do not know?"*** The verse joins ***night worship*** with ***knowledge***. For al-Kindi, seeking knowledge of the world was a way to ***know the Creator***. Tafsir Ibn Kathir 39:9.

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REASON IN THE QUR'AN

SURAH AL-BAQARAH 2:164

إِنَّ فِي خَلْقِ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ وَٱخْتِلَٰفِ ٱلَّيْلِ وَٱلنَّهَارِ وَٱلْفُلْكِ ٱلَّتِي تَجْرِي
فِي ٱلْبَحْرِ بِمَا يَنفَعُ ٱلنَّاسَ وَمَآ أَنزَلَ ٱللَّهُ مِنَ ٱلسَّمَآءِ مِن مَّآءٍ فَأَحْيَا بِهِ
ٱلْأَرْضَ بَعْدَ مَوْتِهَا وَبَثَّ فِيهَا مِن كُلِّ دَآبَّةٍ وَتَصْرِيفِ ٱلرِّيَٰحِ وَٱلسَّحَابِ
ٱلْمُسَخَّرِ بَيْنَ ٱلسَّمَآءِ وَٱلْأَرْضِ لَءَايَٰتٍ لِّقَوْمٍ يَعْقِلُونَ ﴿١٦٤﴾

Indeed, in the creation of the heavens and earth, and the alternation of the night and the day, and the [great] ships which sail through the sea with that which benefits people, and what Allah has sent down from the heavens of rain, giving life thereby to the earth after its lifelessness and dispersing therein every [kind of] moving creature, and [His] directing of the winds and the clouds controlled between the heaven and the earth are signs for a people who use reason.

Translation: Sahih International — quran.com/2:164

This verse lists many natural phenomena — the heavens and the earth, night and day, ships, rain, animals, winds and clouds — and then states that all of them are signs ***"for a people who use reason"***. Words related to ***reason*** (*ya'qilun*) appear dozens of times in the Qur'an. Tafsir Ibn Kathir 2:164.

Al-Kindi understood verses like these as ***encouragement to think***. For him, using reason to understand the world was a form of ***worship***, so long as reason submitted to revelation.

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THE TRIBE OF KINDA AND THE CITY OF KUFA

Al-Kindi came from ***the tribe of Kinda***, one of the leading Arab tribes of Yemen. Before Islam, Kinda once formed a ***kingdom*** in central Arabia, and the famous poet ***Imru' al-Qays*** also came from this tribe.

HISTORY NOTE: DESCENDANT OF A COMPANION

Historical sources mention that al-Kindi was descended from ***al-Ash'ath ibn Qays*** رضى الله عنه, the chief of Kinda who came to the Messenger of Allah ﷺ, embraced Islam, and later settled in ***Kufa***.

Al-Kindi's family remained influential in Iraq. His father, ***Ishaq ibn as-Sabbah***, is said to have served as ***governor of Kufa*** in the Abbasid era. Al-Kindi grew up in a ***wealthy and educated*** family.

KUFA, BASRA AND BAGHDAD

Kufa and Basra were the two earliest centres of learning in Iraq — the birthplaces of ***grammar, fiqh and theology***. Al-Kindi studied in both before moving to ***Baghdad***, the capital that had become the centre of translation and science.

LESSON

A noble lineage is not for boasting, but ***a responsibility***. Al-Kindi used his family's standing to ***seek and spread knowledge***.

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WHO WAS AL-KINDI?

Al-Kindi was ***born around 801 CE in Kufa*** into a noble family of the ***tribe of Kinda***, an Arab tribe from Yemen. His father, Ishaq, served as a governor. He studied in Kufa, Basra and later ***Baghdad***.

HISTORY NOTE: AT THE COURT OF THE CALIPHS

Caliph ***al-Ma'mun*** appointed him to the ***House of Wisdom***, where he ***oversaw the translation*** of Greek works into Arabic. Caliph ***al-Mu'tasim*** appointed him ***tutor to his son Ahmad***, and al-Kindi dedicated his famous philosophical work, ***Fi al-Falsafah al-Ula*** (On First Philosophy), to that caliph.

He also wrote on ***Indian numerals***, helping to spread them in the Muslim world, and wrote four treatises on ***music*** that still survive.

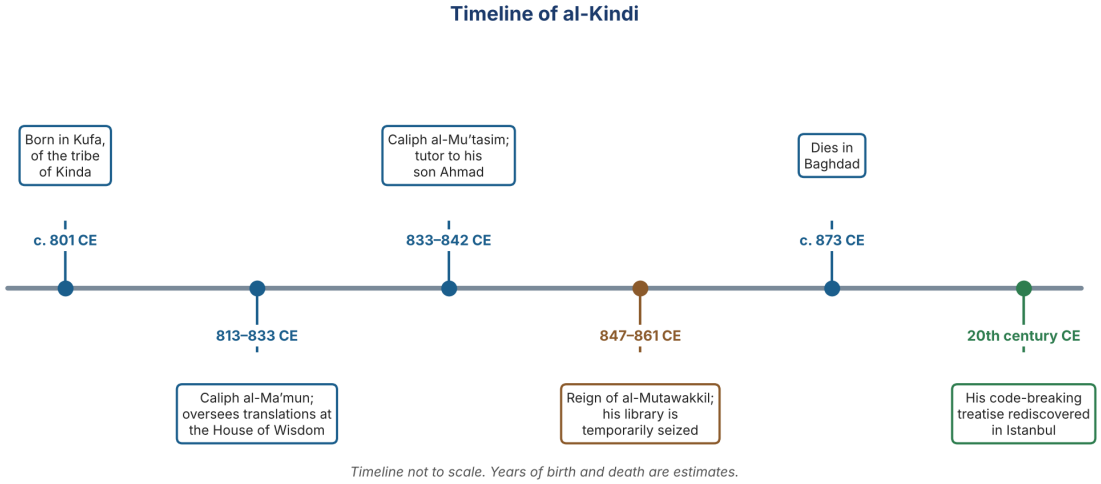


Figure 1: Timeline of al-Kindi.

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SUPERVISOR OF TRANSLATION AT THE HOUSE OF WISDOM

Al-Kindi himself ***did not translate*** Greek books, as he is believed not to have known Greek. His role was to ***supervise, check and edit*** the translations made by a group of translators, so that the Arabic terms were accurate and easy to understand.

> **HISTORY NOTE: THE CIRCLE OF AL-KINDI**
>
> Modern historians call one group of early translations ***"the circle of al-Kindi"***. Its translators included ***Ustath*** (Eustathius) and ***Ibn Na'imah al-Himsi***. They translated works of ***Aristotle***, including parts of the ***Metaphysics***, and works of ***Plotinus***.
>
> Al-Kindi also wrote the treatise ***Fi Kammiyyat Kutub Aristutalis*** (On the Number of Aristotle's Books), which introduced Aristotle's works to Arabic readers and explained the order in which to study them.

BUILDING A LANGUAGE OF SCIENCE

One of al-Kindi's greatest contributions was ***building philosophical and scientific terms in Arabic***. He wrote the treatise ***Fi Hudud al-Ashya' wa Rusumiha*** defining key terms. A language rich in scientific terms lets a nation ***think and write*** about science in its own language.

LESSON

Efforts to build scientific vocabulary in ***Malay*** today continue the same spirit: knowledge belongs to a nation when it can be understood in ***the nation's language***.

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THE ERA OF THE MIHNAH

HISTORY NOTE: THE TRIAL OF THE SCHOLARS

Al-Kindi lived through the ***Mihnah*** (218–234 AH / 833–848 CE), when Caliphs al-Ma'mun, al-Mu'tasim and al-Wathiq forced scholars to affirm that ***the Qur'an was created***. Many scholars, including ***Imam Ahmad ibn Hanbal*** (see Book 7), were imprisoned and tortured for refusing.

Al-Kindi was close to the court at the time, but historical sources ***do not show*** that he took part in persecuting scholars. The Mihnah was finally ended by Caliph ***al-Mutawakkil***.

LESSON

Closeness to rulers can be ***a test*** for scholars. Imam Ahmad showed that ***steadfastness in the truth*** is nobler than position. Scholars should use their knowledge to ***defend the truth***, not to support injustice.

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WISDOM AND TRUTH

SURAH AL-BAQARAH 2:269

يُؤْتِي ٱلْحِكْمَةَ مَن يَشَآءُ ۚ وَمَن يُؤْتَ ٱلْحِكْمَةَ فَقَدْ أُوتِيَ خَيْرًا كَثِيرًا ۗ وَمَا يَذَّكَّرُ إِلَّآ أُو۟لُوا۟ ٱلْأَلْبَٰبِ ﴿٢٦٩﴾

He gives wisdom to whom He wills, and whoever has been given wisdom has certainly been given much good. And none will remember except those of understanding.

Translation: Sahih International — quran.com/2:269

Allah says that ***"whoever has been given wisdom has certainly been given much good"***. In ***Fi al-Falsafah al-Ula***, al-Kindi wrote that we ***should not be ashamed to appreciate the truth and to take it wherever it comes from***, even from distant peoples.

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Seeking the truth must go hand in hand with ***honesty***. The Messenger of Allah ﷺ said:

HADITH — SAHIH AL-BUKHARI, NO. 6094

حَدَّثَنَا عُثْمَانُ بْنُ أَبِي شَيْبَةَ، حَدَّثَنَا جَرِيرٌ، عَنْ مَنْصُورٍ، عَنْ أَبِي وَائِلٍ، عَنْ عَبْدِ اللَّهِ ـ رضى الله عنه ـ عَنِ النَّبِيِّ صلى الله عليه وسلم قَالَ «إِنَّ الصِّدْقَ يَهْدِي إِلَى الْبِرِّ، وَإِنَّ الْبِرَّ يَهْدِي إِلَى الْجَنَّةِ، وَإِنَّ الرَّجُلَ لَيَصْدُقُ حَتَّى يَكُونَ صِدِّيقًا، وَإِنَّ الْكَذِبَ يَهْدِي إِلَى الْفُجُورِ، وَإِنَّ الْفُجُورَ يَهْدِي إِلَى النَّارِ، وَإِنَّ الرَّجُلَ لَيَكْذِبُ، حَتَّى يُكْتَبَ عِنْدَ اللَّهِ كَذَّابًا».

TRANSLATION:

‘Abdullah ibn Mas‘ud رضى الله عنه narrated that the Prophet ﷺ said: **“Truthfulness leads to righteousness, and righteousness leads to Paradise.** A man keeps telling the truth until he becomes a truthful person (siddiq). Lying leads to wickedness, and wickedness leads to the Fire. A man keeps lying until he is written before Allah as a liar.”

CHAIN OF NARRATION: Narrated by Imam al-Bukhari: from ‘Uthman ibn Abi Shaybah, from Jarir ibn ‘Abd al-Hamid, from Mansur ibn al-Mu‘tamir, from Abu Wa’il Shaqiq ibn Salamah, from ‘Abdullah ibn Mas‘ud رضى الله عنه.

REFERENCE: Narrated by Imam al-Bukhari in Sahih al-Bukhari, Book of Manners (Kitab al-Adab), Hadith No. 6094; also narrated by Muslim (No. 2607).

GRADE: SAHIH — contained in Sahih al-Bukhari, the most authentic book of Hadith after the Qur'an by consensus of the Hadith scholars.

Source: https://sunnah.com/bukhari:6094

LESSONS FROM THIS HADITH

Truthfulness is the path to Paradise — and also ***the path of knowledge***. An honest scholar admits what is known and what is not yet known, and does not hide the truth even when it comes from others.

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A PHILOSOPHY THAT DEFENDED THE CREED

Many Greek philosophers, including Aristotle, held that ***the world is eternal*** — without beginning and uncreated. Al-Kindi ***rejected*** this view and argued that ***the world is originated***, created by Allah from nothing.

SURAH AL-BAQARAH 2:117

بَدِيعُ ٱلسَّمَٰوَٰتِ وَٱلۡأَرۡضِۖ وَإِذَا قَضَىٰٓ أَمۡرٗا فَإِنَّمَا يَقُولُ لَهُۥ كُن فَيَكُونُ ١١٧

Originator of the heavens and the earth. When He decrees a matter, He only says to it, "Be," and it is.

Translation: Sahih International — quran.com/2:117

Allah is the ***"Originator of the heavens and the earth"***, and when He decrees a matter, He only says to it ***"Be"***, and it is. Tafsir Ibn Kathir 2:117.

HISTORY NOTE: AL-KINDI'S ARGUMENT

In ***Fi al-Falsafah al-Ula***, al-Kindi argued that ***a body cannot be infinite***, and that ***time too is finite***. Therefore the world must have ***a beginning***, and everything that begins needs ***a Creator***.

He also stressed ***the oneness of Allah***: Allah is ***al-Wahid al-Haqq*** (the True One), who resembles nothing in creation.

MODERN SCIENCE AND THE BEGINNING OF THE UNIVERSE

Interestingly, modern cosmology through the ***Big Bang*** theory also holds that the universe ***had a beginning***, about 13.8 billion years ago (NASA: Universe overview). Scientific theories may change, but the belief that ***Allah is the Creator of all things*** stands firm.

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THE KNOWLEDGE OF PROPHETS SURPASSES PHILOSOPHY

Although called "the Philosopher of the Arabs", al-Kindi affirmed that ***the knowledge of the prophets*** is higher than that of philosophers. Philosophers acquire knowledge through ***years of effort***, while prophets receive it from Allah ***without study***.

SURAH YA SIN 36:79

قُلْ يُحْيِيهَا ٱلَّذِىٓ أَنشَأَهَآ أَوَّلَ مَرَّةٍ ۖ وَهُوَ بِكُلِّ خَلْقٍ عَلِيمٌ ﴿٧٩﴾

Say, "He will give them life who produced them the first time; and He is, of all creation, Knowing."

Translation: Sahih International — quran.com/36:79

HISTORY NOTE: AN EXAMPLE FROM SURAH YA SIN

In ***Fi Kammiyyat Kutub Aristutalis***, al-Kindi took as an example ***the Qur'an's answer*** to the one who asked ***who will revive bones that have crumbled*** (36:78–79). He said this answer is ***briefer, clearer and more convincing*** than the long arguments of philosophers.

For al-Kindi, ***the Qur'an is divine knowledge*** that human reason cannot rival.

EXPLANATION OF VERSE 36:79

Allah says: ***"He will give them life who produced them the first time"***. The argument is simple: ***the One who could create the first time can more easily create again***. Tafsir Ibn Kathir 36:79.

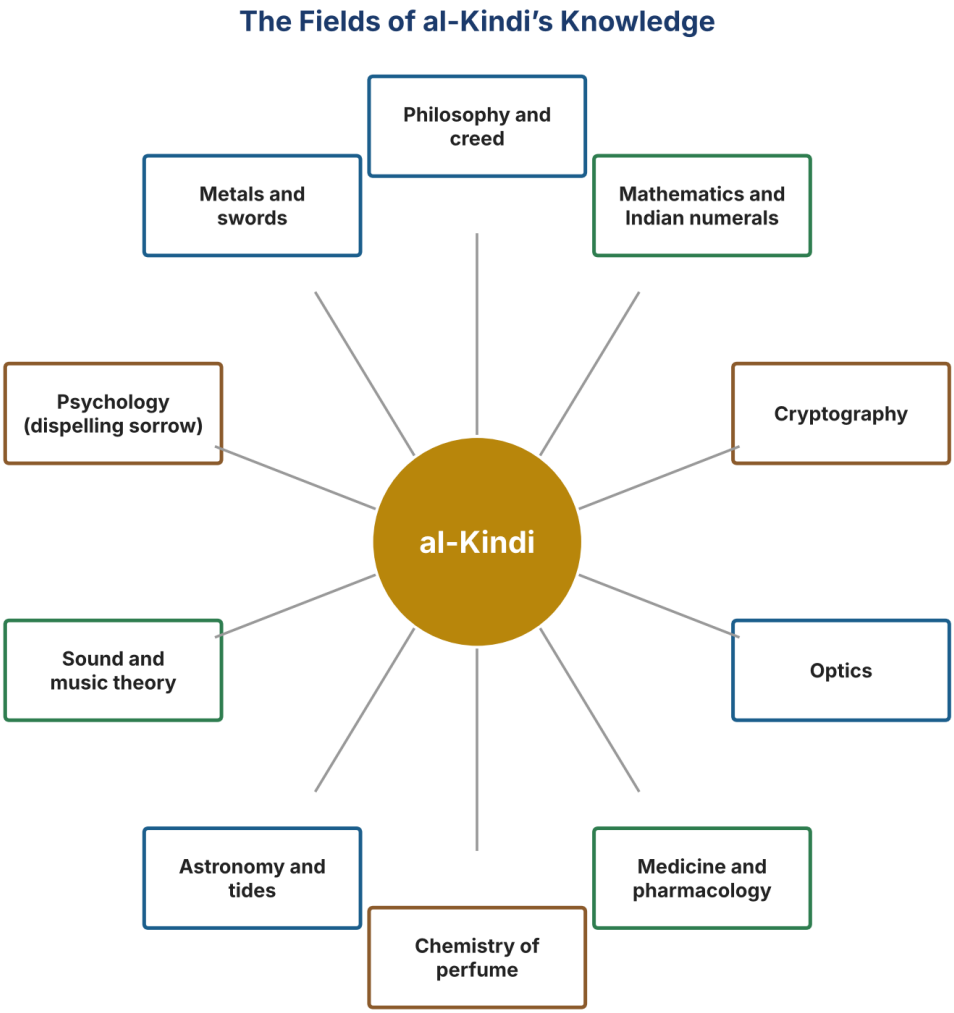
LESSON

Reason and revelation ***do not conflict***. Sound reason leads to conviction in revelation, and revelation guides reason in the right direction.

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THE FIELDS OF AL-KINDI'S KNOWLEDGE

Al-Kindi wrote in almost ***every field of knowledge*** known in his time. Ibn al-Nadim arranged his books into ***more than a dozen fields***, including philosophy, logic, arithmetic, geometry, astronomy, medicine, music and politics.



Simplified diagram based on the list of works in al-Fihrist (Ibn al-Nadim). Most of his works are now lost.

Figure 3: The fields of al-Kindi's knowledge.

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SURVIVING WORKS

WORK	FIELD AND DESCRIPTION
Fi al-Falsafah al-Ula	Philosophy and creed; dedicated to Caliph al-Mu'tasim.
Risalah fi Istikhraj al-Mu'amma	Cryptography; the method of letter-frequency analysis.
De aspectibus (in Latin translation)	Optics; on how light travels and how we see.
De gradibus (in Latin translation)	Pharmacology; measuring the strength of medicines mathematically.
Kitab Kimiya' al-'Itr wa at-Tas'idat	The chemistry of perfume and distillation.
Risalah fi al-Hilah li Daf' al-Ahzan	Psychology; how to dispel sorrow.
Risalah fi Jawahir as-Suyuf	Metals; types of iron and swords.

LESSON

Al-Kindi showed that ***knowledge is integrated***: mathematics helps medicine, language helps cryptography, and philosophy helps the creed. A student who masters ***several fields*** can see connections that others miss.

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INDIAN NUMERALS AND MATHEMATICS

Al-Kindi wrote ***four books*** on the use of ***Indian numerals***, including ***Kitab fi Isti'mal al-A'dad al-Hindiyyah***. With al-Khwarizmi (see Book 18), he helped spread the place-value system and zero in the Muslim world.

Al-Kindi also applied mathematics in other fields: ***ratios*** in music and medicine, ***geometry*** in optics, and ***statistics*** in cryptography. For him, mathematics was ***the gateway to all knowledge***, and he insisted that no one could master philosophy without first studying mathematics.

LESSON

Mathematics trains the mind to be ***orderly, careful and honest***. It is not just an exam subject, but ***a tool for thinking*** about Allah's creation.

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BREAKING SECRET CODES

Al-Kindi's treatise on ***deciphering secret messages*** (*Risalah fi Istikhraj al-Mu'amma*) describes a clever method: ***count how often each letter appears*** in the secret message, then match it with the most frequent letters of the original language. In Arabic, letters such as ***alif*** and ***lam*** appear very often.

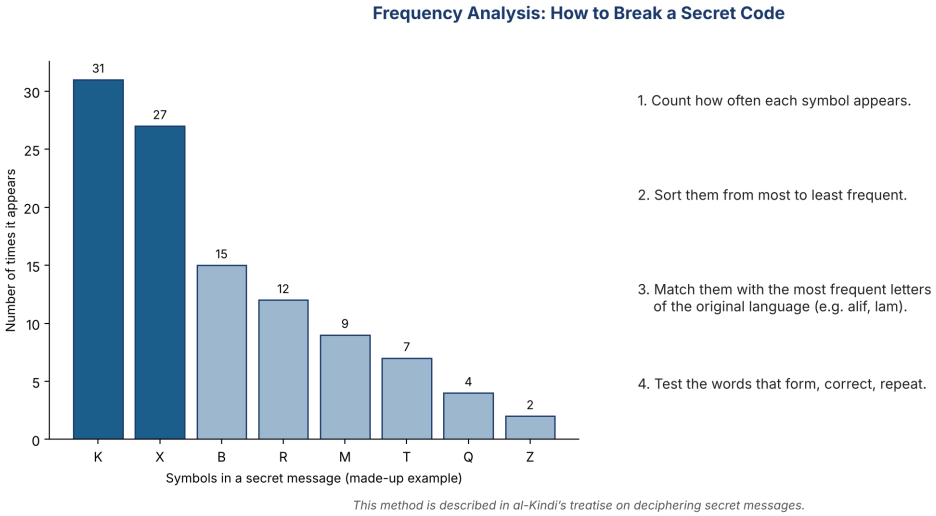


Figure 2: Frequency analysis — a method for breaking secret codes.

This method is regarded as the ***earliest known use of statistical inference***, and it remains a foundation of ***cryptography*** — the science that protects our messages, bank accounts and conversations today.

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THE ROOTS OF THE METHOD: SCHOLARS COUNTING THE LETTERS OF THE QUR'AN

Why did frequency analysis arise in Islamic civilisation? Historians of cryptography note that Muslims had long ***studied Arabic with great care***: grammarians compiled dictionaries and rules of the language, and scholars of Qur'anic recitation ***counted the verses, words and letters of the Qur'an***.

This careful study of ***the forms and frequency of letters*** gave al-Kindi the basis to realise that every language has ***a stable pattern of letters***. The careful preservation of the Qur'an indirectly gave rise to ***a new science***.

LESSON

Service to the Qur'an opens the door to many sciences. Religious and worldly knowledge ***support each other*** when studied with sincerity.

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CRYPTOGRAPHY TODAY

Let us try it ourselves. In a simple ***shift cipher***, each letter is replaced by the letter a few positions ahead of it. For example, with a shift of 3:

ORIGINAL MESSAGE	ENCIPHERED MESSAGE (SHIFT 3)
A B C D E	D E F G H
ILMU (knowledge)	LOPX
SABAR (patience)	VDEDU
How to break it	Count the most frequent letter in the enciphered message, and assume it stands for the most frequent letter of the original language.

FROM AL-KINDI TO THE INTERNET

Simple ciphers like this are easily broken with al-Kindi's method. That is why modern cryptography uses ***very complex mathematics***, such as ***AES*** and ***public-key cryptography***, to protect ***online banking, WhatsApp and "https" websites*** (Britannica: cryptology).

TRUST AND SECRETS

Islam honours ***keeping secrets*** and ***trust***. Cryptography is a technology for keeping the trust of information. Muslim cybersecurity experts today continue al-Kindi's tradition by ***protecting the data*** of the Ummah from fraud and intrusion.

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LETTER FREQUENCY IN MALAY

Al-Kindi's method can be used for ***any language***. In Malay written in Roman letters, the letter ***a*** is usually the most frequent, followed by letters such as ***n, e, i, k, u*** and ***r***. So if a Malay message is enciphered, the most frequent letter in the cipher most probably stands for ***a***.

STEP	AL-KINDI'S METHOD (FREQUENCY ANALYSIS)
1. Gather text	Obtain a long ordinary text in the same language to learn the frequency of each letter.
2. Count letters	Count the frequency of each letter in the enciphered message.
3. Match	Match the most frequent letters in the message with the most frequent letters in the language.
4. Test and correct	Try reading short words; correct the matches until the message makes sense.

These steps are an early example of an ***algorithm*** — an ordered set of instructions for solving a problem (see Book 18).

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OPTICS: HOW DO WE SEE?

In his book on optics, known in Europe as ***De aspectibus***, al-Kindi studied ***how light travels*** and ***how the eye sees***. He affirmed that ***light travels in straight lines***, and demonstrated it by observing shadows.

> **HISTORY NOTE: BETWEEN OLD AND NEW THEORIES**
>
> Al-Kindi still held the Greek theory that ***the eye emits rays*** in order to see. But he ***improved*** Euclid's theory by stating that the rays spread out ***in all directions***, not as separate lines.
>
> About 150 years later, ***Ibn al-Haytham*** (see a coming book) proved that sight occurs when ***light enters the eye***, not when it leaves it — the foundation of modern optics.

MODERN SCIENCE

Today we know that light is an ***electromagnetic wave*** travelling at about ***300,000 km per second***, and that the eye receives light reflected from objects (Britannica: light).

LESSON

Knowledge grows ***step by step***. Al-Kindi improved on Euclid, and Ibn al-Haytham improved on al-Kindi. Each generation adds ***one step*** towards the truth.

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THE EYE, THE CAMERA AND LIGHT

The human eye works like a ***camera***: light enters through the ***lens*** and forms an image on the ***retina***, and the signal is sent to the brain through the optic nerve (Britannica: eye). This was fully understood only after the work of Ibn al-Haytham and the scientists after him.

The precision of the eye's design reminds us of the blessings of ***hearing, sight and hearts*** that Allah has given, which must be used to ***give thanks*** and ***seek the truth***.

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TIDES AND NATURAL PHENOMENA

Al-Kindi also wrote treatises on ***the cause of tides*** (*Risalah fi 'Illat al-Madd wa al-Jazr*) and on ***the blue colour of the sky***. He tried to explain natural phenomena through ***physical causes***, not superstition.

> **HISTORY NOTE: A THEORY LATER IMPROVED**
>
> Al-Kindi linked tides to ***changes in temperature and the expansion of water*** influenced by the sun and the moon. His theory was ***not entirely correct***, but he was right that ***the moon plays a role***.
>
> On the colour of the sky, he held that the blue arises from ***light mixing with particles in the air*** — an idea close to the modern scientific explanation of ***light scattering***.

THE MODERN SCIENTIFIC EXPLANATION

Today we know that tides occur mainly because of ***the moon's gravitational pull*** and, to a lesser extent, the sun's (NOAA: tides). The sky looks blue because of ***Rayleigh scattering***: blue light is scattered more by air molecules.

LESSON

Seeking ***the causes of nature*** is part of reflection. An inaccurate theory is not a failure, but ***a first step*** towards a better explanation.

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STARS: BETWEEN ASTRONOMY AND FORTUNE-TELLING

In al-Kindi's time, ***astronomy*** (the science of the motion of the stars) and ***astrology*** (predicting fortunes from the stars) were often mixed. Al-Kindi himself wrote in both fields, as was common in his age.

SURAH AL-AN'AM 6:97

وَهُوَ ٱلَّذِى جَعَلَ لَكُمُ ٱلنُّجُومَ لِتَهۡتَدُواْ بِهَا فِى ظُلُمَٰتِ ٱلۡبَرِّ وَٱلۡبَحۡرِۗ قَدۡ فَصَّلۡنَا ٱلۡأٓيَٰتِ لِقَوۡمٍ يَعۡلَمُونَ ٩٧

And it is He who placed for you the stars that you may be guided by them through the darknesses of the land and sea. We have detailed the signs for a people who know.

Translation: Sahih International — quran.com/6:97

The Qur'an states the clear function of the stars: ***"that you may be guided by them through the darknesses of the land and sea"***. The stars are ***guides to direction and time***, not determiners of fate. Tafsir Ibn Kathir 6:97.

THE ISLAMIC ATTITUDE TO ASTROLOGY

Scholars distinguish between ***astronomy***, which calculates the motion of the stars for prayer times, the qiblah and navigation — which is ***praised*** — and ***fortune-telling***, which claims knowledge of the unseen — which is ***forbidden***. Only Allah knows the unseen.

MODERN SCIENCE

Modern science has fully separated astronomy from astrology. Astronomy is a science tested by observation, while astrology ***has no scientific basis*** (Britannica: astrology).

LESSON

We honour the contributions of earlier scholars without accepting ***all*** their views. What agrees with revelation and evidence we take; what contradicts them we leave.

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MEDICINE BY MEASURE

In ***De Gradibus*** (on the degrees of medicines), al-Kindi used ***mathematics to measure the strength of medicines***, so that the doses given would be precise. This agrees with the words of the Messenger of Allah ﷺ:

HADITH — SAHIH MUSLIM, NO. 2204

حَدَّثَنَا هَارُونُ بْنُ مَعْرُوفٍ، وَأَبُو الطَّاهِرِ، وَأَحْمَدُ بْنُ عِيسَى، قَالُوا حَدَّثَنَا ابْنُ وَهْبٍ، أَخْبَرَنِي عَمْرٌو، - وَهُوَ ابْنُ الْحَارِثِ - عَنْ عَبْدِ رَبِّهِ بْنِ سَعِيدٍ، عَنْ أَبِي الزُّبَيْرِ، عَنْ جَابِرٍ، عَنْ رَسُولِ اللَّهِ صلى الله عليه وسلم أَنَّهُ قَالَ « لِكُلِّ دَاءٍ دَوَاءٌ فَإِذَا أُصِيبَ دَوَاءُ الدَّاءِ بَرَأَ بِإِذْنِ اللَّهِ عَزَّ وَجَلَّ ».

TRANSLATION:

Jabir ibn ‘Abdullah رضى الله عنهما narrated that the Messenger of Allah ﷺ said: **“For every disease there is a cure. When the cure matches the disease, it is healed by the permission of Allah, the Mighty and Majestic.”**

CHAIN OF NARRATION: Narrated by Imam Muslim: from Harun ibn Ma‘ruf, Abu at-Tahir and Ahmad ibn ‘Isa, from ‘Abdullah ibn Wahb, from ‘Amr ibn al-Harith, from ‘Abd Rabbih ibn Sa‘id, from Abu az-Zubayr, from Jabir ibn ‘Abdullah رضى الله عنهما.

REFERENCE: Narrated by Imam Muslim in Sahih Muslim, Book of Greetings (Kitab as-Salam), chapter: every disease has a cure, Hadith No. 2204.

GRADE: SAHIH — contained in Sahih Muslim, the second most authentic book of Hadith after Sahih al-Bukhari.

Source: https://sunnah.com/muslim:2204

LESSONS FROM THIS HADITH

A medicine heals by the permission of Allah ***when it matches*** the disease. Precision in the type and dose of medicine is ***a demand of medical science***, and al-Kindi was among the first to measure it with numbers.

THE CHEMISTRY OF PERFUME

Al-Kindi also wrote ***Kitab Kimiya’ al-‘Itr wa at-Tas‘idat***, which contains over ***a hundred recipes*** for perfumes, ointments and medicines, including methods for ***distilling*** rosewater (see Book 17). The book shows the close link between ***chemistry, medicine and industry*** in the Abbasid era.

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DISPELLING SORROW

One of al-Kindi's most touching treatises is ***Risalah fi al-Hilah li Daf' al-Ahzan*** (A Treatise on the Art of Dispelling Sorrows). It is among the earliest works of ***psychology*** in Arabic.

HISTORY NOTE: AL-KINDI'S ADVICE

Al-Kindi wrote that sorrow comes when we ***lose something we love*** or ***do not get what we desire***. Therefore we should ***not be too attached*** to worldly things that are sure to pass away.

He compared the world to ***a ship stopping at an island***: passengers too busy collecting things on the island may ***miss the ship***. So it is with people so busy with the world that they forget the purpose of their journey.

The Qur'an gives a higher remedy:

SURAH AR-RA'D 13:28

ٱلَّذِينَ ءَامَنُواْ وَتَطۡمَئِنُّ قُلُوبُهُم بِذِكۡرِ ٱللَّهِۗ أَلَا بِذِكۡرِ ٱللَّهِ تَطۡمَئِنُّ ٱلۡقُلُوبُ ٢٨

Those who have believed and whose hearts are assured by the remembrance of Allah. Unquestionably, by the remembrance of Allah hearts are assured.

Translation: Sahih International — quran.com/13:28

Allah says: ***"Unquestionably, by the remembrance of Allah hearts are assured"***. Tafsir Ibn Kathir 13:28.

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The Messenger of Allah ﷺ himself sought refuge from worry and grief:

HADITH — SAHIH AL-BUKHARI, NO. 6369

حَدَّثَنَا خَالِدُ بْنُ مَخْلَدٍ، حَدَّثَنَا سُلَيْمَانُ، قَالَ حَدَّثَنِي عَمْرُو بْنُ أَبِي عَمْرٍو، قَالَ سَمِعْتُ أَنَسًا، قَالَ كَانَ النَّبِيُّ صلى الله عليه وسلم يَقُولُ «اللَّهُمَّ إِنِّي أَعُوذُ بِكَ مِنَ الْهَمِّ وَالْحَزَنِ، وَالْعَجْزِ وَالْكَسَلِ، وَالْجُبْنِ وَالْبُخْلِ، وَضَلَعِ الدَّيْنِ، وَغَلَبَةِ الرِّجَالِ».

TRANSLATION:

Anas رضى الله عنه said: The Prophet ﷺ used to say: **"O Allah, I seek refuge in You from worry and grief, from incapacity and laziness, from cowardice and miserliness, from the burden of debt and from being overpowered by others."**

CHAIN OF NARRATION: Narrated by Imam al-Bukhari: from Khalid ibn Makhlad, from Sulayman (ibn Bilal), from 'Amr ibn Abi 'Amr, from Anas (ibn Malik) رضى الله عنه.

REFERENCE: Narrated by Imam al-Bukhari in Sahih al-Bukhari, Book of Supplications, Hadith No. 6369.

GRADE: SAHIH — contained in Sahih al-Bukhari, the most authentic book of Hadith after the Qur'an by consensus of the Hadith scholars.

Source: https://sunnah.com/bukhari:6369

LESSONS FROM THIS HADITH

Sorrow is a human feeling, but we are taught to ***pray and strive*** so that it does not overpower us. Al-Kindi's advice not to be attached to the world, combined with ***remembrance of Allah and supplication***, is a powerful remedy. If sorrow persists, do not hesitate to ***seek help*** from family, teachers or health professionals.

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METALS AND SWORDS

Al-Kindi wrote the treatise ***Fi Jawahir as-Suyuf*** (On the Kinds of Swords), describing ***types of iron***, how swords are made and where they come from — from India and Yemen to Khurasan.

> **HISTORY NOTE: MATERIALS SCIENCE IN THE 9TH CENTURY**
>
> In this treatise, al-Kindi distinguishes between ***soft iron*** and ***hard iron (steel)***, and explains how ***heating and cooling*** affect the hardness of a sword.
>
> His description helps historians understand the technology of ***wootz steel*** and ***Damascus swords***, famous for their strength and patterns (Britannica: Damascus steel).

LINK TO THE QUR'AN

Allah says that He ***sent down iron***, in which there is ***great might and many benefits*** (57:25). Al-Kindi's study of iron was an effort to understand this ***blessing***.

LESSON

Materials science ***is not only for war***. Steel today is used to build ***bridges, buildings, vehicles and medical instruments***. The same knowledge can build or destroy — depending on ***the intention and character*** of those who use it.

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A TALE OF MISERLINESS AND GENEROSITY

Not every story about al-Kindi praises him. The famous writer ***al-Jahiz*** (d. 255 AH / 869 CE) included al-Kindi in his satirical work, ***Kitab al-Bukhala'*** (The Book of Misers).

> **HISTORY NOTE: AL-JAHIZ'S SATIRE**
>
> Al-Jahiz reports several humorous stories about al-Kindi's ***excessive thrift*** towards the tenants of his house — including charging extra when a tenant received guests.
>
> Historians remind us that al-Jahiz's book is ***a work of satirical literature***, and its stories are ***not necessarily accurate***. Yet it shows how society in that age viewed miserliness.

Whether or not the story is accurate, Islam strongly condemns miserliness and praises those who ***spend in the way of good***. The Messenger of Allah ﷺ said:

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HADITH — SAHIH AL-BUKHARI, NO. 1442

حَدَّثَنَا إِسْمَاعِيلُ، قَالَ حَدَّثَنِي أَخِي، عَنْ سُلَيْمَانَ، عَنْ مُعَاوِيَةَ بْنِ أَبِي مُزَرِّدٍ، عَنْ أَبِي الْحُبَابِ، عَنْ أَبِي هُرَيْرَةَ ـ رضى الله عنه ـ أَنَّ النَّبِيَّ صلى الله عليه وسلم قَالَ « مَا مِنْ يَوْمٍ يُصْبِحُ الْعِبَادُ فِيهِ إِلاَّ مَلَكَانِ يَنْزِلاَنِ فَيَقُولُ أَحَدُهُمَا اللَّهُمَّ أَعْطِ مُنْفِقًا خَلَفًا، وَيَقُولُ الآخَرُ اللَّهُمَّ أَعْطِ مُمْسِكًا تَلَفًا ».

TRANSLATION:

Abu Hurayrah رضى الله عنه narrated that the Prophet ﷺ said: **"There is no day on which the servants wake up except that two angels descend. One of them says: O Allah, give the one who spends a replacement. And the other says: O Allah, give the one who withholds destruction (of his wealth)."**

CHAIN OF NARRATION: Narrated by Imam al-Bukhari: from Isma'il ibn Abi Uwais, from his brother 'Abd al-Hamid ibn Abi Uwais, from Sulaiman ibn Bilal, from Mu'awiyah ibn Abi Muzarrid, from Abu al-Hubab Sa'id ibn Yasar, from Abu Hurairah رضى الله عنه.

REFERENCE: Narrated by Imam al-Bukhari in Sahih al-Bukhari, Book of Zakah, Hadith No. 1442. Also narrated by Muslim (No. 1010).

GRADE: SAHIH — contained in Sahih al-Bukhari, the most authentic book of Hadith after the Qur'an by consensus of the Hadith scholars.

Source: https://sunnah.com/bukhari:1442

LESSONS FROM THIS HADITH

Every day two angels pray: ***reward for the one who spends*** and ***loss for the one who withholds***. A wealthy scholar should be ***generous*** — sponsoring knowledge, helping students and supporting those in need, like the Banu Musa who sponsored translators (see Book 19).

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TESTED BY LOSS

HISTORY NOTE: A LIBRARY CONFISCATED

In the time of Caliph ***al-Mutawakkil*** (847–861 CE), al-Kindi's standing declined. Historical sources mention that he was ***beaten and his library was temporarily confiscated***. Ibn Abi Usaybi'ah links this episode to the rivalry of the Banu Musa (see Book 19).

The library was eventually ***returned*** to him. Al-Kindi died in Baghdad around ***873 CE***.

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Loss and trials do not stop a believer. The Messenger of Allah ﷺ taught the right attitude:

HADITH — SAHIH MUSLIM, NO. 2664

حَدَّثَنَا أَبُو بَكْرِ بْنُ أَبِي شَيْبَةَ، وَابْنُ، نُمَيْرٍ قَالاَ حَدَّثَنَا عَبْدُ اللَّهِ بْنُ إِدْرِيسَ، عَنْ رَبِيعَةَ بْنِ عُثْمَانَ، عَنْ مُحَمَّدِ بْنِ يَحْيَى بْنِ حَبَّانَ، عَنِ الأَعْرَجِ، عَنْ أَبِي هُرَيْرَةَ، قَالَ قَالَ رَسُولُ اللَّهِ صلى الله عليه وسلم « الْمُؤْمِنُ الْقَوِيُّ خَيْرٌ وَأَحَبُّ إِلَى اللَّهِ مِنَ الْمُؤْمِنِ الضَّعِيفِ وَفِي كُلٍّ خَيْرٌ احْرِصْ عَلَى مَا يَنْفَعُكَ وَاسْتَعِنْ بِاللَّهِ وَلاَ تَعْجِزْ وَإِنْ أَصَابَكَ شَىْءٌ فَلاَ تَقُلْ لَوْ أَنِّي فَعَلْتُ كَانَ كَذَا وَكَذَا. وَلَكِنْ قُلْ قَدَرُ اللَّهِ وَمَا شَاءَ فَعَلَ فَإِنَّ لَوْ تَفْتَحُ عَمَلَ الشَّيْطَانِ ».

TRANSLATION:

Abu Hurayrah رضى الله عنه said: The Messenger of Allah ﷺ said: **"The strong believer is better and more beloved to Allah than the weak believer, and in both there is good. Strive for what benefits you, seek the help of Allah, and do not be weak. If something befalls you, do not say: If only I had done such-and-such, it would have been such-and-such. Rather say: Allah has decreed, and what He wills He does. For "if only" opens the door to the work of Satan."**

CHAIN OF NARRATION: Narrated by Imam Muslim: from Abu Bakr ibn Abi Shaybah and Muhammad ibn 'Abdillah ibn Numayr, from 'Abdullah ibn Idris, from Rabi'ah ibn 'Uthman, from Muhammad ibn Yahya ibn Habban, from 'Abd al-Rahman al-A'raj, from Abu Hurayrah رضى الله عنه.

REFERENCE: Narrated by Imam Muslim in Sahih Muslim, Book of Divine Decree (Kitab al-Qadar), chapter on the command to be strong and to abandon weakness, Hadith No. 2664.

GRADE: SAHIH — contained in Sahih Muslim, the second most authentic book of Hadith after Sahih al-Bukhari.

Source: https://sunnah.com/muslim:2664

LESSONS FROM THIS HADITH

Al-Kindi lost his library, but not his knowledge. ***Strive for what benefits you, seek Allah's help, and do not say "if only"*** — that is the attitude of a believer when tested.

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THE CHARACTER OF A SCHOLAR

The rivalry between al-Kindi and the Banu Musa, and the satire of al-Jahiz, remind us that ***knowledge must be adorned with good character***. The Messenger of Allah ﷺ made character the measure of a person's goodness:

HADITH — SAHIH AL-BUKHARI, NO. 6035

حَدَّثَنَا عُمَرُ بْنُ حَفْصٍ، حَدَّثَنَا أَبِي، حَدَّثَنَا الأَعْمَشُ، قَالَ حَدَّثَنِي شَقِيقٌ، عَنْ مَسْرُوقٍ، قَالَ كُنَّا جُلُوسًا مَعَ عَبْدِ اللَّهِ بْنِ عَمْرٍو يُحَدِّثُنَا إِذْ قَالَ لَمْ يَكُنْ رَسُولُ اللَّهِ صلى الله عليه وسلم فَاحِشًا وَلاَ مُتَفَحِّشًا، وَإِنَّهُ كَانَ يَقُولُ «إِنَّ خِيَارَكُمْ أَحَاسِنُكُمْ أَخْلاَقًا».

TRANSLATION:

Masruq said: We were sitting with 'Abdullah ibn 'Amr رضى الله عنهما as he was narrating Hadith to us, when he said: "The Messenger of Allah ﷺ was neither obscene nor did he deliberately speak obscenely. He used to say: **The best among you are those with the best character.**"

CHAIN OF NARRATION: Narrated by Imam al-Bukhari: from 'Umar ibn Hafs, from his father Hafs ibn Ghiyath, from al-A'mash, from Shaqiq ibn Salamah, from Masruq, from 'Abdullah ibn 'Amr رضى الله عنهما.

REFERENCE: Narrated by Imam al-Bukhari in Sahih al-Bukhari, Book of Manners (Kitab al-Adab), chapter on good character, generosity and the dislike of miserliness, Hadith No. 6035.

GRADE: SAHIH — contained in Sahih al-Bukhari, the most authentic book of Hadith after the Qur'an by consensus of the Hadith scholars.

Source: https://sunnah.com/bukhari:6035

LESSONS FROM THIS HADITH

The best people are those with ***the best character***, not those with the most knowledge. Knowledge without character can breed envy and hostility; knowledge with character brings ***mercy and benefit***.

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HOW SCHOLARS VIEWED PHILOSOPHY

How did Muslim scholars judge the philosophy brought by al-Kindi and his successors? Their views ***differed***, and these differences teach us a balanced attitude.

VIEW	DESCRIPTION
Accepting with conditions	Logic and mathematics are accepted as tools of thought, so long as they do not contradict the creed.
Criticising	Imam al-Ghazali (see Book 13), in Tahafut al-Falasifah, criticised philosophers who held the world to be eternal — a view al-Kindi himself rejected.
Rejecting most of it	Some scholars of Hadith and fiqh feared that philosophy would confuse ordinary people and distance them from revelation.

AL-KINDI'S POSITION

Many researchers see al-Kindi as the philosopher ***closest to the Islamic creed*** among the early philosophers, because he ***affirmed the creation of the world***, ***the oneness of Allah*** and ***the superiority of prophetic knowledge***.

LESSON

Knowledge from outside must be ***filtered by the balance of revelation***. What is true is accepted, what is false is rejected, and what is unclear is studied carefully. This is the attitude of ***justice and learning***.

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STUDENTS AND LEGACY OF AL-KINDI

Al-Kindi left behind students and an enduring influence on ***Islamic philosophy and science***.

> **HISTORY NOTE: STUDENTS AND SUCCESSORS**
>
> ***Ahmad ibn at-Tayyib as-Sarakhsi*** (d. 286 AH / 899 CE) was al-Kindi's most famous student, a philosopher and geographer who later became tutor to Caliph al-Mu'tadid.
>
> ***Abu Zayd al-Balkhi*** (d. 322 AH / 934 CE), geographer and author of ***Masalih al-Abdan wa al-Anfus*** (the health of bodies and souls), is said to have been influenced by al-Kindi. His book is regarded as one of the earliest works on ***mental health***.
>
> Great philosophers after him, such as ***al-Farabi*** and ***Ibn Sina***, continued the effort to combine philosophy with Islamic thought.

IN EUROPE

Several of al-Kindi's works were translated into Latin by ***Gerard of Cremona*** in the 12th century CE, including his books on optics and pharmacology. The 16th-century Italian scholar ***Gerolamo Cardano*** listed al-Kindi among ***the twelve greatest minds*** in history.

LESSON

Knowledge taught to students is ***an enduring investment***. Al-Kindi died, but his knowledge lives on through his students and books.

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ESTABLISHED REPORTS AND POPULAR STORIES

The table below separates what is established from what needs checking about al-Kindi.

STORIES AND THEIR STATUS

POPULAR STATEMENT	STATUS
Ibn al-Nadim listed about 260 books by al-Kindi.	Established. Most of them are now lost.
Al-Kindi described frequency analysis for breaking codes.	Established. His treatise was rediscovered in Istanbul in the 20th century.
His library was confiscated in the time of al-Mutawakkil.	Established in historical sources; the role of the Banu Musa is reported by Ibn Abi Usaybi'ah.
Al-Kindi added a fifth string to the oud.	Attributed to him by sources on music; not entirely certain.
Hadith: "A word of wisdom is the lost property of the believer; wherever he finds it, he has more right to it."	Weak (narrated by at-Tirmidhi, No. 2687). Its meaning is good, but it is not authentic as a saying of the Prophet ﷺ.
Al-Kindi was the first to invent secret codes.	Incorrect. Secret codes existed long before; his contribution was a systematic method of breaking them.
Al-Kindi translated Greek books himself.	Incorrect. He supervised and edited translations made by other translators.

REFLECTION — AUTHENTIC WISDOM

Many link al-Kindi's attitude to the Hadith "a word of wisdom is the lost property of the believer", but that Hadith is ***weak***. We can hold on to its ***good meaning*** through authentic evidence, such as verse 2:269, without attributing weak wording to the Prophet ﷺ.

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LESSONS AND CONCLUSION

LESSONS FROM THIS EBOOK

First: Study Allah's signs in the world and within ourselves (41:53).

Second: Those who know are not equal to those who do not (39:9).

Third: Wisdom is much good, and truth is accepted wherever it comes from (2:269).

Fourth: Honesty is the path of knowledge and the path to Paradise (Sahih al-Bukhari 6094).

Fifth: True philosophy defends the creed — the world was created by Allah (2:117).

Sixth: Revealed knowledge surpasses rational knowledge (36:79).

Seventh: Precision in medicine is a demand of knowledge (Sahih Muslim 2204).

Eighth: Peace of heart comes through remembrance and supplication (13:28; Sahih al-Bukhari 6369).

Ninth: Do not despair when tested (Sahih Muslim 2664).

Tenth: Build a language of knowledge so that science can be understood in the nation's language.

Eleventh: Be generous, for the angels pray for those who spend (Sahih al-Bukhari 1442).

Twelfth: Adorn knowledge with good character (Sahih al-Bukhari 6035).

Thirteenth: Distinguish astronomy from fortune-telling (6:97).

CONCLUSION

Al-Kindi died in Baghdad around 873 CE, but his method of breaking codes is still used today. The next book of **Tracing the Scholars of Islam**, in sha Allah, will tell the story of ***al-Battani***, the astronomer who measured the year with great precision. Wallahu a'lam.

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GLOSSARY AND REFLECTION QUESTIONS

GLOSSARY

TERM	MEANING
Philosophy	The effort of reason to understand the reality of things; al-Kindi was called "the Philosopher of the Arabs".
Qadim (eternal)	Without beginning; some Greek philosophers held the world to be eternal, al-Kindi rejected this.
Cryptography	The science of writing and breaking secret codes.
Frequency analysis	A method of breaking codes by counting the frequency of letters.
Cipher	A method of turning an ordinary message into a secret one.
Optics	The science of light and vision.
Pharmacology	The science of medicines, their effects and their doses.
Steel	A hard, strong alloy of iron, used for swords and construction.

REFLECTION QUESTIONS

1. Why did al-Kindi reject the view that the world is eternal? Which Qur'anic evidence supports him?

2. How does frequency analysis work? Explain with an example.

3. What is the lesson of comparing the world to a ship stopping at an island?

4. How did al-Kindi show that reason and revelation do not conflict?

5. Why is it important to build scientific vocabulary in Malay?

SUGGESTED ACTIVITIES

Activity 1: Break the following enciphered message (shift 3): ***EHUVDEDUODK***. Hint: move each letter back three places.

Activity 2: Take a paragraph in Malay or English and count the frequency of each letter. Which letter is the most frequent? Compare with a friend.

Activity 3: Observe the shadow of a stick in the morning and in the afternoon. What does it show about how light travels?

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SURAH AL-BAQARAH 2:261

مَّثَلُ ٱلَّذِينَ يُنفِقُونَ أَمۡوَٰلَهُمۡ فِي سَبِيلِ ٱللَّهِ كَمَثَلِ حَبَّةٍ أَنۢبَتَتۡ سَبۡعَ سَنَابِلَ فِي كُلِّ سُنۢبُلَةٖ مِّاْئَةُ حَبَّةٖۗ وَٱللَّهُ يُضَٰعِفُ لِمَن يَشَآءُۚ وَٱللَّهُ وَٰسِعٌ عَلِيمٌ ٢٦١

The example of those who spend their wealth in the way of Allah is like a seed [of grain] which grows seven spikes; in each spike is a hundred grains. And Allah multiplies [His reward] for whom He wills. And Allah is all-Encompassing and Knowing.

Translation: Sahih International — quran.com/2:261

SURAH SABA' 34:39

قُلۡ إِنَّ رَبِّي يَبۡسُطُ ٱلرِّزۡقَ لِمَن يَشَآءُ مِنۡ عِبَادِهِۦ وَيَقۡدِرُ لَهُۥۚ وَمَآ أَنفَقۡتُم مِّن شَيۡءٖ فَهُوَ يُخۡلِفُهُۥۖ وَهُوَ خَيۡرُ ٱلرَّٰزِقِينَ ٣٩

Say, "Indeed, my Lord extends provision for whom He wills of His servants and restricts [it] for him. But whatever thing you spend [in His cause] - He will compensate it; and He is the best of providers."

Translation: Sahih International — quran.com/34:39

HADITH — SAHIH MUSLIM, NO. 2588

حَدَّثَنَا يَحْيَى بْنُ أَيُّوبَ، وَقُتَيْبَةُ، وَابْنُ، حُجْرٍ قَالُوا حَدَّثَنَا إِسْمَاعِيلُ، - وَهُوَ ابْنُ جَعْفَرٍ - عَنِ الْعَلاَءِ، عَنْ أَبِيهِ، عَنْ أَبِي هُرَيْرَةَ، عَنْ رَسُولِ اللَّهِ صلى الله عليه وسلم قَالَ « مَا نَقَصَتْ صَدَقَةٌ مِنْ مَالٍ وَمَا زَادَ اللَّهُ عَبْدًا بِعَفْوٍ إِلاَّ عِزًّا وَمَا تَوَاضَعَ أَحَدٌ لِلَّهِ إِلاَّ رَفَعَهُ اللَّهُ ».

TRANSLATION:

Abu Hurayrah رضى الله عنه narrated that the Messenger of Allah ﷺ said: "Charity does not decrease wealth.

Allah does not increase a servant who forgives except in honour. And no one humbles himself for the sake of Allah except that Allah raises him in rank."

CHAIN OF NARRATION: Narrated by Imam Muslim: from Yahya bin Ayyub, Qutaibah bin Sa'id and 'Ali bin Hujr, from Isma'il bin Ja'far, from al-'Ala' bin 'Abd al-Rahman, from his father 'Abd al-Rahman bin Ya'qub, from Abu Hurayrah رضي الله عنه .

REFERENCE: Narrated by Imam Muslim in Sahih Muslim, Book of Virtue, Good Manners and Joining the Ties of Kinship (Kitab al-Birr wa al-Silah wa al-Adab), chapter on the encouragement of forgiveness and humility, Hadith No. 2588.

GRADE: SAHIH — contained in Sahih Muslim.

Source: https://sunnah.com/muslim:2588

HADITH — SAHIH MUSLIM, NO. 1631

حَدَّثَنَا يَحْيَى بْنُ أَيُّوبَ، وَقُتَيْبَةُ، - يَعْنِي ابْنَ سَعِيدٍ - وَابْنُ حُجْرٍ قَالُوا حَدَّثَنَا إِسْمَاعِيلُ، - هُوَ ابْنُ جَعْفَرٍ - عَنِ الْعَلاَءِ، عَنْ أَبِيهِ، عَنْ أَبِي هُرَيْرَةَ، أَنَّ رَسُولَ اللَّهِ صلى الله عليه وسلم قَالَ « إِذَا مَاتَ الإِنْسَانُ انْقَطَعَ عَنْهُ عَمَلُهُ إِلاَّ مِنْ ثَلاَثَةٍ إِلاَّ مِنْ صَدَقَةٍ جَارِيَةٍ أَوْ عِلْمٍ يُنْتَفَعُ بِهِ أَوْ وَلَدٍ صَالِحٍ يَدْعُو لَهُ ».

TRANSLATION:

Abu Hurayrah رضي الله عنه narrated that the Messenger of Allah ﷺ said: "When a person dies, his deeds come to an end except for three: an ongoing charity, knowledge that is benefited from, or a righteous child who prays for him."

CHAIN OF NARRATION: Narrated by Imam Muslim: from Yahya bin Ayyub, Qutaibah bin Sa'id and 'Ali bin Hujr, from Isma'il bin Ja'far, from al-'Ala' bin 'Abd al-Rahman, from his father 'Abd al-Rahman bin Ya'qub, from Abu Hurayrah رضي الله عنه .

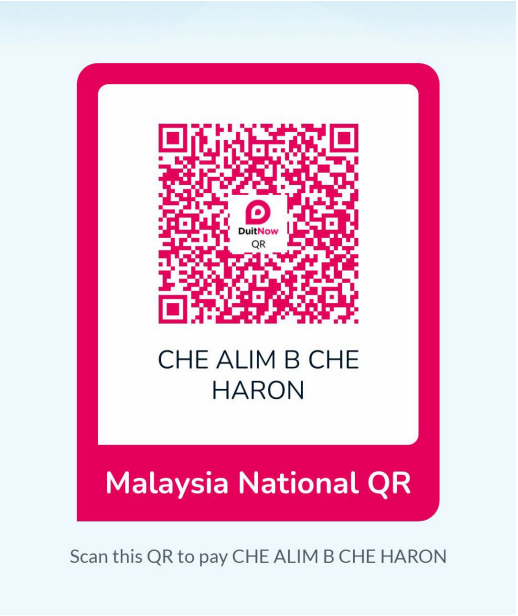
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GRADE: SAHIH — contained in Sahih Muslim.

Source: https://sunnah.com/muslim:1631

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