INITIATIVE ON ISLAM AND MEDICINE
INSTILLING HIKMAH IN HEALTHCARE

Unit 6: Are Human Beings Unique in this Universe?

Science and Theological Inquiry about Extraterrestrial Intelligent Life

Lesson 2 - Human Uniqueness and How Certain is Extraterrestrial Life

Time Length: 45-50 min.

INSTRUCTIONAL OUTCOMES:

Next Generation Science Standards (NGSS)

HS-ESS1 Earth's Place in the Universe: This standard is relevant as the lesson deals with the concept of extraterrestrial life and the vastness of the universe, which are central to understanding Earth's place in the cosmos.

HS-LS4 Biological Evolution: Unity and Diversity: The exploration of human uniqueness and the potential for diverse forms of life in the universe can be linked to this standard, which focuses on the diversity of life and its evolutionary processes.

Science and Engineering Practices: The lesson engages students in practices such as asking questions, analyzing and interpreting data, constructing explanations, and engaging in arguments from evidence, particularly when discussing the likelihood of extraterrestrial intelligence and the implications of such findings.

Crosscutting Concepts: The lesson involves crosscutting concepts like "Cause and effect" and "Systems and system models," especially in discussing human uniqueness, from a scientific lens as well as a theological framework that underpins our understanding of the universe and a human's role/involvement within it.

Common Core State Standards (CCSS)

CCSS.ELA-Literacy.RST.11-12.1: Citing specific textual evidence to support analysis of science and technical texts, especially in discussing theological and scientific views on extraterrestrial life.

CCSS.ELA-Literacy.RST.11-12.7: Integrating and evaluating multiple sources of information presented in diverse formats and media, such as the comparison of different philosophical viewpoints on human exceptionalism.

CCSS.ELA-Literacy.RST.11-12.8: Evaluating the hypotheses, data, analysis, and conclusions in a science or technical text, which aligns with evaluating the likelihood of extraterrestrial life and human uniqueness.

CCSS.ELA-Literacy.SL.11-12.1: Initiate and participate effectively in a range of collaborative discussions with diverse partners on complex topics, which applies to the group discussions and analysis of the video content in the lesson.

Content Learning Outcomes:

- Describe & explore the underlying motivations to pursue specific fields of inquiry.
- Describe & explain the underlying motivation for Muslims to pursue intellectual questions.
- Evaluate how applying Islamic epistemology informs questions.
- Explain & evaluate the potential theological implications of scientific questions

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Materials:

- **Presentation Slides** (Slides 32-44)
- **Triple-Entry Vocabulary Journal** (Student Responsibility)
- Video: Other Earths: The Search for Habitable Planets - 4k
- **Comprehending "Human Exceptionalism"** - Supplemental Material

Instruction/Teacher Facilitation:

- Last time we looked at some of the scientific knowledge and the revelatory knowledge that surrounds this topic of ETI. Through the case of the seven earths, and through Hadith analysis, we saw the realm of possibilities but no certainties. And we were left with being comfortable with uncertainty. The question then arises: *Are* there any certainties in this discussion of extraterrestrial life or intelligence? Well, we mentioned conclusive knowledge and evidences last time.
- Ask Students: Is there some conclusive knowledge that we should look at that would help us in giving some definiteness to this discussion of ETI? Think on a theological level. What are some Aqeedah-related questions that might have come up in your mind? Would accepting ETI contradict what we believe about ourselves or what ALLAH swt has told us about ourselves? How about any contradictions about what we are told about the Prophet S?
- Theological and Metaphysical Legitimacy
  - Scholarly consensus: "The best of ***all*** creation without exception is our Prophet ﷺ so avoid violating scholarly consensus". (Jawharat al-Tawḥīd)
  - Challenges to prophetic superiority - this is something we believe; that the Prophet ﷺ is the superior being, among humans and jinn. There is no alien/intelligent being that can be superior or more intelligent than the Prophet ﷺ he is the peak of intelligence.
    - Concerning the question of who is more intelligent between humans and jinn, the answer is clearly humans because of the fact that the final Prophet, the Prophet ﷺ, was a human. And jinn too are obligated to accept and follow the Prophet ﷺ
      - Also, there has been subjugation of jinn by humans, Prophet Sulaiman (عليه السلام) controlled jinn, and the Prophet ﷺ also subjugated jinn.
  - Human uniqueness: We have created humans in the best of forms and still reduced them to the lowest of the low. (Surah At-Tin 95: Ayaat 4-5). (For further discussion on the concept of Human Uniqueness, view **Comprehending "Human Exceptionalism"**.)

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- In Summary - What Does Revelatory Evidence Tell Us?

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  - What We Know ***Conclusively***
    - Existence of Intelligent Creatures: Man, Jinn, and Angels
    - The Multiplicity of Worlds and Realms (ʿālamīn)
    - Vastness of the Universe
    - The specialness of the Prophet Muḥammad (may Allah bless him and grant him peace)

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  - What We Know Probabilistically

- Broad metaphysical possibility of the existence of extraterrestrial intelligent life.
- It is theologically possible for extraterrestrial intelligent life to exist.
- Multiple earths and even multiple prophets do not necessarily challenge the finality of prophethood or the specialness of the Prophet Muḥammad (may Allah bless him and grant him peace).

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- ➢ All conclusive knowledge is *cohesive*.
- ➢ Speculation is not problematic if emerging from a sound, strong epistemological framework.

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- ❖ Scope and Motives of Scientific Inquiry:
  - ➢ Ask Students:
    - What assumptions underlie the search for extraterrestrial intelligent beings? (i.e. Why should we care about this? Why did this question even come up? Who came up with this question in the first place?) - For example, we saw from an Islamic perspective that Muslim scholars looked into it because of wahy.
    - What are the reasons and motivations for exploring any topic?

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- ➢ Watch Video: Human Exceptionalism -- Aristotle versus Epicurus Other Earths: The Search for Habitable Planets - 4k
  - Prior to watching, ask students to pay attention to or listen for the philosophical roots of the search of ET life. (As scientists, everything we inquire about or search/research has philosophical roots or reasons, the answer to "why." Helps us see if our views are similar or different.)
  - Watch the video from 0:00 to 6:20
  - Post Video Discussion:
    - Human Exceptionalism – Aristotle versus Epicurus
      - Aristotle also believed in human exceptionalism, and due to this, he believed Earth to be the center of the universe, and a unique place (meaning no other place like it).
      - If any being did exist, they were not as special as humans.
      - This differed greatly from Epicurus' view…

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- The philosophy of Epicurus (341–270 B.C.E.) was a complete and interdependent system involving:
  - The goal of human life: happiness, resulting from the absence of physical pain and mental disturbance - to live stress-free or carefree, with no limits
  - An empiricist theory of knowledge - sensations, together with the perception of pleasure and pain, are infallible criteria - only what he could experience with his 5 senses was true knowledge.
  - Description of nature based on atomistic materialism, and a naturalistic account of evolution, from the formation of the world to

the emergence of human societies - life is based on material things that you can observe.

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- Epicurus believed that, based on radical materialism:
  - Disproves the possibility of the soul's survival after death, and hence the prospect of punishment in the afterlife - no life after death (contrast this with our Islamic belief of the soul surviving death; almost everything we believe in depends on the afterlife) He felt that if he could disprove this, no accountability, life would then become very easy, stress-free. Resulting in what we call today as Hedonism.
  - Disregard transcendent concepts like Platonic Ideas or Forms
  - He believed that eliminating fears (e.g. death, punishment) and corresponding desires would leave people free to pursue the pleasures, both physical and mental, to which they are naturally drawn, and achieve satisfaction.

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- WHY is this Epicurean philosophy important to know? - NOT because this is the right philosophy, but because much of this thought is behind scientists and astronomers who built these telescopes (they call themselves neo-epicureans because they ascribe to this philosophy).
  - Epicurus advised on the 'proper' attitude toward:
    - Politics (avoid it where possible)
    - The gods (do not imagine that they concern themselves about human beings and their behavior) - even if there was a God or gods, they would have just created things and left us alone, "don't worry about the details" view
    - The role of relations and marriage (dubious) - just another hassle
    - Various meteorological and planetary phenomena (best to keep an open mind in the absence of decisive verification) - he wanted to see diversity in creation, in planets, etc to prove that humans are not that special.
- Not all scientists think this way or agree with all of this, but this is a very real and adopted philosophy.

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- What is the Motivation Behind the Inquiry?
  - What is the connection between creation and the Creator?
  - Is it just pure curiosity, because we are curious beings?
  - Immediate need? - to fulfill a need or replace/replenish a need (e.g. gas, food)
  - What does pursuing this inquiry cost? - literally in dollars and cents - these decisions have a lot to do with how money/funds are allocated for various things in society. We as Muslims should be very concerned with this to make sure we are using our resources in the best way.

- Motivations are usually not spoken about, you have to search for them and find them.

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- The US government spends an average of $55 Billion on space exploration, a year.
  - Ask students to name some aspect of society that they care about. (e.g. poverty, housing, climate, etc.)
    - How much would it cost to fix this problem? (The teacher can look up this information accordingly.)
    - EX: Childhood Poverty in America, Global Warming - worth your time to find out how much it costs to fix it because it is something you care about.

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- What Else Could $54 Billion Do?
  - End World Hunger? According to the U.N. World Food Programme:
    - 828 million people on the planet who are hungry. That's 1 in 10 people.
    - Of those, 50 million people are on the brink of famine and desperately need help.
    - $7 billion to deliver food to the millions of people facing famine this year.
    - $40 billion per year to feed all the world's hungry people and end global hunger by 2030.
  - End Homelessness? According to US Housing and Urban Development:
    - $20 billion to end homelessness in the US (only *half* of NASA's budget)
  - Americans spend more than $35 billion a year on gym memberships
  - The U.S. spends around $718 billion on its military in 2019 alone
- But, what are we spending this money on? Space Exploration - gives us an idea of the scale of importance in the eyes of scientists or the eyes of the American government.
  - So the two biggest spending allocations are NASA and the military.
  - On an ideal level, is this a good use of resources?

- In Summary:
  - We understand the epistemology for inquiring into ETI - from our own Muslim traditions, we see that we have reasons to ask these questions, as well as from science we see curiosity in seeking answers to these questions.
  - We looked at Epicurious and his philosophy to get us to think, WHY are we studying this? What are we trying to prove? And maybe, other scientists might be trying to disprove something that we fully believe.

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- As Muslim scientists, would we ask different questions? - We should understand that our theology can inform the science that we think will be helpful/beneficial.
- Our goal as Muslim scientists is to find out what would be beneficial to the people, and aim to look into that and how can we participate in moving that forward.

- (As discussed in the last lesson) A Muslim's solution to any situation or problem would be universally beneficial; it would be beneficial in this world (dunya) as well as in the hereafter (akhirah); beneficial to Muslims and non-Muslims alike.

➢ This all takes intention, effort, and a lot of hard work!