

LIGHTNING

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Part 1: READ

2:19 البقره	<p style="text-align: center;">أَوْ كَصَيْبٍ مِّنَ السَّمَاءِ فِيهِ ظُلُمَاتٌ وَرَعْدٌ وَبَرْقٌ يَجْعَلُونَ أَصَابِعَهُمْ فِي آذَانِهِمْ مِّنَ الصَّوَاعِقِ حَذَرَ الْمَوْتِ وَاللَّهُ مُحِيطٌ بِالْكَافِرِينَ</p>
	<p>(Y. Ali) Or (another similitude) is that of a rain-laden cloud from the sky: In it are zones of darkness, and thunder and lightning: They press their fingers in their ears to keep out the stunning thunder-clap, the while they are in terror of death. But Allah is ever round the rejecters of Faith!</p>
2:20 البقره	<p style="text-align: center;">يَكَادُ الْبَرْقُ يَخْطَفُ أَبْصَارَهُمْ كُلَّمَا أَضَاءَ لَهُمْ مَشَوْا فِيهِ وَإِذَا أَظْلَمَ عَلَيْهِمْ قَامُوا وَلَوْ شَاءَ اللَّهُ لَذَهَبَ بِسَمْعِهِمْ وَأَبْصَارِهِمْ إِنَّ اللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ</p>
	<p>(Y. Ali) The lightning all but snatches away their sight; every time the light (Helps) them, they walk therein, and when the darkness grows on them, they stand still. And if Allah willed, He could take away their faculty of hearing and seeing; for Allah hath power over all things.</p>
13:12 الرعد	<p style="text-align: center;">هُوَ الَّذِي يُرِيكُمُ الْبَرْقَ خَوْفًا وَطَمَعًا وَيُنشِئُ السَّحَابَ الثِّقَالَ</p>
	<p>(Y. Ali) It is He Who shows you the lightning, by way both of fear and of hope: It is He Who raises up the clouds, heavy with (fertilizing) rain!</p>
24:43 النور	<p style="text-align: center;">أَلَمْ تَرَ أَنَّ اللَّهَ يُزْجِي سَحَابًا ثُمَّ يُؤَلِّفُ بَيْنَهُ ثُمَّ يَجْعَلُهُ رُكَامًا فَتَرَى الْوَدْقَ يَخْرُجُ مِنْ خِلالِهِ وَيُنزِلُ مِنَ السَّمَاءِ مِثْرًا حَالًا فِيهَا مِنْ بَرَدٍ فَيَصِيبُ بِهِ مَنْ يَشَاءُ وَيَصْرِفُهُ عَنِ مَن يَشَاءُ يَكَادُ سَنَا بَرْقِهِ يَذْهَبُ بِالْأَبْصَارِ</p>
	<p>(Y. Ali) Seest thou not that Allah make the clouds move gently, then joins them together, then makes them into a heap? - then wilt thou see rain issue forth from their midst. And He sends down from the sky mountain masses (of clouds) wherein is hail: He strikes therewith whom He pleases and He turns it away from whom He pleases, the vivid flash of His lightning well-nigh blinds the sight.</p>
30:24 الروم	<p style="text-align: center;">وَمِنْ آيَاتِهِ يُرِيكُمُ الْبَرْقَ خَوْفًا وَطَمَعًا وَيُنزِلُ مِنَ السَّمَاءِ مَاءً فَيُحْيِي بِهِ الْأَرْضَ بَعْدَ مَوْتِهَا إِنَّ فِي ذَلِكَ لَآيَاتٍ لِّقَوْمٍ يَعْقِلُونَ</p>
	<p>(Y. Ali) And among His Signs, He shows you the lightning, by way both of fear and of hope, and He sends down rain from the sky and with it gives life to the earth after it is dead: verily in that are Signs for those who are wise.</p>

Part 2: K

What do these “Aayaat” say collectively?

- 1) These verses suggest a linkage between lightning with heavy clouds and thunder.
- 2) The term “sayyibun” was used to describe “violent” cloudburst; and it is derived from the root verb “asaba” which means to strike, assail, inflict ...etc. This verb and its derivative imply a forceful action; Allah creates a kind of cloud which produces lightning and thunder.
- 3) Lightning produces both fear and hope, fear of harm and damage or hope of benefits. The heavy precipitation, associated with lightning, revives the dead earth in terms of biological activities and productivity.
- 4) Allah can cause loss of sight by increasing the intensity of lightning; people can walk in the short-lived illumination but the darkness that follows takes away all sense of sight, and people are blinded temporarily.
- 5) Many non-Muslims in Europe and America, at least until 1700s, thought that ringing church bells kept lightning away; the Quran which came 1400 years ago described lightning correctly as a natural phenomenon.



What does science say?

- 1) Lightning is a giant spark of electricity which we see in the sky.
- 2) Lightning consists of electrical strokes or discharges and produces bright light which travels at a speed of 186,282 miles per second.
- 3) These strokes may discharge about 100,000,000 volts of electricity.
- 4) Each stroke may produce 15,000,000 volts which may raise the temperature of the air to 60,000 degrees F.
- 5) The heated air expands very quickly creating a pressure wave known as thunder.



How does the human eye adapt to lightning?

- 1) Adaptation of the human eye to light and darkness occurs in the pupil and retina.
- 2) During lightning, the pupil may become small like a pinhead to prevent the eye from being damaged by too much light.

- 3) The retina absorbs the light rays by pigments in the rods and cones (light- sensitive cells).
- 4) Light-sensitive chemicals in the retina react to light and trigger nerve impulses to the brain.
- 5) The retina contains rods and cones in the proportion of 10 -15:1. The rods detect images in darkness because they contain pigment called visual purple or rhodopsin. When exposed to light, the visual purple changes chemically and loses its color causing the rods to lose their sensitivity to light guarding against harm resulting from too much brightness.
- 6) The eye will be able to see again only after the visual purple is restored. It is difficult to see in the dim light because the rhodopsin was bleached by the bright light. It takes 10 to 30 minutes to renew the rhodopsin.
- 7) Lightning can plunge people into darkness, a type of temporary blindness.



How do meteorologists explain lightning?

- 1) It is associated with thunderclouds or “cumulonimbus”
- 2) The cloud matter is made up of atoms which may become charged positive by gaining electrons, or may become charged negative by losing electrons.
- 3) Lightning is the spark of electric current resulting from the movement of charged particles.
- 4) Lightning could be intracloud, cloud to cloud, cloud to air, and cloud to ground depending on the direction in which the charges first begin to flow.



What is the benefit of lightning?

Lightning is Allah’s way to circulate nitrogen among the atmosphere, soil, water, plants and animals of the earth. Air is composed of 78% nitrogen and 21% oxygen. Nitrogen is an important part of protein molecules in the living material in all tissues of animals and plants, known as protoplasm. Lightning causes nitrogen and oxygen to first form nitrogen oxides and later nitric acid when water is added. To manufacture their protein, plants get their needs of nitric acid from atmospheric rainwater.

References:

Husaini, S. Waqar Ahmed. The Quran for Astronomy and Earth Exploration from Space. Goodword Press, New Delhi,(2005)

Part 3: THINK & CONNECT

What do we need to produce lightning in the school laboratory?
Which attributes of Allah does lightning confirm?