



Human Elephant
Learning Programs

HUMAN-ELEPHANT LEARNING PROGRAM

ELEPHANT FACT SHEET

Elephants belong to the family *Proboscidae*. In India, elephants are found in South India, North-eastern India and the Himalayan valleys and Orissa.

1. Asian elephants are of five strains – they are Indian, Burmese, Ceylonese, Sumatran and Malaysian.
2. An Asian cow elephant weighs 2.5-3.5 tonnes and a bull weighs 3.5-5 tonnes.
3. Bull elephants without tusks are called 'makhnas'.
4. Size of the neck is not proportionate to that of the head, and so elephants have short necks to balance their huge head.
5. The elephant is one among a few animals that use tools in their day-to-day lives. A few examples of such animals are discussed. A species of vulture uses a stone to break ostrich eggs. Some otters found in the Californian seas use a stone to break open clam shells. A woodpecker sometimes uses a stick to stir insects hiding in a hole. Monkeys use a blade of grass to draw out ants from a hole. An elephant uses a twig to scratch itself and can learn to manipulate a variety of objects to carry out a range of activities.
6. Elephants have nails rather than hooves. Most of the elephants have 18 nails, five in each of the front legs and four in each of the hind legs and very rarely 20 nails (five nails each, on the hind and fore legs). The foot pad has a thick fat cushion to provide a good grip while walking over marshy and slushy grounds, as well as on rocks.
7. It is possible to measure the height of an elephant by measuring the circumference of the front foot. Twice the circumference gives the approximate height.
8. The upper ridge of the ear starts folding inwards from the age of 10 and folds about an inch in 20 years. An elephant with a 1" fold on its ear is considered to be approximately 30-35 years of age. There are however, many exceptions to this rule.
9. In the absence of a weigh bridge, the following formula can be applied, to weigh an elephant:
$$\text{Body Weight} = (18.0 \times \text{girth cm}) - 3,336$$
10. Elephants love spending lots of time in the water and can swim long distances. They also love wallowing in the marsh.
11. Elephants travel extensively, walking long distances in the wild in search of food, shade, minerals and water. Since they have an enormous food requirement, they have to travel constantly to look for fodder sources. They do not stay confined to a single place for a long time which avoids habitat destruction.



12. They walk at a slow pace of 4km/h.
Elephant walk has been made into a music, (in the film *Hatari*) which is popular all over the world.
13. Elephants feed on all three tiers of plant life, i.e. lower (grass), middle (bush), and upper (canopy) tiers.
14. Elephants have very clean feeding habits. While grazing, they pull out a bunch of grass and dust the mud and dirt against their legs before eating it.
15. *Elephants drink 200-255 litres of water a day, i.e. 50-60 litres at a time, 3-4 times a day. A trunkful can retain 6-7 litres or even as much as 10 litres.*
16. Elephants can run short distances quite quickly (25 km/h for short distances, or 30-40 km/h, according to reports from Mudumalai Elephant Camp, in Tamil Nadu. Even with hobbles they can hop very fast, but cannot gallop like horses or run like cattle.

17. Elephants can perceive sound frequencies inaudible to the human ear. Frequencies below the normal audible range are called infrasonic waves and those above the normal audible range are called ultra sonic waves. Examples of infrasonic waves are thunder, earthquakes etc.

Elephants sometimes communicate with each other through infrasonic waves. This was discovered by Catherine Payne in Africa. The region between the frontal projection and the base of the trunk produces vibrations. A simple experiment to demonstrate this fact can be done, by submerging (half way, to the middle of the head) the elephant in water, facing the current and tickling the frontal area. The vibrations produced can be seen as ripples in the water.

In an African savannah elephants can perceive thunder several miles away and will move towards that direction to find the rain. Elephants have several kinds of communications between them. They are provided with large ears, so that they can receive as many of these frequencies as possible.

18. An elephant's eye sight is very poor, it relies very much on its sense of smell. Elephants can recognise people by their sense of smell, even after several years.
19. In Kerala, there is a misconception that elephants fan their ears because they appreciate the rhythm of the Panchavadyam , a musical symphony. Although it makes a nice story, this is not true. Elephants fan their ears, to cool their body. Sweating, in other species such as man, helps maintain suitable body temperature. Since elephants have few sweat glands, they depend on their ears to regulate their body temperature. The ear is an important organ in removing heat. The blood from the various parts of the body is transported to the ear, where it is cooled due to the fanning motion. This cooled blood, then flows back into the various parts of the body, thus bringing down the body temperature. It is observed that there is a difference of 1 degree centigrade in the temperature of arterial and venous blood of the ear.
20. The normal body temperature of the elephant is 96.6 F or 36.9 C.

21. The skull has several sinuses and so the head is not as heavy as it may appear.
22. The elephant has only two pairs of teeth at a time and they are replaced five times during its lifetime. The number of ridges on the teeth increases with age. In most animals the teeth erupt from the bottom, but in elephants, they grow and push from the back to the front. The molars are replaced five times in the lifetime of an Asian elephant.

23. The tusk is an outgrowth or extension of the upper incisor or teeth. In males it starts at 2 or 2.5 years and grows 3-4 inches every year.

The tusk has regenerative capacity. The pulp, which is conically shaped, is present along the inside of the tusk. One has to be careful not to damage the pulp, while trimming or shaping the tusk. Teeth in Sanskrit are called Dantam, and thus the elephants are also called Danti. The



elephant uses its tusks in a variety of ways. Humans may be right or left handed. Elephants also exhibit, a similar dexterity, for a particular tusk. The tusks continue growing, even after being cut.

24. The Asian cow elephants have tushes, but African cows have tusks.

25. The tongue has restricted movement and cannot be protruded out. The food can be hooked if placed on the tongue and pushed back into the mouth.

26. An elephant's trunk is formed by the fusion of the upper lip and the nose. It is made up of approximately 1,00,000 muscles.

27. There is no naso lacrimal duct running from the eye to the nose and so water runs out of the eyes constantly.

28. A few sweat glands are present on the skin, found at the base of the nails. Since the sweat glands are deficient, the elephant sucks secretions from the mouth and sprays

it on its body with its trunk to lower the body temperature.

29. The skin is very thick and is called a Pachyderm. The skin has several folds and wrinkles, which help to remove heat. Though the skin is thick, the elephant will experience pain when injured.

30. Males and females have a temporal gland, which produces secretions or temporal discharge . Temporal gland activity in bulls is characterised by behavioural changes, particularly aggression, libido and disobedience to words of commands. Some cow-elephants occasionally exhibit temporal gland activity, but do not show any pronounced behavioural changes.

31. Elephants cannot jump up, because their legs are not shaped for absorbing the shock of a jump. They may leap horizontally however, as their knee cap is placed very low, which helps them stand on or bend their knees, like humans.

32. The heart of an elephant does not have a pointed apex like other mammals. The ends are shaped differently and have a bifid apex.

33. As in marine mammals, the testes of a male elephant are placed abdominally (close to the kidneys). During musth the testes enlarge in size (functional hypertrophy).

34. In a cow-elephant, the vulval openings are between the hind legs. The clitoris is large and may be 15-30 cms long, but they mate like all other quadrupeds or four-legged animals.

35. Elephants have two openings on the roof of their mouth called vomero, nasal openings, which act as scent glands.

36. Mating consists of prolonged courting, short duration of penetration, several times a day. The special position of the vulva makes the penis (when erected) into a cobra shaped hood to facilitate penetration. An ejaculate may have 50-100ml of semen.

37. The gestation period is 21 months. Even when pregnant, ovulation takes place in cows.

38. A calf at birth weighs 80-100 kg and measures 90-100 cms in height.



39. *Mammary glands are found between the forelegs. They secrete milk through several pores. Usually they suckle offspring for 4-5 years, but in captivity the calves are weaned after 2 years.*

40. Although herbivorous, the cholesterol level in African elephants is high compared to that of the local tribes (Masai), who eat beef.

41. There is no gall bladder in the elephant.

42. Dog posture or 'sternal recumbency' posture is a relatively safe and comfortable position in other animals. In elephants this is dangerous, especially when they are tired. The pleural cavity around the lungs is absent in elephants, and they may die of suffocation if made to sit in the dog posture for long periods under sedation, or for any other purpose. Respiration rate is 10 PM (per minute) while standing and 5 PM during recumbency.

43. Like humans, elephants are also prone to arthritis, because of the vertical position of their limbs.

44. The total number of bones in the elephant's body is 282 and the total number of vertebrae is 61. The bones are not very thick and so the likelihood of a fracture is greater.

45. Elephants can stand for long periods. Horses and passerine birds have checked ligaments, which help them to stand, while sleeping straight up. Similarly, elephants are also provided with such feet, that can be splayed, thus enabling them to stand for long periods. There was an elephant in Thrippunithara, Kerala, that stood up for 18 months, when it was sick. Healthy elephants in captivity, usually do not lie down during the day.

46. Most animals fold their hind limbs backwards, while lying down, but elephants fold them forwards.

47. Captive elephants in Kerala are given a restorative treatment during the monsoon, which is a practise for human beings too.

48. Elephants are efficient seed dispersers. Seeds that pass out in the elephant's dung are highly viable and germinate easily.
49. They defecate 15-20 times a day. The number of boli being 5-8 and weighing 1-21/2kg. Elephants urinate 10-15 times a day and a total quantity of 50-60 litres is expelled. Inadequate water intake produce crystalluria.
50. Elephants can unerringly locate and dig out water from the sub soil or river beds during the dry periods.
51. Elephants have a remarkable memory for events and people and are also believed to be emotional. While in musth captive male elephants deliberately try to attack their mahouts.
52. Elephants are gregarious by nature. In the wild when a baby elephant is born, it is trained and disciplined by every adult in the group. Captive born calves on the other hand, turn out to be truants, as they are excessively pampered by humans. They turn out to be problematic adults if not trained properly after weaning.
53. Elephants have matriarchal groups and the leader of a herd is usually a cow-elephant. Males are loosely attached to the herd. In summer, when there is scarcity of food and water, the herds break up into smaller herds and when favourable conditions return they re-unite to form a large herd with a larger number of individuals. Elephants in the wild spend a minimum of 60-70% of their activity in feeding. In summer during the day, the herds spend 2-4 hours a day resting, to prevent heat strokes.
54. Elephant herds when threatened, have an interesting defence strategy. At first they all stand in a line defending. Then they round up the young ones and sub-adults into the centre and form a circle around them.
55. *Elephants can never be completely domesticated. They always have a desire to return to the wild, unlike some other domesticated species such as dogs and cats, which come back home.*
56. Elephants are a valuable commodity and need to be handled with care and respect. In Artha shastra , an ancient Indian text, Chanakya (the author), described the value of elephants as equivalent to gold. Chankaya says that, a man deserved capital punishment, if charged of killing an elephant.