

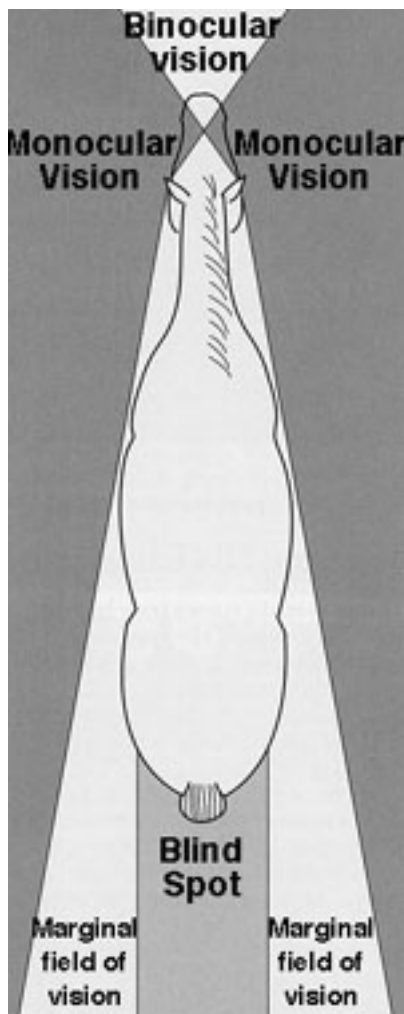
## Behavior and Training Study Guide

Working with horses successfully requires knowing about how a horse sees, hears, responds to touch, behaves, and learns. A horse's behavior is more easily understood once you know about the horse's senses and instincts. This knowledge is very important for training horses properly as well.

### The Horse's Senses

The senses that are most important for understanding the horse are vision, hearing, and touch.

A horse's vision is both similar and different to that of a human being. Like people, horses can see the same thing with both eyes at once; this is called binocular vision. Horses, however, can also see a different picture with each eye; this is called monocular vision. Please refer to the diagram to see where a horse can see with each type of vision.



Horses use their **binocular vision** to judge distances, and this is the weaker of the two types of horse's vision. Horses have to lower their heads to see objects closer to them and raise their heads to see objects that are further away. Objects that are very close, within 4 feet, cannot be seen with binocular vision, and the horse must turn his head a bit to look at them.

**Monocular** vision is used to see areas on each side of the horse's body. Using monocular vision, the horse is able to see objects coming from either side, without turning its head. This type of a vision was an advantage to the horse as a prey animal.

Horses have **blind spots** directly in front of their head and directly behind their hindquarters.

Horses are better at **detecting movement** than at seeing objects clearly.

A horse's hearing is much better than his sight. Because of this, horses will usually move their ears to listen to something, and then try to see it. Often, a horse's ears and eyes work together. The horse's sense of hearing can be utilized during training by teaching the horse to respond to the voice commands of a rider or handler.

Horses also have a well developed sense of touch, and this sense is the most important for riding. The most sensitive areas on a horse are the head and face, ribs, barrel and flanks, and the withers and back. Sensitivity to touch varies greatly by the breed, age, and training of the horse. A highly sensitive horse with gentle and light training is likely to remain that way. As horses age, they tend to become slightly less sensitive as they become accustomed to being touched. Gentle handling and use of the aids can prevent a horse from losing too much sensitivity.

The **head and face** of a horse is his most sensitive area. Horses should always be handled very gently around these areas. This sense of touch plays a very important role in riding, as control through the bit and bridle rely on it. A rider's touch must remain light and gentle, or the horse may become dull and unresponsive.

Horses are also quite sensitive on their **ribs, barrel, and flanks**. Riders can use the sensitivity of the ribs and barrel to their advantage, but the touch must again be gentle, or the horse will become dull. Riders should also avoid using their legs on the horse's flanks, as this is a very sensitive area.

Horses are also responsive to touch on their **withers and back**, which also play a critical role in riding. Horses can understand cues to stop, go, and turn, simply from a change or shifting of weight on their backs. Sudden or large shifts in weight may throw the horse off balance.

### **The Horse's Instincts**

Horses are very social animals and have a highly developed desire for the company of other horses. This is otherwise known as herd instinct and is a basic survival technique for the horse. Because horses were prey animals, a herd of horses was much better able to protect themselves than a single horse alone. Horses may be nervous or uneasy about being separated from other horses, but with time and patient training can learn to accept being alone for periods of time, such as when being ridden.

### **Training Techniques**

Training a horse is based primarily on teaching the horse to respond to stimuli, and then strengthening these responses through reinforcement.

Stimuli are the cues that the trainer or person who is working with the horse uses. These are divided into conditioned and unconditioned categories. A stimulus is said to be unconditioned if it naturally causes a response; very few of these types of responses are used in horse training. Conditioned stimuli, which have to be learned through practice, are used much more commonly, and are often referred to as cues.

Responses are the specific behaviors that occur as a result of the stimuli. Training involves teaching the horse to make the correct response to the stimuli. Often, the response is a small unit of behavior, and many responses must be strung together to produce a major maneuver.

Reinforcement is one of the main components of learning for a horse. Reinforcement is usually divided into two types of categories: primary/secondary and positive/negative.

**Primary** reinforcements have natural reinforcing properties to the horse. An example of this is feed, since the horse naturally appreciates feed. It can be used to strengthen desired responses, such as a feeding the horse a treat when it stops at the command “whoa.”

**Secondary** reinforcements are acquired over a period of time. Examples of this are general acts of kindness to the horse such as pats, or if the horse learns that the training period ends if he responds correctly.

**Positive** reinforcement has also been referred to as reward training, and positive reinforcers beyond food are usually secondary and learned. Despite that, this type of reinforcement can be quite valuable and useful.

**Negative** reinforcement refers to aversive stimuli that the horse will work to avoid or get rid of, and there are at least three types.

Punishment aims to weaken or eliminate a response that a horse makes, either with or without a stimulus. The intensity of the punishment is very important, and varies by the sensitivity of the horse.

Escape refers to the application of an aversive stimuli, and the horse must respond in a certain way in order for that stimuli to be removed. An example of this is the application of a spur to the horse’s ribs; the horse must use an escape response and move in order for the spur to be removed.

Avoidance is characterized by the horse first being given a cue to respond. If the response is correct, there is no punishment. If the response is incorrect, then an aversive stimuli is applied. Most of the responses that the horse learns are conditioned in this way. For example, the horse moves from a slight heel pressure because, in the past, failure to do so has been followed by a sharp kick.

Important training principles that use these concepts are contingent reinforcement and alternate response, shaping, and schedules of reinforcement.

In order for any reinforcement to be effective, it must be **contingent**, which means that it must be given immediately after the response of the horse. This is especially important with negative reinforcement; if the reinforcement does not come immediately after the undesired response, the horse will not know what response is being punished. Instead, he will likely develop a general fear. Additionally, when negative reinforcement is used, the horse must have the correct **alternate response** available. That means if the horse gives the wrong response and negative reinforcement is used, the horse must then be able to make the desired response.

**Shaping** refers to the process of reinforcing small steps that the horse makes along the way towards an eventually desired maneuver. Many maneuvers cannot be taught in a single day’s training and instead must be worked toward gradually. An example is teaching a horse to move backwards. On the first day of training, the horse cannot be expected to back steadily and readily. So, the trainer might reward one small step backwards. The trainer then gradually adds steps until the horse backs confidently.

**Schedules of reinforcement** refer to when and how often a horse is reinforced, it applies to horses that are in the process of being trained and also trained horses that are being ridden. During early training, the trainer will usually practice continuous reinforcement, where most responses are reinforced. For most horses that have been trained, intermittent schedules of reinforcement work fine, where the horse is not reinforced at each response but instead at

random intervals. A horse that operates on this type of schedule is sometimes called “finished” and can ridden longer by beginner riders who are not yet adept at reinforcement. Horses cannot operate with no reinforcement indefinitely, however, as the horse will eventually stop responding. At this point, the horse may need to be “tuned up,” or ridden by an experienced rider who can provide the appropriate reinforcement.