CHARMANDER

DOGNITION REPORT - MAY 16, 2025

Dognition®

A SMOOTH OPERATOR, THE CHARMER RELIES ON HIS SECRET WEAPON - YOU.

Charmander can work a problem out on his own as well as anybody, but he prefers to rely on his secret weapon - you. As a Charmer, Charmander has exceptional social skills, which means he can read your body language like a book. He is not above using this information to get his own way. Charmander is no fool when it comes to independent problem solving, and his scores reflect a keen understanding of the physical world. However, Charmander's real genius is that he sees you as an ally and partner, and he will usually turn to you for help before trying to figure out a problem on his own.

THE DOGNITION PROFILE

Usually, when you get test results, you see a score that means you either passed or failed. To compare your results to someone else, you see who got the higher score. This is why your dog didn't take a test. Instead, you played a series of games together - and when you play a game there is more than one way to win. Success often comes from playing to your strengths.

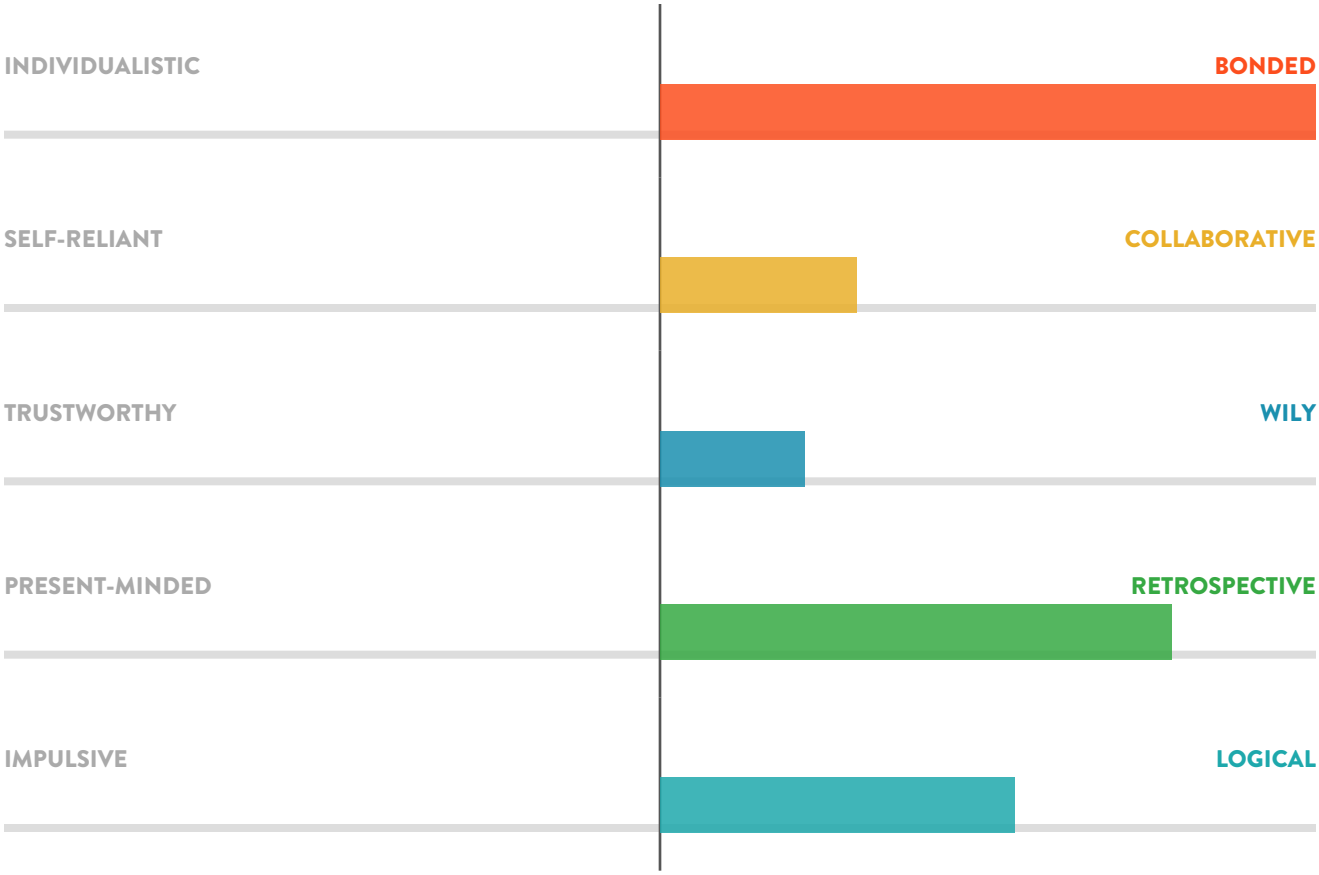
There has recently been a revolution in how we think about intelligence. The Dognition Profile is based on this cutting-edge field called cognitive science. Cognition is the study of how the mind works and draws on many scientific disciplines, from psychology to computer science to neuroscience.

By studying animals, cognitive scientists have made three important discoveries:

> Animals use many types of cognition to survive (learning skills from others, remembering the location of food, inferring the solution to a new problem or deceiving others during competition).
>
> Different animals rely on different cognitive strategies. Asking if a crow is more intelligent than a dolphin is like asking whether a hammer is a better tool than a saw. Each animal has strategies to solve a unique set of problems.
>
> Just because an animal tends to use a certain strategy to solve specific problems doesn't mean he or she will always apply that strategy to all types of problems. Animals rely on a toolbox of strategies that depend on a variety of factors. Dognition gives you insight to the most significant tools that your dog will use on a daily basis to interact with you and the world.

Based on these findings, the Dognition Profile looks at five cognitive dimensions. Rather than counting correct and incorrect answers, the Dognition Profile identifies your dog's cognitive style, and the strategies he relies on to solve a variety of problems. Using this revolutionary new science, the Dognition Profile will give you an unprecedented window into the workings of Charmander's mind and reveal his particular genius.

COGNITIVE DIMENSION RESULTS



EMPATHY - Reading and responding to the emotions of others

COMMUNICATION - Using information from others to learn about the environment

CUNNING - Using information from others to avoid detection

MEMORY - Storing past experiences to make future choices

REASONING - Inferring the solution to new problems

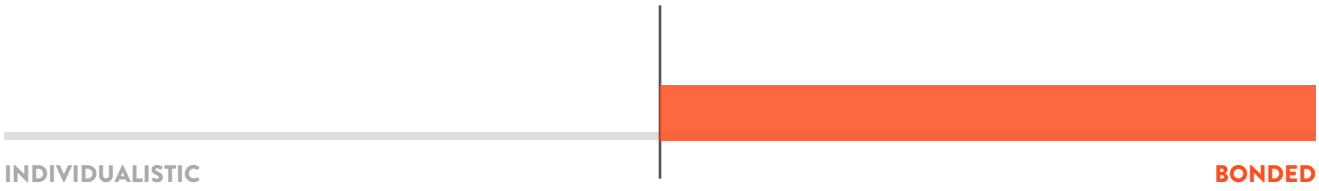
EMPATHY

Charmander's empathy scores were off the charts. Empathy is the ability to feel what someone else is feeling. Humans are extremely empathetic; it is one of our best qualities. Empathy is not something we are taught; it is present even in young children, growing and strengthening as we get older.

Researchers have recently suggested that other animals also have empathy, or at least a basic form of empathy. If this is true, dogs are an ideal place to look. Humans and dogs go back thousands of years - enough time for the bond between us to develop into something special.

You may be interested to know: initial results seem to suggest that large dogs like Charmander are generally more bonded than small dogs. If most dogs are bonded to their owners, Charmander absolutely adores you.

FIG.1



Playing and interacting with your dog like you did in the Dognition games increases your oxytocin, the hormone responsible for feelings of pleasure, bonding, and affection.

YAWN GAME

In this game, you yawned and recorded whether Charmander yawned in response. Yawning in dogs can be an indicator of stress, but we were measuring something different - social yawning. The rationale behind this game is that even as young children, we laugh when we see someone laughing, and we cry when we see someone in distress. Our ability to "catch" the emotions of others is called emotional contagion. A common form of emotional contagion is yawning. If you see, hear or even think about someone yawning, you will probably feel an irresistible urge to yawn.

Charmander did not yawn in response to your yawn, but this is not surprising. Although dogs are one of the few species besides humans that contagiously yawn, there is variation among dogs. Data from several research groups shows differing results, but our preliminary data shows that only 20% of dogs yawn contagiously.

Recent studies have shown that dogs only catch yawns from humans, not other dogs.

EYE CONTACT GAME

In this game, you timed how long Charmander held your eye contact. Before babies can hug or speak, they use eye gaze to bond with their mothers. Research with dogs has shown that a similar phenomenon may happen with owners and dogs. Owners whose dogs stared at them for longer had significant increases in the hormone oxytocin. Oxytocin, also known as the "hug hormone," is related to feelings of bonding, pleasure and affection.

Judging by the extraordinary length of time Charmander spent gazing soulfully into your eyes, you probably often find him staring at you for no reason. You might wonder if Charmander is trying to tell you something, like he is hungry, needs to go to the bathroom or has an opinion on what to do over the weekend. But Charmander may not want or need anything - he may be just hugging you with his eyes.

Dogs can even be better than aspirin. Children in a hospital reported that their pain was four times less when they played with a dog than when they spent the same time relaxing.

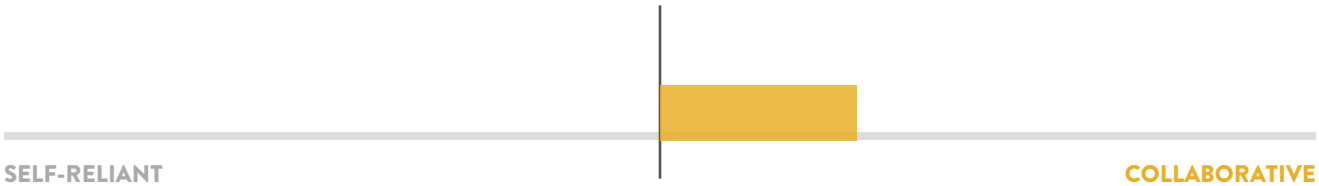
COMMUNICATION

Charmander's performance was highly collaborative. You probably notice that Charmander can read you like a book. Maybe he seems to know where you are going before you do. Maybe he can tell where to find a lost ball just by you glancing in the right direction. However his talent expresses itself, you can be sure that Charmander pays close attention to your gestures and what you are trying to communicate.

Charmander is remarkably like a human infant, who start reading communicative gestures at around nine months old. This ability is the foundation for all forms of culture and communication, including language.

Communication is the basis of many relationships, including our relationship with dogs. Charmander's behavior in the Communication games demonstrated exactly why the dog and human relationship is so special.

FIG.2



ARM POINTING

Although the pointing game may have seemed simple, the skills it requires are quite specialized. Dogs are one of the only animals that rely on human gestures - but even among dogs there is variation. Some dogs are more like infants and rely heavily on our communicative gestures, while other dogs are more like chimpanzees and try to solve problems on their own without our help. Charmander seems to use a mixed strategy. Because Charmander could see food in both places, he didn't really need your help, but occasionally chose to follow your gestures anyway.

By no means did Charmander do badly on this game; in fact, he developed quite a clever strategy. He developed a right or left side bias, meaning when he didn't know which side was correct, he went to one side every time. This is pretty clever, because 50% of the time he was correct.

FOOT POINTING

Just like in the hand pointing game, Charmander thought he had better cover all his bases by sometimes choosing the treat you pointed at and sometimes striking out on his own.

Charmander probably does not see you point with your foot very often, so this game was a way of seeing how flexibly Charmander can read new gestures. Giving animals a new version of a problem they have seen before is a common tactic used to reveal what strategy they are using to solve a problem.

Although Charmander did not follow you every time, he may have sensed your communicative intent, and would probably not need much practice to start using a range of new gestures.

Many dogs tend to ignore unintentional cues from humans. The most effective way to communicate is to call the dog's name, make eye contact, then point and look in the direction of the object.

CUNNING

It could be a tasty morsel left on a coffee table. Or a stuffed animal you've forbidden Charmander to chew up. As soon as you aren't paying attention, whatever Charmander has been lusting after mysteriously disappears. You might have wondered whether Charmander is incapable of learning a tiny word like 'No!'

On the contrary - Charmander has a keen mind and is not afraid to use it. The cunning games are based on research showing that many dogs use information about what you can and can't see when deciding how to behave - or, in some cases, misbehave.

Charmander is the perfect example of a dog using cognitive strategies effectively. He knew he should wait when you were watching, and that it was safe to swoop in and take the treat when you had your back turned or your eyes covered.

The fact that Charmander didn't wait as long to take the treat when your eyes were covered is impressive, since you looked almost exactly the same as when you were watching Charmander - the only difference was that you had your hands over your eyes. Many animals can tell the difference between your front and back, but even some primates (like lemurs) have difficulty detecting the subtle meaning of covering your eyes. Charmander's performance shows a sophisticated mind at work.

Interestingly, although chimpanzees would not do so well in the Communication dimension where gestures are cooperative, they do very well in games where they have to compete with or deceive a human. In fact, just like Charmander, they can tell what you can or can't see, and use this social information for their own ends.

Charmander's performance in the Communication dimension shows that he is excellent at using your social information to cooperate with you. His performance in the Cunning dimension shows that he is not above using this same social information to get his own way.

FIG.3

MEMORY

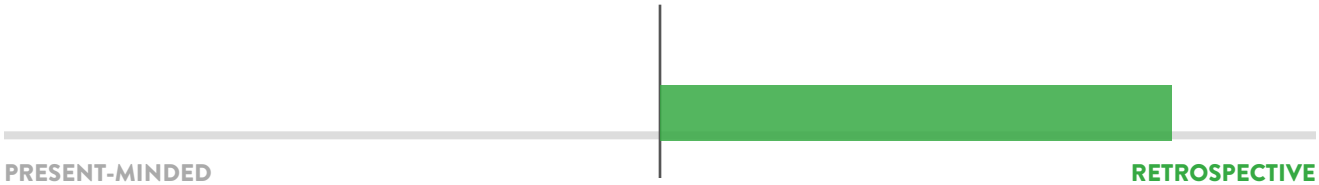
Charmander has an amazing working memory, which is a type of memory that allows your dog to keep information in mind for a few minutes and mentally manipulate it. This may sound simple, but working memory is crucial for any kind of problem-solving. In humans, working memory has been found to correlate with skills in learning, math, reading, and language. Researchers have even found some evidence that in children, working memory is more predictive of academic success than IQ.

In these memory games, Charmander had to understand that the treat continued to exist, even though it had disappeared from view. In the wild, this ability is essential. Animals have to keep track of mates, predators, and prey that might disappear momentarily behind a bush or a rock.

If Charmander is an avid fetch player, you've probably noticed that no stick or ball escapes for long. Charmander skillfully searching for an object that has briefly disappeared is a perfect example of him using his working memory to solve a problem.

For Charmander, out of sight is definitely not out of mind.

FIG.4



Most dogs can remember their mothers even if they haven't seen them for two years. However, they can't remember their brothers and sisters after a similar separation.

MEMORY VERSUS POINTING

Charmander was clearly trying hard to figure this one out. When he saw you hide the treat under one cup but point to the other cup, he wanted to use the information you were giving him, but he also knew what he saw. Rather than choose one strategy, he switched back and forth between the two, which shows impressive flexibility.

Despite being genetically similar, dogs and wolves make opposite choices in this game. This difference may be behind why we love dogs so much.

MEMORY VERSUS SMELL

Since dogs have such a keen sense of smell, you may have been surprised that after you switched the cups, Charmander used his memory over his sense of smell. He went to where he remembered seeing the treat hidden, rather than sniffing out where the treat was.

Because a dog's nose can sniff everything from narcotics to cancer, whenever we run a study where we hide a treat under one of two cups, the first question people always ask is, "Can't my dog just smell the food under the cup?" It was certainly our first question, but extensive research by half a dozen independent research groups has concluded that dogs do not rely on their sense of smell to find the food in these games.

If dogs were using smell, they would go directly to the cup with the hidden food. In fact, these studies found that dogs only choose the correct cup around half the time - which means they are guessing. Dogs do have an excellent sense of smell and can probably detect food if allowed to sniff both cups before choosing. But when you study their first choice, they cannot localize the food to a specific cup from a distance of six feet away.

One study found that to successfully track a person's direction of travel, tracking dogs need at least five sequential footsteps.

DELAYED CUP GAME

This game was a perfect demonstration of Charmander's excellent working memory. After you hid the treat Charmander had to retain the information for up to two and a half minutes before making a choice.

This skill comes in handy in the wild. Feral dogs tend to be endurance hunters, slowly wearing down their prey. During the chase, the prey may not always be in direct sight, and feral dogs have to remember where their prey was last seen and predict where they might reappear.

In these kinds of memory games, most cats quickly start to forget where an object is after only 10 seconds, while most dogs are still able to show success for up to 4 minutes.

REASONING

You can be very proud. Charmander just aced the most difficult games in the Assessment. Reasoning is the ability to solve a problem when you can't see the answer and have to imagine the solution. Unlike learning through trial and error, which doesn't necessarily require much understanding, reasoning requires that you truly understand the problem and the phenomena behind the problem.

A Sherlock Holmes among dogs, Charmander was able to solve the mystery by imagining different solutions and choosing the one that made the most sense. This leads to a lot of flexibility. He can solve a new version of a problem he has seen before, and spontaneously solve new problems he has never seen before. This is a sign of true genius.

FIG.5

Some studies show dogs are better at solving complex puzzles when humans are not around. When humans are around, dogs look to us for help rather than solving it themselves.

INFERENTIAL REASONING GAME

In this game, you presented Charmander with a problem and provided some, but not all of the information needed to solve it. When you showed Charmander the empty cup he had to infer that the treat must be in the other cup.

This is not as easy as it sounds because Charmander was also attracted to the empty cup, for the simple reason that you touched it. It looks like Charmander switched back and forth between strategies in this game, sometimes making an inference and choosing the correct cup, and sometimes relying on your social cues. Either way, this shows impressive flexibility.

PHYSICAL REASONING GAME

In this game, Charmander demonstrated an excellent understanding of a fundamental property of the physical world - that one solid object cannot pass through another solid object.

Charmander had to infer that a piece of paper on an angle meant that a treat was hidden behind it. This talent would come in handy in the wild, since animals often have to keep track of objects that become hidden. To find these objects, animals have to maintain a representation of the object and predict where it might appear.

Humans intuitively understand basic physical phenomena like the solidity principle - it looks like Charmander does too.

Even though many dogs may struggle with physical properties like gravity, this doesn't stop them from thoroughly enjoying a game of fetch.

NEXT STEPS

We hope you've enjoyed reading Charmander's Dognition Profile and gaining fresh perspective on how he sees the world!

You can fill your friends in on what you've discovered about Charmander very easily. Download and email or print Charmander's profile report any time from your portal.

Of course, these five cognitive dimensions are only part of the picture; the magic of your relationship with Charmander is how you spend your time together. To that end, a Dognition membership gives you on-going games and tips that will help provide even more insight into what makes Charmander tick and how to act on that information.

As a member, each month you'll receive:

- A new game that will shed light on another aspect of how Charmander thinks and sees the world.

- Tips and activities prepared for Charmander from canine training experts based on how Charmander sees the world.

- Exclusive offers from Dognition partners, including brands such as Kong and Purina ONE.

- New findings about how all dogs think and how Charmander's strategies compare.

At the same time, by contributing to Dognition you and Charmander are helping to build the world's knowledge about all dogs. This allows us to tackle fresh questions -- how do certain breeds think compared to others? To what extent do memory skills decline by age? Are female dogs any more empathic than male dogs? And many more!

What questions would you like answered? We'd love any feedback on that or anything else related to Dognition. Contact us any time at hello@dognition.com.

Woof!

The Dognition Team

See the World Through Your Dog's Eyes

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