



### **Novice Scent - Level 3: Course Syllabus**

Welcome to Novice Scent - level 3. Dogs were introduced to the game in Intro Scent through the use of boxes, containers, and tins paired with highly motivating rewards. In this class you will continue to build skills with your dog to confidently search and alert to source (birch and anise) with little to no help from you the handler while working with a number of unique environmental challenges.

Teaching your dog scent work is a process of tapping into natural skills and creating confidence. You and your dog will progress at your own pace as you learn. This class is designed to help you further develop the foundational skills and basic understanding of the sport whether you plan to continue for fun or move on to many of the available competitive venues. The level of difficulty will be tailored to you and your dog's evolving skill level as we work to keep it fun for all.

This class can be repeated as many times as necessary before moving up to Novice - level 3. After those skills have been mastered there are multiple levels to move to as you and your dog advance. We will be following the AKC scent program and learning the basics for each level they offer.

We will learn:

- Continuing to build an effective reinforcement system for scent work
- How to teach your dog to identify the target odors: birch and anise
- Your dog will learn duration when they have located an odor and stay in position (trained final response)
- How to build confidence and have fun searching for odor in a variety of search scenarios
- Correct handler skills with reading body language, using a long line, and keeping your dog focused

Please take a minute to read this syllabus before the first class as there is important information to note before we meet. **PLEASE NOTE THERE ARE NO DOGS THE FIRST DAY OF CLASS. WE WILL HAVE A REVIEW OF SKILLS LEARNED IN INTRO AND DISTRIBUTION OF SCENT KITS.**

**For your dog to be successful please bring the following items to each class:**

- Flat collar or harness and six-foot leash (please no flexi-leashes or shock collars in class).
- Treat pouch/bag (to help keep your hands free to train) and plenty of small soft treats (something they don't get every day to increase value) such as hot dogs, cheese, chicken, steak. If your dog prefers toy rewards find a good tug to use to reward in class along with treats
- Small mat or towel. \*\*\*Please note, there will be intermediate and large wire crates available onsite to use during class. If your dog requires a special size or you prefer to use your own crate please feel free to bring it to class.
- Something to keep them busy during turns (i.e. snuffle mat, bully stick/chew item, stuffed Kong treat, favorite toy) that are safe to be left in a crate with the dog. Please do not bring toys with squeakers in them, it is too distracting.

**Items you will need to practice outside of class:**

- Long line: ideally 12-15 feet to start with.
  - Using a line takes a bit of getting used to so starting with a shorter length will help you build skills
  - I strongly recommend Biothane as it does not get wet, dirty, or stretches
  - As you progress in the sport you may need a longer line but to begin a 12' - 15' line will work
- A source for lines are:
  - <https://a.co/d/bmXJrg3>
  - Wag Boy/ etsy: <https://www.etsy.com/shop/wagboy#about>
- Variety of tins, containers, and boxes. They do not need to be fancy or unused, but you should have an area to store the "hot" (used with source) and "cold" items so there is not cross contamination

**Things to remember:**

- If your dog is a confident pup, another dog in class might not be. They might not be as comfortable being approached by a strange person or dog. Please try to keep a safe distance between the dogs and be mindful of space when

entering and exiting the building and in tighter areas such as doorways. **We have a “no nose-to-nose greetings” policy in class to ensure all the pups have a great time in class.**

- Practice makes perfect. Plan time throughout the week to practice. Skill building requires repetition.
- Please make sure to give your pup a chance to potty before class. There are waste disposal areas for solid BAGGED waste if needed out front.
- Your dog should have access to water to keep their olfactory system working well and they should have some type of busy object ( Kong, Pupsicle, bully stick, etc) to work on when relaxing in a crate between turns.
- If you are unclear or struggling with a skill, please make sure that you text or email me for help. If I am with a client or in class, I will return your text as soon as possible. Emails are returned each evening when I return to my office. Please reserve phone calls for extreme training emergencies. Please text 734-368-6608 or email [info@pet-behavior.com](mailto:info@pet-behavior.com)
- Dogs will be crated or wait out of the search area
  - You must be mindful of tight spaces and other dogs moving through doorways
  - Dogs will often be overstimulated prior to a search
  - Water is always accessible while dogs are crated or waiting. Dry noses = diminished scenting ability
- Playing with other dogs is off limits during class
- Boxes, containers and scent tins are the most common items used for searches, although training will be generalized to a variety of objects at this level
- Use of rewards – as always in training, we can encourage and reward our dogs with the use of highly desirable rewards (food and tug games are high on the list) and LOTS of verbal praise after a find

If you would like instructional videos on how to do some of the exercises we will learn in class please visit my website at <http://www.pet-behavior.com> On the students page you will need to log in with a password, which is **dognerd**.

### **NOVICE SCENT- LEVEL 3**

The canine olfactory system is one of your dog's greatest assets. Scentwork is:

- Good for dogs that are nervous, anxious, high energy, young or old
- A way to form a greater bond with you and your dog with searching and scent games
- Adaptable to almost every environment and can be done for fun or as a competition

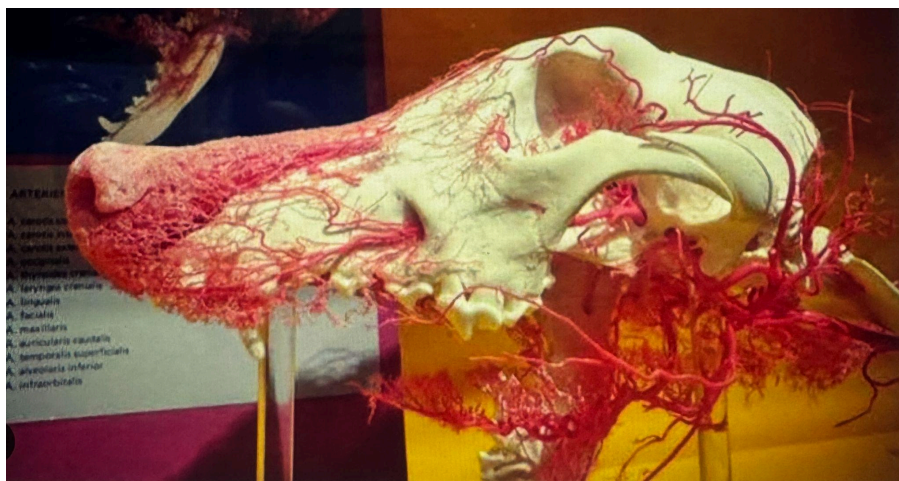
Depending on the breed, age, and health history, a dog's sense of smell is between 10,000 and 100,000 times better than our own.

They can detect a specific substance in a solution when it's been diluted so much that it only makes up a trillionth of the mixture. As well as being able to find the source of a smell, dogs can also obtain detailed information through scent. The scent from a canine's anal gland can tell other dogs about their age, sex, health and even their diet; it's why they sniff each other when they first meet. (NOVA 10/2012)

Dogs are used in a variety of situations that require the ability to detect minute particles of scent:

- Find missing persons (search and rescue/ live), locate deceased individuals (search and rescue/ cadaver)
- Find individuals evading the police
- Detect medical conditions (allergies, cancer, epilepsy, diabetes, migraines, anxiety, etc)
- Detect narcotics, illegal substances, bombs, gun powder, and other explosives
- Detect items for customs and immigration (produce, large sums of money, electronics)
- Detect and locate vermin, infestations, and biological dangers (bed bugs, termites, mold, etc)
- Find lost/missing pets
- Find organic items (endangered species, truffles, plants, etc)

Let's Compare	Human	Dog
Size of turbinates	Size of a postage stamp	Size of a sheet of paper
# of scent receptors	~ 5 million	~300 million
Olfactory bulb size	5-6 mm	10-12 mm
% of brain dedicated to scent	~ 1%	~ 40%
# of recognizable scents	~ 4,000.00	~ 100,000



[www.caninescience.co.uk](http://www.caninescience.co.uk)

In proportion to their head, dogs have very large noses (most breeds) which contain an infrastructure of airway and scent passages. Inside the nasal passages, the dog has layered, folded tissue called turbinates, which are scent-detecting cells and nerve receptors leading to the brain and because they are folded, they increase the surface area of the smell receptors.

But how do dogs actually do it? With a miraculous system of organs, pathways, air flow, pheromones, dedicated brain centers and nerves that work in unison to allow them to find, process, and locate minute traces of scent. Let's start with the physiology and break it down.

- Dogs can use their nostrils independently
  - New smells enter the nose and it splits into two different flow paths, one for olfaction (scent) and one for respiration
  - Processed smells go out the side slits as they exhale allowing a constant flow of scent
  - This allows them to locate the direction of odor because they nostrils can be used independently
  - Olfactory receptors within the tissue that lines the turbinates distinguish odor molecules and dispatch electrical impulses to the brain for analysis
  - Dogs can wiggle their nostrils independently
- Dogs also have a secondary olfactory system located in the bottom of a dog's nasal passage
  - The vomeronasal organ, also known as Jacobson's organ
    - Picks up pheromones, the chemicals unique to each animal species that advertise mating readiness and other sex-related details
    - The pheromone molecules that the organ detects—and their analysis by the brain—do not get mixed up with odor molecules or their analysis, because the organ has its own nerves leading to a part of the brain devoted entirely to interpreting its signals

We must also understand what the kinetic theory of matter is important to the process too. Using their unique and amazing olfactory system, dogs must work their surroundings to reach the source of any odor, which is in simple terms, matter. All matter is made of molecules and atoms which are constantly in motion so when the temperature rises it causes the particles to speed up, increasing the energy of the matter. The same applies to a decrease in temperature, just in reverse. The speed of the matter and the environment it is in all play into how the entire scent work picture looks to the dog. We will be teaching the dog to use all their skills to work scent problems in their environment.

So how do we solve scent problems as a team? Your job will be to help your dog as they search with as little guidance as possible and reward them when they find the source. We will work on dogs learning to work independently, be dedicated to source once it is found, and present them with training scenarios that will strengthen their skills (and yours).

Many types of scent training systems rely on pairing odor with treats. We all acknowledge the dog (most of them) will always choose treats when offered. However, odor, or source as it is sometimes referred to, is often lost in the layers of the game and is not the primary component in the dog's view. It gets overshadowed if your dog is very food or toy motivated as they are focused on the reward and not the predictor (source) that comes before the reward.

When odor (source) is perceived first it then signals the dog the reward will be coming. Often the overlap of the container/box, the handler's hand, the lure (if using food to lure to the source), is in the forefront and does not leave the dog with a clear picture of the game. And yes the items or process that overshadows the source are faded out (i.e. handler no longer needs to lure the dog to source), but if you start with odor as the primary element your dog does not have to sort out all the pieces and will always keep source as the primary element.

Odor is what pays. Odor predicts reward. So using a system that enforces the process of odor then reward also allows you to reward dedication to source (they will wait longer at source before the reward), eliminate false alerts, build confidence in the dog, and allows the dog to work in the presence of distractions while remaining true to source.

I am also not a fan of starting your dog's scent training with a "cocktail" of multiple odors. Different essential oils present with a different profile, which includes its overall strength out of the bottle. Birch can be very overwhelming for many dogs, and it is often the odor most used starting scent. For this reason, I choose to not pair it with other odors and add them down the road once the dog understands the scent game. That way the dog is learning each odor independently and, in my opinion, resulting in a clearer picture for the dog of what we are asking them to do.

#### **Week One- My dog has one job, easy right?**

- Review how to prepare, store, and replace scent
- Discussion of range of scent
  - New, aged, and residual source
  - Avoid using the same amount of scent as your training progresses
- Discuss what are your teams strengths and weakness
- Value of odor components- the value the dog places on the parts of a search
  - Odor recognition- behavior change in the presence of target odor
  - Hunting behavior- actively searches to find the target odor
  - Sourcing- stays with the problem and works until the target odor is found
- Search components
  - Communication between handler and dog
  - Odor obedience
  - Hunting behavior
  - Value of odor

- When a sniff is not a sniff
  - o Not all sniffing is the same
    - Target odor- dedicated sniffing with committed body language
      - Nose licking, pace changes, head snap, closed mouth searching, guppy mouth
    - Pest odor- pests in wall, nests, outdoor issues with prey smells
      - Appear to be looking and listening, may dig to gain access
    - Dog communication odors- odor left behind by other dogs
      - Paw pads, drool, fur, pheromones
      - Message left behind like a bulletin board, some are good, some are bad
    - Displacement behavior/sniffing
      - Yawn, lip licking, moving slow, itching, genital sniffing, nose stuck on object
      - Lack confidence in space, too much pressure, dog gets stuck and not working
- How the environment plays into the search and why it wins sometimes
  - o Sounds, size of space, previous exposure and level of training
- Review environmental assessment and tools to use
  - o Tools available in the room and phone apps to use outside of class
    - Scentwork log book- free and premium version available to download from their site
      - [www.dogsnoseknow.com](http://www.dogsnoseknow.com)
- Reading the room- how is the air around you moving (smoke demonstration)

**Homework:** please take a moment to read this syllabus in its entirety if you have not already, as well as the handouts provided with your welcome email. Start to gather your scent supplies to use outside of class. Refresh training with reverse pairing strategy, move to pairing with a small bit of duration, then generalize it around the house.

#### **Week Two- skill review and warm-up** simple searches

- Two sources (birch & anise)
  - o Change up sessions to include both source odors **BUT NOT IN THE SAME SESSION**
- Discuss AKC scent program and set up for novice
- The environment
  - o Air movement in the room
  - o Hot air, cold air, doors/windows, and human/dog movement in the search area
  - o Doors opening and closing
- Search patterns
  - o Approaching from different directions
    - Always keep the dog between you and the boxes, and work in two different directions
  - o Mental list of areas searched, areas missed, and areas to revisit
  - o The zig zag search- working the edges of plume back to source
    - Good patterns = close to source
- Discussion of how to know if your dog's indication is working
- Your job
  - o DON'T NAG YOUR DOG
  - o Leash handling
    - Long lines and off leash searches
    - Looping strategy
    - Keep moving if you are leading the dog, do NOT stop near the source, move past and return to reward
  - o Body language
  - o Communication
    - Once you cue the "search" don't talk unless you are redirecting or rewarding
  - o Pressure points
    - Corners and proximity to dog
- Remember terminology for the search- it is important for you and your dog!

- o "Search" or "find it" - the start cue
- o "Get to work" - If the dog is distracted
- o "Yes", "good", or other verbal mark- once your dog finds source
- o "Find another" - after finding a source if you are still searching
- o "Too far" - if the dog moves outside the search area
- o "Alert" when your dog indicates
- o "All done" or "Finished" - ending the search
- Duration drills
  - o Using odor training boxes to create duration and commitment to odor
  - o Boxes with hole placement to allow for duration and commitment
- Keeping track of progress
  - o Keeping a training log of searches to help review overall progress
  - o Make sure to note day, time, location, environmental challenges, type of search, and source used
  - o Comment on the overall search and note items to work on moving forward

**Homework:** set up box search at home, do no more than three repetitions in one session. Remember to crate or remove the dog from the room when resetting for the next search and allow 5-10 minutes for scent to pool. KEEP YOUR HOT ITEMS HOT AND YOUR COLD ITEMS COLD! Label everything to avoid confusing your dog.

### **Week Three-** room searches

- Simple searches
  - o Boxes
  - o Containers
  - o Dog will search a defined search area
  - o Your cue, posture, and how to move with your dog during a search
  - o Looping to bring them back into position and restart the search
- Criteria for room searches
  - o Dog will search a room with source in the open then work to find hidden sources
  - o How to encourage your dog to work independently
  - o How to keep them engaged if they become distracted
- Discussion of how a room search is different than a box search
  - o Multiple heights
  - o Competing odors
  - o Dog hasty search then detail search
- Blind searches- handler and dog will not know where the source is prior to starting the search
  - o Remember body language
  - o Don't be chatty!
  - o Let the dog work the room and problem solve
- **Remember:** No obedience cues once you give the search cue - silence is ideal. No helping the dog find the scent - no leaning, eye darting glances or breath holding! Continue to use reverse pairing drills intermittently to help build a solid TFR.

**Homework:** room search with only one source search in a distraction free room. Practice no more than twice a day, every 2nd or 3rd day. If the dog disengages then stop the exercise and pick it up later. Leave the room between the searches and let them play for ten to fifteen minutes before the second search. Remember to alternate between odors.

### **Week Four-** bags and random containers

- Backpack search
- Shopping bag search
- Discuss residual scent
- Discuss when to start varying the concentration of training source

- Continue to work on dedication to source and building a strong indication

**Homework:** simple with only one source search in a distraction free room. Practice no more than twice a day, every 2nd or 3rd day. If the dog disengages then stop the exercise and pick it up later. Leave the room between the searches and let them play for ten to fifteen minutes before the second search. On the days in between do simple reverse pairing exercise.

**Weeks Five-** Performing an outdoor search

- Types of outdoor searches
  - o Vehicle
  - o Tracking
  - o Buried
  - o Water
- How to assess the search area BEFORE the search
  - o Wind, temperature, obstacles, possible hazards
  - o Determine best direction to begin in
- Supporting your dog
  - o During the search
  - o After the search
- Using video to help strengthen your searches

**Weeks Six-** Dealers choice, surprise searches!

## **Scent Work Glossary of Terms We Will Use**

**Air Movement-** different patterns of air movement within a search area

**Air scenting-** behavior dogs use to move towards the target odor; head is usually up

**“Alert”-** word called out when the handler believes the dog has found the source

**Active alert-** a behavior that a dog gives when it's trying to get to source

**Aging -** the time between the source placement and the search

**Aggressive alert -** dog is physically interacting with the source by biting, scratching, etc and disturbs the hide

**Aversive-** anything the dog finds undesirable or unpleasant

**Box-** item to place source or a distraction in for searching and may have source in it or may be empty

**Blind Search-** searching with no knowledge of where source is

**Blocking -** handler is blocking the dog from an area by their physical position

**Clear -** when the search team determines that the search is complete and there is no source present

**Cocktail -** a combination of two or more odors

**Cold -** search items (box, containers, etc) that have no trace of source odor on them

**Compulsion-** a dog training philosophy that uses negative reinforcement and positive punishment

**Container-** any item that is used in a search and may have source in it or may be empty

**Contamination -** used when the handler drops food in the search area, moves the source, or touch the source

**Convection currents-** A convection current happens when warm air rises, and cool air falls which then pushes the air into a circular pattern

**Cues-** an indicator or signal to the dog for a certain behavior that can be verbal, environmental, or physical

**Distraction-** any item or scent placed in the search area to redirect the dog's attention

**False alert-** when searching blind the handler indicates a find and it is inaccurate

**Finish -** once a search is complete the handler gives the cue “finish” to the judge

**Fringe -** when the dog indicates close the source but not at source

**Head snap -** dog makes a sudden change in direction when they locate the source trail

**Hide -** the source odor placed in a container and hidden within the search area

**Hot -** anything containing the source odor

**Indication-** a behavior the dog gives that tells the handler they have found the source

**Jacobson's Organ** (also known as the vomeronasal organ)- located in the nasal cavity opening into the roof of the mouth behind the upper incisors. Serves as a secondary olfactory system for chemical communication

**Marker-** verbal or physical behavior given by the handler to let the dog know they are right

**Olfactory -** complex system the dog uses to detect odors in their environment

**Pairing-**process of putting two things together that communicates to the dog item A predicts item B

**Passive alert-**an alert where the dog stops and passively tells the handler they have found source (ex. sit or down)

**Pheromones-**chemicals that animals and humans release to communicate with each other

**Pooling odor-** when scent collects in an area without a clear direction or flow, causing issues with false alerts, as the pooled odor may have a higher concentration than the source

**Redirection-** teaching dogs to "do this, not that" by redirecting their attention away from distractions and back to the handler.

**Reinforcement-** anything (toy, food, game, affection) the dog finds rewarding and positive

**Scent Cone-** scent spreads out in all directions in a shape that resembles an ice cream cone

**Scent pools-** areas where scent has collected

**Scent trails-** a line of scent the dog follows to the source

**Source-** the location of the scent where all the scent trails, pools, and cones drift from

**Tins-** container for containing source odor; can be vented or closed and often have magnets on them for elevated hides

**Trained Final Response (TFR)-** your dog's indication at source. Can be passive or aggressive style.

**Turbinates-** soft tissue branches in the canine nasal cavity that help warm and moisten incoming air. They are made up of thin bones called maxillo-turbinates that are lined with epithelium, creating a large surface area for the incoming air to pass over

**Wind effect-** wind can also create a wind effect, where air continues to travel inside a building in the direction of the outside wind

### **Key things to remember about essential oils**

- Many essential oils are harmful or toxic if ingested. Please store your oils in an area that your dog does not have any access to.
  - Sweet birch, clove, and anise are toxic to pets
    - These oils should never be used in a diffuser that will have pets in the room
- Some oils will solidify in cooler temperatures. If this happens, set the entire bottle in a container of warm water for a short time until it returns to a liquid.
- Oils should be stored in a cool, dry place in their original glass containers. Amber vials are better for storage as they preserve the oil better by restricting light.
- Buy your oils from a reputable business so you are certain of the quality and purity.
  - Leerburg <https://leerburg.com/noseworkequip.htm?loc=sportMegaMenu>
  - K9 Nosework Supply <https://k9nwsources.com/shop/>
- Replace your oils once a year. Oils have a tendency to break down depending on how they are stored and the quality. Oil can also go rancid which will greatly impact your dog's training, so please be careful with storage. Date all your oils when purchased, not opened, as they will have a distinct shelf life.
- Clean your vessels and tins about every three to six months using Dawn dish soap and hot water. Rinse very, very well so there is no soap residue to add to the odor profile.
- Always treat handling oils like handling wet paint, it will get everywhere! Use disposable gloves to always handle your vessels and dispose of all used gloves and Q-tips in an outside can the dog does not have access too.
- Never leave the dropper in the oil vial/dram as the oil will degrade and break down the plastic and silicone impacting the scent of the oil itself. Use the dropper and store it outside the bottle with the original cap back on the bottle.
- When using tins and vessels with magnets, the magnets should be INSIDE the vessel, not outside, in case your dog swallows it. If it is inside the vessel it will likely pass through the dog's GI. If it is outside, it will likely not and necessitate a veterinary visit for removal.
- Your odor preparation kit should include these basics
  - Gloves
  - Tweezers or hemostats
  - Q-tips cut in half
  - Tins, vessels, hide materials
  - Oil(s) of choice with dropper and glass container to keep it in
  - Odor safe box to store all hot (source) items in

### **Preparing odor**

Preparing your hides should be done in such a way that you are careful not to contaminate the work area and objects you will be touching with the oils. Gloves are a MUST!

See my video about Q-tip preparation here <https://youtu.be/PgR9jT6bWOg>

See my video about odor prep box set and storage here <https://youtu.be/KAk7k-VXiHE>

See my video about reverse pairing here <https://youtu.be/9C3laawwJvU>



### **Resources for your training**

#### Organizations:

C-WAGS: <https://c-wags.org/>

National Association of Canine Scent Work: <https://www.nacsw.net/>

American Kennel Club: <https://www.akc.org/sports/akc-scent-work/>

United Kennel Club: <https://www.ukcdogs.com/nosework>

#### Supplies:

K9 NWSource: <https://k9nwsources.com/akc-scentwork-supplies-essential-oils-scented-qs-kits/>

All Good Dogs: <http://www.allgooddogs.biz/products>

Paws 4 Fun: <http://www.paws4fun.net/>

J & J Dog Supplies: <https://www.jjdog.com/nosework-kit-essential-oils-scent-kit>

Leerburg: <https://www.jjdog.com/nosework-kit-essential-oils-scent-kit>

## Olfactory Epithelium

A catacomb at the back of the nasal passage houses sensory receptors.

<i>Humans</i>	<i>Dogs</i>
<b>1 in<sup>2</sup></b>	<b>30 in<sup>2</sup></b>
surface area	surface area
<b>~6</b>	<b>~250</b>
million receptors	million receptors



## Olfactory Bulb

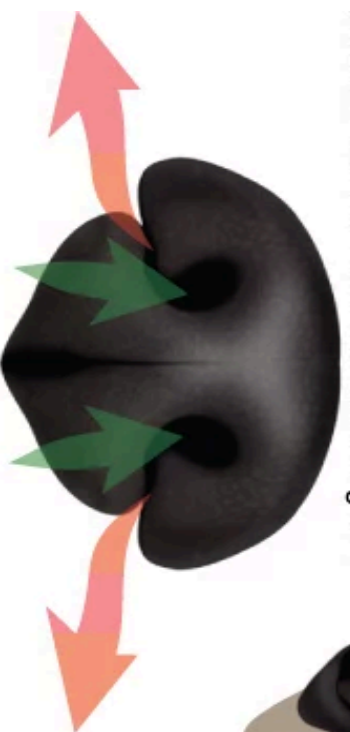
A brain region that processes signals from the olfactory epithelium. Canine olfactory bulbs are **3 times larger** than those of humans, even though their brains are **10 times smaller**.

## Vomeronasal Organ

A sensory organ that detects pheromones picked up by a dog's wet nose.

## Nostrils

Air is exhaled through the side slits, so it doesn't dilute the scent of incoming air.



## FROM THE AKC RULEBOOK FOR SCENT TRIALS

**Section 2. Odors.** The target odors shall be Birch (*Betula Lenta*), Anise (*Pimpinella Anisum*), Clove (*Eugenia caryophyllata*), and Cypress (*Cupressus sempervirens*) .

Novice classes shall utilize Birch only. Advanced classes may utilize Birch and/or Anise. Excellent classes may utilize Birch and/or Anise and/or Clove. Master Classes may utilize Birch and/or Anise and/or Clove and/or Cypress

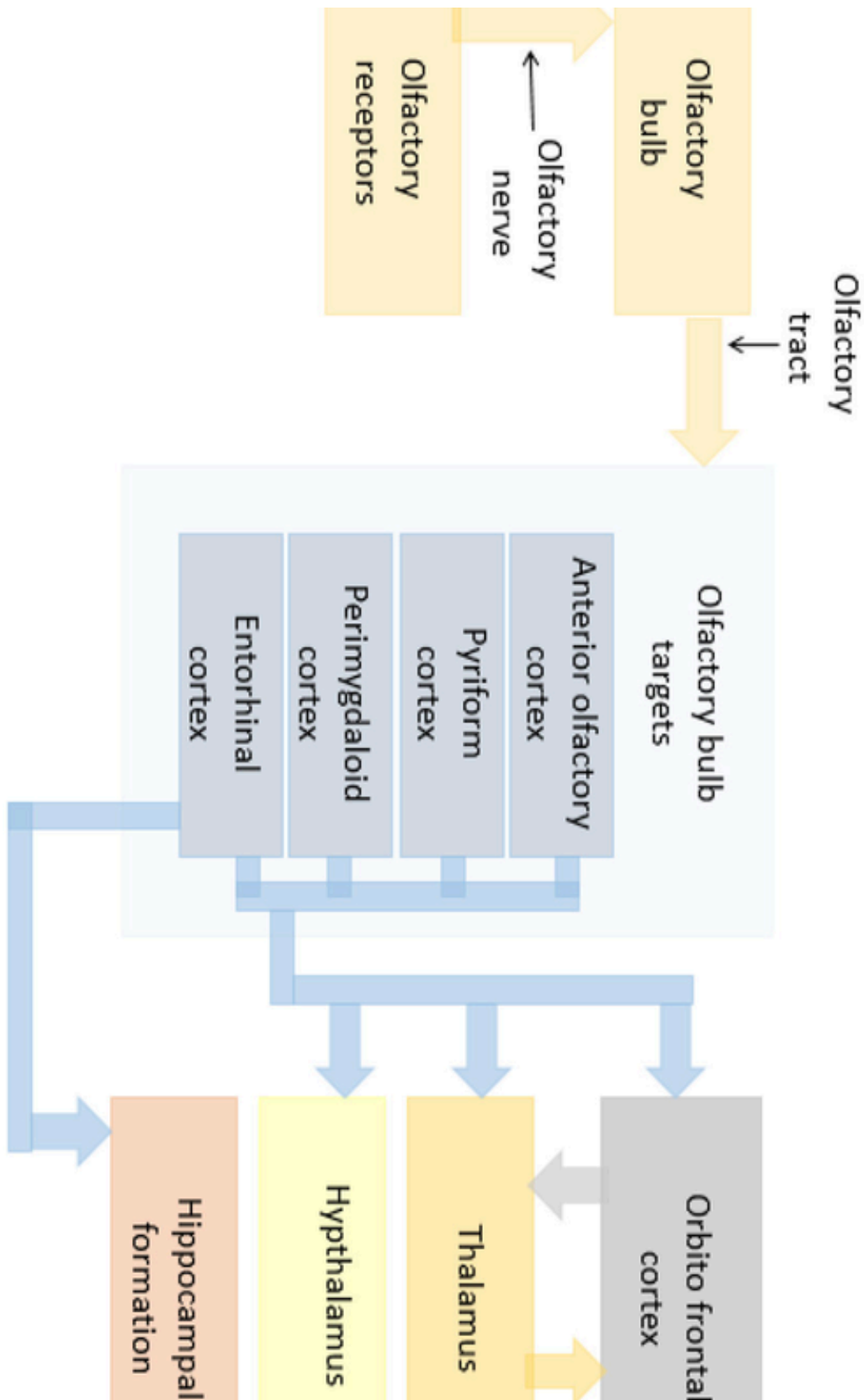
### Container

Novice Class: Ten identical cardboard box containers (see Chapter 5, Section 11 above for size requirements) are laid out on the floor of the search area. The boxes are arranged in two rows of five containers . Each box must be at least 12" apart, and each row must be at least 36" apart. The search area must be at least 250 and no more than 400 square feet . One of the containers holds the target odor of Birch. The dog has two minutes to locate the container with the target scent and communicate the find to its handler. The handler must call "Alert" when the dog indicates the find. The Container Novice Class is open to all dogs .

Container Advanced Class: Fifteen containers of various sizes and types are laid out on the floor of the search area. The containers may be arranged in three rows of five containers, in a circle, or in a "U" formation. Each container must be at least 12" apart, and if rows are used, each row must be at least 36" apart. The search area must be at least 400 and no more than 600 square feet. Two of the containers hold the target odor, which may be Birch or Anise (each scent vessel may contain the same odor, or one may contain Birch and the other may contain Anise). One non-food distraction will be placed in the search area. The distraction may be in a container or loose in the search area. If in a container, it may NOT be in the same container as the odor. The dog has two minutes to locate the containers with the target scents and communicate the finds to its handler. The handler must call "Alert" when the dog indicates each find. After the second "Alert" call, the handler must call "Finish" to indicate that all hides have been found and to stop the time. The Container Advanced Class is open to dogs who have acquired the Container Novice (SCN) title .

### The Container Element

	Novice	Advanced	Excellent	Master
Scent	Birch	Birch and/or Anise	Birch and/or Anise and/or Clove	Birch and/or Anise and/or Clove and/or Cypress
# of Containers	10	15	20	20
Type of Containers	Identical cardboard boxes	Various size and type	Various size and type	Various size and type
Arrangement	2 rows of 5 containers	3 rows of 5 containers, circle, or "U" formation	4 rows of 5 containers, circle, or "U" formation	4 rows of 5 containers, circle, or "U" formation
Minimum Distance b/w Containers	12" in all directions 36" between rows	12" in all directions If rows are used, 36" between rows	12" in all directions If rows are used, 36" between rows	12" in all directions If rows are used, 36" between rows
# of Hides	1 (Known)	2 (Known)	3 (Known)	1-3 (Unknown)
Time Limit	2 minutes	2 minutes	3 minutes	4 minutes
Distractions	None	1 non-food distraction	2- non-food, food, auditory, or visual	3- non-food, food, auditory, visual, human, or mimic
Required calls	Alert only	2 Alert calls and Finish	3 Alert calls and Finish	Alert(s) and Finish
Size of Search Area	250-400 sq ft	400-600 sq ft	600-800 sq ft	600-800 sq ft



Ramalhargi, Bhavitha & Pustovyy, Oleg & Beyers, Ronald & Wildey, Chester & Morrison, Edward & Salibi, Nouha & Katz, Jeffrey & Denney, Thomas & Vodyanoy, Vitaly & Deshpande, Gopikrishna. (2018). Zinc Nanoparticles Enhance Brain Connectivity in the Canine Olfactory Network: Evidence From an fMRI Study in Unrestrained Awake Dogs. *Frontiers in Veterinary Science*. 5. 127. 10.3389/fvets.2018.00127.