Clinical Pathology Mentorship



VM 22700

Criteria Logbook Fall 2025

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ALL SKILLS MUST BE DEMONSTRATED ON LIVE ANIMALS. Models or cadavers are not acceptable.

Student Information

Contact Information

Questions regarding the overall Clinical Mentorship process should be directed to-

Jennifer Smith, BS, RVT, LATG

Clinical Mentorship Coordinator

jpope@purdue.edu

<u>Questions regarding this mentorship (tasks, due dates, etc.) should be directed to the instructor for this mentorship course.</u>

Animal Use Guidelines

The student shall abide by the following guidelines when performing mentorship tasks:

- 1. All animals used for demonstration of mentorship skills must be appropriated restrained by another person, for the safety of the patient and the student.
- 2. A mentorship task may be performed only once on a single animal.
- 3. A student may perform a maximum of ten (10) minimally invasive tasks (denoted by one asterisk) on a single animal within a 24-hour period.
- 4. A student may perform a maximum of three (3) moderately invasive tasks (denoted by two asterisks) on a single animal within a 24-hour period.
- 5. When combining tasks, a student may perform a maximum of five (5) minimally and three (3) moderately invasive tasks on a single animal within a 24-hour period.
- 6. Tasks denoted with no asterisks do not involve live animal use.

For example, a student might perform the following tasks on an animal in a single day-

- Restrain a dog in sternal recumbency*
- Restrain a dog in lateral recumbency*
- Restrain a dog for cephalic venipuncture*
- Restrain a dog for saphenous venipuncture*
- Restrain a dog for jugular venipuncture*
- Administer subcutaneous injection**
- Administer intramuscular injection**
- Intravenous cephalic injection canine**

Failure to comply with the Animal Use Guidelines may result in failure of the Clinical Mentorship.

Ensuring the welfare and safety of animals during handling and restraint is paramount. Proper techniques must be employed to minimize stress and prevent injury. This involves understanding the normal behavior of the animal, using humane methods, and applying the least amount of restraint necessary to achieve the desired outcome. Training in these techniques is essential for all personnel involved in animal care. The use of physical, mechanical, or pharmaceutical restraints should be carefully considered and monitored to ensure they are appropriate and effective.

With this in mind, the student is expected to utilize Fear Free® techniques for animal handling and restraint, as well as ensure that all patients are handled and restrained appropriately when they perform skills. Failure to do so will result in consequences ranging from loss of points or repeating the task, up to failure of the course and / or dismissal from the program.

By adhering to these principles, we can promote the health and well-being of animals while ensuring a safe environment for both patients and veterinary personnel.

Rabies Vaccination Requirement

When working with live animals in this mentorship, all students must follow the Rabies Policy outlined in the syllabus.

- Students who are not rabies-vaccinated are prohibited from handling unvaccinated companion animals or farm animals.
- Unvaccinated students must submit proof of rabies vaccination for every patient used in their tasks, showing patient name, vaccine date, and next due date.
- Students who are rabies-vaccinated may handle unvaccinated animals. A student is considered vaccinated 14 days after completing the rabies vaccine series

For full details, refer to the Rabies Policy in the course syllabus.

Selecting the Clinical Mentorship Site – Facility Requirements

You must visit the Clinical Mentorship Site and determine if the following supplies and equipment are readily available to you for use during your Clinical Mentorship. The mentorship supervisor will verify the availability of required items by completing the Mentorship and Facility Requirement Agreement.

The veterinary care facility must be equipped with the following: Microscope and Related Supplies

- Binocular
- 10X oculars
- Objectives
- 10X (low power)
- 40-50X (high dry power)
- 100X (oil immersion)
- Mechanical stage
- Functional and properly aligned condenser and diaphragm
- Light source of at least 20 watts
- Immersion oil
- Lens paper
- Lens cleaning solution

*NOTE: All parts of the microscope should be clean, functional, properly adjusted and aligned. We highly recommend, if the microscope has not been professionally serviced within the last six (6) months and/or is in a questionable state of repair, it be professionally serviced. Microscopes which are in a state of disrepair, out of adjustment, or dirty internally or externally will create difficulties for the student in providing accurate results.

The veterinary care facility must be equipped with the following: Urinalysis Instruments and Supplies

- Centrifuge appropriate for tubes and centrifuging urine
- Conical centrifuge tubes
- Urine chemistry test strips (minimum tests: pH, glucose, ketones, bilirubin, blood, protein)
- Frosted or non frosted end glass microscope slides
- Coverslips
- Stain (optional) NMB or Sedi (type) stain
- Disposable pipettes
- Refractometer (with total protein and specific gravity scales)
- Test tube rack

Selecting the Clinical Mentorship Site – Facility Requirements (continued)

The veterinary care facility must be equipped with the following: Hematology Instruments and Supplies

- Automated hematology analyzer with appropriate supplies capable of providing:
 - o Red blood cell counts
 - o White blood cell counts + individual cell or composite differential
 - Platelet counts
 - Hematocrit
 - Hemoglobin (may be stand-alone instrument or a function of the automated hematology or chemistry analyzer)
- Microhematocrit (PCV) centrifuge
- Microhematocrit (PCV) tubes, plain
- Microhematocrit tube clay sealant
- Microhematocrit reader
- Refractometer (with total protein and specific gravity scales)
- Frosted or non-frosted end glass microscope slides
- Quick stain (ex. Diff-Quik®)
- EDTA blood collection tubes (appropriate for patient size)
- Laboratory wipes
- Small, plain test tubes
- Hand tally (single-digit and/or multi-key differential counter) optional

Selecting the Clinical Mentorship Site – Facility Requirements (continued)

The veterinary care facility must be equipped with the following: Clinical Chemistry Instruments and Supplies

- Automated chemistry analyzer with appropriate supplies capable of providing:
 - o BUN, glucose, and common enzymes
- Serum blood collection tubes (appropriate for patient size)
- Anticoagulated blood collection tubes (appropriate for patient size)
- Centrifuge appropriate for the serum and plasma blood collection tubes

The veterinary care facility must be equipped with the following: Coagulation Instruments and Supplies

- Equipment, supplies and materials to perform <u>ONE</u> of the following tests:
 - o Buccal bleeding time
 - Lancet
 - Timer
 - Filter or blotting paper
 - Roll gauze
 - Activated clotting time (ACT) (automated OR ACT tube test)
 - Automated ACT or ACT test tubes (White Top Tubes WTT acceptable)
 - Thermostatically-controlled water bath or heating block OR Digital thermometer
 - Timer
 - Automated Prothrombin time (PT)
 - Automated Activated Partial Thromboplastin Time (APTT)
 - Fibrinogen Assay (automated OR heat precipitation)
 - Automated fibrinogen and/or thermostatically controlled heating block or water bath
 - Refractometer
 - Timer
 - Microhematocrit tube centrifuge
 - Microhematocrit tubes
 - Microhematocrit tube sealant

Selecting the Clinical Mentorship Site – Facility Requirements (continued)

The veterinary care facility must be equipped with the following: Crossmatch Instruments and Supplies

- Commercially available <u>crossmatch</u> kit (ex. RapidVet®-H companion animal crossmatch or Alvedia crossmatch must be a crossmatch kit, not a "blood type" kit)
 OR
- Traditional crossmatch
 - o Phosphate-buffered saline (PBS, 0.9% Sodium Chloride)
 - o Plastic, conical bottom, 12-mL tubes
 - o EDTA blood collection tubes
 - Plain, red-top tubes (Note: serum separator tubes are not appropriate for this procedure)
 - Centrifuge
 - Disposable pipettes
 - Frosted or non frosted end glass microscope slides
 - Coverslips
 - Microscope (see previous requirements)
 - o Thermostatically-controlled heating block or water bath (optional)

The veterinary care facility must be equipped with the following: Cytology Instruments and Supplies

- Sterile, 6" cotton-tip swabs
- Non-sterile, 6" cotton-tip swabs
- Quick Stain (ex. Diff-Quik®)
- Frosted or non frosted end glass microscope slides
- Sterile saline 0.9%
- Sterile vaginal speculum (optional; if used, the speculum must be the appropriate size for the patient)
- Sterile lubricant
- Mild non-irritating soap for vaginal cytology patient prep (optional)

Information for Patient Requirements

It is essential that the student perform the designated tasks on the same sample, when specified, so that related values may be verified when the submission is evaluated.

- Urinalysis: one patient, any species
- Hematology: one patient, any species
- Normal differential: one <u>healthy</u> patient, any species
- Clinical chemistry: one patient, any species
- Abnormal differential: Written Report
- Coagulation: appropriate patient for the test performed
- Crossmatch: one canine donor and one canine recipient
- Vaginal cytology: one female canine patient (intact female preferred)
- Ear cytology: one patient, any species, with ear pathology.
 - o Do NOT use patients that have been treated in the past 48 hours with topical ear medication

Introduction to Essential Tasks and Criteria

Before You Begin Any Task: Mandatory Preparation Requirements

You must meet the following conditions before recording or attempting any task. *Failure to follow these instructions exactly will result in your submission being rejected or scored as a zero.*

1. Video Equipment Requirements

- You must have a working camera or video recording device (phone, tablet, or camera) with enough memory and battery to record the entire task without stopping.
- You must have another person available to operate the camera.
 - Self-recording is NOT allowed.
 - Do not use a tripod, selfie stick, mirror, head mount, or set your phone down to record yourself.
- The person recording should be able to follow your movements so everything is clear and visible in the video.
- Record in a quiet area with good lighting.
 - Make sure there is no loud background noise and that you and your task are easy to see and hear.

2. Mentor Supervision

- Your approved mentor must be physically present and actively supervising the entire task from start to finish.
- The mentor must appear at the beginning of the video and clearly state:
 - Their full name
 - Their credentials
 - That they are supervising the task.
- The mentor may NOT be the person operating the camera. A third person is required.

3. Know the Task Requirements

- o Carefully read and understand the following sections for each task before beginning:
 - Goa
 - Task Description
 - Required materials
 - Criteria for Completion
 - Materials to Be Submitted for Evaluation and Verification
- You are responsible for knowing what is expected and for ensuring every requirement is clearly demonstrated and documented
 - If anything is unclear, contact your instructor before you begin recording.

4. Equipment & Supply Preparation

- o Make sure all required equipment and materials are available before you begin.
- Gather and organize all materials and supplies in one central location so you don't have to stop midtask to look for something.
- Test all equipment (e.g. microscope, centrifuge, analyzers) in before recording to confirm that it works properly
- Pay close attention to specific documentation or images that must be submitted as part of your task.

5. Practice Requirements

- Before recording a task, students must complete the required number of practice attempts listed in the Logbook for that task.
- o Practice sessions may not be completed on the same day that the final video is recorded.
- Students are responsible for ensuring that all practice attempts are performed under appropriate supervision and documented if required.

RECORDING REQUIREMENTS

- o ALL videos MUST be recorded in horizontal (landscape) orientation.
- Your task video must be recorded in one continuous, unedited take.
 - Do not pause, crop, mute, or trim the video (unless specifically indicated).
- If you make a mistake during the task, KEEP GOING.
 - Do not stop the video or edit out the mistake.
 - Do not try to "explain" the mistake or fix it afterward in editing
- Use may your logbook as a guide to confirm that:
 - All required steps were performed
 - All criteria were met
 - Any item labeled as "CRITICAL" was completed and clearly shown
- If any CRITICAL criteria are missing, you will receive a zero and will need to re-record and resubmit the entire task.

6. Video Introduction Requirements

- o At the start of every video, you must state:
 - Your full name
 - The number and task name

- The date of the recording
- Your mentor's name and credentials
- o NOTE: If this introduction is missing, your video will be returned.

7. Use of Logbook, Textbooks, and Reference Materials

- You are allowed to refer to your logbook or a textbook/reference guide briefly during the task, but they should only be used as a guide.
- You should not be relying on printed materials to walk you through the task step-by-step during your recording
 - This is what your practice time is for.
- **Exception:** For certain tasks (such as crossmatch), you may use the instructions included in prepackaged commercial kits as needed to ensure proper execution of the procedure.

SUBMISSION REQUIREMENTS

8. Review Your Video Before Submitting

- o After recording, immediately watch the entire video.
- Use your logbook as a guide as you watch your video to confirm that:
 - All required steps were performed
 - All criteria were met
 - Any item labeled as (CRITICAL) was completed and clearly shown
- o If any *(CRITICAL)* criteria are missing, you will receive a zero and will need to re-record and resubmit the entire task.

9. Submitting Materials - All at Once, No Exceptions

- You must submit the video, completed task form, and any required supporting documentation (e.g., photos, test results, worksheets) at the same time.
- o Video and documents are correctly labeled with my name, task title and task number
 - (ie. LastName_FirstInitial_ Task 12_Ear Cytology)
- Do NOT submit your video first and send the form or documents later.
- Submissions that are incomplete or missing required components will be returned and scored as incomplete.

10. Permissions and Professionalism

- Make sure you have permission from the facility's owner or manager to complete and record the task
- Maintain a professional relationship with all staff, especially the veterinarian in charge. Their support is essential to a successful mentorship.

11. If You Don't Have Someone to Help You

- o If you are unable to find someone to record for you, your mentor is unavailable, or you cannot meet any of the above criteria, **contact your instructor before beginning**.
 - Any video that is self recorded will be automatically rejected
- o **Do not submit** any task that does not meet all criteria.

Task Submission Expectations (Read Carefully)

- o In an attempt to promote professional behavior and accountability, we are closely monitoring the number of task video resubmissions.
 - If we see that you're submitting multiple attempts without preparation and making errors, your instructor will contact you and possibly limit future attempts.
- We understand that mistakes happen and sometimes things get missed. However, in a professional setting like a real clinic you're expected to follow directions, review your feedback, and make improvements. Submitting sloppy or incomplete work multiple times is not acceptable.
- o If a task requires more than 3 submissions to be considered correct and complete:
 - You will be required to complete additional practice attempts before re-recording.
 - > The number of required practice sessions will be set by your instructor and depends on how complex the task is
 - Your resubmission will be delayed until practice is logged and confirmed
 - You will receive a points deduction for each additional attempt (as outlined in the syllabus)
- Continued issues may result in a warning and require a one on one meeting with your instructor or other academic consequences

AFTER PERFORMING EACH TASK

- 1. Label all items submitted so that the materials submitted for evaluation and validation at Purdue are identified as the student's submission.
- 2. Label all videos posted to Brightspace with the task number.
- 3. Submit all required materials by the deadlines listed in the course syllabus
 - See syllabus for exact late penalties.



1. VIDEO VERIFICATION OF REQUIRED EQUIPMENT AND SUPPLIES

Goal: Ensure that the student will have access to all equipment and supplies necessary to complete the skills in this course.

Description: The student will provide a narrated video showing equipment and supplies specific to this mentorship, to verify that required items are available to them and adequate for completion of tasks in their facility.

Criteria:

- The student introduced the video and showed their face clearly.
- The student walked through the facility and showed the following clearly:
 - VNDL-provided sign informing clients that students may be involved in patient care (it should be displayed in an area that is visible to clients). (CRITICAL)
 - Microscope (CRITICAL)
 - o Refractometer (with total protein and specific gravity scales) (CRITICAL)
 - Hold the refractometer up to the camera with the eyepiece directly in front of the lens.
 - Keep it steady for at least 5 seconds so the TP and SG scale inside is clearly visible on video.
 - o PCV card or circle reader (CRITICAL)
 - Centrifuge (CRITICAL)
 - Show the centrifuge(s) that will be used for the tasks in this course, including the microhematocrit centrifuge
 - Automated hematology analyzer, states make and model (CRITICAL)
 - Automated chemistry analyzer, states make and model (CRITICAL)

Live Narration Required: Yes

Continuous (unedited) Video Required: Yes

Number of Times Task Needs to be Successfully Performed:

- 1. Task Verification Form for Video Verification of Required Equipment and Supplies, signed by the Clinical Mentorship supervisor.
- 2. One continuous, unedited video is required with their mentor present
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
 - b. The student then walks through the facility, narrating the video live while pointing out all the required items.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
verify that the student will have access to the items shown,	for tasks in this course.
Signature of Clinical Mentorship Supervisor:	

2. MICROSCOPE USE, CARE, AND CLEANING

*NOTE: This task must be completed and submitted for evaluation before beginning the remaining tasks. It is crucial that a functional and properly equipped microscope is available to the student for completion of the tasks in this mentorship.

Goal: To identify, demonstrate and explain the function of the parts of a microscope, and to clean it properly.

Description: The student accurately identified, demonstrated, and explained the function of the parts of the microscope and demonstrated the cleaning procedure.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

Note: all steps are (CRITICAL)

- The student accurately identified and explained, using correct terminology, the function of the following:
 - Make (manufacturer) and model of the microscope
 - Oculars, including power of each
 - Focus adjustment ring (if so equipped)
 - Interpupillary distance adjustment device (must demonstrate)
 - Nosepiece/Turret (must demonstrate)
 - Objectives, including power
 - Scanning 4x (if so equipped)
 - Low power 10x
 - High dry 40x
 - Oil immersion 100x
 - Other (specify)
 - o Fine and coarse focus adjustment knobs (must demonstrate)
 - Stage, including mechanical stage adjustment device(s)
 - Left and right adjustment device (must demonstrate)
 - Forward and back adjustment device (must demonstrate)
 - Condenser, including
 - Vertical adjustment device (must demonstrate)
 - Horizontal control lever (iris diaphragm) adjustment device (must demonstrate)
 - o Field Diaphragm
 - Iris adjustment lever (if so equipped)
 - On and off light switch (must demonstrate)
 - Rheostat control (if so equipped)
 - Location of light source (bulb)



2. MICROSCOPE USE, CARE, AND CLEANING (CONTINUED)

Criteria (CONTINUED):

- The student demonstrated and described verbally the process of viewing a slide including adjustments of the microscope. The following must be included, in the proper order: (CRITICAL)
 - Positioning of the slide on the stage (CRITICAL)
 - o Adjustment of the interpupillary device (CRITICAL)
 - Adjustment of ocular focus ring (if so equipped)
 - Positioning of each objective, lowest to highest power, including oil immersion (CRITICAL)
 - The student examined the slide on the 4x objective (CRITICAL)
 - Correctly focused on field and held the camera to the eyepiece for 5 seconds (CRITICAL)
 - The student examined the slide on the 10x objective (CRITICAL)
 - Correctly focused on field and held the camera to the eyepiece for 5 seconds (CRITICAL)
 - The student examined the slide on the 40x objective (CRITICAL)
 - Correctly focused on field and held the camera to the eyepiece for 5 seconds (CRITICAL)
 - o The student examined the slide on the 100x objective and applied oil. (CRITICAL)
 - Correctly focused on field and held the camera to the eyepiece for 5 seconds (CRITICAL)
 - Positioning of the condenser, condenser (iris diaphragm) lever, light rheostat and field diaphragm in relation to each objective in use with this microscope
 - Coarse and fine focus adjustment knobs
- Starting at the oculars and ending at the light sources, the student cleaned the microscope so the field of view with each objective was debris-free. (CRITICAL)

Live Narration Required: Yes

Continuous (unedited) Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 2 (*Practice dates cannot be on the same day task is recorded*)

- 1. Task verification form for Task 2 signed by the clinical mentorship supervisor.
- 2. One continuous, unedited video is required with their mentor present
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
- 3. Include one photo of each microscopic field at 4x, 10x, 40x, and 100x (4 images total)
 - a. Label each image with the microscope objective used
 - b. Labels must appear directly on the image in a contrasting font color that stands out against the image background.

Date:	
Student Name:	
Supervisor Name:	_ (circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these tasks under my supervision.	
Signature of Clinical Mentorship Supervisor:	<u>-</u>

3. URINALYSIS

Goal: To properly and accurately perform, read and record results of a urinalysis, including physical, chemical and microscopic observations.

Description: The student, using a properly collected fresh urine sample, will accurately perform, read and record findings for a urinalysis.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- The student checked the cleanliness and calibration setting of the refractometer (CRITICAL)
 - o Identified the scale and solution used to check calibration setting
 - Hold the refractometer up to the camera with the eyepiece directly in front of the lens.
 - Keep camera steady for at least 5 seconds so the TP and SG scale inside is clearly visible on video
 - o Properly cleaned refractometer
- While wearing exam gloves, the student verbally described the physical properties of the urine including
 - o color, clarity, volume, foam, odor specific gravity with a refractometer
 - Hold the refractometer up to the camera with the eyepiece directly in front of the lens.
 - Keep camera steady for at least 5 seconds so the SG scale inside is clearly visible on video
 - o Reported results using proper units of measurement.
 - o Properly cleaned refractometer (CRITICAL)
- The student verbally identified the manufacturer and brand of chemistry strips used or automated reader if used.
- While wearing exam gloves, the student followed the manufacturer's protocols for the urine chemistry test strips (CRITICAL)
 - verbally stated the chemical properties of the urine and reported the results using proper units of measurement. (CRITICAL)
 - Note: the student followed the guidelines from the manufacturer whether to place drops of urine onto the strip or dip the strip directly into the urine. (CRITICAL)
- While wearing exam gloves, the student prepared the urine for centrifugation. (CRITICAL)
- While wearing exam gloves, the student balanced the centrifuge with a balance tube or another patient tube and secured the centrifuge lid and cover. (CRITICAL)
- The student set and verbally identified the appropriate centrifugation time (and speed if applicable). Be sure to follow manufacturer guidelines for proper speed and time to get sediment
 - Important: Follow the guidelines provided in the textbook or manufacturer recommendations for proper speed and time. Do not rely solely on your clinic's routine settings, as incorrect centrifugation can affect the quality of the sediment and lead to inaccurate results.
- After the centrifuge stopped, while wearing exam gloves, the student removed the tube, poured off the supernatant, mixed the sediment by gently flicking the bottom of the tube with a finger, transferred a drop of the sediment to a microscope slide with a pipette, and placed a coverslip on top for microscopic evaluation. (CRITICAL)
- The student subdued the light of the microscope by partially closing the iris diaphragm.



3. URINALYSIS (CONTINUED)

Criteria (CONTINUED):

- The student examined the sediment on the 10x objective (CRITICAL)
 - Correctly focused on field and verbally identified any casts and large crystals present. (CRITICAL)
 - Provide a brief (1-2 minute) segment demonstrating and verbally describing your findings. (CRITICAL)
 - o Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds (CRITICAL)
- The student examined the sediment on the 40x objective (CRITICAL)
 - Correctly re-focused on field and verbally identified any RBCs, WBCs, small crystals, epithelial cells, bacteria, parasites, sperm, and fat droplets present. (CRITICAL)
 - Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds (CRITICAL)
 - o Provide a brief (1-2 minute) segment demonstrating and verbally describing your findings. (CRITICAL)
- The student thoroughly documented all results on the written urinalysis report and the student's mentor verified these results. (CRITICAL)
 - Note: A new urine sample may be needed if sediment evaluation is inconclusive. If an automated analyzer is used, the student must first evaluate and report the microscopic findings before reviewing analyzer results. (CRITICAL)

Live Narration Required: Yes

Continuous (unedited) Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 2 (Practice dates cannot be the same day task is recorded)

- 1. Task verification form for Task 3 signed by the clinical mentorship supervisor.
- 2. **One continuous, unedited video is required with their mentor present** showing the student completed the entire urinalysis task from start to finish
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
 - b. **NOTE:** The video may be paused or stopped ONLY while the centrifuge is running. Multiple clips must be edited into one continuous video before submitting.
- 3. Completed written report of findings using the form on the next page.
- 4. A maximum of 2-3 clear images of the 10x and 40x microscopic fields that reflect sediment analysis findings
 - a. Label the microscope objective used in each photo (ie 10x, 40x)
 - b. Identify any structures or elements visible in the field (ie crystals, RBCs, casts, etc).
 - c. Labels must appear directly on the image in a contrasting font color that stands out against the image background.

/T, LVMT, DVM, VMD
results.
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3. URINALYSIS (CONTINUED)

Date:	Name or ID:	Species:
Age:	Breed:	Gender: <i>(circle one):</i> spayed neutered intact
Time of Collection:		Time of Testing:
Method of Collection:		Method of Preservation (circle one): None Refrigeration
Physical Evaluation		Chemistry Evaluation – Brand of Dipstick:
Volume (mL):	<u> </u>	Glucose (include units of measurement):
Color:	<u> </u>	Bilirubin(include units of measurement)::
Turbidity:	<u></u>	Ketones(include units of measurement)::
Odor:	<u> </u>	Blood(include units of measurement)::
Foam:		рН:
Specific Gravity (Refractomet	ter):	Protein (include units of measurement)::
		Urobilinogen (include units of measurement)::
Sediment Analysis		
WBC/HPF:		
RBC/HPF:		
Epithelial cells/HPF:		
Sperm/HPF:		
Bacteria/HPF:		
Casts (Specify Type)/LPF:		
Crystals (Specify Type)/LPF: _		
Other cells (Specify):		
	uggest about the urine (fo	results in this sample match or support each other. Clearly explain or example, infection, crystalluria, etc.). Use details from your own
I verify that (student name the written report results.		performed this task under my supervision and I reviewed
Signature of Clinical Ment	torship Supervisor:	

4. PACKED CELL VOLUME (PCV), TOTAL PLASMA PROTEIN (TP), AND AUTOMATED HEMATOLOGY PANEL (CBC)

*NOTE: Task 4 is composed of two sub-tasks (A-B). Both sub-tasks must be performed simultaneously on a single sample collected from the same patient.

Goal: To accurately perform, read, and record the results of a packed cell volume, total plasma protein, and an in-house automated hematology panel (CBC).

Description: The student determines the packed cell volume (PCV) from a properly collected EDTA whole blood sample using a capillary tube and hematocrit reader, evaluates the plasma, measures the total protein with a refractometer, and then performs, reads, and records an in-house automated complete blood count (CBC).

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- PART A Packed Cell Volume and Total Plasma Protein
 - Packed Cell Volume
 - While wearing exam gloves, the student mixed, by 6-8 gentle inversions, a properly collected and anticoagulated (EDTA) tube of fresh, clot-free whole blood. (CRITICAL)
 - Must demonstrate inverting the tube even if tube has been on a rocker
 - While wearing exam gloves, the student filled a plain capillary tube 2/3 to 3/4 full, wiped the outside of the tube with a lab tissue, and sealed the end with sealing clay. (CRITICAL)
 - While wearing exam gloves, the student placed the capillary tube into a slot in a microhematocrit tube centrifuge with the sealed end to the outside edge, noting the slot number. (CRITICAL)
 - While wearing exam gloves, the student balanced the centrifuge with another patient tube. (CRITICAL)
 - The student secured the centrifuge lid and cover. (CRITICAL)
 - The student set and verbally identified the appropriate centrifugation time (and speed if applicable).
 - After the centrifuge stopped:
 - While wearing exam gloves, the student removed the tubes and showed them to the camera for 5 seconds. (CRITICAL)
 - The student verbally stated the appearance of the plasma and buffy coat and recorded the result on the task form. (CRITICAL)
 - The student visually guessed and verbally stated the PCV.
 - The student used an appropriate hematocrit reader and correctly followed all required steps to accurately determine the packed cell volume (PCV). (CRITICAL)
 - The camera must clearly show the hematocrit tube on the reader at the time the student reads the PCV. (CRITICAL)
 - Keep camera steady for at least 5 seconds for proper evaluation. (CRITICAL)
 - The student verbally stated the PCV and recorded the value on the task form.
 (CRITICAL)

4. PACKED CELL VOLUME (PCV), TOTAL PLASMA PROTEIN (TP), AND AUTOMATED HEMATOLOGY PANEL (CBC) (CONTINUED)

Criteria (CONTINUED):

- PART A Packed Cell Volume and Total Plasma Protein (CONTINUED)
 - Total Plasma Protein
 - While wearing exam gloves and using the patient's tube from the PCV, the student scored the tube above the buffy coat with the edge of a triangular file or corner of a microscope slide and snapped the tube by placing finger pressure on each side of the scored line. (CRITICAL)
 - With the refractometer in position, while wearing exam gloves the student lifted the cover plate to expose the measuring prism.
 - The student used the non-broken end of the hematocrit tube and placed a drop of plasma onto the prism. (CRITICAL)
 - The tube does not touch the prism. (CRITICAL)
 - There was no contamination from the buffy coat, other cellular components, or glass shards. *(CRITICAL)*
 - The student may improve plasma flow by gently tapping the end of the tube near the cover plate, or by dispensing the plasma with an appropriate pipetting bulb or insulin syringe. (CRITICAL)
 - While wearing exam gloves the student slowly and carefully lowered the cover plate on top of the plasma. (CRITICAL)
 - The student held the refractometer to their eye with prism toward light. (CRITICAL)
 - The student focused if needed, read and verbally stated the total protein value.
 (CRITICAL)
 - Hold the refractometer up to the camera with the eyepiece directly in front of the lens. (CRITICAL)
 - Keep the camera steady for at least 5 seconds so the TP scale inside is clearly visible on video. (CRITICAL)
 - The student recorded the value on the task form. (CRITICAL)
 - While wearing exam gloves the student appropriately cleaned the measuring prism and cover plate with water and dried with laboratory tissue. (CRITICAL)
- PART B Automated Hematology Panel (CBC)
 - The student identified and verbally stated the make (manufacturer) and model of the automated hematology analyzer.
 - The student described quality control (QC) procedures for the analyzer and explained why QCs are done (not just how) (CRITICAL)
 - The student followed the manufacturer's established protocol for the performance of an inhouse automated hematology panel.
 - The student demonstrated entering patient information into the system. (CRITICAL)
 - The student selected the appropriate test panel. (CRITICAL)

4. PACKED CELL VOLUME (PCV), TOTAL PLASMA PROTEIN (TP), AND AUTOMATED HEMATOLOGY PANEL (CBC) (CONTINUED)

Criteria (CONTINUED):

- The student wore gloves and gently inverted the EDTA blood tube immediately before loading the sample in the analyzer. (CRITICAL)
- The student started the analyzer and confirmed the machine started without error.
 (CRITICAL)
- The student verbally commented on the results. (CRITICAL)
 - The student included a printout or screenshot of the results. (CRITICAL)

Live Narration Required: Yes **Continuous Video Required**: Yes

Number of Times Task Needs to be Successfully Performed: Part A 2 times; Part B 2 times (*Practice dates cannot be the same day task is recorded*)

- 1. Task verification form for Task 4 signed by the clinical mentorship supervisor.
- 2. **One continuous video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
 - b. **NOTE:** The video may be paused or stopped *ONLY* while the centrifuge is running. Multiple clips must be edited into one continuous video before submitting.
- 3. A printout or screenshot of patient results
- 4. Written evaluations (see below).

Appearance of Plasma (circle	e one): Clear, Cloudy, Lipemic, H	emolyzed, Icteric
Buffy Coat Color:	Packed Cell Volume:	(%) Total Plasma Protein:(g/dL)
Date:	_	
Student Name:		
Supervisor Name:		(circle one) RVT, CVT, LVT, LVMT, DVM, VMI
I verify that the student perf	ormed these tasks under my su	pervision.
Signature of Clinical Mento	ship Supervisor:	

5. BLOOD FILM PREPARATION AND STAINING

Goal: To prepare and properly stain a quality blood film.

Description: The student prepares a quality blood film from fresh EDTA-anticoagulated blood using either the handheld or tabletop wedge method on a base slide. The film is then stained with a quick stain to allow proper differentiation and identification of the cells and their components.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- While wearing exam gloves, the student properly mixed, by 6-8 gentle inversions, a properly collected and anticoagulated (EDTA) tube of fresh, clot-free, whole blood. (CRITICAL)
- While wearing exam gloves the student placed a small drop of blood approximately 1cm from the frosted end of the microscope slide. (CRITICAL)
 - o The drop of blood must be obtained directly from the EDTA tube. (CRITICAL)
 - A capillary tube, a small pipette or another appropriate collection device may be used as long as it allows for accurate transfer of a small, controlled drop of blood.
- For the handheld method, the student held the base slide between the thumb and index finger.
 (CRITICAL)
- For the tabletop method, the student held the base slide on the outer corner of the frosted end of the slide, with the frosted end toward their body. *(CRITICAL)*
- While wearing exam gloves, with the spreader slide held at a 30-45° angle, the student brought the spreader slide back into the drop of blood, allowed the blood to spread out along the edge of the spreader slide, and then moved the spreader slide forward in a rapid, even motion. (CRITICAL)
 - Do not reuse the same end of the spreader slide when making a new smear.
- The student produced a blood film 1/2 to 2/3 the length of the slide. (CRITICAL)
 - The blood film was slightly narrower than the width of the slide. (CRITICAL)
 - The feathered edge of the blood film was relatively straight across or slightly curved and did not end abruptly or have tail-like extensions. (CRITICAL)
 - When viewed macroscopically, the blood film appeared to have a gradual transition from the thicker body to the feathered edge. (CRITICAL)
 - The blood film did not have pressure ridges, holes, scratches, streaks or ridges within the smear.
 (CRITICAL)
 - The student held the slide steady to the camera for at least 5 seconds so the slide can be evaluated (CRITICAL)
- The student allowed the blood film to air dry completely before staining. (CRITICAL)
 - Acceptable drying methods include gently waving the slide in the air or standing the slide vertically with frosted end pointing up.
- While wearing exam gloves, the student stained the dried film with fresh Diff Quick stain. (CRITICAL)
 - Acceptable staining methods include:
 - Dipping the slide for approximately ten, one-second dips in the fixative, then the eosin (red), then the thiazine (blue) stains
 - Letting the slide sit in each stain for ten seconds.

5. BLOOD FILM PREPARATION AND STAINING (CONTINUED)

Criteria (CONTINUED):

- While wearing exam gloves, the student held the slide vertically by the frosted end and rinsed the back
 of the slide with water. (CRITICAL)
- The student allowed the stained blood film to air dry vertically with the frosted end up. (CRITICAL)
- The student demonstrated on camera labeling the slide on the frosted end with patient ID, species, specimen type and date.

Live Narration Required: Yes

Continuous (unedited) Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 2 (Practice dates cannot be the same day task is

recorded)

- 1. Task verification form for Task 5 signed by the clinical mentorship supervisor.
- 2. **One continuous, unedited video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
- 3. One clear photo of the properly stained and labeled blood film.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these tas	sks under my supervision.
Signature of Clinical Mentorship Supervisor	:

6. NORMAL DIFFERENTIAL

Goal: To accurately classify and count the different types of white blood cells, and evaluate the morphologic features of red blood cells, white blood cells, and platelets in a **healthy patient**.

Description: Using a fresh EDTA whole blood sample from a healthy patient, the student prepares and stains a quality blood film according to Task 5 criteria, evaluates the film using correct terminology* to describe red and white blood cell and platelet morphology, performs white blood cell and platelet estimates, and applies an appropriate tracking method to count and classify 100 white blood cells.

*Veterinary Hematology Atlas of Common Domestic and Non-Domestic Species, Reagan, Irizarry-Rovira, and DeNicola, 3rd Edition, ISBN: 9781119064978

Criteria: *NOTE:* The student *must verbalize* every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- While wearing exam gloves, the student prepared and stained a quality blood film based off the criteria listed in Task 5, using anticoagulated (EDTA) whole blood from a **healthy patient**. **(CRITICAL)**
- The student showed the stained slide to the camera for 5 seconds for proper evaluation. (CRITICAL)
- The student performed a microscopic evaluation of the slide that included setting up the slide on the stage, properly using the microscope and objectives. (CRITICAL)
- The student confirmed that the microscope condenser was elevated and the iris diaphragm was open.
- The student performed a systematic evaluation of **AT LEAST 5** fields of the blood film and narrated their observations at each magnification: **(CRITICAL)**
 - o The student started the evaluation on 10x objective. (CRITICAL)
 - Correctly focused on the field and adjusted the condenser and iris diaphragm as needed.
 - Hold the camera to the eyepiece of one field of the monolayer and keep steady for 5 seconds (CRITICAL)
 - Identified and verbally described the body, monolayer, and feathered edge. (CRITICAL)
 - The student moved to the 40x objective. (CRITICAL)
 - Correctly re-focused on the monolayer and adjusted the condenser and iris diaphragm as needed. (CRITICAL)
 - Hold the camera to the eyepiece of one field of monolayer and keep steady for 5 seconds. (CRITICAL)
 - Examined the slide for at least 5 fields in a serpentine pattern and verbally commented on any cell patterns or large structures, such as platelet clumps, debris, microfilaria, or white blood cell aggregates. (CRITICAL)
 - WBC Estimate and Differential: Provide 1-2 minutes of narration, the rest can be done off camera.
 - Examined the monolayer and <u>estimated</u> the number of WBCs by counting the total number of WBCs in 10 separate microscopic fields and calculated the average. Record this number on the written report. (CRITICAL)
 - The student verbally identified each type of WBC and documented any nucleated RBCs present. (CRITICAL)
 - The student used an appropriate tracking method and showed it to the camera. (ie tally counter, clicker, or notebook with tally marks). (CRITICAL)

- Criteria (CONTINUED):
 - The student continued <u>counting</u> until a total of 100 WBCs are counted. while identifying each type of WBC and documenting any nucleated RBCs present.
 - The student moved to the 100x objective and demonstrated adding immersion oil. (CRITICAL)
 - Correctly re-focused on the monolayer and adjusted the condenser and iris diaphragm as needed as needed. (CRITICAL)
 - Hold the camera to the eyepiece of one field of monolayer and keep steady for 5 seconds. (CRITICAL)
 - **Note:** For the next steps, only 1-2 minutes of narration is needed, the rest can be done off camera).
 - While in the monolayer, the student:
 - Performed the platelet estimate by counting the total number of platelets over 10 microscopic fields, calculated the average/field then calculated the estimated platelet count. (CRITICAL)
 - While counting platelets, the student evaluated and verbally stated the morphology of RBCs, WBCs, and noted if any clumping of platelets is present. (CRITICAL)
 - Note: Examples of morphology terms and grading schemes can be found in Appendix A and B of the Veterinary Hematology Atlas* textbook.
 - The student used an acceptable tracking method (i.e. tally counter, clicker, or notebook with tally marks). (CRITICAL)
 - Note: A platelet estimate is required on the written report. If excessive platelet clumping is present, the student will need to prepare a new blood film from a new healthy patient.
 - The student thoroughly documented all results on the normal differential written report. *(CRITICAL)*

Live Narration Required: Yes **Continuous Video Required**: Yes

Number of Times Task Needs to be Successfully Performed: 2 (Practice dates cannot be the same day task is

recorded)

- 1. Task verification form for Task 6 signed by the clinical mentorship supervisor.
- 2. **One continuous video is required with their mentor present** showing the student completed the task from start to finish.
 - a. Separate clips must be combined into one continuous video
 - b. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
- 3. Completed written report of findings using the form on the next page.
 - a. Must be free of errors, cross outs or corrections.
- 4. Images showing microscopic fields that reflect differential findings, emphasizing the monolayer.
 - a. One microscopic image of the monolayer at 10x
 - b. 1-2 microscopic images at 40x identifying at least one platelet, one red blood cell one white blood cell, and identify the specific type of WBC (ie seg or band neutrophil, monocyte, etc)
 - c. 1-2 microscopic images at 100x identifying at least one platelet, one red blood cell one white blood cell, and identify the specific type of WBC (ie seg or band neutrophil, monocyte, etc)
 - d. Label each image with the microscope objective used.
 - e. Labels must appear directly on the image in a contrasting font color that stands out against the image background.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these tas	ks under my supervision.
Signature of Clinical Mentorship Supervisor:	

Normal Differential Written Report (PAGE 1)

Date:	Name or ID	: Spec	cies:
Breed:	Age:	Gender: <i>(circ</i>	ele one): spayed neutered intact
WBC Estimate: (Average # \ SHOW YOUR WORK!	WBCs per 40x field x		imate # of WBCs/mm³)
WBC Differ	rential	Relative Count (%)	Absolute Count (/uL)
		(Number (%) of each WBC type observed in 100 WBCs)	(% of WBC type x WBC estimate)
Segmented Neutrophil			
Non-segmented (Band)	Neutrophil		
Lymphocyte			
Monocyte			
Eosinophil			
Basophil			
WBC count needs to be only the contract of the	done). n e)	BCs: (If more than 5 r	
reviewed the written rep	ort results.		
Signature of Clinical Mer	ntorship Supervise	or:	

Normal Differential Written Report (PAGE 2)

	g y: use appropriate terminol I B of the Veterinary Hemato	ogy (examples of morphology terms and grading schemes can be found in logy Atlas* textbook.)
Size:		
Shape:		
Color:		
WBC and Platel	let Morphology (Specify usi	ng appropriate terminology):
Platelet Estim	ate: SHOW YOUR WORK!	
(Average # pla	itelets per 100x field x 20,	000 = Estimated platelets/mm³)
Platelet clump	oing observed? <i>(circle one)</i>) Yes/No
1.	6.	
2.	7.	
3.	8.	
4.	9.	
5.	10.	
		performed this task under my supervision and I
reviewed the v	written report results.	
Signature of C	Clinical Mentorship Super	visor

7. PREPARE SERUM AND PLASMA, AUTOMATED CHEMISTRY PANEL, AND SALINE SLIDE/CARD AGGLUTINATION TEST

*NOTE: Task 7 is composed of three sub-tasks (A-C). All three sub-tasks must be performed simultaneously on a single sample collected from the same patient.

Goal: To collect and prepare quality serum and plasma samples, accurately perform and record an in-house automated chemistry panel measuring BUN, glucose, and common enzymes, and perform, read, and report a saline slide or card agglutination test.

Description: The student collects and prepares serum and plasma samples using appropriate tubes, ensuring they are free of hemolysis and lipemia, performs and records an in-house automated chemistry panel using a properly prepared sample, accurately performs, reads, and reports a saline slide or card agglutination test.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

PART A - Prepare Serum and Plasma

Note: The student must show all items clearly on camera for evaluation.

- o The student selected the following items and organized them in a central area:
 - Appropriate blood collection tubes for serum and plasma. (CRITICAL)
 - The student identified each blood tube, showed the fill volume for each tube (in mL) and stated the fill volume for each tube. (CRITICAL)
 - Syringe and needle, or needle holder with needle, appropriate for the procedure, species, and patient size. (CRITICAL)
 - Must state the size of syringe and size of needle. (CRITICAL)
 - The student stated the correct order of draw (which tube to fill first, last, etc) (CRITICAL)
- While wearing exam gloves, the student demonstrated venous blood collection from the patient.
 (CRITICAL)
 - The student selected an appropriate blood vessel from any species. (CRITICAL)
 - The student collected the sample without injury to the patient. (CRITICAL)
- While wearing exam gloves, the student filled one serum tube (plain red-top or serum separator) and one anticoagulated tube (EDTA or lithium heparin) to 90–100% of the manufacturer's stated capacity and clearly shows the fill level on camera for evaluation. (CRITICAL)
 - NOTE: Each tube must be shown on the video with the label on the tube facing away from the camera so the level may be evaluated as the tube is being filled. The student must state the manufacturer's stated fill capacity in mL. (CRITICAL)
 - The student filled the tubes by either removing the cap from the tube and the needle from the syringe *OR* replaced an appropriately sized needle on the syringe to fill each tube. *(CRITICAL)*
 - Tubes must be filled in the correct order. (CRITICAL)

7. PREPARE SERUM AND PLASMA, AUTOMATED CHEMISTRY PANEL, AND SALINE SLIDE/CARD AGGLUTINATION TEST (CONTINUED)

Criteria (CONTINUED):

- PART A Prepare Serum and Plasma
 - Tubes must be filled in the correct order. (CRITICAL)
 - The student gently inverted only the appropriate tubes (e.g., anticoagulant tubes) to mix the contents. (CRITICAL)
 - The student labeled each tube on camera with the patient's name and date immediately after filling and before centrifugation. (CRITICAL)
 - Tubes may also be labeled prior to filling.
 - The student placed the serum tube upright in a holder and allowed it to clot undisturbed for 10–
 20 minutes before centrifugation
 - The student stated how long the tube sat undisturbed until the blood clotted. (CRITICAL)
- TIP: this is a good time to perform Task 7C, since the student should obtain a drop of anticoagulated blood from the EDTA tube prior to centrifugation.
 - While wearing exam gloves, the student placed the serum collection tube <u>AND</u> the plasma collection tube in the centrifuge. (CRITICAL)
 - The student_properly balanced the centrifuge and secured the centrifuge lid/cover. (CRITICAL)
 - The student may need to centrifuge the serum and plasma tubes separately, depending on the equipment available.
 - The student set and verbally identified the appropriate centrifugation time (and speed if applicable).
 - After the centrifuge stopped, the student carefully removed the serum collection tube <u>AND</u> the plasma collection tube. *(CRITICAL)*
 - The student ensured plasma is not disturbed when removing tube from centrifuge.
 - The student correctly identifies plasma and serum
 - The student showed the tubes to the camera for 5 seconds. (CRITICAL)
 - The student stated the approximate amount and condition of the serum and plasma.
 (CRITICAL)
 - Each tube must be shown on the camera with the label on the tube facing away from the camera so the amount and condition of the serum and plasma can be evaluated.
- PART B Automated Chemistry Panel
 - The student identified and verbally stated the make (manufacturer) and model of the automated chemistry analyzer.
 - The student described quality control (QC) procedures for the analyzer and explained why QCs are done (not just how) (CRITICAL)
 - The student followed the manufacturer's established protocol for the performance of an inhouse automated chemistry analyzer.
 - The student demonstrated entering patient information into the system. (CRITICAL)
 - The student selected the appropriate test panel. (CRITICAL)

7. PREPARE SERUM AND PLASMA, AUTOMATED CHEMISTRY PANEL, AND SALINE SLIDE/CARD AGGLUTINATION TEST (CONTINUED)

Criteria (CONTINUED):

- The student wore gloves and prepared the sample to load into the analyzer. (CRITICAL)
- The student demonstrated all steps required to run the chemistry panel. (CRITICAL)
- The student started the analyzer and confirmed the machine started without error.
 (CRITICAL)
- The student verbally commented on the results. (CRITICAL)
 - The student included a printout or screenshot of the results. (CRITICAL)
- PART C Saline Slide/Card Agglutination Test
 - While wearing exam gloves, the student demonstrated and described verbally on video, the entirety of the procedure and accurately reported the results, including proper units of measurement. (CRITICAL)
 - If a saline slide agglutination test was performed, the student evaluated the slide under the microscope and verbally reported the results. (CRITICAL)
 - Correctly focused on the field and adjusted the condenser and iris diaphragm as needed
 - Verbally commented on any cell patterns or agglutination. (CRITICAL)
 - Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds. (CRITICAL)
 - o If a card agglutination test was performed, the student followed the manufacturer's established protocol for performance of the test. **(CRITICAL)**

Live Narration Required: Yes **Continuous Video Required**: Yes

Number of Times Task Needs to be Successfully Performed: Part A 2 times; Part B 2 times; Part C 2 times (*Practice dates cannot be the same day task is recorded*)

- 1. Task verification form for Task 7 signed by the clinical mentorship supervisor.
- 2. **One continuous video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
 - b. **NOTE**: The video may ONLY be paused or stopped while the centrifuge and analyzer are running. However, multiple clips must be edited into one continuous video before submitting.
- 3. One clear and labeled microscopic image of the slide agglutination test (if performed).

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these tasks under my sup	ervision.
Signature of Clinical Mentorship Supervisor:	

8. ABNORMAL DIFFERENTIAL (CORRECTED WBC COUNT WRITTEN ASSIGNMENT)

*NOTE: This is a written assignment only. No video recording is required.

Goal: To accurately interpret a previously completed WBC differential and perform a corrected white blood cell (WBC) count when nucleated red blood cells (nRBCs) are present. This assignment simulates a real-world clinical scenario that requires both analytical thinking and precise reporting.

Description: For this task, you will use your Task 6 results to complete a written report. You will be given a number of nucleated red blood cells (nRBCs) observed per 100 WBCs, and you will perform a corrected WBC calculation using the formula provided.

Criteria: Use your original results from Task 6 to complete the provided Task 8 report form (found on the next page) for an abnormal differential.

1. Use your original results from Task 6 to report:

- Estimated WBC count (cells/μL)
- Platelet estimate (adequate/inadequate and platelets per field)
- Relative differential (% of each WBC type)
- Absolute differential (cells/μL of each WBC type)
- RBC morphology (grade and description)
- Platelet morphology (description)
- WBC morphology (description)

2. Calculate the Corrected the WBC Estimate for nRBCs

- Use the nRBC value you were assigned in the Brightspace Task 8 Readiness quiz
- Show your calculation clearly
- o Round the corrected WBC to the nearest whole number
- Remember: Use the <u>corrected</u> WBC value (not the original) to recalculate your absolute differential counts
- Use the following formula:

Corrected WBC (cells/ μ L) = (WBC estimate × 100) / (100 + nRBCs)

3. Write a Short Interpretation

In 3-4 sentences:

- Explain why correcting for nRBCs is important.
- Describe what impact the corrected WBC count has on the patient interpretation (i.e., does it significantly change the assessment?).
- You must use your own Task 6 results. Submissions using fake or copied data will not be accepted.
- If you did not complete Task 6, you must finish it first before beginning this assignment.

Number of Times Task Needs to be Successfully Performed: 1

- 1. Task verification form for Task 8 Abnormal Differential signed by the clinical mentorship supervisor.
- 2. Completed written report using the form on the next page.
 - a. Forms with cross-outs or corrections will not be accepted and must be resubmitted.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these task	s under my supervision.
Signature of Clinical Mentorship Supervisor:	

Abnormal Differential Written Report (PAGE 1)

_ Name or ID	: Spec	cies:
Age:	Gender: <i>(circ</i>	<i>le one)</i> : spayed neutered intact
# WBCs per 40x field x	x 2,000 (or 50x field x 3,000) = approx	imate # of WBCs/mm³)
fferential	Relative Count (%)	Absolute Count (/uL)
	(Number (%) of each WBC type observed in 100 WBCs)	(% of WBC type x WBC estimate)
hil		
nd) Neutrophil		
rubricyte) per100 Wl e done).	BCs: (If more than 5 r	nRBCs are seen then a corrected
	# WBCs per 40x field x fferential hil hil rubricyte) per100 W	# WBCs per 40x field x 2,000 (or 50x field x 3,000) = approx Ferential Relative Count (%) (Number (%) of each WBC type observed in 100 WBCs)

Abnormal Differential Written Report (PAGE 2)

		Atlas* textbook.)	
Size:			
Shape:			
Color:			
WBC and Platele	et Morphology (Specify using ap	propriate terminology):	
Platelet Estima	ate: SHOW YOUR WORK!		
(Average # plat	endix A and B of the Veterinary Hematology Atlas* textbook.)		
Platelet clumpi	ing observed? <i>(circle one)</i> Yes	/No	
1.	6.		
2.	7.		
3.	8.		
4.	9.		
5.	10.		
Corrected WBG	C count for nRBCs: <u>SHOW YO</u>	UR WORK!	
		nm³)	
Written Interp	retation		
	udent name) vritten report results.	performed this task under my supervision and I	
Signature of Clinical Mentorship Supervisor			

9. COAGULATION

Goal: To accurately perform and record results of an in-house coagulation test.

Description: The student accurately performed an in-house coagulation test and read and recorded the results.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- The student selected an in-house coagulation test from the following:
 - Buccal mucosal bleeding time (BMBT), activated clotting time (ACT tube or automated),
 prothrombin time (PT), activated partial prothrombin time (APTT), fibrinogen assay (automated or heat precipitation), or other test approved by instructor. (CRITICAL)
 - NOTE: For the ACT test, plain red top tubes (no silica coating) or white top tubes may be used.
 If performing a BMBT, only the appropriate lancing device must be used.
- The student explained the rationale for the procedure selected, which includes
 - o The reasoning behind the need for coagulation testing. (CRITICAL)
 - o Normal vs. abnormal ranges for the patient. (CRITICAL)
- The student described quality control (QC) procedures for the analyzer and explained why QCs are done (not just how) (CRITICAL)
- While wearing exam gloves, the student demonstrated and described verbally on video, the entirety of the procedure and accurately reported the results, including proper units of measurement. (CRITICAL)
 - **NOTE:** If the patient is sedated/anesthetized an assistant must be present to monitor the patient and assist as needed.

Live Narration Required: Yes

Continuous Unedited Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 2 (Practice dates cannot be the same day task is recorded)

- 1. Task verification form for Task 9 signed by the clinical mentorship supervisor.
- 2. **One continuous, unedited video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these task	ks under my supervision.
Signature of Clinical Mentorship Supervisor:	

10. CROSSMATCH

Goal: Demonstrate the ability to perform a crossmatch between a potential blood donor and recipient, using either the traditional method or a commercial test kit to determine compatibility for transfusion.

Description: Using collected samples from a potential blood donor and recipient, the student performs a crossmatch with either the traditional method or a commercial test kit to determine transfusion compatibility and accurately reports the findings. If using a commercial test kit, be sure to use a major crossmatch kit and not a blood type kit. If using the traditional method, please use the method posted in the course resource folder.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- While wearing exam gloves, the student demonstrated and described proper processing of the samples for a crossmatch procedure including:
 - o Identifying the donor and recipient samples as plasma or serum. (CRITICAL)
 - o The condition of the sample (NSF, hemolyzed, lipemic) prior to testing. (CRITICAL)
 - The student must announce if they are doing a traditional crossmatch or using a commercial kit
 - If using a commercial kit the student must identify the name and manufacturer and clearly show it on camera
- The student demonstrated and described verbally on video, the entirety of the procedure and accurately reported the result of the crossmatch test, using proper medical terminology and units of measurement. (CRITICAL)

Live Narration Required: Yes

Continuous Unedited Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 1

- 1. Task verification form for Task 9 signed by the clinical mentorship supervisor.
- 2. **One continuous, unedited video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
 - b. **NOTE:** The video may *ONLY* be paused or stopped while the centrifuge is running. However, multiple clips must be edited into one continuous video before submitting

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these tas	sks under my supervision.
Signature of Clinical Mentorship Supervisor	:

11. CANINE VAGINAL CYTOLOGY

*NOTE: This task may be performed on a sedated or anesthetized patient

Goal: To properly collect, process, and accurately evaluate and report the cellular findings for canine vaginal cytology.

Description: The student properly collected, processed, and stained a vaginal cytology sample. The student evaluated the slide under the microscope, used correct cytologic terminology to describe cell types and findings, and accurately recorded the results.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- The student had an assistant hold the dog in either sternal or standing recumbency.
- The dog was held firmly to minimize movement prior to sampling.
 - NOTE: If the patient is sedated/anesthetized an assistant must be present to monitor the patient and assist as needed.
- While wearing exam gloves, the student moistened a sterile cotton swab with sterile saline. (CRITICAL)
- The student collected the sample without contaminating the sample/swab or causing injury to the patient.
 - Note: The use of a speculum is OPTIONAL. If a sterile speculum is used, the speculum must be the correct size and properly lubricated. (CRITICAL)
- The student rolled the swab across the slide to distribute the cells along the slide and allowed it to dry. (CRITICAL)
- The student stained the slide with Diff-Quik®. (CRITICAL)
- The student performed a systematic evaluation of the slide and narrated their observations at each magnification:
 - o 1-2 minutes of the initial microscopic evaluation is acceptable
 - The student examined the sample on 10x for an initial view of the cell types present. (CRITICAL)
 - Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds (CRITICAL)
 - The student examined the sample on 40x and verbally identified any cells or large structures present. (CRITICAL)
 - Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds (CRITICAL)
 - NOTE: the oil immersion objective (100x) may be used to gain a closer view of bacteria or other cells/debris present.
- The student thoroughly documented all results on the canine vaginal cytology written report and the student's mentor verified these results. *(CRITICAL)*

11. CANINE VAGINAL CYTOLOGY (CONTINUED)

Live Narration Required: Yes

Continuous Unedited Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 2 (Practice dates cannot be the same day task is

recorded)

- 1. Task verification form for Task 11 signed by the clinical mentorship supervisor.
- 2. **One continuous, unedited video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
- 3. Completed written report of findings using the form on the next page.
 - a. Must be free of errors, cross outs or corrections.
- 4. A maximum of 2-3 clear photos of microscopic fields that reflect written report findings.
 - a. Label the microscope objective used in each photo (ie 10x, 40x, etc)
 - b. Identify any structures or elements visible in the field (ie cells, WBCs, RBCs, etc).
 - c. Labels must appear directly on the image in a contrasting font color that stands out against the image background.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VME
I verify that the student performed these tasks u	nder my supervision.
Signature of Clinical Mentorship Supervisor:	

11. CANINE VAGINAL CYTOLOGY (CONTINUED)

Canine Vaginal Cytology Written Report

Date:	Name or ID:	Species:
Breed:	Age:	Gender: <i>(circle one)</i> : spayed intact
Appearance of labia an	d behavior of patient (Describe):	
Appearance of discharg	ge (Color, Consistency, Odor):	
Microscopic Evaluation	(#/HPF):	
Basal:		Intermediate:
Parabasal:	-	Superficial:
Metestral:	-	Mucus:
RBC:		Debris:
WBC (Specify):		Other/Abnormal Cells (Specify/Describe):
Bacteria (Specify):		
I verify that (student reviewed the written		performed this task under my supervision and I
Signature of Clinical	Mantarchin Suparvicar	

12. EAR CYTOLOGY

*NOTE: Patient must be pathologic. Do NOT use patients that have been treated in the past 48 hours with a topical ear medication.

Goal: To properly collect, process, and accurately evaluate and report the cellular findings for ear cytology.

Description: The student properly collected a sample, and properly processed, accurately stained, and read and recorded the results for ear cytology.

Criteria: *NOTE:* The student must verbalize every step clearly while demonstrating it in the video. The video must allow the instructor to evaluate both skills and understanding.

- The student had an assistant hold the patient in either sternal or standing recumbency.
- The dog was held firmly to minimize movement prior to sampling.
 - NOTE: If the patient is sedated/anesthetized an assistant must be present to monitor the patient and assist as needed.
- While wearing exam gloves, the student placed one clean cotton swab into the patient's right ear to
 properly collect secretions. The swab should be inserted into the vertical ear canal and gently rotated to
 collect the sample. (CRITICAL)
- The student placed a separate clean cotton swab into the patient's left ear to properly collect secretions.
 The swab should be inserted into the vertical ear canal and gently rotated to collect the sample.
 (CRITICAL)
- The swabs containing the appropriate samples were safely removed from the ears.
- The student rolled the swabs across the slide, confirming the location of the right and left ear samples on the slide, and allowed it to dry. Heat fixing the slide is optional.
 - Note: the samples can be placed on the same slide or separate slides. (CRITICAL)
- The student properly labeled and stained the slide with Diff-Quik®. (CRITICAL)
- The student performed a systematic evaluation of the slide and narrated their observations at each magnification:
 - The student examined the sample on 40x and verbally identified any cells or large structures present. (CRITICAL)
 - Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds (CRITICAL)
 - The student examined the sample on the oil immersion objective (100x) and verbally identified any bacteria or yeast present. (CRITICAL)
 - Hold the camera to the eyepiece of the microscope and keep camera steady for 5 seconds (CRITICAL)
- The student thoroughly documented all results on the ear cytology differential written report and the student's mentor verified these results. (CRITICAL)

12. EAR CYTOLOGY (CONTINUED)

Live Narration Required: Yes

Continuous Unedited Video Required: Yes

Number of Times Task Needs to be Successfully Performed: 2 (Practice dates cannot be the same day task is

recorded)

- 1. Task verification form for Task 12 signed by the clinical mentorship supervisor.
- 2. **One continuous, unedited video is required with their mentor present** showing the student completed the task from start to finish.
 - a. The video clearly shows both the student and the mentor as they each verbally introduced themselves, stated the date, and their credentials.
- 3. Completed written report of findings using the form on the next page.
 - a. Must be free of errors, cross outs or corrections.
- 4. A maximum of 2-3 clear photos of microscopic fields that reflect written report findings.
 - a. Label the microscope objective used in each photo (ie 10x, 40x, etc)
 - b. Identify any structures or elements visible in the field (ie cells, WBCs, RBCs, etc).
 - c. Labels must appear directly on the image in a contrasting font color that stands out against the image background.

Date:	
Student Name:	
Supervisor Name:	(circle one) RVT, CVT, LVT, LVMT, DVM, VMD
I verify that the student performed these ta	sks under my supervision.
Signature of Clinical Mentorship Supervisor	r:



12. EAR CYTOLOGY (CONTINUED)

Ear Cytology Written Report

te:	Name or ID:	Species:
eed:	Age:	Gender: <i>(circle one)</i> : spayed neutered intact
Right Ear		<u>Left Ear</u>
Appearance of Ear (Describe):		Appearance of Ear (Describe):
Appearance of Exudate (Color, Odor):		Appearance of Exudate (Color, Odor):
Microscopic	Evaluation (#/field):	Microscopic Evaluation (#/field):
RBC:		RBC:
WBC:		
Epithetical C	ells:	WBC:
Yeast:		Epithetical Cells:
Bacteria (Ro	ds):	Yeast:
Bacteria (Co	cci):	Bacteria (Rods):
	· · · · · · · · · · · · · · · · · · ·	Bacteria (Cocci):
Parasites: Abnormal Cells (#/field and describe):		Parasites:
		Abnormal Cells (#/field and describe):
Other (Speci	fy):	Other (Specify):
I verify that	(student name)	performed this task under my supervision a
I reviewed t	the written report results.	