

# BORDER CHALLENGE



## Fingerprint Collection and Analysis

**LIMITS:** 3 Students per school



## Fingerprint Collection and Analysis

**PURPOSE:** This event will measure the student competitors; knowledge, skill, and ability to process a fingerprint from discovery through laboratory analysis and reporting.

### COMPETITION

**LIMITS:** 3 Students per school

**DESCRIPTION:** This event will consist of two phases of competition for an individual. Phase one will consist of the location and collection of a latent print from a selection of two items. Phase two the individual will complete a fingerprint analysis activity requiring the competitor to match known and unknown prints along with identifying minutiae. The event will be timed and evaluated according to event guidelines.

### Phase I Evidence Collection

1. Competitor(s)/Team(s) will report to their respective event when called for or at a set reporting time.
2. Competitor(s)/Team(s) will be directed (by room moderator) into the event room.
3. Each student will be directed (by room moderator) to a workstation with two items of evidence to be examined (example; glass, ceramic tile, CD, kitchen knife, etc.).
  - a. To provide a consistent and equal opportunity for all competitors, each workstation shall contain the same items. No exceptions to this rule shall be allowed.
4. Once all competitors are at their workstations the Judge will advise competitors that they will have 15 minutes to complete this phase of the fingerprint competition and inform them they will be informing them when they have 10 minutes left, 5 minutes left, and 2 minutes left. The Judge will set a timer for 15 minutes.
5. When the Judge starts the timer and calls "start", each competitor will:
  - a. Locate, dust, and lift a print from the surface of the item. The competitor may lift from one or both of the items, and submit the evidence card they feel best about. No extra time will be added to complete the event, so the competitor should be mindful of the time if they plan to dust both items.



- b. Adhere the fingerprint to a backing card and completely fill out the card. (Cards shall be provided by Border Challenge Case information shall be provided by Border Challenge)
- c. Submit one completed fingerprint card to the judge. If the competitor has opted to lift two prints, the competitor must choose which print they will submit. Only one card shall be submitted to the judge for scoring. The second card shall be deposited in the trash prior to the student cleaning up their workstation. The judge/ monitor may not speak to the student regarding which card to submit.
- d. Clean up workstation. Competitors who have not cleaned their stations will receive a deduction in points on the scoring rubric prior to advancing to Phase II

## **Phase II Fingerprint Analysis**

1. Each student will be directed to a workstation. The student must bring their own magnifying apparatus (optional) (loupe/ glass), ridge counter (optional) and writing utensil (blue/ black ink only)
2. The Judge will distribute a photocopied fingerprint analysis packet to each competitor (face down on the desk). Each packet will contain:
  - a. 3 Ten-Print Identification Cards containing “known” prints
  - b. 1 suspect print of unknown origin (fingerprint backing card)
3. The Judge will set a timer for 30 minutes.
4. The Judge will start the time and announce “start”
5. Upon the word “start” each competitor shall:
  - a. Turn over their fingerprint analysis packet
  - b. The competitor will analyze the prints and attempt to make a match between the suspect print and the fingerprint cards.
  - c. Once the competitor has a “match” they will complete the identification process by;
    - i. Circling three minutiae on the “suspect” print and the corresponding minutiae on the “known” print. Each minutia shall be assigned a number 1-3 by the competitor.



- ii. The competitor will name each of the minutiae on the “suspect” print. (example: delta, bifurcation, island, etc.)
  - iii. The competitor will name the specific overall fingerprint pattern (arch, loop, whorl, double loop) on the “suspect” print.
6. If the competitor completes their analysis prior to the call for “time” they may submit their analysis to the Judge and leave the competition area. All analysis documents must be submitted to the Judge prior to the competitor leaving the room.
7. The moderator will call “time” when the 30-minute timer sounds. All competitors must place their hands in the air and back away from their workstations if not finished.
  - a. Competitors who do not finish in time will submit their analysis to the moderator “as is” for scoring. Points will not be awarded for incomplete sections of the analysis.
8. The moderator will collect all fingerprint analysis documents from students who have not already submitted their analysis for scoring upon the call of “time”. No fingerprint analysis documents shall leave the testing room with a competitor.

## Competitors Supplies

- Black fingerprint powder (magnetic or non-magnetic competitors’ choice)
- Fingerprint brush
- Fingerprint lifting tape (clear, frosted, or box tape acceptable competitors’ choice), **NO HINGED OR GEL LIFTERS (ALL FINGERPRINT BACKINGCARDS WILL BE PROVIDED AT COMPETITION SITE. ONLY PROVIDED LIFTING CARDS MAY BE SUBMITTED)**
- Scissors (if needed to cut fingerprint lifting tape competitor’s choice)
- Gloves (**ARE REQUIRED**)
- Workstation cleaning wipes (Clorox wipes)
- Blue/Black ink pen
- Magnifying loupe/ magnifying glass (Needed for phase II)
- Ridge counter (optional)
- 1 Sheet Legal Size White Copy Paper (Optional for notes. If used must be turned in to judge at the end of both phase I and phase II **CANNOT BE REMOVED FROM COMPETITION SITE**)
- Coffee Filter (Optional)
- Air bubble remover (Optional)
- No additional Items may be brought in to the competition room.



# Border Challenge

## JUDGES RATING SHEET

### ***FINGERPRINT COLLECTION AND ANALYSIS ASSESSMENT SHEET***

<b>STUDENT NAME:</b>		
<b>SCHOOL:</b>		
<b>PHASE I CRITERIA</b>	<b>LOWEST POINTS</b>	<b>HIGHEST POINTS</b>
<b>FINGERPRINT BACKING CARD COMPLETION</b>		
CORRECT: DATE	0	1
CORRECT: CASE #	0	1
CORRECT: AGENCY	0	1
CORRECT: VICTIM	0	1
CORRECT: ADDRESS	0	1
CORRECT: PRINTS LIFTED FROM	0	1
CORRECT: PRINTS LIFTED BY	0	1
CORRECT: BADGE #	0	1
CORRECT: SKETCH/DIAGRAM	0	1
CORRECT: APPLICATION OF PRINT TO BACK OF CARD	0	5
<b>TOTAL POINTS FOR CARD COMPLETION</b>		
<b>FINGERPRINT</b>		
RIDGE DETAIL VISIBLE/READABLE	0	10
CARD FREE OF SMUDGES	0	6
FINGERPRINT TAPE FREE OF AIR BUBBLES	0	6
APPROPRIATE AMOUNT OF POWDER APPLIED	0	6
<b>TOTAL POINTS FOR FINGERPRINT</b>		
<b>SAFETY AND WORKSTATION</b>		
DON GLOVES	0	1
WORKSTATION WIPED DOWN AFTER USE	0	6



TRASH PROPERLY DISPOSED OF	0	1
<b>TOTAL POINTS FOR SAFETY AND WORKSTATION</b>		
<b>TOTAL POINT FOR PHASE I</b>	<b>MAX PTS 50</b>	
<b>PHASE II CRITERIA</b>	<b>LOWEST POINTS</b>	<b>HIGHEST POINTS</b>
<b>SUSPECT IDENTIFICATION</b>		
MATCH	NO 0	YES 40
<b>FINGERPRINT ANALYSIS</b>		
CORRECT: FINGERPRINT PATTERN IDENTIFIED	0	1
CORRECT: MINUTIAE #1 IDENTIFICATION (NAME)	0	1
CORRECT: MINUTIAE #1 CIRCLED ON BOTH PRINTS	0	1
CORRECT: MINUTIAE #1 MATCHES ON BOTH PRINTS	0	1
CORRECT: MINUTIAE #2 IDENTIFICATION (NAME)	0	1
CORRECT: MINUTIAE #2 CIRCLED ON BOTH PRINTS	0	1
CORRECT: MINUTIAE #2 MATCHES ON BOTH PRINTS	0	1
CORRECT: MINUTIAE #3 IDENTIFICATION (NAME)	0	1
CORRECT: MINUTIAE #3 CIRCLED ON BOTH PRINTS	0	1
CORRECT: MINUTIAE #3 MATCHES ON BOTH PRINTS	0	1
<b>TOTAL POINTS FOR PHASE II</b>	<b>MAX PTS 50</b>	
<b>TOTAL OVERAL POINTS FOR EVENT</b>	<b>MAX PTS 100</b>	



# **Border Challenge JUDGES WINNERS SHEET**

## ***FINGERPRINT COLLECTION AND ANALYSIS***

1st Place SCHOOL: \_\_\_\_\_

STUDENT \_\_\_\_\_

2nd Place SCHOOL: \_\_\_\_\_

STUDENT \_\_\_\_\_

3rd Place SCHOOL: \_\_\_\_\_

STUDENT \_\_\_\_\_

4th Place SCHOOL: \_\_\_\_\_

STUDENT \_\_\_\_\_