



THE *Art* OF INDUCTION

ACTIVITY:

Five separate logic puzzles are presented on the following pages. These puzzles are of varying difficulty, but it is possible to figure out the solutions based solely on the clues provided in each puzzle.

TEACHER NOTES:

Forensic science relies on the art of induction—reasoning from the specific to the general. At a crime scene, forensic scientist collect many small clues or facts, from which they have to induce or figure out a particular order of events or criminal scenario. Likewise, in order to solve these logic puzzles, students must take a set number of clues and details from them to determine certain identities and relationships. In addition, the logic puzzles may appeal to students' innate sense of challenge and curiosity.

MATERIALS:

Worksheets



CLASSROOM MANAGEMENT:

The exercises are meant to be completed individually. Alternatively, they can be used as homework assignments to get the students interested in forensic science and the CSI universe.



TEACHER ANSWER KEY

WHO DONE IT?

The entire CSI team spent all night collecting evidence at a crime scene. They've collected a lot of evidence, but no one's quite sure who collected what.

- Sara thinks Greg did not swab for the DNA evidence.
- Nick thinks Sara photographed the footprints.
- Warrick thinks Nick collected the fingerprints.
- Greg thinks Warrick collected the carpet fibers.
- When Grissom read over the assignment sheet, he realized that the CSIs who collected the fingerprints and footprints were wrong, but the two who collected the carpet fibers and DNA evidence were correct.
- Can you determine who collected what evidence?

<u>CSI</u>	<u>EVIDENCE</u>
SARA	<i>Fibers</i>
WARRICK	<i>DNA</i>
NICK	<i>Fingerprints</i>
GREG	<i>Footprints</i>

Name: _____

Date: _____

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SARA	
WARRICK	
NICK	
GREG	

	FIBERS	FINGERPRINTS	FOOTPRINTS	DNA EVIDENCE
SARA				
WARRICK				
NICK				
GREG				

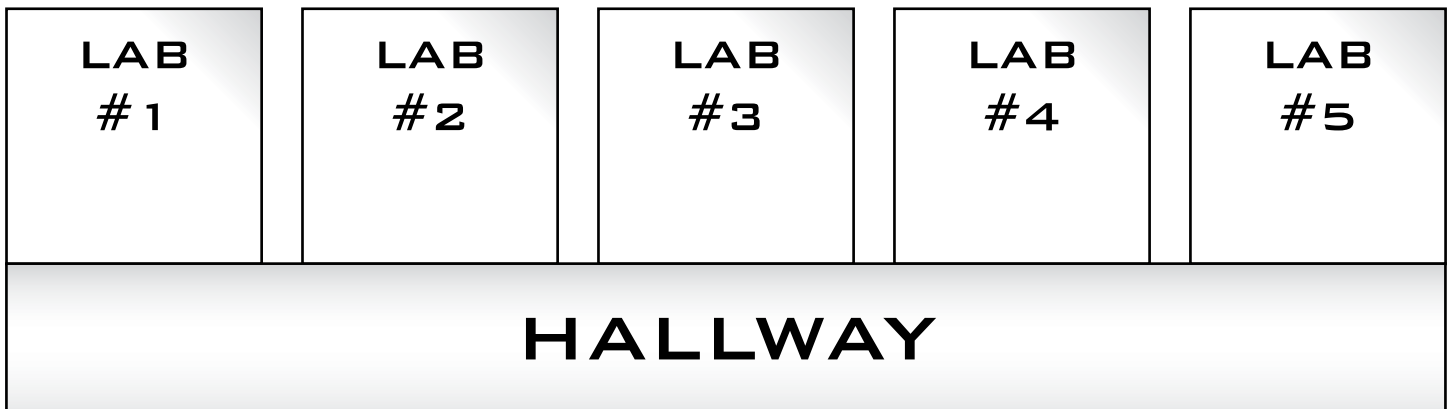
TEACHER ANSWER KEY

FRIENDS AND NEIGHBORS

You've been asked to help layout a new forensics laboratory for the local police department. For convenience sake, the director wants all the laboratories along the same hallway (see below). There are five different labs (Forensic Biology, Fingerprinting, Toxicology, Digital Forensics, and Firearms Examination). Each lab is run by a different specialist (Peggy, Sam, Maria, Danny, and Raymon) who have different preferences on where their lab is located.

Given the following clues, can you determine 1) which specialist works in each lab and 2) how to lay out the labs to please everyone?

- Sam doesn't want his forensic biology lab to be at either end of the hallway
- Maria wants to be immediately to the right of the fingerprinting lab.
- The person who runs the toxicology lab wants to be immediately left of Peggy's lab.
- Danny wants his lab somewhere right of the firearms examination lab, but he doesn't care where.
- The middle lab has to be either the digital forensics lab or the fingerprinting lab.



	<u>LAB NAME</u>	<u>SPECIALIST</u>
LAB # 1	<i>Firearms</i>	<i>Raymon</i>
LAB # 2	<i>Forensic Biology</i>	<i>Sam</i>
LAB # 3	<i>Fingerprints</i>	<i>Danny</i>
LAB # 4	<i>Toxicology</i>	<i>Maria</i>
LAB # 5	<i>Digital Forensics</i>	<i>Peggy</i>

Name: _____

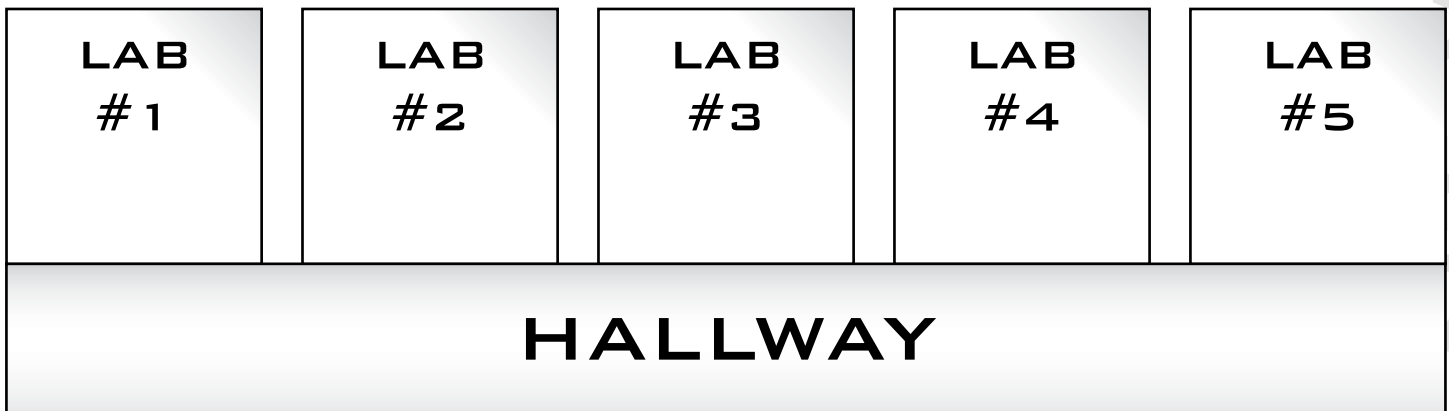
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	<u>LAB NAME</u>	<u>SPECIALIST</u>
LAB # 1		
LAB # 2		
LAB # 3		
LAB # 4		
LAB # 5		

Name: _____

Date: _____

FRIENDS AND NEIGHBORS

	Forensic Biology	Fingerprints	Firearms	Digital Forensics	Toxicology	Peggy	Sam	Maria	Danny	Raymon
LAB # 1										
LAB # 2										
LAB # 3										
LAB # 4										
LAB # 5										
PEGGY										
SAM										
MARIA										
DANNY										
RAYMON										

TEACHER ANSWER KEY

CSI ON VACATION

The Las Vegas CSIs have been working hard. They've definitely earned a rest. Five CSIs (Grissom, Catherine, Nick, Sara, and Warrick) put in for vacation time this month, each after they solved a different type of investigation (fraud, arson, murder, robbery, hit-and-run). Each person's vacation started at a different time, and each went to a different city (Los Angeles, San Francisco, Seattle, Denver, and Houston). Finally, each person spent their vacation doing a different activity (camping, hang-gliding, clubbing, fishing, or horseback riding).

Given the following clues, can you determine when the CSIs started their vacation, where they went, what they did, and which case they solved before they left?

- **The five CSIs who went on vacation were: Catherine; the one who's going to Houston; the male lab member who likes to go hang-gliding; the CSI who's been working on a fraud investigation; and the female lab member who likes to go camping.**
- **Three weeks before Nick went on vacation, the CSI investigating the murder spent some time horseback riding.**
- **Grissom went on vacation two weeks before the male CSI who was working robbery case and one week after the CSI who solved her murder investigation.**
- **Warrick and the CSI who took his vacation on the 9th both went to California to relax.**
- **The CSI who went clubbing was on vacation before the CSI who went fishing, but neither went to Seattle or San Francisco.**
- **The CSI who went to Los Angeles solved either the fraud or the robbery case. He went on vacation two weeks before Sara went to Denver.**
- **The person who solved the arson case was on vacation when the hit-and-run occurred.**

<u>DATE</u>	<u>CSI</u>	<u>CASE</u>	<u>LOCATION</u>	<u>ACTIVITY</u>
2 ND	<i>Catherine</i>	<i>Murder</i>	<i>Seattle</i>	<i>Horseback Riding</i>
9 TH	<i>Grissom</i>	<i>Arson</i>	<i>San Francisco</i>	<i>Hand-Gliding</i>
16 TH	<i>Warrick</i>	<i>Fraud</i>	<i>Los Angeles</i>	<i>Clubbing</i>
23 RD	<i>Nick</i>	<i>Robbery</i>	<i>Houston</i>	<i>Fishing</i>
30 TH	<i>Sara</i>	<i>Hit-and-Run</i>	<i>Denver</i>	<i>Camping</i>

Name: _____

Date: _____

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2 ND				
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Name: _____

Date: _____

CSI ON VACATION

	Grissom	Catherine	Warrick	Nick	Sara	Hit-and-Run	Fraud	Arson	Robbery	Murder	Denver	San Francisco	Seattle	Houston	Los Angeles	Camping	Hang-gliding	Horse-back Riding	Fishing	Clubbing	
2nd																					
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Denver																					
San Francisco																					
Seattle																					
Houston																					
Los Angeles																					
Hit-and-Run																					
Fraud																					
Arson																					
Robbery																					
Murder																					

TEACHER ANSWER KEY

SO YOU WANT TO BE A CSI?

Grissom's been thinking about hiring a new CSI for his team. The interviews started this week, and he's had some promising candidates. Four people applied for the job. They all majored in different fields at different universities. In addition, each person had a different hobby that he or she talked about during the interview.

Using the clues below, can you determine the first and last names of the applicants, what school they graduated from, their major, and their hobby?

- **The four people who interviewed were Teresa; the one who graduated from Rice University; an amateur astronomer; and a Political Science major.**
- **Neither the chemistry major nor the political science major went to Arizona State. The UNLV graduate couldn't stop talking about his stamp collection.**
- **Natalia didn't go to Notre Dame, and her last name isn't Curran. Sandeep's last name isn't Ranney.**
- **Ms. Jones can't juggle. Ms. Ranney, who majored in English, has never been to a hockey game.**
- **The English major didn't go to Notre Dame, and John Garcia didn't go to Arizona State.**
- **The Arizona state graduate majored in biology while he was in college.**
- **Natalia didn't go to Notre Dame. Teresa didn't major in chemistry.**

<u>FIRST NAME</u>	<u>LAST NAME</u>	<u>COLLEGE</u>	<u>MAJOR</u>	<u>HOBBY</u>
SANDEEP	<i>Curran</i>	<i>Arizona State</i>	<i>Biology</i>	<i>Astronomy</i>
NATALIA	<i>Jones</i>	<i>Rice</i>	<i>Chemistry</i>	<i>Hockey</i>
TERESA	<i>Ranney</i>	<i>UNLV</i>	<i>English</i>	<i>Stamp Collecting</i>
JOHN	<i>Garcia</i>	<i>Norte Dame</i>	<i>Political Science</i>	<i>Juggling</i>

Name: _____

Date: _____

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SANDEEP				
NATALIA				
TERESA				
JOHN				

Name: _____

Date: _____

SO YOU WANT TO BE A CSI?

	JONES	GARCIA	CURRAN	RONNEY	ARIZONA STATE	NOTRE DAME	RICE	UNLV	ENGLISH	POLITICAL SCIENCE	BIOLOGY	CHEMISTRY	AMATEUR ASTRONOMY	JUGGLING	STAMP COLLECTING	HOCKEY
SANDEEP																
NATALIA																
TERESA																
JOHN																
AMATEUR ASTRONOMY																
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STAMP COLLECTING																
HOCKEY																
ENGLISH																
POLITICAL SCIENCE																
BIOLOGY																
CHEMISTRY																
ARIZONA STATE																
NOTRE DAME																
RICE																
UNLV																

TEACHER ANSWER KEY

THE DOCTOR WILL SEE YOU NOW

Doc Robbins has had a busy night. Six bodies have been delivered to the morgue—all at different times and with different causes of death. Using the following information, can you determine the first and last name of each person, the cause of death, and the order in which they arrived?

- The bodies arrived in the following order: First was David; then Mr. Daniels; the man who died by electrocution; Phillippe; the hit-and-run casualty; and last was Mr. Archer.
- Sayid was not killed by electrocution or by an aneurysm, but he did arrive after Mr. Klein (who was also not electrocuted).
- Mr. Metzger (who came in before Wesley) was stabbed to death by a former business associate.
- Mr. Santos was not the victim of a hit-and-run, nor did he die of electrocution.
- Robert (who did not die by drowning or an aneurysm) is neither Mr. Chang nor Mr. Klein.
- Dajan was not electrocuted.

<u>TIME OF ARRIVAL</u>	<u>FIRST NAME</u>	<u>LAST NAME</u>	<u>HOBBY</u>
9:12 PM	David	Metzger	Stabbing
9:45 PM	Robert	Daniels	Heart Attack
10:34 PM	Wesley	Chang	Electrocution
11:14 PM	Phillippe	Santos	Aneurysm
12:04 AM	Dajan	Klein	Hit-and-Run
1:11 AM	Sayid	Archer	Drowning

Name: _____

Date: _____

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11:14 PM			
12:04 AM			
1:11 AM			

Name: _____

Date: _____

THE DOCTOR WILL SEE YOU NOW

	ROBERT	WESLEY	DAJAN	PHILLIPE	SAYID	DAVID	ARCHER	SANTOS	CHANG	KLEIN	DANIELS	METZGER	STABBING	ELECTROCUTION	ANEURYSM	HIT-AND-RUN	DROWNING	HEART ATTACK	
09:12 PM																			
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