

**CSI**

**Investigation**

# Purpose

This is a cumulative lab to assess student understanding of the proper use of lab equipment, the collection and presentation of data, and their problem solving skills.

# Why CSI?

- Many students are familiar with *CSI* television programs and this generates a lot of enthusiasm.
- This is an inquiry-based lab.
- Allows students active engagement, creativity and imagination.

# Standards

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- Strand 1: Inquiry Process

- C1: Observations, Questions, & Hypotheses

- PO1: Formulate questions based on observations that lead to the development of a hypothesis.

- C2: Scientific Testing

- PO4: Perform measurements using appropriate scientific tools.

- PO5: Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs.

# Standards

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## C3: Analysis and Conclusions

PO2: Form a logical argument about a correlation between variables or sequence of events

## C4: Communication

PO2: Display data collected from a controlled investigation

PO3: Communicate the results of an investigation with appropriate use of quantitative and qualitative information

# Background Knowledge

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- Basic understanding of metric measurement.
- Knowledge of the scientific method.
- Lessons on observations and inferences.
- Understanding of proper equipment usage.
- Following proper lab safety guidelines.

# Warm Up~ Day 1

- With your group come up with a team name! (**you have 1min to do this**) Write it on the top of your CSI Folder under team name.
- Write all of the team members name on the folder
- Assign roles to each person:
  - **Computer Data Expert** (you should have already chosen this person~ this person is in charge of getting the mini-dell logged on and the data table opened. They are also in charge of inputting data on day 1 and day 2
  - **Team Lead** (keeps the team folder, helps keep group on task, makes sure everyone's lab is back in the folder at end of class, helps with measurements too)
  - **Triple Beam Balance Expert!** (this person works the balance when we get to day 2 of our lab/they should be good at finding the mass of objects.
  - **Measurement Facilitators** (this is really everyone's job but these people, help the group find the length and width of each piece of evidence as well as the perimeter)
  - **EACH PERSON MUST BE ASSIGNED A ROLE/YOUR ROLE WILL BE THE SAME FOR DAY 1 AND DAY 2. WRITE DOWN YOUR ROLE ON YOUR LAB AND ON YOUR TEAM FOLDER!!!!**

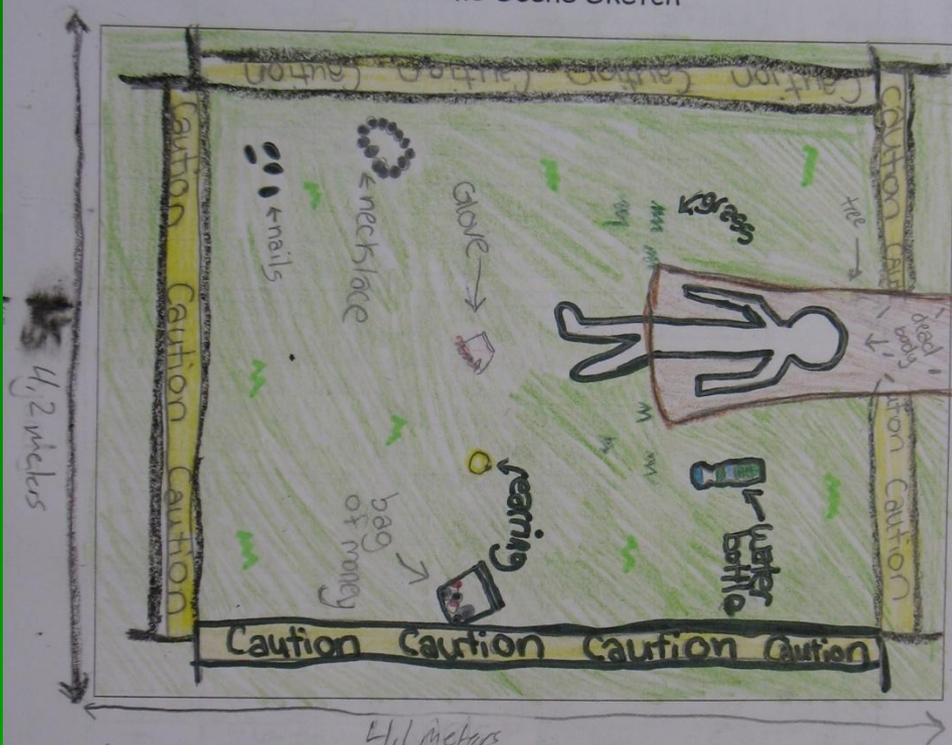
# Day 1:

## Observations/Sketch

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- Create a drawing of the crime scene:
  - Sketch the perimeter and the items within (use color).
  - Label each item
  - Make a legend showing N, S, E and W.
  - Measure the perimeter of the scene (to the nearest .1 m).
  - Photograph crime scene using digital camera.

## Crime Scene Sketch



List all items found in the crime scene:

- \* 59¢ of money in a bag
- \* earring (hoop that was gold)
- \* a body
- \* bloody glove
- \* 4 nails (black)
- \* Silver necklace
- \* water bottle filled with green liquid

# Warm Up~ Day 2

- Team Leader: Handout the labs in your team folder.
- **Warm-up Question:** On the back of your lab identify one issue or problem your group had YESTERDAY while working together on the investigation. How will you and your group work to resolve this issue today in order to complete today's task.

# Day 2: Measurements

Complete the following measurements in centimeters

1. Measure the mass (in grams) of each piece of evidence.
2. Measure the length and width (in cm), of each piece of evidence.
  - Record all data on **your** data table
  - Your computer person will need to record the data on your electronic data table as well.
  - Identify prints found at the crime scene.





# Day 3: Inferences

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- Make inferences about what you think happened at the crime scene:
  - Discuss in your group what you think happened.
  - Make sure you include all the evidence as part of your story.
  - Create a short story describing the events that lead up to the crime scene.  
Everyone in your group **does not** need to have the same story. Give specific details.

Based on the evidence, here's what I think happened:

Jim had just proposed to Mikayla Hammond, the richest girl in the city. Mikayla turned to him and said "Give me time to think about it." "What!" Tom exclaimed "I thought you loved me, you should not need time to think about it." "Don't tell me what to do!" Mikayla screamed then stomped off. As furious as could be Tom was angry yet heart broken he was so confused. The next day Tim came to see Mikayla to apologize. When Tim saw Mikayla she was with Bob! Tim screamed "You Cheater!" then ran off. Tim was so angry he tried to poison Mikayla by putting green poison into her water bottle. Mikayla decided to meet Bob by a tree in the park. Mikayla was about to drink the poison water when Bob grabbed it out of Mikayla's hands and threw it behind him. "It is poison Bob screamed!" "You saved me!" Mikayla cheered. Tim watched the whole thing and was raging with anger. "I'll see you tomorrow" Bob said "Can't wait!" Mikayla shouted as he walked away. When Bob finally left Tim decided to let all of his anger out. Tim charged at Mikayla, beating her. Mikayla was trying to climb up the tree with her fake nails when she fell and they fell off. All of her jewelry and money flew every where. Tim beat Mikayla to death. The next day Bob came to meet Mikayla by the tree again but when he saw her (she) had blood all over her so Bob put on a glove and moved the hair away from her face just to make sure it was Mikayla. "No!" Bob screamed his one true love was murdered by Tim.

# Day 4: Poster Presentation Work Day!

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- Create a poster with your group:
  - Include a creative title.
  - Sketch the crime scene (Big so we can see it)
  - Print your data table with all measurements.
  - Your group must agree on one summary of what occurred at your crime scene based on the evidence.

