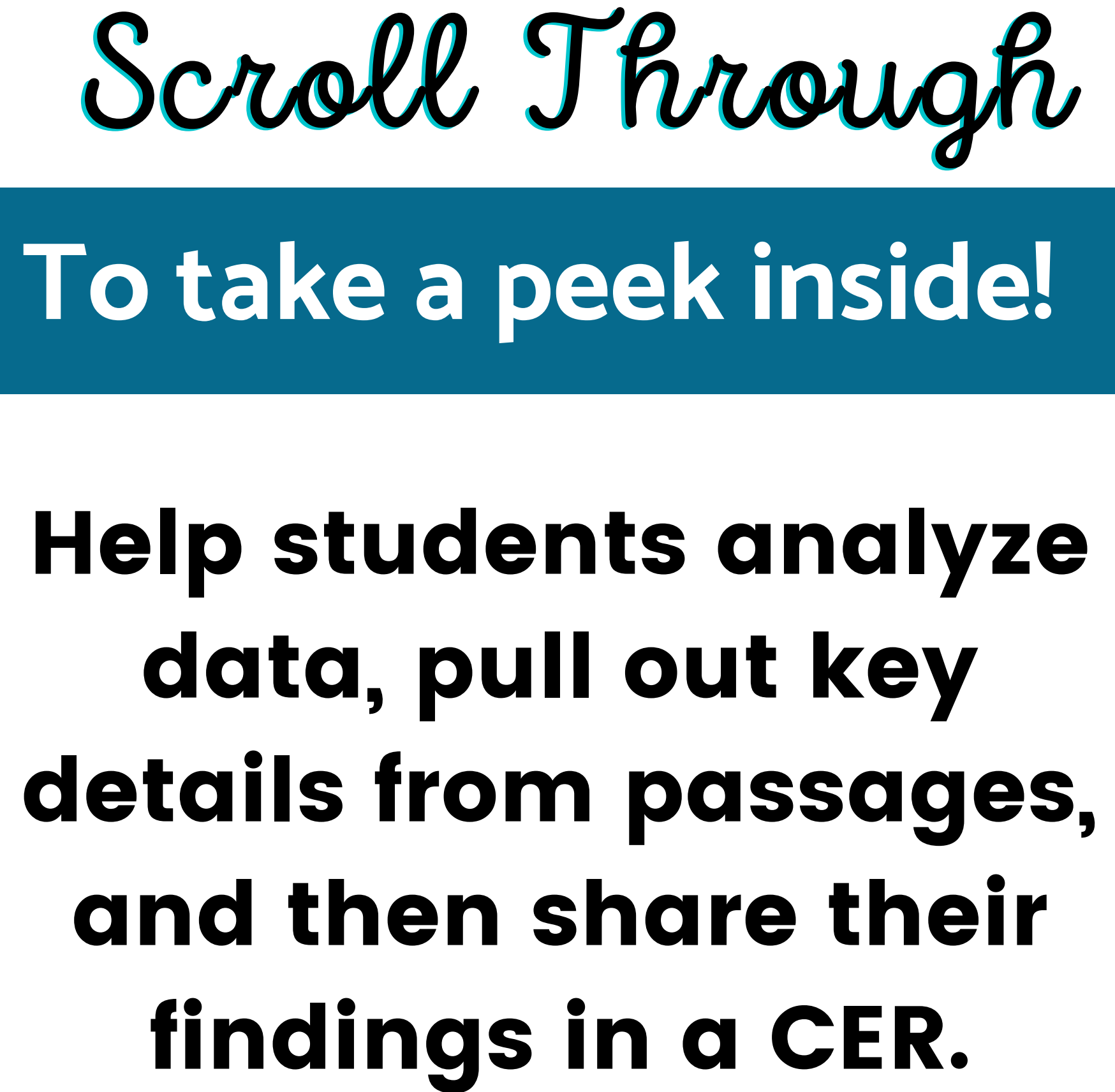


CER Practice



Resource *includes*

- ✓ Teacher presentation
- ✓ Student journal
- ✓ Principal's reports
- ✓ Science reports
- ✓ writing template
- ✓ Grading rubric
- ✓ Sentence starters and student self-assessment checklist

WHAT HAPPENED TO THE GARDEN? CSI INVESTIGATION

CER Practice

Personal Profile


Dana Whitfield
Name

Role at Maplewood Middle school Garden Club President. Organizes the club, plans the planting, and keeps the project records.

Connection to the Case: Leads the club whose garden was damaged

Descriptors: Garden gloves, size 7

Where was the person during the time of the incident?
Working in and around the garden all month, watering, weeding, club members and the sponsor saw her at the beds regularly.

Possible motive?
A damaged garden hurts Dana's own club and the project she leads. The pressure of getting the beds ready for the Spring Harvest Fair had been on her mind.

Additional information?
Dana keeps the club's planting calendar and data binder. She was supposed to die and asked the principal to call in the student science team.

Personal Profile


School custodian and groundskeeper. Maintains the grounds, fence line, and the storage shed beside the garden.

Role at Maplewood Middle school School custodian and groundskeeper. Maintains the grounds, fence line, and the storage shed beside the garden.

Connection to the Case: Stores and uses chemicals near the garden

Descriptors: Greying buzz cut, work shirt, 5'10", 195 lbs, wears size 11 work boots

Where was the person during the time of the incident?
Working in and around the garden all month. He sprays weed killer along the fence line and keeps pool ice-melt (salt) in the shed next to the raised beds.

Possible motive?
Once about the extra watering, weeding, and cleanup the garden

Additional information?
Groundskeeping chemicals and the leftover bags of ice-melt salt

DO YOUR STUDENTS STRUGGLE WITH



Interpreting data



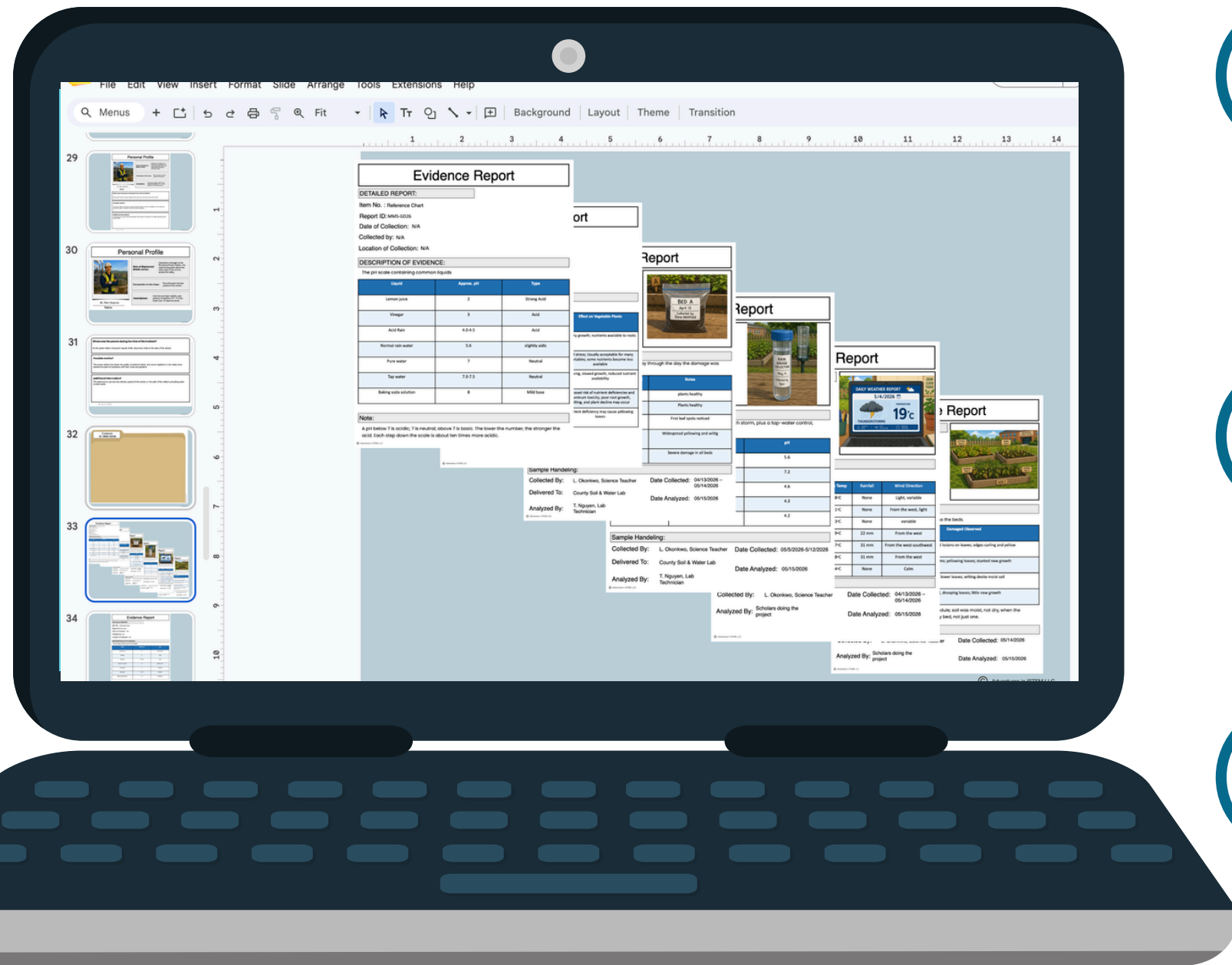
**Finding the key details
in passages**



**Using evidence to
support a claim**



**Using reasoning to link
the evidence to the
claim**



I've Got You Covered

- ✓ Engaging lesson where the students become the detectives
- ✓ Data tables to interpret
- ✓ Camp director report for students to pull out key details
- ✓ Journal to help students record their observations
- ✓ Sentence support to help them write their CER



This activity was a great way to work on CER without being too "science-y." I teach 9th grade instructional biology and this was just the right amount of science and writing. My students lose interest very quickly and solving the mystery kept them guessing. After every piece of evidence, they were were trying to figure out how he died. Great resource!- Carolynn

WHAT HAPPENED TO THE GARDEN? CSI INVESTIGATION CER Practice

Principal's Report
Date: Thursday, May 14, 2026
Report ID: MMS-GD26
Completed by reporting staff: Andrea Voss, Principal
Time: 08:45 am
Location: South-fence garden, Maplewood Middle School, Crayford (river valley)

Maps
MAPLEWOOD MIDDLE SCHOOL & SURROUNDING AREA
PREVAILING WINDS
West - North

Evidence Report
DETAILED REPORT:
Item No. : SOIL-A, SOIL-B, SOIL-C
Report ID: MMS-GD26
Date of Collection: 04/13/2026 – 05/14/2026
Collected by: L. Okonkwo, Science
Location of Collection:
South-fence raised beds A, B, and C;
Maplewood Middle School

DESCRIPTION OF EVIDENCE:
Soil pH measured at each raised bed from planting day through the day the damage was reported.

Day	Bed A pH	Bed Bath pH	Bed C pH	Notes
April 13 (planting)	6.6	6.5	6.6	plants healthy
April 27	6.5	6.5	6.4	Plants healthy
May 5 (After May 4 storm)	5.9	5.8	5.9	First leaf spots noticed
May 12 (after May 8 and May 11 storms)	5.3	5.2	5.3	Widespread yellowing and wiltig
May 14 (damage report)	5.0	5.1	5.0	Severe damage in all beds

Sample Handling:
Collected By: L. Okonkwo, Science Teacher
Delivered To: County Soil & Water Lab
Analyzed By: T. Nguyen, Lab Technician
Date Collected: 04/13/2026 – 05/14/2026
Date Analyzed: 05/15/2026

Evidence Report
DETAILED REPORT:
Item No. : WX01
Report ID: MMS-GD26
Date of Collection: 04/13/2026 – 05/14/2026
Collected by: L. Okonkwo, Science
Location of Collection:
Room 14; Maplewood Middle School

DESCRIPTION OF EVIDENCE:
Local weather and wind log for the garden site

Date	Conditions	High Temp	Rainfall	Wind Direction
April 13 (planting)	Sunny	18°C	None	Light, variable
April 20	Warm & Sunny	21°C	None	From the west, light
April 27	Warm and Sunny	23°C	None	variable
May 4	Thunderstorm	19°C	22 mm	From the west
May 8	Rain storm	17°C	31 mm	From the west-southwest
May 11	Heavey rain	18°C	31 mm	From the west
damage reported)	Sunny	24°C	None	Calm

Sample Handling:
Collected By: L. Okonkwo, Science Teacher
By: Scholars doing the project
Date Collected: 04/13/2026 – 05/14/2026
Date Analyzed: 05/15/2026

What Are *students* Doing?

- ✓ Reading police reports
- ✓ Analyzing and interpreting data from the forensic reports

soil pH analysis, water pH analysis, weather reports, plant observations, maps

- ✓ Organizing their thoughts
- ✓ Answering the question as to what happened using claim, evidence, reasoning

Introduce the Case and have students go through the Principal's reports



Student journal



Principal's reports

Principal's Report	
Report ID: MMS-GD26	Date: Thursday, May 14, 2026
Completed by reporting staff: Andrea Voss, Principal	Time: 08:45 am
Location: South-fence garden, Maplewood Middle School, Crayford (river valley)	
Memo	

Investigation Notebook

Principal's Report

Key information from the Principal's report:

Photograph

Key observations from the crime scene photograph:

Adventures in Science 2016

www.adventuresinscience.com

Next, have them look at the different profiles of the suspects



Personal Profile

Role at Maplewood Middle school

Connection to the Case:

Descriptors:

Name

Where was the person during the time of the incident?

Possible motive?

Additional information?

Working in and around the garden all month, watering club members and the sponsor saw her at the beds.

A damaged garden hurts Dana's own club and the pressure of getting the beds ready for the Spring Harvest Fair.

Dana keeps the club's planting calendar and data to die and asked the principal to call in the student council.



Personal Profile

Role at Maplewood Middle school

Connection to the Case:

Descriptors:

Name

Where was the person during the time of the incident?

Possible motive?

Additional information?

Short dark hair, 140 lbs, wears a green hoodie.

At school during the day and at home in the evenings, where he grows his own vegetables in pots on a windowsill.

Tyler wants to win the Spring Harvest Fair and was overheard earlier in the season saying the club's garden would "flop this year" so his own entry would stand out.

Tyler grows his vegetables at home rather than in the school beds. He says his own plants have started to look unhealthy as well.



Personal Profile

Role at Maplewood Middle school

Connection to the Case:

Descriptors:

Name

Where was the person during the time of the incident?

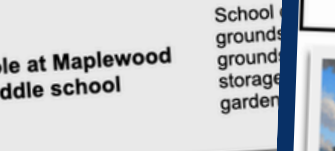
Possible motive?

Additional information?

School grounds, near the storage shed.

Mr. Coletti has grumbled more than once about the extra watering, weeds, and the extra work it adds to his workload.

The shed beside the garden holds his groundskeeping chemicals and tools, and is a source of concern from winter.



Personal Profile

Role at Maplewood Middle school

Connection to the Case:

Descriptors:

Name

Where was the person during the time of the incident?

Possible motive?

Additional information?

Greying brown hair, 195 lbs, wears a blue shirt.

At the power station during his regular shifts, about two miles to the west of the school.

The power station has drawn air-quality complaints before, and some neighbors in the valley have blamed the plant for problems with their crops and gardens.

The plant burns coal and sits directly upwind of the school, in the path of the valley's prevailing to-east winds.



Personal Profile

Role at Maplewood Middle school

Connection to the Case:

Descriptors:

Name

Where was the person during the time of the incident?

Possible motive?

Additional information?

Science teacher and garden club sponsor. Set up the science project and collects the garden's measurements.

Collected and logged the garden data.

Locs tied back, lab apron over cardigan, late thirties, always carrying a clipboard and test kit, wears flats.

Running the science station and the garden project. She set up the rain gauge and has been taking soil pH readings at all three beds and testing rainwater after each storm.

Ms. Okonkwo manages the garden's small budget and runs the club. A failed garden could put next year's program and the funding behind it at risk.

She collected and labeled rainwater, tap water, and soil samples, recorded the readings, and delivered them to the county lab. She guides the student science team as they work through the data.

Then, have them review the various forensic evidence: They will analyze the water samples, the soil samples, plant observation data, weather reports

Evidence Report

Item No. : SOIL-A, SOIL-B, SOIL-C

Report ID: MMS-GD26

Date of Collection: 04/13/2026 – 05/14/2026

Collected by: L. Okonkwo, Science

Location of Collection:
South-fence raised beds A, B, and C;
Maplewood Middle School

DESCRIPTION OF EVIDENCE:

Soil pH measured at each raised bed from planting day through the end of the growing season, plus a tap-water sample and the textbook value for normal rain.

Day	Bed A pH	Bed Bath pH	Bed C pH
April 13 (planting)	6.6	6.5	6.6
April 27	6.5	6.5	6.4
May 5 (After May 4 storm)	5.9	5.8	5.9
May 12 (after May 8 and May 11 storms)	5.3	5.2	5.3
May 14 (damage report)	5.0	5.1	5.0

Sample Handling:

Collected By: L. Okonkwo, Science Teacher

Delivered To: County Soil & Water Lab

Analysed By: T. Nguyen, Lab Technician

Evidence Report

Item No. : RW01, RW02, RW03, TAP01

Report ID: MMS-GD26

Date of Collection: 05/5/2026-5/12/2026

Collected by: L. Okonkwo, Science

Location of Collection:
Garden rain gauge, south-fence garden;
Maplewood Middle School

DESCRIPTION OF EVIDENCE:

Rainwater collected in the garden rain gauge after each storm, plus a tap-water sample and the textbook value for normal rain.

Sample	Source	pH
Normal rain (reference)	Textbook value	5.6
Tap water (TAP01, control)	School spigot	7.2
Storm 1 (RW01)	Rain guage, May 5	4.6
Storm 2 (RW02)	Rain guage, May 9	4.3
Storm 3 (RW03)	Rain guage, May 12	4.2

Sample Handling:

Collected By: L. Okonkwo, Science Teacher

Delivered To: County Soil & Water Lab

Analysed By: T. Nguyen, Lab Technician

Evidence Report

Item No. : Reference chart

Report ID: MMS-GD26

Date of Collection: N/A

Collected by: N/A

Location of Collection: N/A

DESCRIPTION OF EVIDENCE:

Soil pH and vegetable plants (reference)

Soil pH	Condition	Effect on Plants
6.0-7.0	Ideal	healthy growth
5.5-5.9	Slightly acidic	Mild stress on vegetables
5.0-5.4	Acidic	Yellowing of leaves
below 5.0	Strongly acidic	Increased aluminum toxicity, wilting
7.5 and above	Alkaline (basic)	Nutrient deficiencies

Evidence Report

Item No. : LF01

Report ID: MMS-GD26

Date of Collection: 05/14/2026

Collected by: L. Okonkwo, Science

Location of Collection:
South-fence raised beds A, B, and C;
Maplewood Middle School

DESCRIPTION OF EVIDENCE:

Observations of the plant and leaf damage across the beds.

Plant / Bed	Damaged Observed
Lettuce (Bed A)	Brown spots and lesions on leaves; edges curling and wilting
Beans (Bed B)	Pale, limp stems; yellowing leaves; stunted new growth
Tomatoes (Bed C)	Yellowing lower leaves; wilting despite moist soil
Peppers (Bed C)	Spotted, drooping leaves; little new growth

Note: All beds were watered on the regular schedule; soil was moist, not dry, when damage was found. Damage appeared in every bed, not just one.

Sample Handling:

Collected By: L. Okonkwo, Science Teacher

Analysed By: Scholars doing the project

Evidence Report

Item No. : WX01

Report ID: MMS-GD26

Date of Collection: 04/13/2026 – 05/14/2026

Collected by: L. Okonkwo, Science

Location of Collection:
Room 14; Maplewood Middle School

DESCRIPTION OF EVIDENCE:

Local weather and wind log for the garden site

Date	Conditions	High Temp	Rainfall	Wind Direction
April 13 (planting)	Sunny	18°C	None	Light, variable
April 20	Warm & Sunny	21°C	None	From the west, light
April 27	Warm and Sunny	23°C	None	variable
May 4	Thunderstorm	19°C	22 mm	From the west
May 8	Rain storm	17°C	31 mm	From the west-south
May 11	Heavy rain	18°C	31 mm	From the west
May 14 (damage reported)	Sunny	24°C	None	Calm

Sample Handling:

Collected By: L. Okonkwo, Science Teacher

Analysed By: Scholars doing the project

Students will put all of their findings and state what happened using a claim, evidence, reasoning paragraph

Investigation Notebook

Person of Interest:

Role at Maplewood Middle School:

Connection to the Case:

Possible Motive:

Other key information:

Personal Profiles

Investigation Notebook

Principal's Report

Key information from the Principal's report

Photograph

Key observations from the crime scene photograph

Investigation Notebook

Evidence Reports

pH reference - pH scale

Soil pH and vegetable plants reference chart

Soil pH log:

Investigation Notebook

Evidence Reports

Rainwater pH log

Weather and wind log

Leaf / plant damage observations

Claim, Evidence, and Reasoning

Claim

The claim answers the question. It states what you think. It is written in a scientific sentence using academic language. There should be no "I" in the statement.

Some sentence frames to help you write your claim statement

The vegetable plants in the school garden were damaged by....

___ is what damaged the plants in the school garden.

Evidence

The evidence is the actual observations and forensic evidence from the lab.

Some sentence frames to help you write your evidence statements

The forensic evidence showed _____.

According to the _____ report _____.

During the crime investigation, _____.

It was discovered that _____.

Furthermore, ...

Additionally, ...

Reasoning

The reasoning explains why the evidence supports the claim. It uses knowledge that is already known from science class and real world knowledge to link the evidence to the claim.

Some sentence frames to help you write your reasoning statement

This indicates _____.

This supports the claim because _____.

This is important because _____.

This suggests that _____.

I know _____.

Therefore, I can conclude _____.

HOW TO USE THE RESOURCE IN

3 simple steps

1

Print the PDF version, make copies, and hand out to students

2

Use the digital version by clicking the titles in the RED BOX to make your own copy (found at the end of the PDF)

3

Share the resource with your students using your favorite LMS (Google Classroom, Powerschool (schoolology), Canva...)

Student CER self-assessment

Claim

- ☒ Includes the names of the chemicals in the experiment
- ☒ States if a chemical reaction occurred or not
- ☒ States the answer to the question

Evidence

- ☒ States where the information comes from (according to the data, during the experiment..)
- ☒ Includes observations found in the data table
- ☒ Includes actual numbers when appropriate

Reasoning

- ☒ Explains how the evidence supports the claim
- ☐ States why the evidence is important
- ☒ Includes a concluding sentence

Mechanics

- ☒ No spelling errors
- ☒ No grammar errors
- ☒ Easy to read
- ☒ Includes transition words or sentences

CSI INVESTIGATION

CER Practice

Student CER self-assessment

Claim

☐ Includes the keywords from the question

☐ States the answer to the question

Evidence

SCIENTIFIC EXPLANATION

Grading Rubric

	4	3	2	1	0
Claim	Claim is clear, answers the question, and is supported by evidence.	Claim answers the question, and is supported by evidence.	Claim is clear, answers the question, but is not supported by evidence.	Claim answers the question, but is not supported by evidence.	No claim is stated.
Evidence	Provides appropriate and sufficient evidence that includes measurements or observations that have been analyzed and interpreted to support the claim.	Provides appropriate and sufficient evidence to support the claim.	Provides appropriate but insufficient evidence to support the claim or also includes inappropriate evidence.	Provides inappropriate evidence that does not support the claim.	No evidence is given to support the claim.
Reasoning	Explains correctly, using scientific principles, why the evidence is included and how it supports the claim.	Explains correctly why the evidence is included or how it supports the claim, but both are missing.	Explains why the evidence is included or how it supports the claim, but one is missing.	Explains why the evidence is included or how it supports the claim, but one is missing.	No reasoning is provided.
Mechanics	The writing is easy to follow, using academic language and details. Contains no grammar or spelling errors.	The writing is easy to follow, using academic language and details. Contains a few grammar or spelling errors.	The writing is easy to follow, using academic language and details. Contains several grammar or spelling errors.	The writing is difficult to follow, using informal language and details. Contains many grammar or spelling errors.	The writing is not legible.

Comments:

Check out what teachers just like you have said about products like this:



I have to give my students multiple opportunities to write argument essays over the school year. I always love having new ways to explain this process. This was a fun activity that really helped my students understand what to do.- Megan

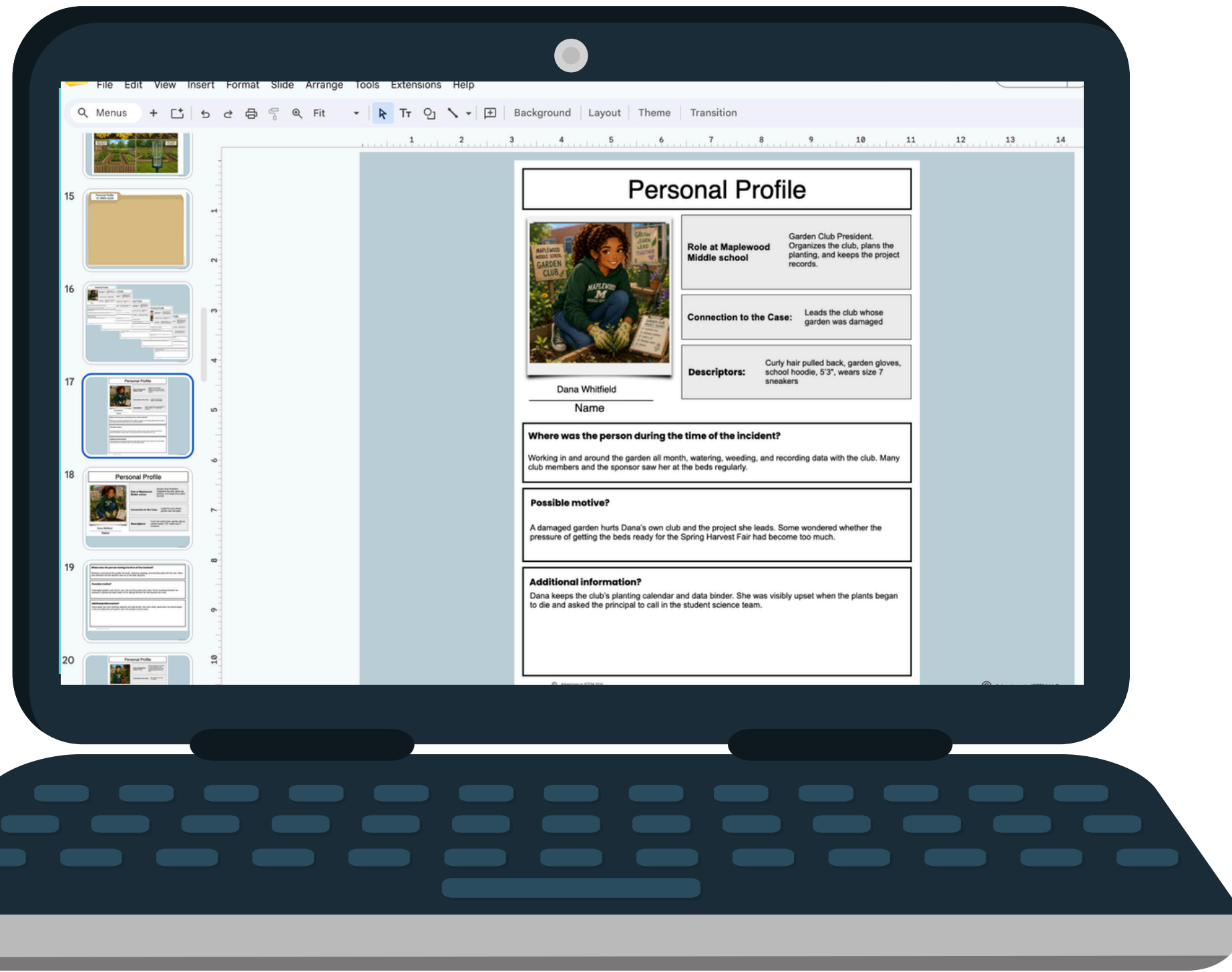


This was a fantastic way of reviewing CER with my students! They were engaged from the get-go! This year, my students are all about crimes and solving mysteries. This resource allowed them to get into the crime and use their CER skills to determine who might have committed the crime. I kept it open-ended, if they haad solid evidence to prove someone's guilt, then they got the points. I was amazed at how creative they got with the evidence, and how invested they were in solving the crime! Thank you so much for creating this resource, it was amazing!- Heather



My students loved this activity so much! They were so into solving the "crime" that they didn't even realize the work atthey were putting in! An excellent way for them to practice CER in little steps and then allow them to put it all together!- Brea

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