

Original Goals:

My goals are

1. to see what they learned about how to tell the developmental stage of a maggot by its physical features #1&2
2. to see what they learned about insect anatomy and physiology #3-4
3. to see what they can do regarding putting the above information together, along with what they already know about forensic testing, to figure out a solution (solve a puzzle). #4&5

Suggested wording:

Big Picture: Effective scientific investigation requires the synthesis of knowledge and evidence.

The students will:

1. use physical features to determine the developmental stages of a maggot
2. identify the organs of a maggot and the function of each (could only be a specific organ, not all)
3. identify the connection between physical features and maggot physiology (could be specific to spiracles and respiratory system)
4. synthesize information about maggots and forensic testing to predict solutions to a problem

Lesson: A possible starting place would be to present the task, maybe: Complete a worksheet to show your knowledge of maggot anatomy and its connections to forensics and synthesize information to predict a solution to a problem. (**Know the direction for learning**)

Given the 'goal' or task, ask students what's valuable in the statement and ask that they justify their response. This could be discussed in partners then a class discussion could help all kids focus on what is important for the lesson. (**Understanding Learning**)

Ask students what they already know that would help them (record individually, then share with a partner) and also what they think they need to know to be successful (again, maybe a quick partner discussion, followed by a class review of possibilities). (**Accessing prior knowledge and Making Predictions**)

I'll assume they will have to read something and if so, this has set their purpose for reading. While reading, they can focus on what has been determined 'important' to successfully complete the task. You could provide the above 'The Student will:' LOs. (**Making Connections**)

If this is a follow-up after having gathered the necessary knowledge then provide some time for kids to figure out 'what they need to know', through whatever means you see fit. Again, sharing the 'The student will' Los is quite helpful.

Finally, review criteria for successful completion of this type of assignment then provide the assignment and show the correlation to the task presented at the beginning of class. Then, cut 'em lose. (if you really wanted to, you could ask for a quick sketch of the scene to help with **imagery**) (**Application**)

Follow-up with a chance to record 'what they learned' (probably on the same paper as what they know and need to know) and finally ask for a reflection on their thinking, sharing and what they might do differently next time (this part could come after discussing answers to worksheet). If discussing answers and a chance for partners arises, the focus may be sharing how and where the answers were found and why they knew they were correct – this is a sharing of thinking skills. (**Metacognition and goal setting**)

(Aspects of learning in bold)

Lori, you can use the worksheet results as summative assessment and the paper the kids used to record what they know, need to know, reflections, etc can provide details of their thinking, strategies for learning and acquired skills. This can be summative assessment, as well. It could also open discussion and suggestions for future success.

Name: _____

The Burial Site

The ground looked like it had been disturbed, but there was no trace of anything buried as far as the investigating officers could tell. Just before they left, the senior investigator had everyone comb the area around the disturbed ground. Soon they found one maggot, then another, then another, until soon each officer had a number of larvae at different stages of development. The largest maggots were easily identified as being in the third instar stage, as, when held under the hand lens, the number of slits in each spiracle were evident. The senior investigator smiled. She knew that within each of these tiny creatures was an important clue.

1. Estimate the length of these maggots in millimetres: _____ mm

2. How many slits would be evident in each spiracle opening of a third instar larva (maggot)? _____

3. The spiracles are the openings to which body system?

4. In which body organ was the important clue?

5. What information could this clue provide, and what should the investigators do to get this information?

Stages for Rubric Development

Questions to ask:

Why do I want to develop a rubric?

What will the rubric assess?

How will the rubric provide meaningful feedback for students to understand their level of performance?

How will the rubric assist students to set directions for improvement?

How will I time manage the use of the rubric?

	In Training	On Probation	Team Member
Background Knowledge	-lacking necessary info	-necessary info present but relevance is variable	-all necessary info included
Observations	-lacks understanding of the key question - problem not reworded clearly	-has limited understanding of the key question -uses some original language to restate the problem	-clearly focused on the key question - restates the problem using accurate, new language
Connections	-missing key connections to accomplish task -no connections to solution made	-makes some accurate connections but needs more to succeed -connections evident ... partial link to solution	-clearly connects the necessary info to the situation and task -clear and accurate connection of all necessary info to the solution
Synthesis	-uses little information -makes few inferences	-uses some accurate info -makes some inferences	- info is accurate and relevant -makes insightful inferences
Response	-poorly worded -meaning not evident -not detailed	-wording still lacks clarity -meaning is evident -details missing	-explanation is accurate and clear. -solution is well presented -full details presented