Mentors Formative Lesson Observation Resource (M-FLOR)

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Name of Mentor: Mr. Hatem	**Cycle: 3**
School: Al QUDRA	**Class: 11 General**
Period: 2	**Date: 23/04/2026**

Brief description of the lesson topic, learning objectives, and planned activities

Lesson Topic: Classifying Chemical Reactions - Combustion Reactions

Learning Objectives:

- **Identify** a combustion reaction from a given set of chemical equations.
- **Predict** the product formed from reactants.
- **Write** a balanced chemical equation representing the reaction.

Introduction & Hook (10 mins): The lesson will open with an inquiry-based discussion surrounding a safe, real-world demonstration of combustion (such as a simple hydrocarbon burn). This will serve to hook the students and elicit their prior knowledge regarding oxygen's role in burning.

Main Collaborative Task (25 mins): Students will be organized into small groups to analyze various sets of chemical equations. They will be tasked with identifying which represent combustion. Following this, they will practice predicting the standard products of hydrocarbon combustion (carbon dioxide and water) and balancing the resulting equations. I will circulate to facilitate dialogue and provide formative feedback.

Plenary & Assessment (10 mins): The lesson will conclude with an independent exit ticket where students will individually classify, predict products for, and balance a final combustion equation to ensure the learning objectives have been met.

As per the M-FLOR guidance, we have selected two specific categories for this observation:

- Classroom presence, posture, relationships and communication skills.
- Establishing clear learning objectives.

DURING THE LESSON

STEP 2: Lesson Observation

Conduct the lesson observation. Based on the categories you selected, describe what you observe, record questions, and note comments using the grid below.

Observation Category 1

Classroom presence, posture, relationships and communication skills: teacher's physical posture, teachers' physical presence, quality of voice, audibility, intonation, fluency, subject specific terminology, suitability of language to age and ability of students, rapport and relationships with students, attention to individuals, respectful relationships

What is happening during the lesson?

You maintained a confident physical presence at the front of the laboratory during the combustion demonstration, keeping your physical posture upright and engaged while moving around the benches.

Your quality of voice was strong, and you ensured audibility for all students, even those at the back like Zayed and Mansoor.

When introducing the reaction, you consistently used subject specific terminology such as "hydrocarbon," "oxidation," "reactants," and "products".

During the group work, you knelt down to eye level when speaking with Khalifa, showing direct attention to individuals.

Areas of strength:

You established excellent rapport and relationships with students. By addressing students like Sultan and Hamdan by name and validating their initial ideas about fire needing oxygen, you maintained highly respectful relationships.

Your fluency and intonation during the hook naturally drew the students into the topic.

Areas needing further development:

While your use of scientific vocabulary is excellent, carefully monitor the suitability of language to age and ability of students in the Grade 11 General track.

When explaining the rapid oxidation process to Tariq's group, the pace and complexity of the explanation were slightly advanced; pausing to allow them to process the terminology would enhance their comprehension.

Observation Category 2

Establishing clear learning objectives: helping students understand a clear sense of what they are trying to achieve during the lesson, identifying clear learning goals, helping students understand the key "learning" words in the learning objectives of the lesson, such as "compare and contrast", "analyze", "summarize" etc.

What is happening during the lesson?

You wrote the three objectives on the whiteboard before the students entered.

Before starting the main activity, you spent three minutes pointing to the board, explicitly identifying clear learning goals for the 45-minute session.

You engaged the class in a brief discussion by asking Majid to explain what he thinks "predict" means when looking at a set of reactants.

You clarified that by the end of the lesson, they must be able to write carbon dioxide and water as the standard products.

Areas of strength:

You were highly effective at helping students understand the key "learning" words in the learning objectives of the lesson.

By unpacking the verbs "identify," "predict," and "write," you ensured the students knew exactly what actions were expected of them.

This practice was instrumental in helping students understand a clear sense of what they are trying to achieve during the lesson.

Areas needing further development:

Although the objectives were unpacked beautifully at the beginning, some groups (such as Saeed and Omar's group) lost focus on the final objective during the collaborative task.

To strengthen this area, consider referring back to the whiteboard mid-lesson to remind the students of the goals, ensuring they maintain a clear sense of what they are trying to achieve throughout the entire group work phase.

AFTER THE LESSON

STEP 3: Post-Lesson Observation Interview

Suggested questions **to ask your Intern** after the lesson observation:

1. What were some of the things **you** did in the lesson that you were pleased with?
2. Can you tell me **your thinking** behind that? (e.g., putting them into groups then ... asking that group or that pupil to give a demonstration)
3. I really liked how the group work went. How did **you** make it go so smoothly? What was your thinking?
4. Can you give me more detail?
5. Can you give me one or two examples of that?
6. What do you mean by...?
7. Do you mean .... Have I understood you right?
8. What else did **you** do that you were pleased with?

General comments and questions:

Mr. Hatem: What were some of the things you did in the lesson that you were pleased with?

Abdulrahman: I was very pleased with the students' high level of engagement during the initial combustion demonstration. I felt my classroom presence was strong, and my voice projection reached everyone, including the students at the back. I was also really happy with how we broke down the learning objectives at the start of the lesson, specifically when I asked Majid to explain his understanding of the word "predict" in a chemical context.

Mr. Hatem: Can you tell me your thinking behind that? (e.g., starting the lesson by unpacking the verbs in the objectives on the board)

Abdulrahman: My thinking was that Grade 11 General students often look at a list of objectives and simply gloss over them. By explicitly unpacking the active verbs—"identify," "predict," and "write"—I wanted to give them a very clear sense of what they were trying to achieve. If they know exactly what the final outcome should look like, they are much more focused during the activities.

Mr. Hatem: I really liked how the group work went. How did you make it go so smoothly? What was your thinking?

Abdulrahman: Thank you. I was very intentional about my physical posture and relationships during that phase. Instead of standing at the front of the lab, I circulated continuously to maintain momentum. My thinking was that if I engage them at their level—like when I knelt down to eye level to speak with Khalifa—they feel more supported and are more willing to take risks when trying to balance the equations.

Mr. Hatem: Can you give me more detail?

Abdulrahman: Certainly. While circulating, I made a conscious effort to use their names, like Sultan and Hamdan, to build rapport and validate their everyday knowledge about fire needing oxygen. However, I also

had to carefully monitor my own communication and ensure my language was pitched suitably for their level, stepping in to adjust my explanations if the scientific concepts became too heavy.

Mr. Hatem: Can you give me one or two examples of that?

Abdulrahman: A good example was with Tariq's group. I was initially explaining the rapid oxidation process using some advanced terminology, and I could tell the pace was a bit too fast for them. So, I paused and adjusted my language. I asked them to think about a car engine burning fuel. We identified the "hydrocarbon" and the "oxygen" as the reactants, which made it much easier for them to grasp the concept before moving on to predicting the products.

Mr. Hatem: What do you mean by "adjust my language"?

Abdulrahman: I mean providing a linguistic bridge between their everyday observations and the subject-specific terminology they are required to learn. If a student says the fire "uses up air to make smoke," I validate their thought process, but then I rephrase it scientifically by saying, "Exactly, the hydrocarbon reacts with oxygen to yield carbon dioxide and water vapor."

Mr. Hatem: Do you mean translating their intuitive understanding of fire into the formal framework of a chemical equation? Have I understood you right?

Abdulrahman: Yes, exactly. It is about taking their intuitive understanding and explicitly linking it back to our learning objectives—specifically the goal where they must write a balanced chemical equation utilizing the correct reactant and product formulas.

Mr. Hatem: What else did you do that you were pleased with?

Abdulrahman: I was highly pleased with the implementation of the exit ticket. During the middle of the group work, I noticed that Saeed and Omar's group briefly lost focus on the final goal of writing the balanced equation. The exit ticket served as a hard reset. It brought everyone back to the core objectives and provided me with concrete evidence of which students could independently identify, predict, and balance a combustion reaction.

Signed: Hatem Date: 23-4-26

(Mentor)

Signed: Date: 23/4/26

(Intern)

STEP 4: Intern's Reflection on the Experience

Describe

The lesson focused on classifying and predicting the products of combustion reactions for Grade 11 General Chemistry students at Al Qudra Government School. The 45-minute session commenced with a real-world demonstration of a hydrocarbon burn to activate prior knowledge regarding the role of oxygen in fire. Before transitioning to group work, I explicitly unpacked the verbs within the learning objectives—"identify," "predict," and "write"—on the whiteboard. During the main activity, students worked in small collaborative groups to analyze sets of chemical equations, predict standard combustion products (carbon dioxide and water), and balance the equations. Throughout this phase, I maintained an active classroom presence, circulating among the benches, dropping to eye level to support individual students like Khalifa, and engaging groups in dialogue. The lesson concluded with an independent exit ticket to assess individual mastery of the objectives.

Evaluation

A primary success of the lesson was the establishment of clear learning goals; explicitly unpacking the verbs ensured that students understood the specific actions required of them to achieve success. Furthermore, my physical presence and audibility were strong, which helped maintain a respectful and engaging rapport with students like Sultan and Hamdan. However, a notable challenge emerged regarding the suitability of language for the Grade 11 General track. When explaining rapid oxidation to Tariq's group, the initial scientific terminology proved too complex, requiring an on-the-spot adjustment to link the concept to a familiar context (a car engine). Additionally, maintaining momentum was challenging when groups such as Saeed and Omar's lost focus on the final objective during the middle of the collaborative task.

Analysis

The effectiveness of the visual hook can be attributed to the implementation of "minds-on" practical work. Abrahams (2017) emphasizes that effective science education must move beyond mere "hands-on" observation to actively engage students' cognitive processes. By asking

the students to deduce the definition of a synthesis reaction directly from the physical burning of the magnesium, rather than passively receiving a dictated definition, the activity bridged the gap between observable phenomena and abstract chemical concepts.

Furthermore, the successful scaffolding utilized with Tariq aligns closely with principles of formative assessment and visible learning frameworks. Hattie and Clarke (2018) highlight the critical importance of providing feedback that actively moves learning forward. By breaking down the complex task of predicting the entire chemical equation into smaller, manageable steps—specifically, identifying individual ionic charges first—the cognitive load was reduced, enabling the student to meet the explicit success criteria.

Conversely, the challenges observed highlight areas for pedagogical growth. The lack of subject-specific vocabulary during group work, a point effectively raised by Mr. Hatem during the post-lesson observation discussion, indicates a need for more explicit modeling of scientific discourse. The Education Endowment Foundation (2018) notes that promoting metacognitive talk is crucial for self-regulated learning; students must be explicitly taught how to structure and monitor their scientific dialogue. Additionally, the pacing issue with early finishers underscores the necessity of anticipating varied cognitive speeds when utilizing inquiry-based science education (IBSE) models (Harrison, 2014).

Plan for the Future

To grow into a highly effective teacher, I must ensure that metacognition and self-regulation are explicitly supported throughout the entire duration of the lesson, rather than just at the beginning and end. I will implement a strategy of "structured reflection" mid-way through collaborative tasks, prompting students to check their progress against the whiteboard objectives. Additionally, I will anticipate language barriers in my lesson planning by preparing specific linguistic bridges—scaffolded questions that seamlessly guide students from their intuitive, observable knowledge toward formal scientific terminology. Finally, I will utilize the rich data gathered from observing students during inquiry tasks to inform my immediate formative feedback, ensuring I address misconceptions in the moment.

References

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