Middle School Science Assessment Appendix Guide

1. Formative Assessments

Formative assessments are tools used to gauge students' understanding and guide instructional adjustments.

a. Interactive Science Discussions

- **Purpose**: Continuous self-assessment tool where students record observations, answer questions, and reflect on learning.
- **Format**: Weekly discussions, including diagrams, questions, and summaries.
- Utilizing KWL Charts to assess learning
- **ELA & Math Extension**:
    - ELA: Use writing prompts to summarize scientific concepts and describe experimental procedures.
    - Math: Include data collection, graphing, and basic statistical analysis of experimental results.

b. Exit Tickets/Post It Responses

- **Purpose**: Quick assessments at the end of a lesson to check for understanding.
- **Format**: One or two questions that address the main points of the lesson
- "Explain in your own words…"

c. Think-Pair-Share/Group Work (non-lab)

- **Purpose**: A collaborative activity where students discuss their understanding with a peer, or group of peers.
- **Format**: Students think individually, discuss with a partner(s), then share with the class. Focus on scientific concepts, vocabulary, and problem-solving, teamwork.
- **ELA & Math Extension**:
    - ELA: Focus on the use of domain-specific vocabulary and clear communication.
    - Math: Incorporate mathematical reasoning, such as estimation and measurement in scientific experiments.

2. Summative Assessments

Summative assessments evaluate student learning at the end of an instructional unit or period.

a. Unit Tests

- **Purpose**: Assess students' cumulative understanding of a unit’s content.
- **Format**: Multiple-choice, short answer, and extended-response questions that cover key concepts, processes, and applications
- **ELA & Math Extension**:
    - ELA: Include reading comprehension questions that assess students' ability to extract information from scientific texts.

    - Math: Apply calculations, graphing, and problem-solving in scientific contexts (e.g., calculating speed in motion experiments or mass/volume in chemistry).

b. Project-Based Assessments

- **Purpose**: A real-world application of learned content through a final project.
- **Format**: Students design and present a science project, experiment, or model. It may involve research, data collection, and analysis (Science Fair, Moon, Planets)
- **ELA & Math Extension**:
    - ELA: Research and writing components to produce a report or presentation that includes clear, coherent writing and correct use of scientific vocabulary.
    - Math: Involve calculations, data analysis, and statistical representation of results.

c. Performance Tasks- Labs

- **Purpose**: Hands-on tasks that assess student ability to apply scientific concepts and skills.
- **Format**: Conduct a scientific experiment or solve a real-world problem

3. Benchmarks

Benchmarks are periodic assessments used to track student progress toward mastering key concepts in science.

a. Assessment Benchmarks

- **Purpose**: Checkpoints to evaluate progress toward mastery of standards.
- **Format**: Short assessments that review the core content covered in each chapter through quizzes and tests.

b. Progress Monitoring

- **Purpose**: Ongoing tracking of student performance throughout each marking period, year.
- **Format**: Data from quizzes, lab activities, and class participation
- **ELA & Math Extension**:
    - ELA: Monitor progress in writing skills, including the ability to describe scientific phenomena using evidence and scientific language.
    - Math: Track progress in applying mathematical concepts like ratios, percentages, and measurements in experiments.