**The Triad:** **This grid is designed to help ensure your content standards align with your objectives and assessment:**

|  |
| --- |
| **Step 1: Standards Code *and* Performance Expectation(s):**  **.** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Step 2: specify the intended learning objectives** |  |  | **Step 3**: Design the appropriate assessment method(s)Formative and Summative |
| **Learning Objective**  | **Revised Bloom:** | **DOK** | **FORMATIVE Assessment (should be used for all objectives** Choose an item.**)**  | **SUMMATIVE Assessment Method(s) (Must be used at least ONCE in a unit, may be used more than once)** |
| 1**SWBAT :**  | Choose an item. | Choose an item. | **Description of a formative assessment you will use with this objective:** **Justification of why this formative assessment is a good choice in this setting**:  | **Description:** **Justification:**  |
| 2**SWBAT:** | Choose an item. | Choose an item. | **Description of a formative assessment you will use with this objective:** **Justification of why this formative assessment is a good choice in this setting**:  | **Description:** **Justification:**  |
| 3**SWBAT : .** | Choose an item. | Choose an item. | **Description of a formative assessment you will use with this objective:** **Justification of why this formative assessment is a good choice in this setting**:  | **Description:** **Justification:**  |
| 4**SWBAT**  | Choose an item. | Choose an item. | **Description of a formative assessment you will use with this objective:** **Justification of why this formative assessment is a good choice in this setting**:  | **Description:** **Justification:**  |
| 5**SWBAT**  | Choose an item. | Choose an item. | **Description of a formative assessment you will use with this objective:** **Justification of why this formative assessment is a good choice in this setting**:  | **Description:** **Justification:**  |

**Unit plan overview (built from UBD ideals)**

|  |
| --- |
| **Stage 1 Desired Results** |
| ***Phenomenon:*** [***The Importance of Phenomena***](https://ngss.sdcoe.net/Phenomena-and-the-NGSS/The-Importance-of-Phenomena) Teachers should expose students to phenomena and guide them to engage in science and engineering practices to explain those phenomena. What phenomena will you use in your unit?<type here> | **Content Standards** (includes the NGSS “code” and demonstration of understanding; clarification Statement; Assessment boundary; and Performance Expectation)  |
| <type here> |
| **Learning Objectives** (should break down the content standards into measureable increments) |
| <type here> |
| **ESSENTIAL QUESTIONS**: [**Use this article**](https://www.dropbox.com/s/5c5gfmw32yd5ou3/Essential%20Questions--What%20Makes%20a%20Question%20Essential_ASCD%20Wiggens%20and%20McTighe.pdf?dl=0) to help you write essential questions that you’ll use throughout the lesson *• What provocative questions will foster inquiry, understanding, and transfer of learning?*<type here> |
| **Stage 2 - Evidence** |
| **Evaluative Criteria** How will you know what they’ve learned/what their misconceptions are? | **FORMATIVE-Assessment** (What will you do in each lesson to measure students’ progress and help drive the instruction of the next lesson?)  |
| <type here> | <type here> |
| <type here> | <type here> |
| <type here> | <type here> |
| <type here> | <type here> |
| <type here> | <type here> |
| **Evaluative Criteria** How will you know what they’ve learned? | **SUMMATIVE Assessment Design (**What will you do to measure the students’ mastery of the goal/standard/objectives?) |
| <type here> | <type here> |
| <type here> | <type here> |
| **Stage 3 – Learning Plan—***Summary of what will happen in each lesson—“SELL” the lesson(in about 5 sentences) so a teacher WANTS to pick it up and teach it.—Mentions 5 E’s if you already know how they’ll play out.* |
| **Brief Lesson Description** *of Lesson #1*<type here> |
| ***Brief Lesson Description*** *Lesson #2*<type here> |
| ***Brief Lesson Description*** *Lesson #3*<type here> |
| ***Brief Lesson Description*** *Lesson #4*<type here> |
| ***Brief Lesson Description*** *Lesson #5*<type here> |

5E **Science Lesson Planning Template**

Including 3 dimensions (SEP/DCI/CCC) and 5E

|  |  |  |
| --- | --- | --- |
| **Grade:** Choose an item. | **Science Topic:** Choose an item. | **Lesson #** Choose an item.**in a series of** Choose an item. **lessons** |
| **Brief Lesson Description**: (description copied from Stage 3 of Unit Plan  |
| **Science Standards Code and Performance Expectation(s):** (copied from triad step 1)  |
| **Specific Learning Objective/Outcomes:** (copied from triad step 2)  |
| **Essential Questions:** (**expanded** from unit plan—These help you keep the discovery in the students control and prevent *you* from lecturing)  |
| **Narrative / Background Information for teacher** |
| **Prior Student Knowledge:** (you can look this up in the DCI Matrix/use probe/pre-assessment)  |
| **Major concept(s) explanation(s)** (like what a substitute-or you- might need to know to avoid perpetuating misconceptions-if you use a probe you can get some of that information from there)  |
| [**Science & Engineering Practices**](http://nstahosted.org/pdfs/ngss/resources/MatrixForK-12ProgressionOfScienceAndEngineeringPracticesInNGSS.8.14.14.pdf) **(SEP):** * Choose an item.
* Choose an item.
* Choose an item.

**Rational** (What will the students do to use this practice?/what will you do to encourage student use of this practice?):  | [**Disciplinary Core Ideas (DCI):**](http://nstahosted.org/pdfs/ngss/20130509/MatrixOfDisciplinaryCoreIdeasInNGSS-May2013.pdf)   | [**Crosscutting Concepts (CCC):**](http://nstahosted.org/pdfs/ngss/MatrixOfCrosscuttingConcepts.pdf) **­** * Choose an item.
* Choose an item.
* Choose an item.

**Rational** (How will you *incorporate/help students discover the connections and tools related across the DCI’s*?):  |
| **Possible Preconceptions/Misconceptions:**  |
| **LESSON PLAN – 5-E Model** |
| 1. **ENGAGE:** Choose an item.
 |
| **Phenomena to connect to real world (**Object event or question used to engage students**.)****Connections facilitated between what students know and can do.*** Engagement is a time when the teacher is on center stage.
* The teacher poses the problem, pre-assesses the students
* Helps students make connections
* Informs students about where they are heading.
 |
| 1. **EXPLORE:** Choose an item.
 |
| **Objects and phenomena are explored.****Hands-on activities, with guidance.*** Student centered
* Teacher’s directions must not tell students what they should learn
* Teacher's must not explain the concept.
* Bulk of the lesson: teacher poses probing questions**.**
 |
| 1. **EXPLAIN: Concepts Explained and Vocabulary Defined:** Choose an item.
 |
| **Students explain their understanding of concepts and processes.****New concepts and skills are introduced as conceptual clarity and cohesion are sought.*** Student explanations should precede introduction of terms or explanations by the teacher. What questions or techniques will the teacher use to help students connect their exploration to the concept under examination?
* Main Purpose: Teacher is to guide student thinking so that the concept of the lesson is constructed cooperatively, not merely given by the teacher.
* Language: Teacher introduces language or concept labels to assist in mental accommodations.
* List higher order thinking questions which teachers will use to solicit student explanations and help them to justify their explanations.
* This is where foundations for differentiation for this activity are used.
 |
| 1. **ELABORATE: Applications and Extensions:** Choose an item.
 |
| **Description:*** Describe how students will develop a more sophisticated understanding of the concept.
* At this stage the teacher also poses problems that students solve by applying what they have learned.
* How is this knowledge applied in our daily lives?
 |
| 1. **EVALUATE:** Choose an item.(This may be incorporated throughout the lesson and does NOT have to occur just at the end of the lesson. You may include details here or in the body of the lesson. However, for the final lesson of the UNIT, you will need to include your Summative Evaluation at the end—**you *may* be able to copy this from the Unit plan**)
 |
| **Students assess their knowledge, skills and abilities.****Activities permit evaluation of student development and lesson effectiveness.**What type of questions can I ask students to help them reflect and to indicate how well they recall and understand what has been learned.* Teacher uses many resources to monitor learning:
* Observation
* Small group work accomplishments
* Group interviewer explain how they got their answer
* Use alternative representation of solution
* Prompt with clarifying questions
* Evaluation should be incorporated throughout all phases of the 5E Learning Cycle Model Teacher uses many resources to monitor learning

**Summative Assessment (Quiz / Project / Report):** Choose an item.**Describe what the Summative Assessment looks like/will entail (end of unit):**  |
| **DIFFERENTIATION/MODIFICATIONS:** Choose an item.**Description:** |
| **Elaborate Further / Reflect: Enrichment:**  |
| **Helpful Resources:**[**Lesson Plans Exploring NGSS**](http://www.resa.net/curriculum/curriculum/science/professionaldevelopment/ngss-pd/lesson-plans-exploring-ngss/)[**Bozeman Science: VIDEOS Explaining NGSS DCI**](http://www.bozemanscience.com/next-generation-science-standards)[**Three Dimensional Framework for NGSS**](https://www.nsta.org/conferences/docs/2015SummerInstituteSecondary/TheThreeDimensions.pdf)[**Writing Essential Questions**](http://www.ascd.org/publications/educational-leadership/sept15/vol73/num01/How-to-Make-Your-Questions-Essential.aspx)[**BSCS 5E Instructional Model**](https://www.bscs.org/sites/default/files/_legacy/BSCS_5E_Instructional_Model-Executive_Summary_0.pdf)[**Understanding Backwards Design Lesson Planning**](http://www.ascd.org/ASCD/pdf/siteASCD/publications/UbD_WhitePaper0312.pdf)[**Appendix E: Disciplinary Core Idea Progressions**](https://www.nextgenscience.org/sites/default/files/resource/files/AppendixE-ProgressionswithinNGSS-061617.pdf)Describes the DCI progressions across K-12, summarizing the main focus of the science disciplinary content at each grade band. [**Appendix F: Science and Engineering Practices**](https://www.nextgenscience.org/sites/default/files/resource/files/Appendix%20F%20%20Science%20and%20Engineering%20Practices%20in%20the%20NGSS%20-%20FINAL%20060513.pdf)Describes the progression of the practices across K-12, detailing the specific elements of each practice that are targets for students at each grade band.[**Appendix G: Crosscutting Concepts**](https://www.nextgenscience.org/sites/default/files/resource/files/Appendix%20G%20-%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf)Describes the progression of the Crosscutting Concepts (CCC) across K-12, detailing the specific elements of each CCC that are targets for students at each grade band. |