**­Part A: Gather and Filter information from** [**NGSS**](http://standards.nsta.org/AccessStandardsByTopic.aspx) **and** [**PhET**](http://phet.colorado.edu/) **Interactive Simulations**

**Step 1*:*****Select PEs and PhET Simulation(s) that work together.**

*a. Select PEs and Identify the associated Clarification Statements and Assessment Boundaries.*

*b. Evaluate PhET sims for alignment with PEs, Clarifications, Boundaries.*

**Table 1b: PhET Sim Selection**

|  |  |  |  |
| --- | --- | --- | --- |
| Sim Name | Main Topics | PhET Sim Learning Goals Ideas | Reflection & Reasoning |

**Step 2**: **Collect and Filter NGSS specifics for lesson.**

*a. Identify the three dimensions that are coded to the PEs.*

**Table 2a: PE Dimensions**

|  |  |  |
| --- | --- | --- |
| Science and Engineering Practices | DCI | Crosscutting Concept (CC) |

*b. Use DCI grade band progressions and/or Appendix E for previous and future grades.*

**Table 2b: Grade Level Bands DCIs**

|  |  |  |  |
| --- | --- | --- | --- |
| Previous Grade DCIs | Target DCI | Future Grade DCI (not for HS) | Enrichment |

*c. Select additional Science and Engineering Practices that support your chosen DCIs and CCs.*

*d. Select related Common Core Mathematics Standards (CCSS-M) and Common Core Literacy Standards (CCSS-L) related to the PE’s selected.*

**Part B: Plan your lesson using Part A and PhET’s teacher tools.**

**Step 3**: **Refine lesson focus**

*a. Break the DCI into lesson segments*

**Table 3a: DCI Analysis for grade level**

|  |  |  |  |
| --- | --- | --- | --- |
| DCI code(s) | Previous Segment(s) | Target Segment(s) | Future Segment(s) |

*b. Blend the Practices, DCI Target Segments, and CCs into lesson-specific PEs and sequence the lesson progression.*

**Table 3b: Develop Lesson Level PEs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Practices | DCI Target Segment(s) | CCs | Lesson-specific PEs | Learning Ideas |

**Step 4**:**Determine evidence for formative and summative assessment**

**Table 4: Assessment Evidence**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lesson Segment | Lesson-  specific PEs | PhET Learning Objectives (Student-Friendly Language) | Specific Performance Evidence | Cues, Prompts & Assessment Ideas (to Elicit Evidence) |

**Step 5**: **Develop a Big Idea and Lesson Plans**

**Step 6**: **Re-examine lesson**