

# **PLANNING FOR AUTHENTIC AND RIGOROUS ENGINEERING UNITS: REFLECTION QUESTIONS**

EDP Phase II, Y2: Session 3

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# INQUIRY: ESSENTIAL QUESTION(S)

- Is your EQ thought-provoking & intellectually engaging?
- Does your EQ call for higher-order thinking such as analysis, inference, evaluation, prediction?
- Does your EQ point toward important, transferable ideas within and sometimes across disciplines?



## **INQUIRY: ESSENTIAL QUESTION(S)**

- Does your EQ raise additional questions and spark further inquiry?
- Does your EQ require support and justification?



# STANDARDS

- Have you listed all the content area standards that will apply?
- What is the DOK range for each of the standards?
- Looking at the deconstruction, is each learning target of the standard included in the unit?



# STANDARDS

- Are there standards from other content areas that can apply? (ELA Reading/Writing) Have you included the Mathematical Practices if applicable?
- Have you identified the concepts that will be commonly assessed?



## LEARNING OBJECTIVES

- Do your learner *goals* reflect each of the standards?
- Do the learner *goals* reflect the appropriate DOK of the standard?
- Are the learner *objectives* specific and use active language (verbs) that makes expectations clear?
- Do the *objectives* focus on the learner, rather than explain what the instructor will do?



## LEARNING OBJECTIVES (CONT.)

- Are the *learning objectives* focused on the application and integration of acquired knowledge & skills?
- Do the *learning objectives* indicate a useful mode of assessment and specific elements that will be assessed?
- Do you have an idea of the number of lessons you will be developing for the unit in order to reach the objectives stated?



# VOCABULARY

- Is the Academic Vocabulary for the unit identified?
- Is there Domain Specific Vocabulary that has been identified for direct instruction?
- Do you have a strategy for explicit, direct instruction of the Academic Vocabulary?



# EDP PROBLEM STATEMENT

When developing a *problem statement* for the Engineering Project, have you addressed the following three questions?

- *What* is the problem or need?
- *Who* has the problem or need?
- *Why* is it important to solve?



## EDP PROBLEM STATEMENT (CONT.)

Does your format for writing a *problem statement* use your answers to the questions and follows these guidelines?

- [Who] need(s) [what] because [why].
- “\_\_\_\_\_ need(s) \_\_\_\_\_ because \_\_\_\_\_.”



# INSTRUCTIONAL STRATEGIES

- Did you include Speaking & Listening Activities (i.e., discussions, debate)?
- Did you include Writing Opportunities using both paper/pencil and technology?



# INSTRUCTIONAL ACTIVITIES

- Do the activities allow for connections to students' prior knowledge?
- Do the activities allow for students to show evidence of a progression from concrete to pictorial to abstract means of learning concepts?
- Do the activities allow for appropriate time for students to develop skills in the context of problem solving and investigations?
- Do the activities allow for technology to support conceptual understanding, skills and procedures, and problem-solving?



# ASSESSMENT

- Is there a pre-assessment you plan to use before teaching the unit?
- Are there at least 2 formative assessments of learner performance that occur during the unit?
- Does your summative assessment(s) align to the DOK of the targets and standards?
- Are your assessment selections appropriate for the DOK of the target or standard?