### 1. Plan Authentic, Intellectually Demanding Project-Based Learning Units Where Students Master Significant Content and Skills

**Teacher Behaviors**
- Designs an intellectually demanding PBL unit around a driving question that challenges students to solve a complex problem, think critically and master course content, concepts and skills over an extended time period
- Develops a challenging problem that "reflects what happens in the world outside of school"*
- Ensures students’ interests are reflected in the PBL design
- Embeds literacy, math and science where appropriate

**Student Behaviors**
- Investigate challenging problems, questions and issues over an extended time period
- Help develop the focus of the project
- Develop and plan questions about the project and project management plan and determine role responsibilities based on the project launch
- Engage in productive struggle and express an eagerness to solve the challenge or answer the driving question
- Connect course content to real-world issues and concepts

**Artifacts**
- Course content standards, concepts and skills like 21st-century skills or college- and career-readiness skills
- Map of Learning including daily learning activities, scaffolding strategies and assessments of and for learning
- Student research required to solve the project
- Student written products including professional notebooks, management plans and written proposals that demonstrate students’ mastery of the standards

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### 2. Utilize Sustained, In-Depth Inquiry

**Teacher Behaviors**
- Ignites student curiosity through the launch of the PBL unit
- Uses intellectually demanding questioning techniques to promote and deepen student thinking
- Creates a classroom culture that develops students’ questioning skills and ability to use questions to drive research
- Provides just-in-time direct instruction for students when needed to advance the project

**Student Behaviors**
- Engage in a cycle of inquiry that includes questioning, research and further questioning
- Conduct research and engage in intellectually demanding assignments that help them learn content, develop skills and satisfy the goals of the PBL unit

**Artifacts**
- Map of Learning including strategies for sustained inquiry and questioning
- Student professional notebooks and other work documenting the use of a cycle of inquiry

### 3. Engage Students in a Collaborative Problem-Solving/Design Process

**Teacher Behaviors**
- Facilitates student learning to understand the whys and hows of the problem-solving/design process
- Scaffolds opportunities for students to work in collaborative teams using various project management tools
- Monitors and checks for understanding of the process and effectiveness of teams’ work

**Student Behaviors**
- Connect the problem-solving/design process to the purpose of the PBL unit
- Apply the problem-solving/design process to accomplish the goals of the PBL unit
- Collaborate with each other like professionals do in a high-functioning authentic workplace
- Use project management tools similar to those used in the workplace, like group contracts, scrum boards or group roles

**Artifacts**
- Map of Learning using a problem-solving/design process to guide learning
- Student professional notebooks, team notes and other artifacts documenting the application of the problem-solving/design process
- Project management tools documentation
- Final product(s) reflecting the contribution of “individual voices, talents and skills... to a shared piece of work”*

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* Framework for High Quality Project Based Learning — [https://hqpbl.org/](https://hqpbl.org/)
### 4. Foster a Classroom Environment That Supports Student Ownership of Learning

**The teacher:**
- Provides scaffolding experiences for students that allow them to receive feedback and revise their work
- Incorporates student-centered instructional practices like questioning, collaboration, and reading and writing for learning

**The students:**
- Explain the standards and purpose of their learning
- Explore, create and experiment with confidence individually and within teams
- Engage in reflection and revision regularly and without teacher prompting
- Create a hum of productivity and excitement in the classroom

**Artifacts:**
- Daily plans with pre-developed probing questions
- Individual and team notes including discussions of suggestions for revising work
- Revised student work
- Detailed student professional notebooks

### 5. Engage in Ongoing and Purposeful Feedback, Revision and Reflection

**The teacher:**
- Plans and delivers a variety of formative and summative assessments that align with standards throughout the PBL unit; assessments are used to adjust instruction and gauge student mastery of standards and skills
- Differentiates and scaffolds the instruction based on formative and summative assessments
- Collaborates with colleagues to reflect on student work and adapt instruction to best meet the needs of students
- Facilitates student reflections and uses those reflections to revise the PBL unit

**The students:**
- Collaborate using data and feedback to identify possible misconceptions and formulate a plan — with their teammates and/or the teacher — to move their learning forward and satisfy the goals of the PBL unit
- Participate in peer feedback sessions
- Continuously reflect on their learning and incorporate feedback through a PBL unit
- Participate in or lead a final reflection of the PBL unit

**Artifacts:**
- Map of Learning including formative and summative assessments to measure mastery; options for scaffolding and differentiation
- Teacher reflection notes or plans showing adjustments to instruction and assessments
- Professional student notebooks containing students’ reflections on their learning
- Documentation of team progress through the PBL unit showing adjustments made based on feedback

### 6. Include Community Partners in Project Planning, Implementation and Reflection

**The teacher:**
- Collaborates with community partners** to brainstorm, co-plan and provide feedback on unit plans
- Engages partners in mentoring, co-facilitating instruction, observing and providing feedback to students

**The students:**
- Contact experts to seek information or assistance
- Revise their work based on their community partner’s feedback
- Participate in field experiences with partners
- Present final solutions and products to a panel of community partners

**Artifacts:**
- PBL unit plan including purposeful inclusion of community partners
- Student and team notes from meetings with partners including actionable items
- Partner feedback during project development and final presentations

**Community partners may include business, industry and postsecondary professionals, school and district representatives, parents or others in the community.**