Powerful Project-Based Learning Instructional Practices

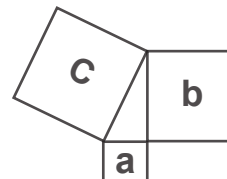| Teacher Behaviors	Student Behaviors	Artifacts
1. Plan Authentic, Intellectually Demanding Project-Based Learning Units Where Students Master Significant Content and Skills		
The teacher: • Designs an intellectually demanding PBL unit around a driving question that challenges students to solve a complex 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	**The students:** • 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
2. Utilize Sustained, In-Depth Inquiry		
The teacher: • 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	**The students:** • 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		
The teacher: • 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	**The students:** • 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"*

* Framework for High Quality Project Based Learning — https://hqpbl.org/

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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.

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