

NH CREATES—An In-service STEM Teacher Program – Amato-Wierda, et al.

Appendix A. Schedule.

Table A1. Detailed Schedule for NH CREATES Teacher Institute.

	Focus Topic(s)	Main Activities	Outcomes
Day 1	Introduction to PBL and NH CREATES	Rapid Prototype of a PBL unit based on UN Sustainable Development Goals	Understanding of the Seven Essential Elements of Gold Standard PBL A completed mock project design containing the seven elements.
Day 2	Introduction to regenerative medicine	Review of RM&B terminology and scientific advancements Hands-on activities using planaria flatworms and sea slugs Curriculum connections to NGSS	Foundational understanding of regenerative medicine and regenerating organisms Shared list of NGSS standards RM&B could integrate with
Day 3	PBL Topic: Challenges to implementation and solutions	PBL Challenges: What are they? Solutions: PBLWorks book and discussion	Solutions to address common barriers to PBL (time, differentiation, classroom management)
	RM&B Topic: Cryopreservation.	Guest lecture from faculty partner: <i>Cryopreservation: Life and Ice.</i>	Understanding of cryopreservation as it relates to RM&B.
Day 4	PBL Topic: Classroom culture	Building a culture of PBL; learning from exemplars	Understanding the how and why of building a culture conducive to PBL.
	RM&B Topic: 3D bioprinting and molecular modeling.	Guest lecture from an industry partner: <i>Biofabrication through Bioprinting</i> Guest lecture from a faculty partner: <i>Molecular Visualization</i>	Understanding of 3D bioprinting technology and molecular visualization as they relate to RM&B
Day 5	PBL Topic: Student assessment	Student assessment tools and rubric building	Understanding of: • how to build and use rubrics to assess student learning • scientific advances in manufacturing of tissues and organs • bioinformatics and its relevance to RM&B
	RM&B Topic: Advanced manufacturing and bioinformatics	Q&A with an industry partner about advanced manufacturing Tour of bioinformatics lab with Q&A	Initial project topic and driving question selected
Day 6	PBL Topic: Student assessment (cont'd)	Teachers develop assessments for their specific projects	Selection of types of assessments teachers will use with their project
	RM&B Topic: Introduction to UNH Tech Camp youth projects	First visits to Tech Camp RM&B youth projects	Interaction with the various RM&B youth projects happening at Tech Camp
Day 7	PBL Topic: Cognitive development	Guest lecture from faculty partner: <i>Cognitive Development</i>	Understanding of cognitive development research and how PBL can benefit all students and increase equity
	RM&B Topic: Visits to Tech Camp youth projects	Project work time and prep for peer feedback session Visits to RM&B youth projects	A rough draft of a project outline with identified “stuck” areas
Day 8	PBL Topic: Peer feedback session.	Teachers share their project “elevator pitch.” Time for questions and receiving feedback from the group.	Collection of peer feedback on projects that can inform fine tuning
	RM&B Topic: Visits to Tech Camp youth projects	Visits to RM&B youth projects	
Day 9	Student feedback	UNH Tech Camp students participate in a gallery walk, viewing the projects the teachers have developed and giving feedback	Understanding of student perspectives on the project they have designed
	Prep for school administrators to visit	Teachers have the afternoon to finalize their projects before school administrators visit	Project posters that will be shared with school leaders
Day 10	School administrators visit	Invited school administrators from the teachers’ respective schools attend a celebration breakfast and presentation about the teachers’ experience and projects	Completed working draft of a classroom RM&B project to be implemented the following school year School administrators understand the mission of NH CREATES and the importance of the work their teachers have done
	Planning for the academic school year	Final wrap-up and planning for academic year activities such as cohort meetings and site visits	Teachers have established a network of contacts and resources that will be reinforced throughout the year