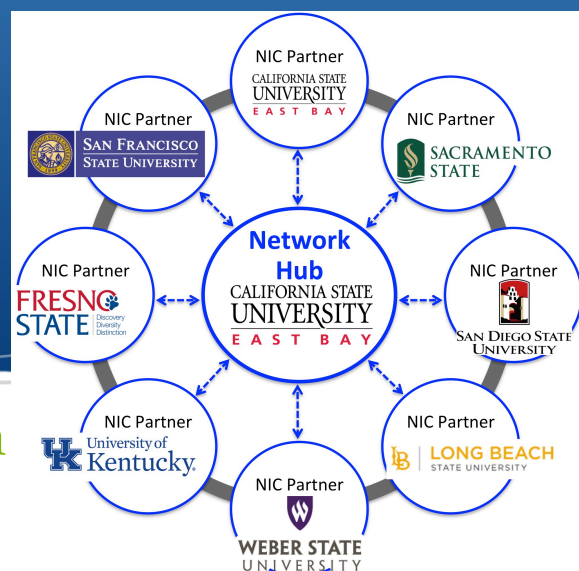# A-STEP Project

Aligning the Science Teacher Education Pathway

The Aligning the Science Teacher Education Pathway (A-STEP) project functions via a Networked Improvement Community to bridge existing gaps across four steps of the science teacher training and development pathway.

Alignment across a teacher education pathway

The A-STEP project fosters collaboration between university faculty and local pathway partners in implementing a common set of tools, the Next Gen ASET Toolkit, across the science teacher training and development pathway. Use of these tools provides common language and modes of discourse when designing and enacting curriculum that aligns with the NGSS. Partnerships across steps function under shared understanding of goals and paradigm shifts required to promote pedagogical reform in local contexts and along the teacher preparation pathway.

The benefit of participation

A-STEP aims to strengthen the capacity of local systems of science teacher education to engage teachers of science who move beyond knowledge of and toward enacting the NGSS, although prepared in varied organizational contexts. A-STEP promotes change across a Networked Improvement Community (NIC) and its local pathway partners, ultimately impacting the enactment of the NGSS in respective K-12 classrooms.

Pathway Steps

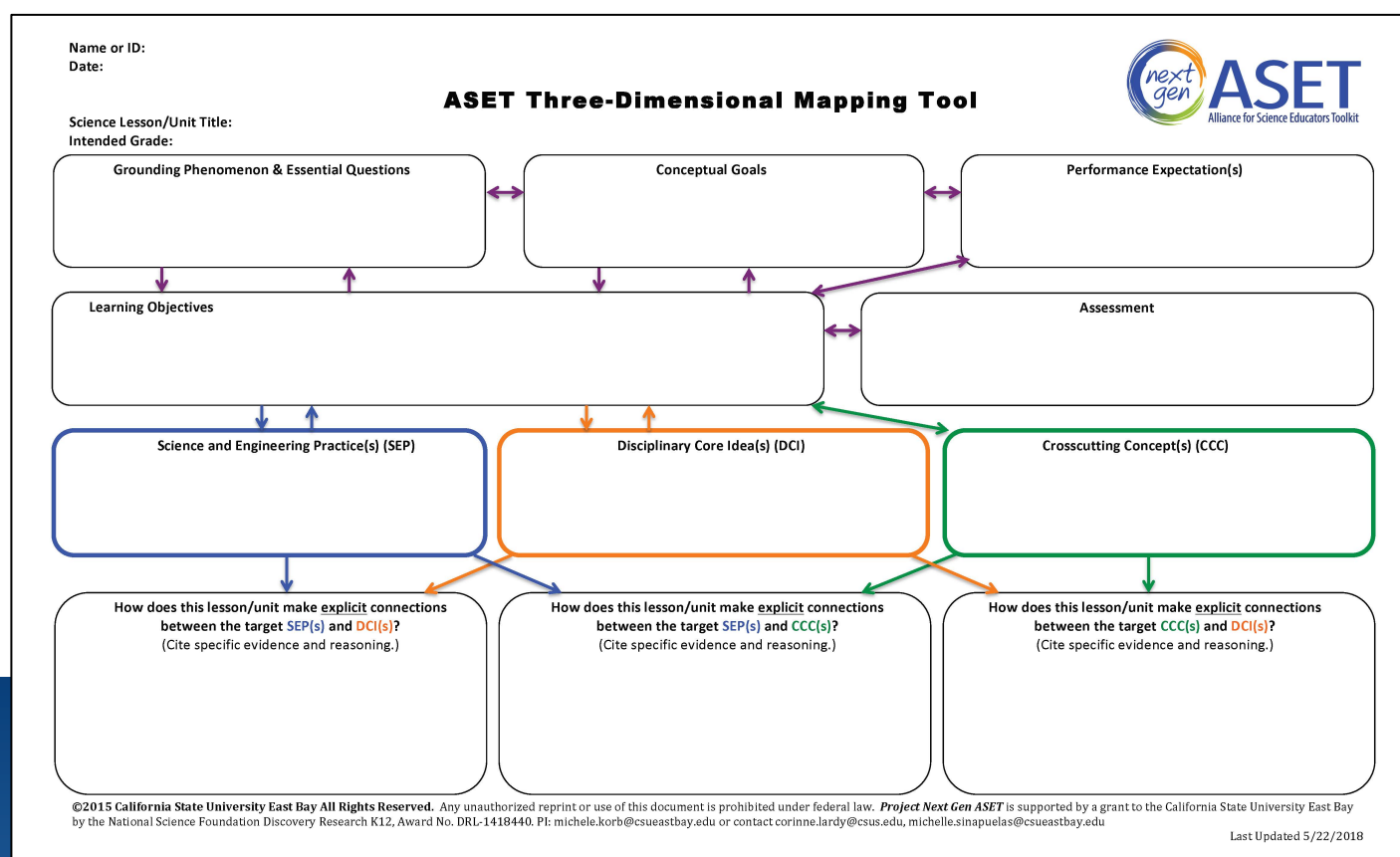| Step 1	University science teaching methods courses
Step 2	Credential candidate fieldwork experiences
Step 3	District level induction programs and training within the first 3 years of entry into the profession
Step 4	District level professional development for inservice teachers

The Next Gen ASET Toolkit

The Next Gen ASET Toolkit consists of a one-page overarching graphic organizer (3D Mapping Tool: 3D Map) and a set of tools with guiding criteria to support active discourse for each Science and Engineering Practice (SEP Tools) across K-12 grade level bands. The tools were not developed for use in isolation, but with peers while designing and critiquing curriculum to align instruction to the NGSS.

ASET Three-Dimensional Mapping Tool

Name or ID:
Date:

Science Lesson/Unit Title:
Intended Grade:

- Grounding Phenomenon & Essential Questions
- Conceptual Goals
- Performance Expectation(s)
- Learning Objectives
- Assessment
- Science and Engineering Practice(s) (SEP)
- Disciplinary Core Idea(s) (DCI)
- Crosscutting Concept(s) (CCC)
- How does this lesson/unit make explicit connections between the target SEP(s) and DCI(s)? (Cite specific evidence and reasoning.)
- How does this lesson/unit make explicit connections between the target SEP(s) and CCC(s)? (Cite specific evidence and reasoning.)
- How does this lesson/unit make explicit connections between the target CCC(s) and DCI(s)? (Cite specific evidence and reasoning.)

For more information and the complete Next Gen ASET Toolkit visit
https://www.nextgenaset.org/ngss/aset-toolkit/

References

Sinapuelas, M.L., Lardy, C., Korb, M.A., Bae, C.L., & DiStefano, R. (2019). Developing a Three-Dimensional View of Science Teaching: A Tool to Support Preservice Teacher Discourse. *Journal of Science Teacher Education,* 30(2), 101-121.

Sinapuelas, M.L., Lardy, C., Korb, M.A., & DiStefano, R. (2018). Toolkit to support preservice teacher dialogue for planning NGSS three-dimensional lessons. *Innovations in Science Teacher Education,* 3(4).