

Making Sense of SCIENCE Professional Learning

Matter Course Syllabus – FALL 2018

Co Instructors

Dr. Angela Hemingway, Dr. Kaitlin Maguire, STEM Action Center

Course Number: KE189TE2710

Course Hours: 40 hours of coursework – 2 credits

Link to Registration: <https://acecreek.boisestate.edu/wconnect/CourseStatus.awp?&course=KE189TE2710>

Deadline to Register for Course: April 30, 2018

Location and Course Dates:

- 5-day in person training workshop - (Boise, ID), July 9 - 13, 2018
- Final evaluations and report due: November 15, 2018

Course Cost: \$60 per credit = \$120

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COURSE DESCRIPTION:

This Making Sense of SCIENCE (MSS) course on the topic of matter prepares STEM educators to navigate shifts in teaching practices through phenomena-based professional learning that combines in-depth adult-level explorations with a focus on classroom practices, productive scientific discourse, literacy supports, and pedagogical reasoning. In the words of a participant last summer, “It was one of the densest and most informative PDs I have participated in. It was a content-rich (gold mine really), very well-organized science workshop.”

This course is optimal for teachers in grades 5–12, as it takes a systems approach to understanding matter and its interactions in the world. As teachers grapple with their own conceptual understanding of core science concepts, they are explicitly supported in utilizing mathematical tools and representations, along with algebraic thinking, to analyze and interpret data (e.g., graphing, calculating slope, determining buoyant force). The teaching component of the course utilizes written teaching cases of practice and protocols to collaboratively examine student work and analyze instructional choices. The literacy component of the course focuses on supporting disciplinary reading and strategies for making sense of informational texts (e.g., reading data tables, mass-volume graphs, periodic table). Many aspects of the course model classroom environments that build key learning and innovation skills (e.g., critical thinking and problem solving, communication, collaboration), while provide opportunities to engage in productive scientific discourse. More information is available on the attached *MSS Matter* overview and at wested.org/mss

The following materials serve as the foundation for the course:

Daehler, K. R., and Folsom, J. (2017). *Making Sense of SCIENCE: Matter for Teachers of Grades 5–12*. San Francisco, CA: WestEd.

Daehler, K. R. and Folsom, J. (2014). *Making Sense of Student Work: A Protocol for Teacher Collaboration*. San Francisco, CA: WestEd.

COURSE OBJECTIVES:

Educators will participate in a 5-day Teacher Course held during summer 2018 (in Boise, ID). Educators will submit a final survey answering questions about key learnings from the professional learning including what they have taken away from experience that informs their teaching practices.

LEARNER OUTCOMES:

Educators who participate in this course will:

- Engage in collaborative, adult-level science learning that models the multidimensional, discourse-rich practices found in productive STEM classrooms.
- Develop deep content knowledge and strong pedagogical skills needed to effectively foster inspirational and impactful teaching.
- Reflect on and improve their practice with tools that scaffold respectful and collaborative professional learning communities.
- Collaboratively investigate the art of teaching, including strategies for promoting evidence-based conversations and supporting disciplinary science reading.
- Acquire the materials and experiences needed to take on vexing science content, explore the practice of teaching science, and consider how to support students' literacy needs in a STEM classroom.

COURSE ASSIGNMENT:

- 1) Attend the five-day MSS Teacher Course
- 2) Complete all surveys and assessments administered through the course.
- 3) Complete final survey/report by the STEM Action Center.

FINAL SURVEY DUE DATE: November 15, 2018 by midnight MST via Salesforce – Community Grants Portal.

TRANSCRIPT DATE: Fall 2018