

Inquiry Science Pedagogy and Practice

Continuing your journey towards becoming a great science teacher



You're here because you love science and working with kids, and you want to be an awesome secondary science teacher

I'm here because I'm passionate about science teaching and science learning, and I want to help you become a great teacher

Together, we'll try to answer these questions this semester:

- *What is scientific inquiry?*
- *What are scientific practices?*
- *How can science teachers enact the formative assessment process?*
- *What is productive discourse and how can it be encouraged in the science classroom?*
- *How can we help students to argue scientifically?*
- *How can science teachers include all learners in their inquiry-based classroom?*

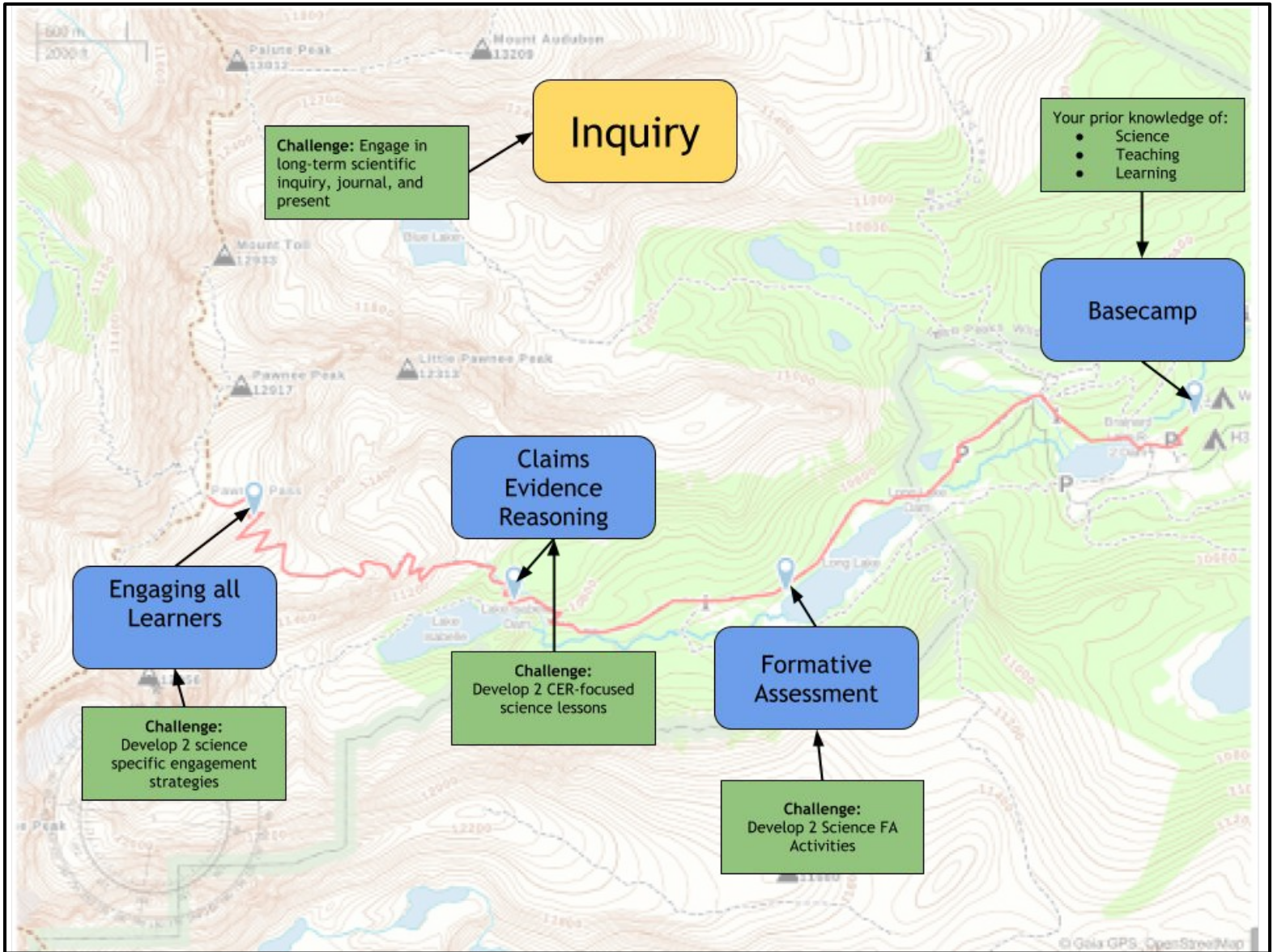
"We are just an advanced breed of monkeys on a minor planet of a very average star. But we can understand the Universe. That makes us something very special."

— Stephen Hawking



School of
Education
& Human
Development

UNIVERSITY OF
COLORADO DENVER



This part of your journey will be like a long hike. You'll bring your prior experiences and knowledge with you into Basecamp, and we'll use that as a foundation for our learning. Along the journey, you'll learn within 3 modules: 1) Formative Assessment, 2) Claims, Evidence, and Reasoning, and 3) Engaging all Learners. In each of those modules, you'll have challenges to complete as shown in the map. And overarching the whole journey will be your exploration into long-term scientific inquiry. This will involve engaging in science inquiry, keeping a journal of your work, and presenting. Threaded throughout the journey will be the theme of *reflection*. We'll work on learning to reflect meaningfully. It takes practice. But it is an essential part of becoming a great science teacher.

- After successfully completing this course, you will be able to:**
- Model scientific inquiry and practice
 - Plan effective science instruction for your students
 - Formatively assess your students' science ideas and learning
 - Promote productive discourse with and among your students
 - Help student develop scientific arguments
 - Develop a culture in your science classroom that is open to all learners



"I'm gonna have to science the \$#!^ out of this" -M. Watney

Your grade for the course will be based on your work in each of five areas:

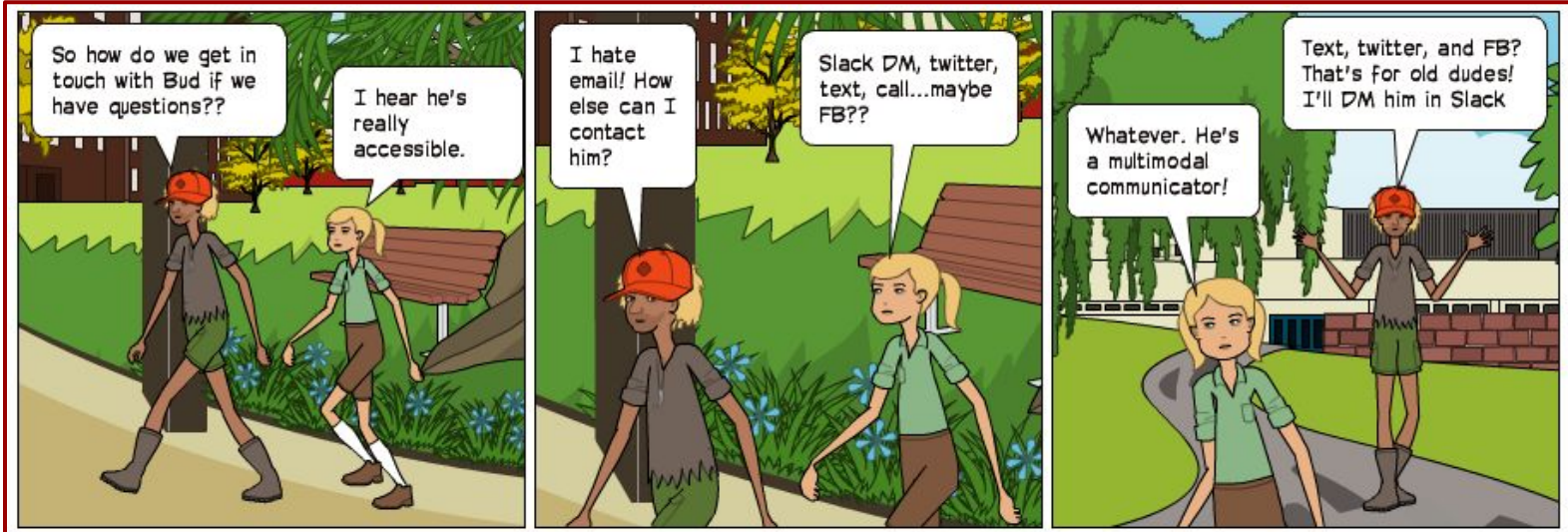
1. Weekly Engagement and Reflections on Science Teaching. (20% of total grade)
2. Formative Assessment Classroom Activities. (20% of total grade)
3. Lessons that promote Claims, Evidence, and Reasoning. (20% of total grade)
4. Science Learning Engagement Strategies. (20% of total grade).
5. Modeling Scientific Inquiry and Practice. (20% of total grade)

**Masters degree-seeking students will be advised on how to adapt these assignments and incorporate them into their masters portfolio or project.

Late work policy: for each day past the due date that an assignment is late, 2% will be deducted from the overall assignment grade.

And speaking of grading: All Teacher Education Program courses and internships must be successfully completed with a grade of B or higher. In order to receive a course grade as indicated relative to the point distribution, all required activities and projects must be completed.

A	A-	B+	B	B-	C	F
94-100	90-93	87-89	83-86	80-82	75-79	≤ 74



This is an email free course! We'll communicate and converse in Slack!

How to @ me:

- Slack DM
- Text/voice 303-668-1322
- @Bud_T
- F2F in LSC 727
- robert.talbot@ucdenver.edu

Follow the trail to the course schedule on the next page, Gantt chart style (Green means you should be doing it, red means an assignment is due. Plan accordingly)



All readings, assignment descriptions, rubrics, and slides are posted in Canvas!

Science	Not Science
<i>Cosmology</i>	<i>Cosmetology</i>
<i>Astronomy</i>	<i>Astrology</i>
<i>Evolution</i>	<i>Intelligent Design</i>

And now for the required syllabus elements. It's all important info, so please read through it and take note.

SEHD Success Center

The SEHD Success Center, located on your Canvas dashboard, is a “one stop shop” for a variety of online and face-to face supports available to you as a Teacher Education or HDFR student. This community provides tools and resources like individualized writing support or Teacher Ed PRAXIS study tools as well as college success mentoring, tutoring, and workshops that will help your overall success. It is a co-constructed space to share as a community of learners and we encourage you to add to the resources! Visit your Canvas dashboard, click on the SEHD Success Center, and explore the various modules and drop in times created for you. Feel free to reach out to the Success Center team for more information: sehdsuccesscenter@ucdenver.edu

SEHD Incomplete Policy

Incomplete grades (I) are not given to replace low grades. To be eligible for an incomplete grade, students must (1) successfully completed at least 75% of the course requirements, (2) have special circumstances (verification required) that preclude the student from attending classes and/or completing graded assignments, and (3) make arrangements to complete missing assignments with the original instructor before more than one year has elapsed since the end of the semester in which the course was taken.

1. Students must be in close communication with the instructor PRIOR to the end of the semester regarding special circumstances precluding them from successfully completing the remainder of the course. Faculty may assign students an incomplete grade of “I” to signify that special circumstances beyond the student’s control prevented the student from completing a small portion of the course (no more than 25%) and that a final grade cannot yet be assigned.
2. IT IS THE STUDENT’S RESPONSIBILITY TO COLLABORATE WITH THE INSTRUCTOR TO COMPLETE AN INCOMPLETE AGREEMENT FORM (found at www.ucdenver.edu/education under Current Students/Current Student Resources) prior to the end of the semester for which the incomplete is given. A copy of the form, signed by both the student and the instructor should be submitted to the SEHD Student Services Center (LSC 701). Both the student and instructor should also keep a copy. The instructor sets the conditions under which the course work can be completed and the time limit for completion. The student is expected to complete the requirements within the established deadline. If the missing assignments are not completed within the allotted time, the “I” converts to an F on the student’s transcript. Students making up an incomplete should not re-register for the course.
3. Upon completion of the missing course work, a Change of Record Form is completed by the original instructor to change the “I” to a letter grade. Faculty should work with the Faculty Services Center to complete the Change of Record Form.

Teacher Ed Program Student Support Plan Protocol

The Teacher Education program has embedded multiple proactive measures within the program to create a supportive environment for Teacher Candidates (TCs) to develop the knowledge, skills and dispositions necessary to be an effective urban teacher including high admission standards, closely aligned course and internship experiences, numerous opportunities for coaching and gaining feedback from instructors, site professors, site coordinators, and clinical teachers, as well as problem-solving protocols for individuals to try and address early concerns.

If a TC is struggling to further develop the professional knowledge, skills, and dispositions necessary for effective urban teaching despite the proactive embedded support provided, university and PDS faculty working with the TC collaborate to try and better understand the TC's performance. This model is reflective of similar processes in K-12 schools (e.g. Student Study Team; Child Support Team, etc.) as they work together to problem-solve and meet the needs of students.

Often this inquiry results in the collaborative development of a Professional Action Plan with the TC and the appropriate university and/or PDS individuals that clearly identifies key areas for improvement of performance by the TC as well as a timeline for improvement. Most often this plan provides the needed scaffolding and targeted direction for a teacher candidate to improve towards meeting the expected performance standards outlined by the program and the State of Colorado for teacher licensure. In other cases, it objectively indicates to the TC and the faculty working with him or her that the Teacher Education program and/or teaching are not suitable for the TC. In this case, the TC is counseled out of the program. Specific details regarding the Teacher Education Student Support Plan Protocol can be found in the Teacher Education Program Handbook you received upon admission into the program. It can also be found on the SEHD website, www.ucdenver.edu/education under Current Students/Current Student Forms along with the electronic form for the Professional Action Plan.

Academic Honesty

Plagiarism is the use of another person's words or ideas without crediting that person. Plagiarism and cheating will not be tolerated and may lead to failure on an assignment, in the class, and dismissal from the University. (Refer to School/College guidelines.) You are responsible for being attentive to or observant of campus policies about academic honesty and all other aspects of student conduct as stated in the University's Student Conduct Code, located at <http://www.ucdenver.edu/life/services/standards/Documents/UCD%20Code%202008-2009.pdf>

Accessibility, Disability, and Communication

The University of Colorado Denver is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. Students with disabilities who want academic accommodations must register with the Office of Disability Resources and Services (DRS), 177 Arts Building, 303-556-3450, TTY 303-556-4766, FAX 303-556-2074. I will be happy to provide approved accommodations, once you provide me with a copy of DRS's letter.



***Let's do
this!***