

# Needs Assessment

## Due Date(s):

**Before Departing for the Expedition**

## Purpose:

The Needs Assessment should include your personal vision for your classroom and address your professional goals. It is an exploratory document, meant to contemplate and predict the ways that the PolarTREC experience will help you make desired changes in teaching methods and help you grow professionally.

## Process:

You can develop the needs assessment individually, but seek feedback or advice as needed from your research team, colleagues, administration, partner teachers, or others.

There is no formal template for the Needs Assessment, although most people write paragraphs or bullet style documents in Word or another word processing program. You can use the provided rubric to self-evaluate your Needs Assessment.

In this document you can answer any or all of the questions below, or come up with questions of your own.

## Questions to address:

- What is my personal vision for my classroom?
  - Students should be provided with authentic learning opportunities that engage and inspire them to pursue their passions
- What are the realities faced in the classroom that may help or hinder my vision?
  - I teach in a full-inclusion school at the U.S./Mexico border with many students of diverse backgrounds: socio-economic, race, ethnicity, ability, etc.
  - Administration at my school is not supportive of science professional development
- What are realistic ways the experience can be shared with students?
  - Teacher-researcher mindset: sharing with my students that if I can be a researcher, so can they
  - Project-based learning unit around polar science (environmental science class)
  - Astrobiology connection with astrophysical understanding of the universe (biology class)
  - Polar Connect events
  - Instagram and social media
  - Upward Bound

## Specific issues to address:

- Three to five student needs related to specific curricula
  - [Interdisciplinary approach to science](#)
  - [Engineering design principles](#)
  - [Collaborative work environment](#)
- Three to five changes you would like to make to your teaching methods
  - [Become more inquiry based](#)
  - [Find ways to use models more effectively to teach intangible content](#)
  - [Teach the scientific method as a circle rather than linear model](#)
- Three to five things you expect to learn during your experience
  - [I hope to have a better understanding of the astrophysical phenomena that can be detected with neutrinos](#)
  - [I hope to learn about the interactions of different particles](#)
  - [I hope to learn about the different “flavors” of neutrinos and why/how they are different](#)
- Three to five concepts you would like to teach “better” or differently
  - [I would like to better explain sub-atomic particle physics](#)
  - [I would like to find a more hands-on way to engage students in nuclear chemistry](#)
  - [I would like to find a new way to connect physics, biology, and chemistry in a project theme](#)
- Equity and expectations related to ethnicity, gender, socioeconomic, and differently-abled students
  - [See above answers for classroom diversity description](#)

### **Distribution:**

Share your Needs Assessment with your research team and the PolarTREC Project Managers. It will help your team understand what you want to get out of the whole experience.