

SHORT UNIT

The objective of this assignment is for you to develop 3-5 days worth of cohesive lessons that address one main concept and incorporate all of the aspects of effective teaching that we will cover in this course. The collaborative set of lessons must be done in teams of 2-3 unless special dispensation is given. The idea is that you select a specific concept and outline in detail the structure of the lessons involved - a working model. Our goal is that you will be able to use this working model in your own classroom. As such, we are looking for lessons in which the activities and assessments are well integrated and all are essential to achieving the learning goals for the unit.

The final product will include:

- A synopsis of the lessons which includes
 - A brief description of the concept to be taught
 - A rationale of roughly one page. *Why is this concept essential to be taught? Where does it fit in a typical curriculum? How does it fit in with "big ideas" from your discipline (it may be helpful to refer to Project 2061 Atlas here, or the NSESs and the GLEs).*
 - A calendar plan of the unit
 - References to the state Essential Academic Learning Requirements (EALR's) and the National Science Education Standards (NSES).
- Pre-assessment for current understanding of the concept.
 - What are the common preconceptions for this concept? *You must use at least two sources.*
 - A specific pre-assessment for your students. *How will you elicit the preconceptions of your students?*
- Complete plans for the lessons. You can use whatever format you like but here are the basic bits of information should be included:
 - title
 - objectives of the lesson (i.e., what are assessable outcomes; SWBAT.....)
 - materials needed *per student*. If group work is being done, how much *per group* and what is an ideal group size
 - mechanical procedures: teacher's role, pupil's role
 - teaching notes: things teachers should watch out for, potential pitfalls, some expected outcomes. This could also include some type of explanation of the concept to your reader if the lesson concept is not intuitively obvious
 - evaluation (if applicable)
 - source of lessons must be noted
- Post-assessment for understanding of the concept
 - this can be the same or different than the pre-assessment, but it must give you information about whether your students internalized the concept and you must be able to determine if misconceptions have been revised.
- Notes about any specific safety considerations.

The lessons should be designed to last a minimum of 3 days. We recommend that they be based on, although not copied directly from, some existing curriculum; your own ideas concerning the activities and organization should also be apparent. In general, your short unit should include:

- objectives that are specific and assessable
- both a pre-assessment and a post-assessment
- opportunities for students to figure out some things and to construct their own understanding of the concept (*Refer to How People Learn*)
- formative assessment integrated in the lessons
- cooperative activities and student-student dialogue
- both informal and formal writing components
- time for students to reflect on their own learning (*metacognition*)

It is expected that you will use the facilities of the Learning Resource Center to get ideas for both the unit concept and specific activities that make it up. We will plan some class time for work on the lessons. We will be available to assist and advise you, but it is your responsibility to seek us out for this.

Our assessment of your lessons will be based on the following:

- The concept is relevant to your discipline and is supported by state and national standards.
- Objectives are specific and reasonable.
- Pre-assessment and post-assessment are integrated into the lessons.
- Common preconceptions are addressed, with at least two sources noted.
- The set of activities are adequate to meet the stated objectives.
- The exposition is clear and well written.
- The lessons are structured to give students experience in the process, not just content, of science.
- The activities encourage student-student dialogue and student initiative.
- The activities include frequent opportunities for students to write both informally (as in notebooks or journals) and formally (as in submitted reports).

Each group's lesson plan will be due the last week of the quarter when you will make brief presentations to the class about them.