

**DOMINICAN
UNIVERSITY**
of CALIFORNIA
School of Liberal Arts and Education

Constructing Science Learning Centers
EDUO 9561 1-4 Semester Credit(s)/Unit(s)

This course may be taken more than once for up to a total of 4 Semester Credit(s)/Unit(s).

Instructor: Ron Kremer

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Public Syllabus

Note: This is a Public syllabus of the course. For a full detailed syllabus please email the instructor.

Course Overview

Drawing from the large appendix of “ready-to-use” science center activities provided in the course content, construct a variety of learning centers for upper primary through middle school levels that encourage students to independently explore topics in science. Notes to the teacher in the write up for each center give directions for construction, gathering and preparing materials, and suggestions for following up an activity when all of the students have had an opportunity to explore that center.

Course Objectives:

Participants will:

- Complete a staff training component on independent investigations and using scientific method.
- Construct four or more science learning centers.
- Collect manipulatives and equipment needed for each center.
- Prepare consumable materials required for each activity.

Course Relation to CCS or other Professional Standards

- ***The Superintendent’s Quality Professional Learning Standards***, California Department of Education, revised March 2015: Content and Pedagogy: Element B: Pedagogy:
 1. Builds educators’ repertoires of evidence-based instructional approaches for various content areas and diverse student learning needs. (This is related to the staff training component on the advantages of small group activities.)
- **2010 K-12 California’s Common Core Content Standards for Mathematics**
- ***Next Generation Science Standards***, volume 1, The National Academies Press, Washington, D.C., 2013

Following are examples of some of the standards that are related to the learning center activities in this course. (Please see the introduction to each learning center activity in the course content for the standards specific to that activity.)

Physical Sciences

1-PS4.A Wave Properties

- Sound can make matter vibrate, and vibrating matter can make sound. (Styrofoam cup telephone)

Life Sciences

1-LS1.A: Structure and Function

- Plants... have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (Sorting and classifying leaves)

Earth and Space Sciences

1-ESS1.A: The Universe and Its Stars

- Patterns of the motion of the sun, moon, and stars in the sky can be observed, described and predicted. (Eclipse simulation)

Mathematics

Grade Four – Geometry

3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. (Creating Pattern Block® butterflies)

Course Assignments

1. Staff Training Component: Constructing Science Learning Centers

- Read the illustrated section on independent investigations and using scientific method.
- Complete the worksheet related to the illustrated section.

2. Science Learning Centers (Please see *Appendix* for listing of titles.)

A. Construct *four* learning centers for each credit. Each center has its own specific set of directions for construction. All will include:

- Glue the two copies of the instruction pages in a file folder or enlarge the instruction pages and use them as posters in the center.
- Collect and prepare the manipulatives listed under, *Materials Needed* in the teacher's notes. (Small containers may be needed for organizing loose items.)
- If there are consumable response papers required for recording discoveries, use the black-line masters provided and make the appropriate number of copies.
- Set up the center as shown in the illustration in the teacher's notes.

Document the completion of each center by photographing it set up on a table or countertop with all of the manipulatives, equipment, and consumables arranged as shown in the illustration.

B. Write a reflective paragraph on any *two* of the four completed centers *for each credit*.

- Include any problems with collecting manipulatives or share an idea for an equivalent substitute for a manipulative that worked well. Include any science insights gained during the preparation of a particular center.

How to Submit Coursework

At the top of each photo-documentation of a completed learning center and your related reflection, please include the assignment letter/number, and the title of the center: Example: *P12 Bubble Mapping*. Then mark the appropriate boxes on the checklist.

When *all* of the assignments have been completed please deposit the files in the dropbox provided. (For larger submissions, you may also need to use the overflow dropbox.) Please submit the completed checklist first, with all the assignments following in the order of the checklist. You have nine months from the date of enrollment to complete the course. If you are unable to complete the coursework in the time allotted you may request an extension of the due date.

Course Assessment Rubric

EXCELLENT	ACCEPTABLE	NOT ACCEPTABLE
Meets or Exceeds Course Objectives: A to A-	Majority of Work Meets Course Objectives: B+ to B-	Needs Considerable Improvement Resubmit Work Suggested: C or below
Staff training component completed with relevant responses. Answers are in complete sentences	Staff training component completed.	Staff training component incomplete or missing.
All assignments completed with good documentation of completed learning centers.	All assignments completed with partial documentation of completed learning centers.	Assignments missing and/or incomplete with no documentation of completed learning centers.
Correct heading at the top of each completed assignment.	Incomplete or incorrect headings at the top of several assignments	Missing headings at the top of assignments.
Clear, relevant, detailed, and thoughtful reflections.	Relevant reflections, but lacking in detail and insight.	Reflections are missing, or if present are irrelevant.
Submission is free of spelling and/or grammatical errors. Presentation shows great care.	Submission has several spelling and/or grammatical errors. Shows some lack of neatness.	Submission has numerous spelling and/or grammatical errors. Presentation shows a lack of care.
Course checklist completed and neatly marked.	Course checklist completed.	Course checklist incomplete or missing
All completed assignments organized following the order of the checklist, with checklist placed at the top of the submission.	Poor organization of completed assignments. Checklist not placed at the top of the submission.	Unorganized submission – did not follow directions. No checklist included.

- You are allowed 9 months to complete the course. Course questions? Contact your instructor by email.
- For questions involving your registration please contact us at support@dominicanCAonline.com or call (800) 626-5080. To change your address, link to your Dominican Store account at https://www.dominicancaonlinestore.com/store/index.php?main_page=login
 - For Dominican Self-Guided course information, link to <http://dominicancaonline.com/Dominican-CA-Online-FAQ>