

ECOS Inquiry: Lewis and Clark team -- Mapping the Outdoor Discovery Core (ODC) at Lewis and Clark

Date of implementation: Wednesday September 21st and 28th, 2005.

1. General goal: To map the ODC.
2. Specific Objective:
 - a. *Academic*: To learn Cardinal directions (N,S,E,&W), and how this relates to the ODC layout; to be able to visualize, from a bird's eye view, the layout of the ODC; to familiarize students with habitat descriptions found in nature (grassland, forest, butterfly garden, etc.).
 - b. *Experimental*:
 - c. *Procedural/technical*: Basic compass skills
 - d. *Social*: 5th graders will team up with and mentor 1st/2nd graders
 - e. *Communication*: Students will informally review project (map) with ECOS educators, citing learning experiences gained and problems encountered
3. Context:
 - a. *For Teachers*: Fundamental knowledge of compass parts (needle, bezel, faceplate, degree readings) and direction of needle (magnetic north).
 - b. *For Students*: Stress importance of mapping to science. Lewis and Clark made detailed maps of their journey; scientists need maps to be able to locate specific areas.
4. Vocabulary: Cartography/cartographer; compass terms listed above in 3A.
5. Grade/age level: we designed this inquiry to levels that will challenge both 1st/2nd graders and 5th graders.
6. Duration: The time commitment for this inquiry is 15 minutes of preparation time, 40 minutes of class time; an additional time allotment will be necessary to add finishing touches to the maps. Assessment time is listed below (11)
7. Motivation/Incentive: The entire inquiry (lecture/exercise) will be performed outdoors. A small prize may be awarded to the team with the most accurate map.
8. Materials: *Preparation*: pencil and drawing paper (may be journal or sheet of paper); compass.
9. Methods/Procedures: An introduction (5 minutes) will involve explaining why mapping is important, how it was used historically, and how scientists use maps today. The students will be shown a completed map to get an idea of what they are to do. The concept of "Bird's Eye View" will be explained by setting some simple objects on a nearby bench, and then sketching them from a horizontal and vertical (Bird's Eye) perspective. The students will then begin sketching the ODC under the supervision of the ECOS mentors and teachers. After about 20 minutes the students will be asked to return to the central area for a quick debriefing and question and answer period.
10. Safety issues: none
11. Assessment: The goals of the inquiry were to make students more proficient in their mapping skills. No formal written assessment is necessary, however, the

- ECOS staff will conduct an oral informal question and answer session to determine if the students enjoyed the activity, and if they felt they are better at mapping and understanding the layout of a natural area now that they have completed the inquiry (this opinion will be compared to the actual maps to determine actual comprehension).
12. Extensions: this lesson lends itself to further explorations with map and compass (orienteeing), topographic map reading, and geography. The inquiry could also be scaled up towards a higher grade by increasing the size of the surveyed area.
 13. Scalability: ECOS teams can scale this inquiry to the age/grade of the student in a number ways: older grades can be expected to add levels of complexity to their maps, such as distances between habitats and degree headings (bearings). Younger students will only be expected to mark where the general areas lie in relation to each other; scale and distances are not as important at this level.
 14. References: This inquiry was designed solely by the Lewis and Clark ECOS team, 2005.
 15. Experts and Consultants: none needed for this inquiry.