Summary of the Essence of the “Forest Walk” Approach

The essence of the "Forest Walk" approach is to allow students to explore a "rich" environment that will evoke many science-y questions from them. This allows them to do the same type of thing that scientists do when they initiate a study, and allows the instructor to teach them about exploration and asking good questions. Of course, the instructor may pick the "rich environment" so that it will lead to student questions about the area to be studied.

Group Dynamics--Students Function as a Novice Scientific Community

If the students work in small groups to explore the rich environment and generate questions, categorize their questions into a small number of categories, and then make group reports in whole-class formats, it also allows the students to function in a way that is analogous to how a scientific community functions when it initiates an area of study.

Student Questions Generate the Curriculum

The "Forest Walk" approach also empowers the students to "create" (to some extent) their curriculum.

a. Instructor-created curriculum: Using the students’ questions and categories, the instructor may create learning experiences that will enable the students to pursue answers to their questions.

b. Student-created curriculum -- Acting as Scientists Do: To some extent, with the instructor’s guidance, the students may design ways to investigate and to pursue answers to their questions. If the instructor allows follow-up where the students work together to design ways to try to answer several (or many) of their "Forest Walk" questions (or versions of their questions that the class has re-written), then this further empowers the students to act as scientists do. This can allow the instructor to teach them about designing and planning scientific investigations. A technique for doing this is available on the MMSTEC website: [http://www.umeedu.maine.edu/coehd/mmstec/plans.html, and then click on "CTTT Group Dynamics for Developing Action Plans"]

c. Students Assigned Questions: Although the students follow instructor-created curriculum, the students could also be assigned one or more of their questions to find answers for. This could be in the form of homework or projects.

An Example -- Walking Through a Rich “Motion” Environment in Physical Science

To create an environment for students to explore in which they are likely to ask many questions about "motion" (or “force and motion” or “motion and energy”) that could be then used to generate curriculum, the instructor could have a room filled with devices that the students could move (swing, slide, push, pull, etc.). There could also be motion-simulation software on
computers.

**Motion Stations:** These motion devices and computer simulations could be on tables or desks that serve as “centers” or “stations” for student exploration and generation of questions. The students might walk from station to station in small groups, pairs, or as individuals. The instructor might allow the student groups a limited time at each station (say, 15 minutes). The students might be able to visit only 3 stations in a 50-minute class period, or 5 stations in an 80-minute class period. There probably should be no questions or instructions at each station. Instead the students should feel free to explore "motion" in as many ways as they could. They should have paper and pencil, so that they could write down questions that come to them. Here (below) are some examples of “motion” devices that might be at stations:

1. A pendulum (with different lengths of string? with bobs of different weights and sizes?).
2. A ramp to slide different blocks (with different weights? with different sliding surfaces?) down.
3. A spring hanging from a support (say, a ring stand) with a weight on the end, that could be vibrated by pulling down on the weight and letting go.
4. A toy car that slides down a ramp, or down a roller-coaster type ramp.
5. Toy bumper cars that can be rolled into each other (with different weights that could be put into the cars?). They might have spring devices that move them away from each other after each collision.
6. A toy "merry-go-round" that can be spun around.
7. Motion-simulation software (e.g., “Interactive Physics” by MSC.Software, http://www.interactivephysics.com/ )