Modeling Across the Curriculum
Step-by-Step Teacher's Guide
2005-2006

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Step 1: Register Your Classes

Fill out a class registration template for each class that will use Pedagogica. The MS Excel template is available for download on the MAC Portal, http://mac.concord.org/portal in the Documents area. Depending on your school, your technology or science coordinator may take responsibility for this task.

For each class, please include the name of the class, the subject area (Biology, Physics, Chemistry), and the class level (regular, AP, remedial, etc.). For each student, you will need to enter:

- Student's first and last name
- Grade level
- Birth date
- Gender
- ID Number

Email the completed Excel files to us at mac-help@concord.org.

Step 2: Pre-Classroom Communiqué

Please fill out a Pre-Classroom Communiqué **before** your students begin working with any of the Pedagogica activities. You can fill out the attached survey by hand and mail it to us at the address included on the survey. You can also download an electronic copy from the MAC Portal, type in your answers, and email the file to us. We would prefer an electronic copy but please use whichever method is easiest for you.

If you are on a yearly schedule where your students will only use the software once per year, then you will only need to fill out the pre-communiqué one time. However, if you are on a term-schedule, where you will use the software multiple times per year with different groups of students, you will need to fill out the Pre-Classroom Communiqué each time you begin a new class.

Step 3: Pre-tests and Surveys

When students first log onto Pedagogica, the pre-test and pre-surveys will be enabled. Students will not be able to access other activities. When they have completed the test and surveys, you must go into the MAC Web Portal and enable the other activities.

Students should take Pre-Modeling Survey and the Pre-Learning Survey before they take the Pre-Test. The two surveys are short, and can be taken in one class period. The Pre-Tests for Dynamica and Biologica have been revised and shortened (there are now 28 questions in Dynamica and 33 in Biologica). The Connected Chemistry Pre-Test is 19 questions and Chemica Pre-Test is 20 questions. Please allow students **one entire class period** to take these tests. Please remember to disable the Pre-Test after students have taken it once.

You will be able to see your student's responses and scores on the MAC Portal after they complete the Pre-Test. It may take a few hours for the results to be processed. If you do not see your students' reports by the following day, please let us know.

Step 4: Activities

Before your students can use activities, you must enable the activities in the MAC Portal. First, please ensure that the pre-test is disabled at this time. Then, enable activities for your students. Please allow sufficient time for your school's proxy server to update the list of enabled activities—you should enable activities the day before you plan to have students use them.

Please complete the activities in order and at an appropriate time in your curriculum. For help with individual activities, you can find new, detailed Activity Guides located on the MAC Portal in the Documents section. You can print a PDF of each guide, which includes an overview of the activity, screen shots and answers to many of the questions.

Biologica

The order of activities is as follows. You may skip activities that are not starred. The (*) activities are core and the others are optional.

Biologica Activity Sequence	
1. Introduction *	7. Mutations *
2. Rules *	8. Mutations 2 (optional)
3. Meiosis *	9. Dihybrid Cross *
4. Horns Dilemma (optional)	10. Scales (optional)
5. Monohybrid *	11. Invisible Dragons *
6. X-Linkage *	12. Plates (optional)

Dynamica

All Dynamica activities are core; there are no optional activities. Many activities have been revised. Please complete all the activities in order.

Dynamica Activity Sequence	
1. Treasure Hunt	6. Collisions & Momentum 1D
2. Vector Motion	7. Advanced Collisions
3. Motion Graphs	8. Balancing Forces
4. F = ma	9. Gravity
5. Force in 2D	

Connected Chemistry (Gas Laws)

All Connected Chemistry activities are core; there are no optional activities. Please complete all the activities in order. An additional activity on emerging pressure will be added mid-year.

Connected Chemistry Activity Sequence	
1. Modeling a Tire	5. Temperature and Pressure
2. Changing Pressure	6. Volume and Pressure
3. Experimenting w/ Particles	7. Ideal Gas Law
4. Number and Pressure	

Chemica (Molecules and Atoms)

The suggested sequence of activities is listed below; however, you may skip around depending on your curriculum. "Gas Laws" and "van der Waals" are optional activities. The Chemica activities are relatively short compared to the other Pedagogica activities.

Chemica Activity Suggested Sequence	
1. Orbitals	6. States of Matter
2. Finding the Nucleus	7. Phase Change
3. Atom Structure	8. van der Waals (optional)
4. Electric Fields & Orbitals	
5. Types of Bonds	

PLEASE NOTE: Many Dynamica and Biologica activities now save the student's place! For example, if a student is unable to complete an activity in one class period, she can begin where she left off.

Step 5: Mid-Classroom Communiqué

Please fill out a Mid-Classroom Communiqué after your students have completed **two** of the Pedagogica activities in your subject area. You can fill out the attached survey by hand and mail it to us. Or, you can download an electronic copy from the MAC Portal, type in your answers, and email the file to us. We would prefer an electronic copy but please use whichever method is easiest for you.

Step 6: Report-A-Bug

To report a bug or other software issue, go to the MAC Web Portal, login, click Help (on the pink bar) and click on the "Report-a-Bug" link. Fill in the form with as many details as possible. If a particular student is having trouble, please send us his or her username so that we can look up his or

her log file. In addition, please indicate the activity and screen where the problem occurred. To find the screen node, press the F12 button on the keyboard. The screen node will appear at the top of the activity window.

After receiving your bug report, we will look into the situation and get back to you as soon as possible.

Step 7: Post-tests and Surveys

When students are done with all the activities that you are planning to have them use, enable the post-test and post surveys.

Students should take Post-Test first. Then, they may take the Post-Modeling Survey and the Post-Learning Survey. The two surveys are short, and can be taken in one class period. The post-tests for Dynamica and Biologica have been revised and shortened (28 questions in Dynamica and 33 in Biologica). The Connected Chemistry post-test is 19 questions and Chemica post-test is 20 questions. Please allow students **one entire class period** to take these tests. Please remember to disable the pre-test after students have taken it once.

Please remind students to take the post-test seriously and to try to do their best. Some teachers have found that students focus more on the post-test if they know that their performance on the test will affect their grade in the class.

Step 8: Student Feedback Survey

Please have students complete the enclosed survey after they complete the MAC activities. Feel free to photocopy as many copies of the survey as you need. The survey is also downloadable from the MAC Web Portal in the Documents section. http://mac.concord.org/portal/documents/ Students should not write their name on the survey—all responses are anonymous.

Please mail all completed surveys to us as soon as possible. Use the following mailing address:

MAC Research Project
Concord Consortium
10 Concord Crossing
Suite 300
Concord, MA 01742

Step 9: Post-Classroom Communiqué

Please complete the final classroom communiqué **after** your students are finished using Pedagogica and have completed the post-test. You may fill out the attached survey by hand and mail it to us. Or, you can download and electronic copy from the MAC Portal, type in your answers, and email the file to us. We would prefer an electronic copy but please use whichever method is easiest for you.

Step 10: On-Line Teacher Survey

In the spring of 2006, we will provide you with a URL to take a short 10-minute end-of-year teacher survey.

If you have any questions, comments or concerns, please contact us at mac-help@concord.org. Or call Ken Bell at (978) 369-4682.