In our January 27 meeting with Science and Math department chairs and liaisons, the majority of chairs agreed with developing shared Science and Math learning goals as a division. We proposed having the SM liaisons do this and then serving as the “conduits” between our working group and individual departments.

1. If we endorse the two overarching goals from the TOSLS (Test of Scientific Literacy Skills) for S and M (1. Understand methods of inquiry that lead to scientific knowledge; 2. Organize, analyze, and interpret quantitative data and scientific information), how do we get departments to start developing their own learning goals and incorporating the TOSLS learning goals into their intro courses?
2. Given the current general education discussion, what are the potential implications for our work with Science and Math learning goals and revision? Do we need separate goals for Science vs. Math?

3. If our division wants to argue for the importance of a gen ed SM lab requirement, what do we mean by a “lab” and what is the purpose of a lab?

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**Current CAPP proposal for Science and Math**

**Natural Sciences**

*The methods of the Natural Sciences provide a distinctive and efficacious path to understanding the natural world. Informed citizen engagement with critical challenges posed by technology, modern medicine, environmental problems, etc. demands an understanding of the way natural sciences work.*

Each student earns at least one credit in a laboratory course that has as a major component the scientific investigation of the natural world. The laboratory work will emphasize the role of experiment and observation in the formulation and testing of scientific hypotheses.

**Mathematical and Logical Reasoning**

*Logic and mathematics are among the most powerful tools the human mind has devised for comprehending and interacting with the world. Students engaged in their study learn foundational critical thinking skills. They develop habits of rigorous thought that empower them to engage in sound analyses of questions amenable to the tools of logic and mathematics throughout their lives.*

Each student earns at least one credit in courses that develop the capacity for logical reasoning through the exploration of techniques in mathematical reasoning, computational reasoning, or reasoning with formal languages. A major component of these courses is the practice of such techniques.

Skills in Gormally et al.’s Test of Scientific Literacy

**A) Understand methods of inquiry that lead to scientific knowledge**

**B) Organize, analyze, and interpret quantitative data and scientific information**

1. Identify a valid scientific argument (e.g., recognizing when scientific evidence supports a hypothesis)
2. Conduct an effective literature search (e.g., evaluate the validity of sources (e.g., websites, peer reviewed journals) and distinguish between types of sources)
3. Evaluate the use and misuse of scientific information (e.g., recognize a valid scientific course of action, distinguish the appropriate use of science to make societal decisions)
4. Understand elements of research design and how they impact scientific findings/conclusions (e.g., identify strengths and weaknesses in research related to bias, sample size, randomization, experimental control)
5. Make a graph
6. Read and interpret graphical representations of data
7. Solve problems using quantitative skills, including probability and statistics (e.g., calculate means, probabilities, percentages, frequencies)
8. Understand and interpret basic statistics (e.g., interpret error bars, understand the need for statistics)
9. Justify inferences, predictions, and conclusions based on quantitative data

Brown Bag lunch on Wednesday, April 8th from 11:30-12:20 in Julian 152

Ideas for discussion topic?

--What is a lab?

--Continued discussion regarding CAPP’s gen ed proposal?