Getting Started on an Interdisciplinary Project

You may want to each take an inventory of the types of projects you currently do in your classes and think about ways each project could be extended to include aspects of the other person's discipline.

Think about what concepts each project may share in common with particular emphasis on how this project could support the development of computational thinking.

What concepts do you wish to cover and what types of projects will you create to address those concepts? What software will you use?

What type of project or situation could you devise to support setting your students' imaginations loose? In other words, try to think in terms of projects that support divergent outcomes.

Creating a project that is intriguing to both sets of students that provides learning outcomes benefitting both your disciplines will promote "buy in" for all involved.

Consistency is another area you and your colleague must work out through communication. There needs to be a consistent set of guidelines for both groups of students regarding due dates and grading policies.

What if you and your colleague discover you have completely different philosophical views towards teaching and grading? Do you rank your students? Are you more of a lecturer or a facilitator? How might you mesh your stylistic differences?

All projects need to be designed so that anyone, regardless of their major or educational level can succeed.

Computational Thinking Inventory for Found Sounds Project

Music

Aural analysis through making decisions about timbre, rhythm, dynamics, form and texture, not to mention the performance aspect.

For the creative notation part of the project, your students will be involved in visual analysis and some serious decision making regarding symbolic representation.

CS

The CT involved in these musical decision-making processes involves your students in temporal structuring, pattern recognition, the beginnings of procedural thinking, and categorizing.

The creative notation part of the project was where we felt the music making and computing could intersect the interests of both sets of students in a natural way. Both disciplines rely on a unique symbol system that is used to create and perform.

Computational Thinking Inventory for Musical Flowchart Project

Music

- Structural/macro analysis – through aural (listening) and lyrics
- Chunking, structural dictation, form, texture
- Representational encoding/decoding, repeats

Computer Science

- Procedural thinking: repetition, branching, `if` and `while` statements, signal flow, serial and parallel processing
- Representational encoding/decoding, pseudo-code, control structures, algorithms, loops