Sample “Code for the Bronx” Project (6th Grade @ MS223)

Teacher Notes	Student Facing
Day 1: Intro Student groups are arranged **ahead of time**. For CS groups, “**heterogeneity**” is best achieved by balancing the number of independent workers in each group. Don’t put all your students who ask a million questions in the same group because students **need** to work independently. Group Projects Having students decide the problem they want to solve or explore is a powerful learning moment.	**Real artists ship** In the next three weeks, you will… ● **Manage** ● **Design** ● **Code** ● **Debug** a program that addresses a real-world problem. ✍ **Design sends a message** What is **design?** Design [n] purposeful planning to achieve a goal. Design **is** problem solving. Writing functional code Drawing a picture Arranging desks Cooking Choosing **Understanding** **What are problems in our community?** In pictures or words, describe five social issues that are of concern to **you** in your current day-to-day life. How do these issues lower the quality of your life? *(If you get stuck, think of Word Generation topics…)* How can **design** change anything?
Day 2: Roles Having **explicit roles** is essential to the success of group projects.	✍ **Roles** **Project Manager:** In charge of daily progress, timekeeping, and feedback **Coder:** Writes functional code, every day.

You can vary the names.“Coder” could be the engineer, and you can have multiple students fulfill the same role, but the three essentials follow: 1. Roles should be explicit. 2. Each student has a job each day. 3. All work must be documented in writing. (See project log below.)	**Debugger/Editor:** Checks everyone’s work and *comments.* **Designer:** Uses sprites, backgrounds, and images. You must **log** your role and what you did **every day.** ✍ **Contract (10 min)** **With your group**, brainstorm a list of expectations and rules that **all of you** can agree to follow. This will be the contract that your project manager will use. Topics to cover: How do you manage conversation? How do you manage disagreement? What happens if someone isn’t working? **Code for the Bronx (CFTB)** In the next 3 weeks you will... And ship a program that addresses a real-world problem. Manage – building a project in a team Design – your program so it meets community needs Code – create a functioning program with code Debug – use problem-solving skills to find and fix issues with your program
## Day 3: The First Work Day Clear time constraints are *really* important. Having a visible timer is quite effective.	**Computer Work Time (25 minutes)** **By the end of class:** 1. Choose a topic. (Use brainstorm document.) 2. Think of ways to use Scratch to create a game or story about that topic. 3. Begin planning sprites. 4. Begin mock-ups in Scratch. **Project Managers:**

	It is **your** responsibility to make sure everyone knows what they should be doing. Refer to your team's contract to keep each other accountable. Be sure that everyone logs work for the day.
Work Day	**S.M.A.R.T. Goals** Specific: What is your goal in detail? Measurable: How will you know when you finish? Actionable: What actions will you take? Realistic: Is it possible? Timely: When will it be done? Project Managers: With your group, set one S.M.A.R.T. goal for today. **Computer Work Time (25 minutes)** By the end of class: 1. Create two functional mockups in Scratch. 2. Create two finished sprites, ready to scan. 3. Define a S.M.A.R.T. goal for next week. 4. Begin mock-ups in Scratch. **Project Managers:** It is your responsibility to make sure everyone knows what they should be doing. Refer to your team's contract to keep each other accountable. Be sure that everyone logs work for the day. **Reflection** In two paragraphs: What have you learned about designing and building something with a group? What have you learned about yourself by working with a group? This will be used for our reflection at the end of the project.
Work Day	**Computer Work Time (25 minutes)** **By the end of class:** 1. Scan the designers' sprites into Scratch.

	2. Add sprites to code. 3. Run **quality assurance** tests on code. **Project Managers:** It is **your** responsibility to make sure everyone knows what they should be doing. Refer to your team's contract to keep each other accountable. Be sure that everyone logs work for the day.