

**Larry Lambert**  
**Addressing the Needs of Students with Disabilities**  
**Lesson Plan Adaptation**

**Part 1 - Lesson**

**Topic:** Introduction to Programming Using AppInventor

**Timeline:** Approximately 12 hours during a single technical week

**Essential Question:** How can MIT's App Inventor be used to create Android cell phone apps?

**Overview/Plan:** The lesson will begin with the instructor demonstrating the AppInventor interface and explaining each of the components and how it is used to develop cell phone apps. Students will then be led step-by-step through the creation of a simple cell phone application. Students will then be asked to extend the functionality of that application independently. Once they have completed this aspect of the lesson they will be asked to develop an application of their own choice.

**Maintaining Momentum and Student Involvement:** The ubiquitous nature of smart phones and tablets help to pique student interest which helps to maintain their involvement. Momentum will be maintained throughout the instructor led portion of the lesson by verifying that students are keeping pace with the step-by-step directions. During the independent work portion of the lesson, the instructor will circulate around the lab providing additional direction and any assistance that students need to continue working.

**Assessing Student Comprehension:**

**Formative Assessment** - Student understanding will be assessed by direct observation of their work as they complete the enhancements of the simple application. Direct observation will continue as the students develop a second application of their own.

**Summative Assessment** – At the conclusion of the lesson, students will be given a written exam to assess their understanding and retention of the lesson's concepts.

**Part 2 – Students with Disabilities**

**Student A**

Limitations as identified by the student's IEP include executive functioning deficits, difficulty with memory retention, and ADHD, Inattentive type. The IEP goes on to state that the student exhibits impulsivity, poor attention to visual detail, and intermittent loss of focus, as well as poor organizational skills, slow initiation of organizational strategies, and poor set maintenance. These deficits impact his academic achievement throughout all curriculum content areas.

Setting the IEP aside, in the approximately 1 year that Student A has been a member of the Programming and Web Development, he has never exhibited any of these traits. On a daily basis he is an exemplary student worthy of emulation by his peers. He completes all assignments in a timely manner. In general, I maintain a very disciplined classroom environment and continually express high expectations for all students. This academic climate may be sufficient to overcome some of the deficiencies outlined in the student's IEP.

## **Student B**

Student B has significantly low processing speed and inattention, which affects his ability to produce academic work on par with his grade level peers across curriculum. His slow processing speed can be observed in his approach to tasks, specifically in his inability to initiate and execute a given assigned task whether in the classroom or at home. Once he is able to begin an assigned task, Student B usually lags behind his classmates. His inattention is also observable in the classroom. He has a tendency to drift off. For example, a teacher may be moving on to the next agenda item, but he has not finished the previous task because he has either drifted off or was slow in processing the information.

Student B often gets caught in between the transition and does not know whether to stay with the task at hand or switch to the new one. If he was drifting off as the transition took place, he will completely miss directions for the new task. This can be extremely overwhelming and self-defeating for him. He needs assistance with this in the classroom. An adult may be able to get him going on a classroom task, but Student B is unable to sustain the concentration in order to work effectively on his own. He requires frequent prompts and cues to stay on task. Matthew also has low self-esteem and social immaturity issues that interfere with his ability to focus, keep organized, and demonstrate his knowledge across all curriculum areas.

Unlike Student A, Student B lives up to every line of this description. It is a constant battle to get Student B going on a task and to sustain that effort requires repeated prompting. Student B has difficulty conceptualizing what is required in order to develop a solution to a programming problem which makes it virtually impossible for him to code the solution.

**Meeting Student Needs:** In the case of Student A, there are no special steps required in order to insure that he has full access to the curriculum. As stated above, he is typically one of the students that completes his assignments most quickly and more often than not, with a quality solution. Any shortcomings that he has are overcome by the classroom climate and the use of best practices within the classroom.

Student B, on the other hand requires extensive assistance in order to fully access the curriculum. Unfortunately, even though Student A is able to complete all assignments with sufficient support, it is evident that he fails to retain the knowledgebase that is intended to be acquired by the student as a result of completing the lesson.

Many students within the Programming and Web Development area are provided with individual assistance while completing assignments so the level of support being received by Student B is transparent to his classmates.

At some point in the future, it may come to recommending that he consider transitioning to a program that is more aligned with his capabilities. Many past students, who displayed similar abilities, have left Programming and Web Development to go on to be successful in Design and Visual Communications.