**Recommended Assessment and Grading Practices**

**Mastery of the Skills and Content**

Due to the nature of this content and how students learn in a hands-on setting, it is recommended that students are assessed on observations of their performance and how they explain what they have accomplished as opposed to using points and percentages to average their scores on homework, quizzes, and tests. It is common for a student to struggle for a while and then have a “light bulb moment.” With that in mind, it can be challenging to report on a student’s progress because when students learn electronics, it looks less like slow, steady growth and more like a series of light bulb moments.

For progress grades, reporting on student engagement, attentiveness, and effort are useful. For final grades, we recommend using larger, end-of-chapter and end-of-course assessments using this or a similar scale:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Number grade** | **1** | **2** | **3** | **4** |
| **Letter grade** | **Incomplete** | **C** | **B** | **A** |
| **Descriptor** | **Below Standard:**  Student has not completed the activities/work | **Approaching Standard:**  Student has built circuits successfully but doesn’t understand them or student understands them but is unable to get them to work | **At Standard:**  Student built working circuits and understands why they work | **Above Standard:**  Student built working circuits, understands why they work, and was able to take the circuit further |

**student Writing**

Students are better able to retain what they learn when they write about the activities they are completing. Using either notebooks or worksheets, two-column formats such as Cornell notes, T-charts, word-definition, or cause-effect all work well to help students articulate the concepts they are learning, which in turn helps cement their knowledge. Additionally, student writing provides opportunities to check for student understanding.

Successes and Mistakes to learn from

Cause Effect

Forgot to include DEC A bunch of weird symbols showed on the screen

New Commands

Command Function

DEBUG Sends numbers or text or other information to the screen

**observational/VERBAL assessment**

Reflection

A real life example of a phototransistor would be a street light – they turn on when it gets dark and they turn back off when it’s light enough outside.

During times when students are working through the activities, asking questions such as: “Can you tell me what you’re working on?”, “What did you change to make it do that?”, or “How is this the same or different than the last activity?”. Asking probing questions such as these for a minute or two from each student will allow you to assess their level of understanding quickly, which will help you identify which students need more help or instruction. Students can also explain their work in a short presentation or in a question and answer format.

**formal assessments (tests/quizzes)**

This guide also provides quizzes and tests. The answer key is only in this document which is available from Parallax only to educators. There are about 50 questions or short code projects per chapter. A level corresponding to Webb’s Depth of Knowledge is provided for each assessment item: Recalling/Reproducing (1), Applying Skills and Concepts (2), Problem Solving (3), and Independent Projects (4).