**AP CSP CodeBot**

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| **LESSON: Types of Division** | | **Time: 45 minutes** |
| **Project Goal:** Students will learn about different types of division, including integer (floor) division and modulo.  **Learning Targets**   * I can evaluate expressions that use decimal division, integer division and modulo division. * I can determine possible answers for modulo. * I can give applications for using modulo division. | **Key Concepts**   * Real number, or decimal, division gives a decimal answer. * Integer division is the whole number only of a division problem, or the number of times the divisor goes into the dividend. * Modulo division is the integer remainder of long division. | |
| **Assessment Opportunities**   * Types of Division Activity Guide | **Success Criteria**   * Evaluate math problems that have integer division * Evaluate math problems that have modulo division * Apply modulo division to real-world problems * Determine possible answers for modulo division | |
| **AP CSP Framework**  **AAP-1.B** Determine the value of a variable as a result of an assignment.  **AAP-2.C** Evaluate expressions that use arithmetic operators. | **Materials**   * Types of Division slides * Types of Division Activity Guide * Types of Division Activity Guide Answers * Problem Sets for printing * More Lessons Review and Test Questions * [Types of Division Kahoot Review](https://create.kahoot.it/share/types-of-division-review/7c4b9298-1bc7-4ca7-9c85-050933c2ef3b) (5 questions) | |
| **Teacher Notes**   * This lesson is best with partners or in groups of three. I recommend random groups and having students work at white boards for this activity. You can print the problems and have students work on them randomly so they can discuss their thinking and check their answers with other groups. This can lead to a rich discussion on binary numbers and real-world problems. * Modulo division isn’t expressly used in the CodeBot missions, but it is covered in the AP curriculum. * Go through the slides first. The set for printing includes step-by-step instructions for guiding this lesson as a whole-class with random groups of three. Then give the activity guide for students to complete. * This activity guide could be printed or given digitally. | | |