



Activity 15.17 PREDICT DOWN THE LINE



For most repeating patterns, the elements of the pattern can be numbered 1, 2, 3, and so on (often referred to as *terms* or *steps*). Provide students with a pattern to extend. Before students begin to extend the pattern, have them predict exactly what element will be in, say, the fifteenth step. Students should be required to provide a reason for their prediction, preferably in writing.

Notice in an ABC pattern that the third, sixth, ninth, and twelfth terms are the C element. Students can use their developing concepts of multiplication and division to predict what the eighteenth and twenty-fifth term would be. Ask them to predict what the element will be in the hundredth term. Because $100 \div 3 = 33$ remainder 1, it would be the A element in the pattern. If predicting the hundredth element, students will not be able to check the prediction by extending the pattern. Justification focuses on students' knowledge of multiplication and division (Warren & Cooper, 2008).

From Van de Walle et. al. (2014). *Teaching Student-Centered Mathematics Grades: Developmentally Appropriate Instruction for Grades 3 – 5* (2nd Ed.). Toronto: Pearson Education, Inc. (p. 303-304).