Problem of the Week

The problems that follow focus on algebra. More specifically, students will explore patterns. The tasks are meant to be open-ended so that discussion can support understanding.

Be mindful that during these prompts, it is important the teacher listens to student conversations and asks questions that illicit student thinking.

Primary	The teacher challenged students to create an increasing or decreasing pattern. The sixth term in the pattern had to be a number less than 20. What could the pattern be?
An extension: • *Ask students if the sixth term could be the same for both an increasing and decreasing pattern? Show your thinking.*	

Elementary	The teacher was curious if the following numbers could be used to make an input-output table: 4 6 8 6 2 10 2 3 4 5 Marsha said that the numbers could be used to make an input-output table. David said that the numbers could not be used to make an input-output table. Who is correct, Marsha or David? How do you know?
An extension: • *Use a ? to represent one or two of the numbers.* • *Have students identify the y-coordinate when the x-coordinate is 16.*	

Intermediate	Five ordered pairs are made up of the following 8 numbers and two unknown numbers (represented by **?**). **?** 9 24 18 12 7 15 10 **?** 8 Identify the correct ordered pairs that maintain a pattern.
An extension: • *Increase the number of unknown numbers given to students.* • *Ask students if more than one algebraic expression can be applied for this collection of numbers (both given and unknown).*	

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