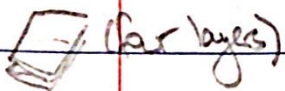
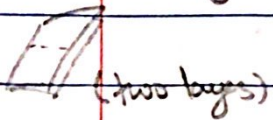
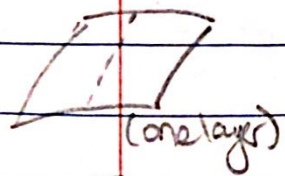


3) The beginning of the number pattern 1, 2, 4, 8 was used by two teachers in separate classes. Teacher A asked, "What is the next number in this pattern?" Teacher B asked, "What are some possibilities for the next number in this pattern?" List more than one way this number pattern can be continued and explain your reasoning for each way. Discuss the difference between the two questions in terms of expected student responses.

Answer i) 1, 2, 4, 8, 16, 32, 64, ...

We start with the number one and then repeatedly multiply by two for each number.

ii) 1, 2, 4, 8, 16, 32, 64



The number in the 1st place corresponds to how many layers of paper there are after 0 folds. The 2nd entry is how many layers of paper there are after 1 fold. Each entry can be got from the previous by performing one additional fold & counting up the # of layers.

The first teacher implicitly suggests there is one right answer and that this answer is the only way we will ever see these numbers. Only one student needs to answer, so students do not need to worry about contributing as someone else will probably answer.

The other teacher is asking a question in a much more open way. There could be multiple answers, multiple reasons, and different scenarios where we could come across this 'sequence'. The increased opportunities for correct answers can make students more motivated to search their own experiences to find the sequence. It's a broader invitation for students to interact, contribute, and be active in class.