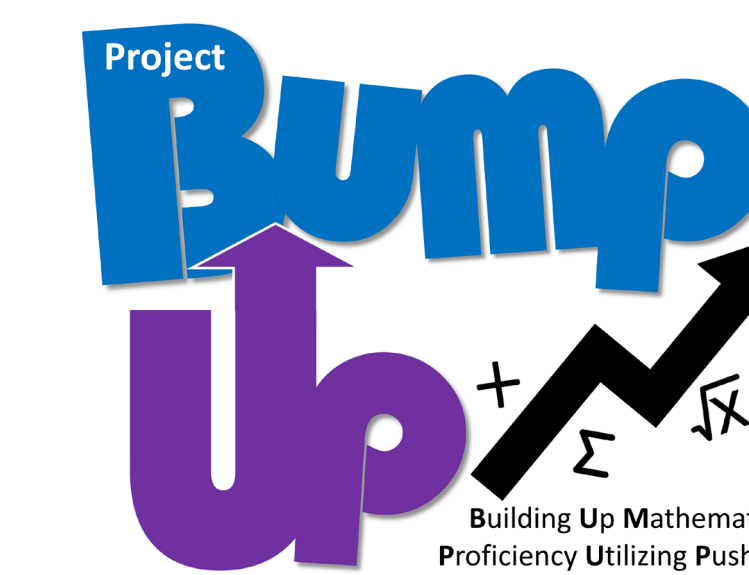
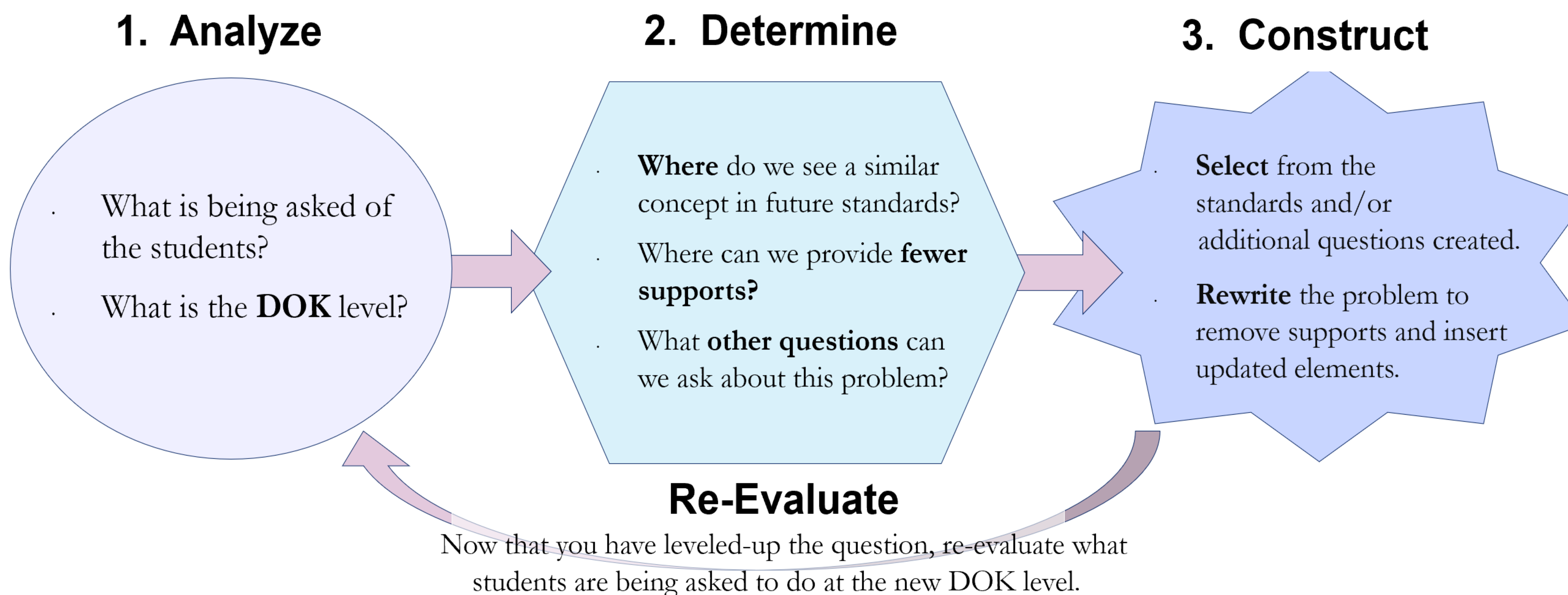


BUMPPing UP: A 3-Step Method to Increase Cognitive Complexity for Advanced Learners



How can we increase the complexity of this math problem? A photographer has files saved in three online albums. The Wedding album has 2,073 files. The Birthday album has 1,860 files. The Pets album has 2,370 files. Which album has the most files? Show your work. Hint: You might want to use a place-value chart to compare these numbers (Curriculum Associates, 2015)



1 analyze Currently, what is this **question asking** the student to do?

- Compare place value
- Order numbers least to greatest

Currently, what is the **DOK** of this problem?

DOK 2: Classifying a number and requiring students to make an informed decision using multiple steps to solve.

2 determine **Looking Ahead:** When will we see a similar concept like this in the future?

- Comparing and ordering decimals

Where can we **provide fewer supports**?

- Eliminate the hint

What **other questions** can we ask?

- Show **two** ways to answer the question
- Use a diagram to help you solve this problem
- Order the files from least to greatest
- Give students the chance to use new math vocabulary (least/greatest) and symbols (<,>=)
- Allow students to see that “most” is the same as “greatest”

3 construct **How can we implement these questions?** (Building the new problem)

- Order the files from least to greatest. Then, describe how you thought up an order for the numbers.
- Now, think of another way to compare the number of files in each album. What makes this way different than the first way you solved this problem?
- After ordering the number of files, which album has the greatest (or most) number of files? Which album has the least (or smallest) number of files?

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