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**Connecting Representations Instructional Routine Pre-Planner**

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| **Consider the Representations:** | |
| Explore the mathematical structure that the representations highlight. What are key features of the representations? How do they connect to big ideas of the content? | |
| **When considering the representations, ask yourself:** | |
| What will students notice and think is important about the different representations?  How will they use those noticings to connect representations? |  |
| How might they connect representations incorrectly? |  |
| **When considering the students, ask yourself:** | |
| Which representations will provide access to students?  Which representations will be challenging for students? |  |
| Which representation will students be connecting, and which one will you leave off for students to generate? |  |

**Connecting Representations Instructional Routine Planner**

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| **Launch** | |
| *Macintosh HD:Users:Amy:Dropbox:FMP Website:Routines:Connecting Reps:Powerpoint:CR_Revised:Slide03.jpg* | What will you say to students about *what* they be doing and *why*? |
| **Interpret and Connect Representations** | |
|  | Will you unveil all 5 representations or decide to unveil one type of representation first? If you unveil one first, which type? |
|  | Which connections will you share? In what order? |
| **Discuss Representations** | |
| **Macintosh HD:Users:Amy:Dropbox:FMP Website:Routines:Connecting Reps:Powerpoint:CR_Revised:Slide06.jpg** | Will students self-select the speaker and the pointer/gesturer, or will you pre-select the roles?  What questions will you ask to highlight structural underpinnings of the representations?  How will you annotate connections? |

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| **Create Representations** | |
|  | What ‘ask yourself questions’ will you pose? |
|  | Which representation will you plan to share in the full group? |
| **Macintosh HD:Users:Amy:Dropbox:FMP Website:Routines:Connecting Reps:Powerpoint:CR_Revised:Slide09.jpg** | How will you annotate the newly created representation to highlight the connection and underlying structure? |
| **Reflect on Thinking** | |
|  | What reflection prompts will you provide? |

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