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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** |
| *Macintosh HD:Users:Amy:Dropbox:FMP Website:Routines:Connecting Reps:Powerpoint:CR_Revised:Slide04.jpg* | Will you unveil all 5 representations or decide to unveil one type of representation first? If you unveil one first, which type?  |
| **Macintosh HD:Users:Amy:Dropbox:FMP Website:Routines:Connecting Reps:Powerpoint:CR_Revised:Slide05.jpg** | 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? |
|  | How will you annotate the newly created representation to highlight the connection and underlying structure? |
| **Reflect on Thinking** |
|  **Macintosh HD:Users:Amy:Dropbox:FMP Website:Routines:Connecting Reps:Powerpoint:CR_Revised:Slide10.jpg** | What reflection prompts will you provide? |

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