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| **Facilitation Guide**  **Educational Service District 123 and Pacific Northwest National Laboratory**  **Exploring Climate Science with Virtual Reality Follow-up 3**  Ambitious Science Teaching  Eliciting Student Ideas and Adapting Instruction  Planning for Formative Classroom Tasks | | |
| Slide 1 |  | **Slide 1 10 minutes**  **Welcome and Introductions** |
| Slide 2 |  | **Slides 2-3 5 minutes**  **Quick Introduction to / Reminder of Ambitious Science Teaching** |
| Slide 3 |  | **Slides 2-3 5 minutes**  Hand out Recording Tool.  Look in each column at the 8 Fundamental Themes of AST. Take a moment to highlight the key words in each columns title. |
| Slide 4 |  | **Slide 4-10 45 minutes**  **https://vimeo.com/106398654** |
| Slide 5 |  | **Slide 4-10 45 minutes**  The ambitious teacher is someone who “works with students’ ideas” over time. What would you experience in classrooms where ambitious teaching was the focus? You would see and hear each of the 8 fundamental themes of AST. Go through each slide 5-8 to see the themes. Give people time to finish recording their ideas. Ask for places in the video where they spotted various themes. |
| Slide 6 |  | **Slide 4-10 45 minutes**  The ambitious teacher is someone who “works with students’ ideas” over time. What would you experience in classrooms where ambitious teaching was the focus? You would see and hear each of the 8 fundamental themes of AST. Go through each slide 5-8 to see the themes. Give people time to finish recording their ideas. Ask for places in the video where they spotted various themes. |
| Slide 7 |  | **Slide 4-10 45 minutes**  The ambitious teacher is someone who “works with students’ ideas” over time. What would you experience in classrooms where ambitious teaching was the focus? You would see and hear each of the 8 fundamental themes of AST. Go through each slide 5-8 to see the themes. Give people time to finish recording their ideas. Ask for places in the video where they spotted various themes. |
| Slide 8 |  | **Slide 4-10 45 minutes**  The ambitious teacher is someone who “works with students’ ideas” over time. What would you experience in classrooms where ambitious teaching was the focus? You would see and hear each of the 8 fundamental themes of AST. Go through each slide 5-8 to see the themes. Give people time to finish recording their ideas. Ask for places in the video where they spotted various themes. |
| Slide 9 |  | **Slide 4-10 45 minutes**  Read from slide |
| Slide 10 |  | **Slide 4-10 45 minutes**  Four minute reporting out for each group. |
| Slide 11 |  | **Slides 11-21 15 minutes**  Last time we watch the Erik Roner video to see an engaging phenomena |
| Slide 12 |  | **Slides 11-21 15 minutes**  We learned about models and explanations as key to all of the practices |
| Slide 13 |  | **Slides 11-21 15 minutes**  We examined some student samples of initial and final models |
| Slide 14 |  | **Slides 11-21 15 minutes**  We learned how to scaffold for models to help students capture ALL of their thinking |
| Slide 15 |  | **Slides 11-21 15 minutes**  One of those scaffolds was the Gotta Have It Checklist |
| Slide 16 |  | **Slides 11-21 15 minutes**  In our first follow-up meeting we engaged in argument driven inquiry using a unit from the Victor Sampson book to help understand arguing from evidence |
| Slide 17 |  | **Slides 11-21 15 minutes**  We used the Carbon Dioxide Levels in the Atmosphere lessons and claims, evidence, reasoning strategies to steep ourselves in this type of classroom task. |
| Slide 18 |  | **Slides 11-21 15 minutes**  One strategy was highlighting important data |
| Slide 19 |  | **Slides 11-21 15 minutes**  Next we commented and interpreted that data. |
| Slide 20 |  | **Slides 11-21 15 minutes**  Finally we summarized that data in a 2-3 sentence ”caption” |
| Slide 21 |  | **Slides 11-21 15 minutes**  We saw the value of making your argument to each other |
| Slide 22 |  | **Slide 31 45-60 minutes or as time allows**  Talk with your partner(s). Make a decision about how you will engage in the practice of representing student ideas publicly. Remember your choices are CER, Models and Explanations. This is the time to begin to develop an actual plan for how they will Represent Student Ideas Publicly as part of eliciting student ideas.   * Given you a couple of ways think about this work * Given you a way to think about phenomena the students can do this work around * Talked about public representations over time to build on and refine * We want you to think about the phenomena you think you might use and about and the work you do in your classroom, how do you embed a formative classroom task. This is your new work. Embedding not adding on. * a very brief reminder of the 4 elements of AST and where we are in the process * Time to translate their phenomena thinking into planning using the AST Planning for Engagement Tool section 4 |
| Slide 23 |  | **Slide 32 60 minutes to 90 minutes Climate Science App** Audio and Video casting,   * Screenshot and video capture * Downloading to a computer screen * Teacher Feedback: * https://drive.google.com/open?id=1Hp-v9OM2BJPlaUsFb1x8SnkR5WXtnVnD7TjM-tMSqlU * Student Feedback: * https://drive.google.com/open?id=1FsuyMw\_LpjCWyvXj9dLbkTn\_CoDgR\_aiZSB5OMofgwE |
| Slide 24 |  | **Slide 33 Whatever time is left**  A brief reminder of where we are in the process   * Given you a couple of ways think about this work * Given you a way to think about phenomena the students can do this work around * Talked about public representations over time to build on and refine * We want you to think about the phen. you think you might use and about and the work you do in your classroom, how do you embed a formative classroom task. This is your new work. Embedding not adding on. * a very brief reminder of the 4 elements of AST and where we are in the process * Time to translate their phenomena thinking into planning using the AST Planning for Engagement Tool section 4   Then using the Planning for Engagement tool Step 4  Be prepared to have something in writing that gets uploaded to the folder on Google Drive. Make the case for why a large variety of documents can be helpful to other teachers. We want products to share. A platform will be created by which these products will be shared. |
| Slide 25 |  | Creative Commons Licensing information |