| ***Time and Duration*** | ***Agenda/Topic*** | ***Description/Notes/Process*** | ***Materials/Logistics*** |
| --- | --- | --- | --- |
|  | **Preparation** | * Set up presentation technology & music * Put up Parking Lot Poster * Put up Feedback Poster * Stage handouts * Set up tables | * Sound set up for video * Preload video to prevent buffering * Parking Lot Poster * Table boxes * Table Signs * Box of handouts * Copy and cut Equity Strategies Cards |
| Slide 1  **Slide 1-6 (7-10 min)** |  | **Welcome Participants**  **Logistics**   * Rest Room location * Locate the Parking Lot Poster or another similar tool. |  |
| Slide 2  **Slide 1-6 (7-10 min)** |  | Display goals  Designed to support teachers K-12, this 3-session series will focus on strategies for improving student performance on *Conclusion Writing* in science as measured on the MSP and EOC.  In addition, this series will lay the foundation for moving from conclusion writing to the NGSS Science & Engineering Practice of *Arguing from Evidence*.  As a result of this series, participants will develop and administer Washington State science assessment-like items and analyze their students’ performance. |  |
| Slide 3  **Slide 1-6 (7-10 min)** |  | This 3-session series will focus on strategies for improving student performance on *Conclusion Writing* in science as measured on the MSP and EOC. In addition, the series will lay the foundation for moving from conclusion writing to the NGSS Science & Engineering Practice of *Arguing from Evidence*. Participants will develop and administer Washington State science assessment-like items and analyze their students’ performance. |  |
| Slide 4  **Slide 1-6 (7-10 min)** |  |  |  |
| Slide 5  **Slide 1-6 (7-10 min)** |  | Photo is hyperlinked to you tube video | Video: You Poked My Heart from You Tube  [www.youtube.com/watch?v=3sKdDyyanGk](http://www.youtube.com/watch?v=3sKdDyyanGk) |
| Slide 6  **Slide 1-6 (7-10 min)** |  | Provide background and context to for participants to understand SEP #7 by briefly reviewing the dimensions and an NGSS standard.  Remember that Argument from Evidence is one of the essential Science and Engineering practices that works in tandem with Crosscutting concepts to deepen our understanding of the Disciplinary Core Ideas.  Transition:  Now that you have a sense of the “big picture”, of the NGSS, let’s look deeper at the Science and Engineering Practices. |  |
| Slide 7  **Slides 7-10 (70-75 min.)** |  | * Participants select the grade level item that is closest to their teaching assignment (5, 8, EOC)   Participants respond to the conclusion item prompt | HO:   * Grade 5 Conclusion Item pdf * Grade 8 Conclusion Item pdf * EOC Conclusion Item pdf |
| Slide 8  **Slides 7-10 (70 min.)** |  | Participants collect the rubric and determine their attribute points | HO:   * Grade 5 Conclusion Teacher pdf * Grade 8 Conclusion Teacher pdf * EOC Conclusion Teacher pdf |
| Slide 9  **Slides 7-10 (70 min.)** |  | Participants are given student responses. They are asked independently to assign each student attribute points. Next they share with a partner to see if they agree and why. If needed they can get a third opinion.   * Grade 5 Conclusion Student Answers (A=1; B=0; C=2; http://www.k12.wa.us/science/pubdocs/Grade5Update2014.pdf) * Grade 8 Conclusion Student Answers (A=2; B=0; C=1; http://www.k12.wa.us/science/pubdocs/Scienceg8Update2013.pdf)   EOC Conclusion Student Answers (A=2; B=0; C=1; D=2; http://www.k12.wa.us/science/pubdocs/ScienceBioEOCUpdate2012.pdf) |  |
| Slide 10  **Slides 7-10 (70 min.)** |  | Participants score their students’ papers and record the attribute point. HS has up to 5 attribute points whereas 5th and 8th have 4.  \*\*\*We must collect and/or make copies of “Class record sheet Conclusion Item”  Participants should have brought their own completed rubric created from the short answer template. If not, you can share the blank template to help guide them. | Class record sheet conclusion item  HO:  Rubrics Templates   * g5Conclusion * g8Conlusion * EOC-Conclusion/Update |
| Slide 11  **Slide 11 (10 minute Break)** |  | **Slide 11 (10 minute Break)** |  |
| Slide12  **Slide 12 ( 15 -20 min).** |  | CER for rubric you would use  Now that you have looked at the state’s rubric, you may be thinking that you would like something more. Here are some examples of CER rubrics.  Give participants time to go through and choose which one they like. Have them share why they chose the one they did.  The last rubric is a rubric to help guide them as they develop their own. Share it with the participants and ask how they can include students in the process. | HO:   * Developing-Scientific-Explanations pp. 7 & 12 downloaded from http://lizastark.com/portfolio/wp-content/uploads/2011/08/Developing-Scientific-Explanations.pdf * 201104Claims EvidenceRubric downloaded from http://www.nsta.org/elementaryschool/connections.aspx * WritingRubric downloaded from http://morganparkcps.org/ourpages/auto/2013/2/6/52428363/WritingRubric.doc   Rubrics\_for\_rubrics\_bie\_2011 downloaded from http://bie.org/object/document/rubric\_for\_rubrics |
| Slide 13  **Slide 13 (50 min.)** |  | Follow Notes on Slides.  Remind people that along with our learning about what makes good claims, evidence and reasoning writing we need to remember the attributes that are credited on the MSP Conclusion rubric and be sure to design our conclusion items accordingly. | Conclusion item template and Rubric template |
| Slide 14 |  | **Slide 14 Lunch: Depends on your workshop parameters** |  |
| Slide 15 |  | **Slide 15 (20 minutes)**  Now ask participants to find a feedback partner that might be from a same or near grade level.  -Explain to the partner the context of your lesson where the conclusion item will be used  -Partners can provide feedback on post-its for each of the following areas  -Partners should give feedback on following points…read through the points under give/get feedback on the following  -The partner providing feedback should explain their noticings and wonderings for the written conclusion item | * Post-its or other fast easy way to give feedback notes to partner |
| Slide 16  **Slides 16-18 (5 min)** |  | In our first session we went through a process of Thinking through claims evidence reasoning that came from Victor Sampson. Today we are going to deepen our thinking about CER using the work of Kathryn McNeill and Joe Krajcick, Carla Zembal-saul and Kimber Hershberger. You will see the components of an argument that we worked with last time in a slightly varied format but the ideas are the same. |  |
| Slide 17  **Slides 16-18 (5 min)** |  | Here is just a reminder from the Science and Engineering Practices about the importance of argument based on evidence for science and engineering.  Talk through Slide 18 and 19 |  |
| Slide 18  **Slides 16-18 (5 min)** |  |  |  |
| Slide 19  **Slides 19-21 (15 min)** |  | There are 3 components to a well formulated scientific argument: read through the components to participant |  |
| Slide 20  **Slides 19-21 (15 min)** |  | Your CLAIM is your answer to the question or solution to the problem based on your examination and interpretation of the data  The EVIDENCE is that data that you have analyzed and interpreted  And REASONING is that justification of the evidence and how it is linked to or supports the claim you made |  |
| Slide 21  **Slides 19-21 (15 min)** |  | You can ask elementary people to work with data set 1 and secondary to work with data set 2, let them choose the data they want to write an argument for.  Use the CER template to organize your thinking  Work with a partner to construct a CER below your data set | HO:  CER Practice and Template |
| Slide 22  **Slides 22-27 (10 min)** |  | **Slides 23-28 (10 min)**  Now lets examine a couple of student samples and try to pick them apart a bit to see how the components are present….or not.  Let’s look at this argument from evidence.  Use Three colored pencils/highlighters and highlight the CLAIM in one color, the EVIDENCE in a second color and the REASONING in a third color. . | HO:  CER Samples  Need three colored pencils or highlighters |
| Slide 23  **Slides 22-27 (10 min)** |  | This elementary CER variation states a claim that answers the questioning, evidence that is scientific data that supports the claim and it also provide multiple piecces of data, and Reasoning-a justifiction fo why the evidence supports the claim using scientific principles. Let’s look at this argument from evidence. Use what you know from the conclusions rubric and as a partner team or table quickly score this statement as a writing a conclusion item.  What may not be in place in this statement to receive full points and how would you advise this student to modify the statement to accommodate explanatory languageRemember that in order for a claims, evidence, reasoning statement to achieve maximum points on the MSP it must very specifically contain 1) conclusive statement, 2) high low data points, 3) explanatory language that ties the claim to the evidence and highlights the relationship of the evidence to each other. |  |
| Slide 24  **Slides 22-27 (10 min)** |  | Let’s look at this argument from evidence. Use Three colored pencils/highlighters and highlight the CLAIM in one color, the EVIDENCE in a second color and the REASONING in a third color. |  |
| Slide 25  **Slides 22-27 (10 min)** |  | Let’s look at this argument from evidence. Use what you know from the conclusions rubric and as a partner team or table quickly score this statement as a writing a conclusion item. This is the simplest type of claims evidence reasoning argument. Now use what you know from the conclusions rubric and as a partner team or table quickly score this statement as a writing a conclusion item. This is the simplest type of claims evidence reasoning argument. What may not be in place in this statement to receive full points and how would you advise this student to modify the statement to accommodate explanatory language.There is a statement that answers the question. There is evidence-scientific data that supports the claim, and there is reasoning which is justification for why the evidence supports the claim. |  |
| Slide 26  **Slides 22-27 (10 min)** |  | Use Three colored pencils/highlighters and highlight the CLAIM in one color, the EVIDENCE in a second color and the REASONING in a third color. |  |
| Slide 27  **Slides 22-27 (10 min)** |  | What may not be in place in this statement to receive full points and how would you advise this student to modify the statement to accommodate explanatory language.There is a statement that answers the question. There is evidence-scientific data that supports the claim, and there is reasoning which is justification for why the evidence supports the claim. |  |
| Slide 28  **Slides 28-29 (5-7 min)** |  | Remember little kids at the beginning of the session. One could argue that increased skill at speaking and listening….discourse would have led to a different type of argument with more positive, less “heart poking” results.  As we review earlier scientists and engineers need to be able to utilize discourse skills in their jobs. This is not just about Writing arguments from evidence but also about verbalizing arguments in a clear and cohesive manner.  (next is a reminder for you to talk through very briefly if you feel the need to remind)  **In science, reasoning and argument are essential for clarifying strengths and weaknesses of a line of evidence and for identifying the best explanation for a natural science, reasoning phenomenon**  Scientists must **defend their explanations**, **formulate evidence based on a solid foundation of data**  **Examine their understanding** in light of the evidence and comments by others  **Collaborate with peers**  Search for **the best explanation for the phenomena being investigated**  **In engineering, reasoning and argument are essential for finding the best solution to a problem**  **Collaborate with their peers**  **selection of the most promising solution** among a field of competing ideas  **Use systematic methods** to compare alternatives  **formulate evidence** based on test data  Make arguments to **defend their conclusions**  **Critically evaluate** the ideas of others  **Revise their design**s in order to identify **the best solution** |  |
| Slide 29  **Slides 28-29 (5-7 min)** |  | Ask participants to read the question and follow slide directions |  |
| Slide 30  **Slides 30-32 (16 min)** |  | Additionally talking through your argument, evidence and reasoning to critical, supportive listeners, and receiving their feedback is the most valuable precursor to writing effective claims, evidence, reasoning statements or conclusions.  Particularly for ELL and SPEd non dominant groups talk can help students formulate their thinking. Hear about what is missing and do the preplanning necessary for a good piece of writing. |  |
| Slide 31  **Slides 30-32 (16 min)** |  | Choose either the facilitating scientific discourse-Mr. English video (8.5 min) or the shorter Ms. Getty video (3.5 min)  Could use both to give a secondary (1st video) or elementary (2nd video) perspective on facilitating academic discourse/argument from evidence    13 min. if using both | Videos:  <https://www.teachingchannel.org/videos/how-discussion-enhances-learning>  AND/ OR  <https://www.teachingchannel.org/videos/encourage-student-debate-getty> |
| Slide 32  **Slides 30-32 (16 min)** |  | Choose either the facilitating scientific discourse-Mr. English video (8.5 min) or the shorter Ms. Getty video (3.5 min)  Could use both to give a secondary (1st video) or elementary (2nd video) perspective on facilitating academic discourse/argument from evidence    13 min. if using both |  |
| Slide 33  **Slide 33 (15 min.)** |  | Follow directions on the slide |  |
| Slide 34  **Slides 34-35 (15 min)** |  | Let’s take a bit of a step away from Claims Evidence and Reasoning  Take a brief break and then we will dive into a bit of thinking about equity |  |
| Slide 35  **Slides 34-35 (15 min)** |  | Equity Piece about 1 hour  10 min.  Stop and jot, Given this quote from the NGSS Appendix D “all Standards, All Students” what implications can you see for how we have traditionally have approached science instruction? |  |
| Slide 36  **Slide 36 (2 min)** |  | Quick talk through reminding people of the seven groups of non-dominant groups. The first 5 are from NCLB authorization language and the NGSS added the last three groups. While girls are not necessarily underrepresented in science classes they are definitely underrepresented in science and STEM careers. Student in alternative education programs represent unique challenges as issues of attendance, poverty, ethnicity and behavioral concerns have marginalized their successful participation in science classes and gifted and talented students are often “left to fend for themselves” but have unique strengths and needs that we need to consider. |  |
| Slide 37  **Slide 37 (10-15 min)** |  | Follow directions on slide | Equity Strategies Cards |
| Slide 38  **Slides 38-39 (30 min.)** |  | 15 to read and 15 for the next slide discussion  <http://www.nsta.org/disabilities/>  Articles about Special Needs Strategies  Use 2, 3, 4 of the articles as time permits. | HO:  Enough copies of2, 3 or 4 of the articles to divide among table mates for jigsaw similar activity  Methods and Strategies: Science Success for Students With Special Needs-Oct. 2007 Science and Children  Three Keys to Success in Science for Students with Learning Disabilities-Nov 2011-Science Scope  Teaching Science to Students with Learning Disabilities-Mar. 2006 Science Teacher  Case Study 3 students with Disabilities nextgenscience.org: in this reading just read pages 1-7, skimming page 1 |
| Slide 39  **Slides 38-39 (30 min.)** |  | **Slides 39-40 (30 min.)** 15 to read and 15 for the next slide discussion  http://www.nsta.org/disabilities/  Protocol for sharing strategies from articles |  |
| Slide 40  **Slides 40-42 (15-20 min.)** |  |  |  |
| Slide 41  **Slides 40-42 (15-20 min.)** |  | Read through slide |  |
| Slide 42  **Slides 40-42 (15-20 min.)** |  | Be sure to modify this slide to fit your context | Evaluation QR code  Clock Hours  You determine your needs |
| Slide 44 |  | Permissions for articles |  |

NOTES To SELF: