

WEBVTT

1

00:00:04.080 --> 00:00:06.930

Scott Warren: Good afternoon, everyone, thank you for joining.

2

00:00:06.930 --> 00:00:21.960

Scott Warren: us for this webinar inspire the next generation and scientific explore this is one of the series of free webinars around instruction that Sri D is providing this fall winter and spring.

3

00:00:22.770 --> 00:00:36.000

Scott Warren: today's is focused on Sri bees powerful science and start from practices we have five of our science leads here with us today that are going to lead the presentation I do want.

4

00:00:36.060 --> 00:00:36.840

Scott Warren: to let you know.

5

00:00:36.870 --> 00:00:44.490

Scott Warren: That we will record the session and send out the link to the recording sometime in the next few days.

6

00:00:45.510 --> 00:01:00.840

Scott Warren: For any that miss it or, if you want to share it with others, by all means, we encourage you to do so, we have leading our today, we have our, as I said five and verse science leads we have Juliana Coleman don kirkwood.

7

00:01:01.890 --> 00:01:03.090

Scott Warren: glass leaves.

8

00:01:04.290 --> 00:01:12.660

Scott Warren: But tanya bolden and to kick us off and start the presentation we're going to have 10 of mason cannot turn it over to you.

9

00:01:13.230 --> 00:01:15.930

Kenneth Mason-SREB: Thanks Scott i'm excited to be.

10

00:01:16.710 --> 00:01:18.930

Kenneth Mason-SREB: able to do this with this team today.

11

00:01:19.740 --> 00:01:29.220

Kenneth Mason-SREB: we've looked forward to the day, where we can focus on quality science instruction and so we're happy to have you join us today.

12

00:01:30.600 --> 00:01:40.710

Kenneth Mason-SREB: And the goal is in the title we need to more than ever, we need to inspire the next generation of a science it's explores to be able to innovate in our world.

13

00:01:41.190 --> 00:01:55.020

Kenneth Mason-SREB: For those of you who are new to Sri Sri be southern regional education Board was the nation's first interstate compact established in 1948 by governors southern governors and legislators.

14

00:01:55.590 --> 00:02:14.490

Kenneth Mason-SREB: This this diagram depicts the depth of our work and how we enact our mission of guiding states to support guiding and supporting states and advancing all levels of education to improve social and economic vitality.

15

00:02:17.640 --> 00:02:34.050

Kenneth Mason-SREB: So our focus today is on powerful science instructional practices, why are they needed like we've started with who we are, but why do we need to focus on powerful science instructional practices it's.

16

00:02:35.970 --> 00:02:50.880

Kenneth Mason-SREB: We have difficulty with students that do pen and paper science and their classes every day and they're not actually doing science and it's questionable whether they're even learning science if they don't.

17

00:02:51.300 --> 00:03:02.790

Kenneth Mason-SREB: push towards the exploration of phenomenon, so a srt be as fortunate, we are extremely fortunate to have our President, Dr Stephen pruit.

18

00:03:03.540 --> 00:03:23.430

Kenneth Mason-SREB: He has a very special set of skills, Dr prune has been working in science, education, since the early 90s, he worked extremely closely with the framework for K 12 science, education, as well as a next generation science standards so you'll see.

19

00:03:24.750 --> 00:03:35.130

Kenneth Mason-SREB: you'll see the depth of that understanding and the practices and one thing that Dr pruit emphasizes the idea of 3D performances.

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00:03:35.550 --> 00:03:51.840

Kenneth Mason-SREB: Where any says we have very few of us got to learn that way and so it's important that we promote these practices, this idea of 3D performance where students use science and engineering practices.

21

00:03:52.920 --> 00:04:04.560

Kenneth Mason-SREB: With disciplinary core ideas, as well as cross cutting concepts in order to make sense of phenomena, so today we're going to take you on a trip.

22

00:04:05.310 --> 00:04:21.690

Kenneth Mason-SREB: and introduce you these practices, but we want you to put your mind put your get in the mindset of being science explore those of you that may not be familiar with the making schools are making schools work framework.

23

00:04:23.520 --> 00:04:40.380

Kenneth Mason-SREB: We have five major focus areas these powerful science instructional practices fit in well with this first three engaging instruction align curriculum and career pathways, but you can see.

24

00:04:40.890 --> 00:04:53.670

Kenneth Mason-SREB: How we connect to all the areas here, and when you when you start looking at our key practices for improvement in order to engage instruction.

25

00:04:54.360 --> 00:05:03.810

Kenneth Mason-SREB: Today, you were going to introduce you to a concept of engaging instruction across all grade levels.

26

00:05:04.290 --> 00:05:20.760

Kenneth Mason-SREB: And all areas from you can see here from elementary to tech schools and not only that, but to prepare for college and career readiness that's one of Sri b's major goals is college and career readiness and, if you look here.

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00:05:22.020 --> 00:05:25.080

Kenneth Mason-SREB: In order to prepare for college and career readiness, these are.

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00:05:25.740 --> 00:05:35.400

Kenneth Mason-SREB: we've taken these from a CT outcomes and throughout the webinar today you'll see how these instructional practices are allowing align to these outcomes.

29

00:05:35.850 --> 00:05:45.270

Kenneth Mason-SREB: But if you know anything about a CT a score of 23 give students a 50% chance of making a grade B or higher.

30

00:05:45.690 --> 00:05:56.160

Kenneth Mason-SREB: And a college level science class, so if we begin students from the very beginning at early discovers i'm talking kindergarten first and second grade.

31

00:05:56.430 --> 00:06:14.730

Kenneth Mason-SREB: They understand how to be have this 360 perform this three dimensional performance and really explore phenomena on their own, guided by their teacher, we can get them to be able to meet these outcomes, by the time they get to high school and beyond.

32

00:06:18.150 --> 00:06:30.480

Kenneth Mason-SREB: So today we're going to engaging students in discovering phenomena and the world around them is at the heart of these practices so we're going to begin.

33

00:06:31.530 --> 00:06:40.080

Kenneth Mason-SREB: with you to summon your inner scientists and think about the properties of water.

34

00:06:40.260 --> 00:06:42.420

Kenneth Mason-SREB: And we're going to transport you.

35

00:06:42.720 --> 00:06:47.850

Kenneth Mason-SREB: into the class of of the.

36

00:06:50.010 --> 00:07:07.170

Kenneth Mason-SREB: North Carolina teacher science teacher of the year, my friend and colleague don Kurt would he's going to ask you to enter to look at his demonstration, but also engage your mind scientifically into.

37

00:07:09.150 --> 00:07:11.220

Kenneth Mason-SREB: A making making a claim.

38

00:07:13.440 --> 00:07:29.670

Kenneth Mason-SREB: generating that evidence for your claim and and then moving forward to acknowledging the reason that it takes to understand this phenomena so i'm just gonna i'm just gonna jump us right into don's experiment i'm sure you're going to enjoy.

39

00:07:38.340 --> 00:07:45.960

Welcome, welcome to our experiment today we're going to look at the properties of warming how low water.

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00:07:47.520 --> 00:08:00.270

Kenneth Mason-SREB: Water is so good for you, some would say, one of the properties of Water is life itself um that we couldn't even have life without water wow think about that.

41

00:08:01.050 --> 00:08:13.920

Kenneth Mason-SREB: Who, we have life without water oh wow another great property it's considered the universe and soften it probably could dissolve more things than any other type of liquid um.

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00:08:14.550 --> 00:08:19.740

Kenneth Mason-SREB: it's the reason why the oceans are so salty because of all that run off.

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00:08:20.640 --> 00:08:30.150

Kenneth Mason-SREB: And that's another thing i'm the water cycle, think about the water cycle, the water is ability to evaporate does it take high temperatures, but.

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00:08:30.660 --> 00:08:40.380

Kenneth Mason-SREB: It definitely will cycle, the water around, so there are so many different amazing properties of water another one, it is worth a lot of heat.

45

00:08:41.160 --> 00:08:53.700

Kenneth Mason-SREB: It keeps our planet cool um so there's I could talk forever about water but water is just amazing so what we're going to do is we're going to do a quick demonstration with water.

46

00:08:54.690 --> 00:09:02.820

Kenneth Mason-SREB: we're going to see if you can make a claim to what property of water, it could be a physical property or it could be a chemical property.

47

00:09:03.270 --> 00:09:10.740

Kenneth Mason-SREB: All you have to do is make a claim support with evidence and give me some logical reason of course my colleagues.

48

00:09:11.460 --> 00:09:22.980

Kenneth Mason-SREB: we're going to use minty meter so we're going to give you an opportunity to make those claims so i'm just going to do a quick demonstration, so what I have here is a bottle of water, let me show you this water.

49

00:09:25.170 --> 00:09:37.470

Kenneth Mason-SREB: Ah, good stuff good stuff alright, so you know, usually we we use a cup for water right so i'm gonna pour the water into the cup i'm gonna have me a delicious.

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00:09:37.920 --> 00:09:48.960

Kenneth Mason-SREB: delicious refreshing cup of water, so, as you can see i'm pouring water, you see it barge the waters just falling all right, you know.

51

00:09:49.950 --> 00:10:04.110

Kenneth Mason-SREB: Water so good for you so as, as you know, water has so many amazing properties so we'll put this card over the water now I wouldn't advise doing this at home, but, as you can see, the water.

52

00:10:05.070 --> 00:10:15.060

Kenneth Mason-SREB: Is in the cup right, I think, so what happened so far removed the card wait a second look at the cards now even what we're asking happened to the water.

53

00:10:16.080 --> 00:10:17.070

The water.

54

00:10:18.300 --> 00:10:18.660

What.

55

00:10:19.770 --> 00:10:34.170

Where does the water go, so what I want you to do now is i'm going to hand it over to my my colleagues they're going to give you opportunity to process what you just saw where did the water go you're going to make a claim.

56

00:10:35.220 --> 00:10:44.160

And then you're going to use some evidence from your observations, what did you see what do you think happened to the water and then you're going to use some logical.

57

00:10:44.490 --> 00:10:51.270

reasoning and we're going to give everyone the opportunity to do that so we'll ask my colleagues to go ahead and pause me.

58

00:10:57.510 --> 00:11:01.890

Kenneth Mason-SREB: So you see the demonstration you saw the phenomena.

59

00:11:02.910 --> 00:11:03.600

Kenneth Mason-SREB: Now.

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00:11:04.620 --> 00:11:09.420

Kenneth Mason-SREB: Just to remind you we're gonna we're going to use our technology tool called minty meter.

61

00:11:10.830 --> 00:11:22.620

Kenneth Mason-SREB: miss Mr wizard kirkwood told you you're going to make a prediction you're going to make a claim what will happen if I pour the water in the cup turn it upside down you're going to make a claim about.

62

00:11:23.880 --> 00:11:25.650

Kenneth Mason-SREB: Like what you think will happen and then.

63

00:11:27.030 --> 00:11:40.170

Kenneth Mason-SREB: develop your reasoning what logic what logic, do you come up with your conclusions for so the minty meter is the link to the mentor meter is in the chat and it's also on your agenda.

64

00:11:44.430 --> 00:11:53.010

Kenneth Mason-SREB: So we'd like you to do if start making first of all claim, what do you think will happen to the water.

65

00:12:03.510 --> 00:12:07.530

Kenneth Mason-SREB: meant to me, it is a great tool to be able to use students with students.

66

00:12:09.630 --> 00:12:12.120

Kenneth Mason-SREB: be able to collect their responses live.

67

00:12:16.200 --> 00:12:16.710

Kenneth Mason-SREB: i'm.

68

00:12:20.790 --> 00:12:25.020

Kenneth Mason-SREB: I believe the water mix something else come.

69

00:12:32.460 --> 00:12:34.860

Kenneth Mason-SREB: Waiting for a few more responses to come in.

70

00:12:39.000 --> 00:12:41.550

Kenneth Mason-SREB: feel free to use the chat as well.

71

00:12:55.980 --> 00:12:58.200

Kenneth Mason-SREB: You saw the demonstration, what do you think.

72

00:13:21.090 --> 00:13:23.460

Kenneth Mason-SREB: Leslie Can you see more responses, I believe, is.

73

00:13:24.120 --> 00:13:25.740

SREB - Leslie Eaves: crashing just to make sure.

74

00:13:26.100 --> 00:13:29.550

SREB - Leslie Eaves: yeah and I turned off my my camera.

75

00:13:38.760 --> 00:13:42.570

Kenneth Mason-SREB: You know what we'll go we'll go with we'll go with that.

76

00:13:44.460 --> 00:13:53.700

Kenneth Mason-SREB: you're thinking about what students would say, of course, they're gonna think something else, be in the cup now let's move to evidence you saw the demonstration.

77

00:13:54.750 --> 00:13:59.220

Kenneth Mason-SREB: What evidence to gather to support from your observations.

78

00:14:02.520 --> 00:14:07.980

Kenneth Mason-SREB: So you made your claim now we're going to ask you to defend your claim, with some evidence.

79

00:14:32.370 --> 00:14:36.930

Kenneth Mason-SREB: Definitely saw the water go in the cup there was no holes in the Cup.

80

00:14:40.140 --> 00:14:47.580

Kenneth Mason-SREB: Ah, the water went in as liquid but it turned upside down and it didn't pour back out great observation.

81

00:14:50.130 --> 00:14:53.880

Kenneth Mason-SREB: I also observed that it was actually worried because don drinking.

82

00:15:06.390 --> 00:15:10.470

Kenneth Mason-SREB: Right imagine what students would say imagines what students would come up with.

83

00:15:10.830 --> 00:15:15.270

Kenneth Mason-SREB: What evidence alive in the class what would what would they do, what would they think.

84

00:15:17.760 --> 00:15:23.400

Donn Kirkwood: My favorite one that kinases I always have one student that thinks there was a sponge within the Cup.

85

00:15:24.570 --> 00:15:25.320

Kenneth Mason-SREB: Absolutely.

86

00:15:25.620 --> 00:15:27.270

Donn Kirkwood: I was like you see this but.

87

00:15:28.230 --> 00:15:37.410

SREB - Leslie Eaves: That sounds like a username so let's go ahead and move on to reasoning, the observation that it's you know that it could be drink.

88

00:15:38.460 --> 00:15:40.290

SREB - Leslie Eaves: hey we saw pour in.

89

00:15:42.420 --> 00:15:43.980

SREB - Leslie Eaves: herbicide didn't fall out.

90

00:15:44.070 --> 00:15:45.030

SREB - Leslie Eaves: wasn't it.

91

00:15:45.570 --> 00:15:47.280

SREB - Leslie Eaves: means why, why do we think like.

92

00:15:52.290 --> 00:16:03.990

Kenneth Mason-SREB: So now, you went from claim we made observation and had some evidence now let's use logic what evidence will do you have to support your thinking.

93

00:16:39.090 --> 00:16:39.480

Kenneth Mason-SREB: Ah.

94

00:16:40.590 --> 00:16:48.330

Kenneth Mason-SREB: Here we go leaning towards a physical sansom something ah, since something new, was not

created.

95

00:16:48.840 --> 00:16:56.640

Kenneth Mason-SREB: Okay, so in don's introduction he talked about the physical properties of water but there's also the chemical properties of water and.

96

00:16:56.940 --> 00:17:04.980

Kenneth Mason-SREB: Good solid middle school students in high school and students, they know that their their physical and chemical changes.

97

00:17:05.460 --> 00:17:24.990

Kenneth Mason-SREB: Ah, we also know that water hey, why are just doesn't disappear hey matters neither created nor destroyed, we know it just changes so since it didn't disappear it went in the cup so somehow there's some change that happened there are some reasoning okay and.

98

00:17:26.010 --> 00:17:37.500

Kenneth Mason-SREB: If you if you imagine doing this in the class and not giving them the answer oh water has an he's a property and cohesive.

99

00:17:38.340 --> 00:17:55.680

Kenneth Mason-SREB: properties, so now we're getting into the the the actual molecular nature of water and and pulling a student's prior knowledge of understanding what water is and applying it.

100

00:17:56.250 --> 00:18:17.820

Kenneth Mason-SREB: To this applying it to explain the reasoning behind this phenomena, so this type of demonstration, this type of conversation this type of collection of data ideas questions that the heart of the.

101

00:18:19.020 --> 00:18:24.630

Kenneth Mason-SREB: Science instructional practices we're going to move forward and explore them.

102

00:18:26.130 --> 00:18:29.100

Kenneth Mason-SREB: With a little more with a little more depth.

103

00:18:31.260 --> 00:18:33.570

Kenneth Mason-SREB: and take back the presentation here.

104

00:18:43.470 --> 00:18:44.070

Right.

105

00:18:56.910 --> 00:18:59.280

Kenneth Mason-SREB: Alright we're good on the slides thumbs up.

106

00:19:00.870 --> 00:19:01.590

Kenneth Mason-SREB: Alright, great.

107

00:19:02.970 --> 00:19:06.660

Kenneth Mason-SREB: So here we are, this cycle.

108

00:19:08.070 --> 00:19:17.790

Kenneth Mason-SREB: This cycle of ideas are the powerful science instructional practices and just to note I we didn't start.

109

00:19:18.270 --> 00:19:34.140

Kenneth Mason-SREB: Our presentation, with just giving you what this what these were we wanted you to experience them, just like a student would in the class get a taste of what the experience is before you know exactly what it is, so what are these.

110

00:19:35.190 --> 00:19:45.030

Kenneth Mason-SREB: Practices set of tools that serves as the essential building blocks of both instructional design and delivery.

111

00:19:45.900 --> 00:20:08.580

Kenneth Mason-SREB: they're designed intentionally to assist teachers and leaders and curriculums support to identify instructional practices that increase student engagement hey as well as content mastery when you look at the cycle, the very first one, making sense of natural.

112

00:20:09.960 --> 00:20:15.480

Kenneth Mason-SREB: and human design phenomenon, this is at the heart of it, but when you look at the cycle.

113

00:20:16.500 --> 00:20:32.790

Kenneth Mason-SREB: Let me tell you what it's not think of this as building blocks and not a building blocks for a unit design not something that you would try to condense and to the boundaries of a single day lesson plan.

114

00:20:33.900 --> 00:20:38.700

Kenneth Mason-SREB: You we want students to have these practices again that three.

115

00:20:39.060 --> 00:21:03.540

Kenneth Mason-SREB: dimensional performance, so they they become they get to the point of not just learning science terms, but actually doing science so it's a focus on the actual learning of science by students experiencing questioning and and dialoguing about phenomenon.

116

00:21:05.940 --> 00:21:17.280

Kenneth Mason-SREB: i'm going to go through each one and then we're going to get a chance to see these practices in action, so the very first one and and and really.

117

00:21:18.390 --> 00:21:34.410

Kenneth Mason-SREB: We could, this is a in totality a huge concept, making sense of natural and human design phenomena traditionally we're very familiar if you've been in science classes with the natural phenomena.

118

00:21:35.520 --> 00:21:48.540

Kenneth Mason-SREB: That that you get when you study disciplinary science, but what we've added here is the human design phenomena, when you start thinking about robotics artificial intelligence automation.

119

00:21:49.620 --> 00:21:58.470

Kenneth Mason-SREB: We want students to be motivated to observe carefully and and to be able to.

120

00:21:59.880 --> 00:22:11.100

Kenneth Mason-SREB: create an understanding, along with the teacher's assistant, not the answers aren't given by the teacher, but this three dimensional.

121

00:22:12.270 --> 00:22:22.800

Kenneth Mason-SREB: performance is a of the powerful science practices are established by the classroom environment that the teacher sets.

122

00:22:23.070 --> 00:22:30.840

Kenneth Mason-SREB: So we have teacher behaviors to motivate students to think this way to be curious and make to want to make sense of natural phenomena.

123

00:22:31.110 --> 00:22:39.030

Kenneth Mason-SREB: But there's also student behaviors they got to drive it, they are the Doers of the science and how do we know there are artifacts.

124

00:22:39.390 --> 00:22:58.020

Kenneth Mason-SREB: That will demonstrate that student understanding this teacher behavior student behavior artifact cycle is in all of our powerful instructional practices, but very critical in order to create engaging environments and science, so this is the first one, making sense of.

125

00:22:59.850 --> 00:23:00.900

Kenneth Mason-SREB: of phenomena.

126

00:23:03.630 --> 00:23:17.310

Kenneth Mason-SREB: The second one developing questions and plan and carry out investigations, when you all saw that demonstration that Mr kirkwood did and the cup turned over water didn't come out.

127

00:23:17.820 --> 00:23:29.460

Kenneth Mason-SREB: The first thing that I would want you to to do and feel in my classroom would be that curiosity and immediately the question start generating in your mind.

128

00:23:30.000 --> 00:23:35.850

Kenneth Mason-SREB: The questions may come out be articulated in small groups with students questions, maybe.

129

00:23:36.780 --> 00:23:51.570

Kenneth Mason-SREB: Questions may turn into quick solutions we used to call it, we call them hypotheses right So how do you get students to first be engaged in and the discovery of the world, but then, how do they.

130

00:23:51.930 --> 00:24:04.800

Kenneth Mason-SREB: develop the questions in order to plan and carry out investigations well when you plan and carry out investigations, this is an important part of the third step of gathering.

131

00:24:05.310 --> 00:24:22.650

Kenneth Mason-SREB: data and information in order to generate that evidence, they need to create the reasoning so and again and procedural science classes, a lot of times students are given the information and they walked through the go through the procedures.

132

00:24:23.700 --> 00:24:30.570

Kenneth Mason-SREB: And some some students learn most don't learn as deeply, but if students learn.

133

00:24:31.800 --> 00:24:47.100

Kenneth Mason-SREB: To go from their observations to generating questions together, discussing it, and then gathering the data they need to refine those questions and to do to plan out those investigations.

134

00:24:47.520 --> 00:25:01.200

Kenneth Mason-SREB: which will create more questions, then you start and look at the artifacts What are those artifacts data charts and tables remember the the slide I had on the AC T.

135

00:25:01.860 --> 00:25:18.240

Kenneth Mason-SREB: When a lot of students face those charts and graphs in a CT they're intimidated by the information because they haven't learned to collect their own data they're unfamiliar with that process, they don't know how it feels so what we're going to do is we.

136

00:25:19.740 --> 00:25:28.830

Kenneth Mason-SREB: move moving from data, moving from data data is just data until you put some reasoning to it.

137

00:25:29.310 --> 00:25:36.360

Kenneth Mason-SREB: You have to discuss it, you have to rely on your prior knowledge you happen to have some analytical skills and tools.

138

00:25:36.570 --> 00:25:47.370

Kenneth Mason-SREB: And these skills can be again the teacher behaviors create the environment, the student actually has to go through the process of reasoning and developing.

139

00:25:47.730 --> 00:25:57.150

Kenneth Mason-SREB: An understanding articulating how that evidence supports or explanation, instead of looking it up in the textbook of how the textbook explains it.

140

00:25:57.360 --> 00:26:03.840

Kenneth Mason-SREB: or waiting on the teacher explaining students need to come up with their own explanations their own understanding.

141

00:26:04.350 --> 00:26:12.120

Kenneth Mason-SREB: So we've gone over the first four practices and what we want to do is jump you into another classroom.

142

00:26:13.110 --> 00:26:22.470

Kenneth Mason-SREB: Another classroom to be able to focus on just these four practices, so what you're going to see is a classroom.

143

00:26:22.800 --> 00:26:39.450

Kenneth Mason-SREB: And I love this idea of classroom that they're looking they've been studying life science they've been studying energy systems well they're done in a life science kind of way but they're going to teachers going to challenge them well if you understand this.

144

00:26:40.470 --> 00:26:48.960

Kenneth Mason-SREB: In terms of life science and how the earth works and how the water cycle may work let's think about a physical system that mirrors that.

145

00:26:49.170 --> 00:27:02.160

Kenneth Mason-SREB: Again, that three dimensional that modeling design, so the phenomenon is beyond the limited experience of just that content but students are starting making those broad connections so we're we're gonna.

146

00:27:02.880 --> 00:27:18.270

Kenneth Mason-SREB: we're going to show these practices in action in chunks so start looking for these first four chunks and be prepared, as you are watching the video and after the video to put in the chat what you see.

147

00:27:18.600 --> 00:27:28.740

Kenneth Mason-SREB: I mean if you if you love a student quote, that you here, if you see something that you haven't seen or you want to see in the classroom we want you to start looking for.

148

00:27:29.820 --> 00:27:33.300

Kenneth Mason-SREB: These practices, as you observe these students.

149

00:27:34.590 --> 00:27:35.970

Kenneth Mason-SREB: Okay Giuliana you ready.

150

00:27:47.490 --> 00:27:57.180

Kenneth Mason-SREB: You want to create a video explanation that explains your device, my name is tricia Shelton I am a science teacher in boone county Kentucky.

151

00:27:57.480 --> 00:28:11.220

Kenneth Mason-SREB: I have been teaching high school science for 20 years I teach anatomy and physiology integrated science and biology included in your explanation, should be one run of your entire machine all right, good luck.

152

00:28:15.000 --> 00:28:22.920

we've been learning about transfers of energy at first, we started wondering about food chains and ecosystems and how energy transfers, through their then.

153

00:28:23.610 --> 00:28:32.880

threw a curveball into it, and that was all life science she threw a curveball into an addict physical science into it, we have been focused on a study of.

154

00:28:33.210 --> 00:28:43.470

The conservation and flow of matter and energy within a life science system, the students expressed an interest in incorporating a rube goldberg.

155

00:28:44.010 --> 00:28:52.920

A couple of months ago, actually, so this became our opportunity when we were studying the life science system for us to transfer that to a physical science system.

156

00:28:53.310 --> 00:29:03.390

And the umbrella so just before our class has been a cross cutting concept of energy, so today we build a ribs goldberg machine to understand energy transfers and how that works.

157

00:29:03.810 --> 00:29:15.900

We were moving back and forth between a physical and a life science system throughout the day, while we were deepening our understanding of the conservation of energy and applying a new situation of discussing efficiency.

158

00:29:16.650 --> 00:29:33.870

Students really need to have an understanding of how to communicate evidence based thinking so that is something that from day one that we have tried to develop that seed as objects interact with each other, it really just transfers the energy it causes a series of events on.

159

00:29:38.550 --> 00:29:43.650

When it hits the car that's a transfer of energy that goes into the dominoes to the color kinetic energy transfers.

160

00:29:46.350 --> 00:29:47.040

That was awesome.

161

00:29:52.980 --> 00:29:57.360

What do you guys try to make the energy exchange.

162

00:29:58.950 --> 00:30:05.130

When the marvel was hitting it it had more outward for us this way and and so like there were more news coming out this way.

163

00:30:05.490 --> 00:30:16.680

If you let them explore before you explain what if you haven't like this way where it has been for like this there's more frost going out to the backside and then making sure that.

164

00:30:16.950 --> 00:30:24.150

You are making the Cross cutting concepts explicit in the classroom because those are the tools that allow students to get to independent thinking.

165

00:30:28.890 --> 00:30:30.450

Kenneth Mason-SREB: Independent thinking.

166

00:30:32.070 --> 00:30:33.420

Kenneth Mason-SREB: The goal that we want.

167

00:30:34.680 --> 00:30:37.890

Kenneth Mason-SREB: And all of our our classrooms we want students.

168

00:30:38.910 --> 00:30:41.820

Kenneth Mason-SREB: We want students to be independent thinkers.

169

00:30:44.190 --> 00:30:54.180

Kenneth Mason-SREB: So what what is it that I see in the chat what is it that you really like to see in that video, what is it that you saw.

170

00:30:55.560 --> 00:31:04.500

Kenneth Mason-SREB: How physical sciences incorporated with life science it's right there they're not separated there together always, thank you for saying that.

171

00:31:04.860 --> 00:31:19.650

Kenneth Mason-SREB: Oh absolutely correct using the terminology I just caught the the student with the car saying kinetic energy wait he's in a life science class not supposed to say kinetic energy prior knowledge comes out he could explain it.

172

00:31:21.510 --> 00:31:28.200

Kenneth Mason-SREB: And to feel free to come come off of mute and share any anything else in the chat.

173

00:31:29.400 --> 00:31:37.530

Kenneth Mason-SREB: Oh, one thing that I liked was being able to use toys manipulative everyday objects that they see to explain the science around them.

174

00:31:39.330 --> 00:31:39.990

Kenneth Mason-SREB: anyone else.

175

00:31:42.090 --> 00:31:52.830

SREB - Leslie Eaves: I think I didn't see it in the chat but definitely watching the video again seeing how students were having to use evidence so coming back to exploring.

176

00:31:53.730 --> 00:32:05.100

SREB - Leslie Eaves: and playing first exploring with science first, but using that as a way for students to use their observations use evidence to create reasoning statements to.

177

00:32:06.240 --> 00:32:17.460

SREB - Leslie Eaves: And certainly making making it tangible first before we get into some of the life science concepts which can be less tangible, because you can't physically see them.

178

00:32:18.000 --> 00:32:26.700

Kenneth Mason-SREB: Absolutely, I believe that's how infants learn they tinker there you discover they break things they.

179

00:32:26.910 --> 00:32:27.390

Kenneth Mason-SREB: knock them.

180

00:32:27.660 --> 00:32:38.790

Kenneth Mason-SREB: Down they they discover first and then their curiosity and the questions come up and then it goes on from there, how do we keep that.

181

00:32:39.210 --> 00:32:52.440

Kenneth Mason-SREB: infinite joy of learning, all the way through K 12 science classrooms where where every day is a day of discovery so we're going to move from so we've collected these.

182

00:32:53.880 --> 00:33:08.130

Kenneth Mason-SREB: ideas of what these force for practices would look like in the classroom we're going to move on to the next to and I kind of jumped ahead engaging an academic discourse, unfortunately, a lot of times.

183

00:33:09.750 --> 00:33:15.900

Kenneth Mason-SREB: And the school I taught and way back when up this is where science began in in.

184

00:33:16.350 --> 00:33:28.980

Kenneth Mason-SREB: So let's read the chapter define the bold words and answer the questions at the back of the chapter and we move on and then we say we've done science well.

185

00:33:29.490 --> 00:33:38.220

Kenneth Mason-SREB: If students don't take those turns and be able to communicate again their reasoning speaking and writing and interpreting graphs.

186

00:33:38.820 --> 00:33:57.810

Kenneth Mason-SREB: And having true academic discourse, based on the phenomena they're already curious about without limits without bounds, because their questions are driving this how How does that continue so academic discourse is again modeled by the teacher.

187

00:33:59.280 --> 00:34:04.170

Kenneth Mason-SREB: It is facilitated and done by the students.

188

00:34:04.380 --> 00:34:06.360

Kenneth Mason-SREB: And not just copying powerpoints.

189

00:34:06.570 --> 00:34:11.130

Kenneth Mason-SREB: But actually as those students, you heard them there and you'll hear more.

190

00:34:11.820 --> 00:34:26.730

Kenneth Mason-SREB: conversations around the phenomena and they may not always be right, in fact, we do want some misconceptions so we can start eliminating those academic discourse so critical for that critical thinking moving forward.

191

00:34:27.720 --> 00:34:35.160

Kenneth Mason-SREB: um and then, so what you'll see next in the video is okay so they've had they've had this.

192

00:34:36.090 --> 00:34:52.500

Kenneth Mason-SREB: they've had this experience and now we get to the point where the teacher is starting looking for checking for understanding here's where these formal and informal assessments come in and students have to defend.

193

00:34:53.190 --> 00:35:05.700

Kenneth Mason-SREB: Their understanding with evidence Okay, we did that in the claim evidence reasoning, we wanted you to defend your thinking with that quick DEMO.

194

00:35:06.210 --> 00:35:15.150

Kenneth Mason-SREB: understanding that there, there has to be some evidence that justifies your thinking not just because the book said it, not just because the teacher said it.

195

00:35:15.630 --> 00:35:27.330

Kenneth Mason-SREB: Because i'm having authentic thoughts and questions and responding to them so we'll move back into the classroom and we'll see these two practices.

196

00:35:34.260 --> 00:35:47.400

Kenneth Mason-SREB: You guys had some fantastic table talk around the core ideas that you use to build your design, how you fix the problems that you ran into your understanding of energy and your use of models and engineering design.

197

00:35:47.730 --> 00:36:00.060

Kenneth Mason-SREB: So we use that deeper understanding and then transferred it back to the live site system where this week, they designed an organism that they could make a claim that was the most efficient source of energy for a human.

198

00:36:00.450 --> 00:36:07.950

Kenneth Mason-SREB: And they had to be able to describe or express the ecosystem that that organism would be a component of.

199

00:36:08.220 --> 00:36:20.970

Kenneth Mason-SREB: we're going to transition from a physical science system to a life science system that you guys have been studying one, at a time you're going to defend the claim my organism is the most efficient source of energy for the human.

200

00:36:21.720 --> 00:36:29.760

Kenneth Mason-SREB: Your claim what we're looking for is that your claim is based on evidence from your design your claim should also reflect the scientific knowledge of.

201

00:36:30.030 --> 00:36:46.620

Kenneth Mason-SREB: Both of our systems understudy the room, as well as the ecosystem and then your peers that are sitting with you today are going to respectfully provide critique by probing your reasoning asking you questions and challenging your ideas all right, good luck.

202

00:36:47.790 --> 00:36:48.120

Whatever it.

203

00:36:49.890 --> 00:36:52.530

takes in the most energy, biomass each.

204

00:36:54.780 --> 00:36:55.050

Other.

205

00:36:56.070 --> 00:36:56.640

So.

206

00:36:58.380 --> 00:36:58.830

Whenever we.

207

00:37:03.810 --> 00:37:06.030

kind of looked at this from a different perspective.

208

00:37:07.530 --> 00:37:16.680

Both you and I don't know if that's a good thing or bad thing, but when I thought of an efficient organism, I was like thinking what's an animal that we've been eating since the dawn of time and it's easy to catch.

209

00:37:17.370 --> 00:37:21.390

The first thing that came to mind was that's what I thought I thought of an official.

210

00:37:22.800 --> 00:37:23.580

source of energy.

211

00:37:25.410 --> 00:37:25.590

We.

212

00:37:29.280 --> 00:37:39.810

come together as a group to form the best answer so if I say this is my opinion and that's all I say i'm not really giving them a good they can't agree with me just because I say so.

213

00:37:40.410 --> 00:37:46.620

So I have to be able to tell them like Oh, I think this is it because here's all the evidence that I had to prove for it.

214

00:37:47.220 --> 00:38:06.090

And then maybe another person, I agree, will be like Oh well, I don't think so, and here's what what I liked about was how you should transfer from the sun 100% yeah like what how low the amount of energy that transfer there's no problem for a relationship that they have to waste.

215

00:38:08.490 --> 00:38:11.400

So I mean like that seems like a lot of ways.

216

00:38:12.420 --> 00:38:12.930

same on.

217

00:38:13.950 --> 00:38:14.730

What I can find out.

218

00:38:16.110 --> 00:38:24.660

When students communicate with evidence in my classroom and when they are evaluating the evidence that other

students aren't communicating to the group.

219

00:38:25.020 --> 00:38:31.890

They look to see if the evidence is sufficient if it is reliable, if it is in their minds complete.

220

00:38:32.280 --> 00:38:44.040

And so, one of the things that they look for live is if the evidence is quantitative We really need to work on like quantifying like how much energy is actually like being taken in and then wearing it's disperse.

221

00:38:45.600 --> 00:38:46.680

Its total energy.

222

00:38:59.730 --> 00:39:00.750

Kenneth Mason-SREB: So we're.

223

00:39:02.730 --> 00:39:05.850

Kenneth Mason-SREB: Where we're back i'm.

224

00:39:06.900 --> 00:39:19.590

Kenneth Mason-SREB: These Leslie put second wave of practices you think if you think of an ocean wave that first wave in a in a classroom.

225

00:39:19.980 --> 00:39:29.580

Kenneth Mason-SREB: When you're make when you want to make sense of the phenomenon well is that exploration is that questioning is that that fun.

226

00:39:29.910 --> 00:39:40.590

Kenneth Mason-SREB: exciting I don't know what just happened or Oh, my goodness, what what is happening those questions generate well you think about an ocean way or another one comes right back.

227

00:39:41.250 --> 00:39:56.280

Kenneth Mason-SREB: Okay, the second wave deepens our practice deepens our understanding of the phenomena, because now heard you heard the students defending themselves refining their thinking.

228

00:39:57.450 --> 00:40:07.140

Kenneth Mason-SREB: Challenging each other's ideas respectfully I saw student, and this is the first time I saw it, she has video hundreds time using her phone to do a little research.

229

00:40:07.620 --> 00:40:17.730

Kenneth Mason-SREB: presenting the evidence of learning why wouldn't students, be able to use their handwritten drawings diagrams they find on their phone.

230

00:40:19.380 --> 00:40:40.920

Kenneth Mason-SREB: Student created art all there and as Julie is July and saying how these the academic vocabulary in a creative way, but having true scientific conversations, if you ever met a scientists they don't just sit in labs all day they have to.

231

00:40:41.400 --> 00:40:51.930

Kenneth Mason-SREB: They have to communicate their understanding to a community of other learners to refine their approach to share their approach and to get better.

232

00:40:52.260 --> 00:41:06.900

Kenneth Mason-SREB: To to process that is absence from a lot of classrooms but we got to see it there um any other comments that anybody wants to come before we we hit this last this last way.

233

00:41:08.700 --> 00:41:11.580

Kenneth Mason-SREB: Yes to lasagna authentic.

234

00:41:12.810 --> 00:41:17.820

Kenneth Mason-SREB: Students had using their own words mixed in with the academic language.

235

00:41:18.150 --> 00:41:25.440

Kenneth Mason-SREB: And their true understanding their own ideas and you see the teacher grinning on the side because maybe she's never thought of those.

236

00:41:25.710 --> 00:41:34.980

Kenneth Mason-SREB: Those things that's the powerful thing that happens when you apply these practices and create a culture in your classroom yes Leslie you want to make a comment.

237

00:41:35.400 --> 00:41:47.070

SREB - Leslie Eaves: yeah I was just again i've also watched this video a number of times and it hit me again of just how powerful academic discourse is in terms of the learning process.

238

00:41:47.520 --> 00:41:56.790

SREB - Leslie Eaves: So kids talking to each other they're forming their thinking they're reef and I love your word refining their ideas as they're discussing.

239

00:41:57.300 --> 00:42:14.280

SREB - Leslie Eaves: And so it's not only for the teacher, to be able to see and hear what are the thinking that's going on in the kids but just the act of discussing kids are refining their thinking they're they're mulling over passengers a lot that's going on in the brains, that you can kind of.

240

00:42:16.260 --> 00:42:24.720

SREB - Leslie Eaves: see us are having that discussion, so it certainly it's just so important in terms of the learning process it's an active learning strategy.

241

00:42:26.100 --> 00:42:27.000

Kenneth Mason-SREB: And what will.

242

00:42:27.030 --> 00:42:37.950

Kenneth Mason-SREB: Thank you, is what you'll get to see next Is this how students take this discourse and their presentation of.

243

00:42:38.460 --> 00:42:44.670

Kenneth Mason-SREB: Their evidence, but now they're going to start dispelling their own misconceptions.

244

00:42:45.300 --> 00:43:02.160

Kenneth Mason-SREB: Through that conversations not again not relying on what a text says, but refining it based on their dialogue their their refined deeper thinking on this phenomenon that they've studied in a way, so last wave.

245

00:43:05.850 --> 00:43:30.480

Kenneth Mason-SREB: Again, communicating reasoning i've said it before this is, this is one of Dr i'm going to take this this quote from data is just data until you create some reasoning, once you reason, with the data comes evidence so that evidence evidence is how we communicate scientific reasoning okay.

246

00:43:31.980 --> 00:43:46.320

Kenneth Mason-SREB: So how, how does the again the teacher has to create an environment structure, a lesson and unit plans, so that students can actually do this not rely on.

247

00:43:47.490 --> 00:43:52.650

Kenneth Mason-SREB: rely on anything but themselves, their own understanding dispelling the myths.

248

00:43:54.000 --> 00:44:06.840

Kenneth Mason-SREB: Pulling pulling in that academic language, if you notice the way the teacher set up the the second session she really use the academic language, where we're going to.

249

00:44:07.320 --> 00:44:14.550

Kenneth Mason-SREB: we're going to compare our life cycles to our rube goldberg we're bringing physical and life science together.

250

00:44:14.940 --> 00:44:27.360

Kenneth Mason-SREB: you've studied this and, probably, taken a test on this, but I need to see, can you communicate your reason reasoning, and how does a teacher no students do that outside just a.

251

00:44:27.690 --> 00:44:44.190

Kenneth Mason-SREB: outside of just a summative assessment well, you have to have a variety of creative formative assessments in which students have to use written and oral responses order to defend their ideas and that's where we're moving next.

252

00:44:44.820 --> 00:44:53.190

Kenneth Mason-SREB: That they apply that knowledge they apply that knowledge, their understanding of the phenomena beyond.

253

00:44:53.850 --> 00:45:07.830

Kenneth Mason-SREB: the bounds of what that chapter was what the section was what the test requirements are what the state standards, say, beyond that, so they understand that this.

254

00:45:08.370 --> 00:45:24.990

Kenneth Mason-SREB: This process goes well beyond the classroom, and so they can take those science and engineering skills and use them for college and career readiness last way bring us brings us home right to.

255

00:45:25.830 --> 00:45:34.680

Kenneth Mason-SREB: The beginning making sense of the phenomena last wave enjoy this last little video in the classroom it's going to be fun.

256

00:45:38.970 --> 00:45:50.760

Kenneth Mason-SREB: Or is your groups claim about how the life science system in a physical science system or like in different so I told this group, I was going to let them start so i'm going to hand it over to felicity.

257

00:45:51.660 --> 00:46:06.480

Kenneth Mason-SREB: Okay, so we compare and contrast the two systems, I think that this small changes that lead to big changes over time in our class is the focus on evidence based thinking, because that opens the door for more participation.

258

00:46:06.930 --> 00:46:13.170

Kenneth Mason-SREB: So we know that as energy transfers and animals some is lost due to the cellular respiration so as.

259

00:46:13.650 --> 00:46:22.680

Kenneth Mason-SREB: The animals go on in ecosystem, a more and more energy is lost, we figured out that it works, the same with the rube goldberg, because if we.

260

00:46:23.220 --> 00:46:32.760

Kenneth Mason-SREB: had too many steps in our rube goldberg then we wouldn't we would lose too much energy and it wouldn't finish if we had less steps and there's enough energy to make it all the way through the system without it.

261

00:46:33.630 --> 00:46:45.600

Kenneth Mason-SREB: Not completing we kind of had the same thing going on, or rube goldberg machine when we saw that we had a cardboard tube in which the.

262

00:46:46.950 --> 00:46:57.630

marvel was supposed to roll down and we realized that was losing too much energy do the friction and what students

want to share to the conversation they want with a.

263

00:46:57.990 --> 00:47:04.560

are saying to be valued and to be important, so if they know that they can look for evidence and then use that evidence.

264

00:47:04.860 --> 00:47:12.600

To communicate their reasoning and their lens that makes science very accessible to them, and it makes the class participation very accessible to them.

265

00:47:12.930 --> 00:47:19.740

That was great piggybacking one off another to all, and then we got to that this big idea that we experienced.

266

00:47:20.040 --> 00:47:28.620

Do you feel like you like I got this now, I have this understanding that I can transfer, that was a lot of thinking right you guys had a lot of conversation to get it up.

267

00:47:29.220 --> 00:47:38.220

And so that that is a great benefit of table talk and sharing your claims with other people and having that trust, so thank you very much for that I never.

268

00:47:54.810 --> 00:48:06.390

Kenneth Mason-SREB: Alright sorry I was muted, so you can see that students in this classroom over time went through this full cycle.

269

00:48:08.040 --> 00:48:19.110

Kenneth Mason-SREB: And how these practices, create an environment if you notice this the teacher commented that students ideas were valued.

270

00:48:19.410 --> 00:48:40.320

Kenneth Mason-SREB: Now if that's not engagement I don't know what it is, if students are in an environment and a in a classroom any classroom in which their ideas are valued, even if they're wrong it's okay to make mistakes and science, in fact, the greatest scientific discoveries were mistakes, but.

271

00:48:42.660 --> 00:48:52.140

Kenneth Mason-SREB: The Community again made reasoning from those mistakes they're able to have academic discourse around those misconceptions.

272

00:48:52.620 --> 00:49:09.060

Kenneth Mason-SREB: They presented that evidence and they got somewhere else to communicate and explain phenomena, so you can see how these these practices, create a classroom environment that allows for.

273

00:49:09.930 --> 00:49:30.780

Kenneth Mason-SREB: Not only high level student engagement connections to other subject areas college and career

readiness and careers, but also builds confidence and young people to be able to explore their own ideas alone or together.

274

00:49:31.890 --> 00:49:41.580

Kenneth Mason-SREB: With their their students mirrors work force mirrors a quality environment in which science is done.

275

00:49:42.870 --> 00:49:45.990

Kenneth Mason-SREB: So these powerful.

276

00:49:47.280 --> 00:50:00.720

Kenneth Mason-SREB: practices in science we're in the design intentionally, as I said before, to reflect the the framework of the next generation science standards, the understanding of this.

277

00:50:01.200 --> 00:50:15.690

Kenneth Mason-SREB: Three D performance where students are actually doing the science, but they were also intentionally designed in our broader work with Sri be to be able to connect two more elements of school improvement.

278

00:50:16.980 --> 00:50:20.340

Kenneth Mason-SREB: You can use these her focus on plc.

279

00:50:21.510 --> 00:50:31.020

Kenneth Mason-SREB: administrators using this as a walk through tool developing a common language, not only in your science department your career tech department.

280

00:50:31.440 --> 00:50:45.120

Kenneth Mason-SREB: Your math department, but school wide creating a broad true definition of stem where you you bring in high quality thinking and which students are the leaders in X.

281

00:50:45.720 --> 00:51:07.710

Kenneth Mason-SREB: You applying their critical thinking skills to make connections, not only with the content within their standards but beyond and then finally these these practices were designed to make relevant connections with industry partners and develop work for skills.

282

00:51:10.860 --> 00:51:18.960

Kenneth Mason-SREB: Again I mentioned stem even see from this diagram that the science, the powerful science practices.

283

00:51:20.190 --> 00:51:25.890

Kenneth Mason-SREB: are very much aligned with this is from national teachers association.

284

00:51:27.480 --> 00:51:41.850

Kenneth Mason-SREB: Deeper definition of stem, what are we trying to figure out the first question that a student when

they face a problem, what is it that i'm trying to figure out and what's my cycle of learning.

285

00:51:43.440 --> 00:52:02.820

Kenneth Mason-SREB: These practices do that again we need teacher behaviors and student behaviors and those artifacts to make stem not just four distinct letters, but a true understanding of how to process natural and human made phenomena.

286

00:52:05.130 --> 00:52:12.780

Kenneth Mason-SREB: These practices also connect and are built in within our middle grades stem projects.

287

00:52:14.160 --> 00:52:25.710

Kenneth Mason-SREB: exciting opportunities for students to be able to apply project based learning in middle grades, and this classroom that you saw very much.

288

00:52:26.400 --> 00:52:39.690

Kenneth Mason-SREB: would be a model for what we're looking to develop with our middle grade stem projects and also one of our newest initiative sorry be smart that alternate route for.

289

00:52:40.170 --> 00:52:47.460

Kenneth Mason-SREB: New teachers emerging teachers folks from industry that want to come into teaching math and science fall.

290

00:52:47.880 --> 00:53:10.500

Kenneth Mason-SREB: If they lay if we lay a foundation with in the instructor where the powerful science instructional practices are they're framing for their classroom environment, then you see from example of this classroom the the type of results that you can get from students.

291

00:53:15.030 --> 00:53:16.410

Kenneth Mason-SREB: So this.

292

00:53:17.640 --> 00:53:23.580

Kenneth Mason-SREB: This webinar is part of a series of webinars and again.

293

00:53:24.690 --> 00:53:25.680

Kenneth Mason-SREB: And sorry be.

294

00:53:26.730 --> 00:53:39.210

Kenneth Mason-SREB: has several content specific powerful instructional practices that we have to offer across all grade levels and be looking out.

295

00:53:40.110 --> 00:54:01.470

Kenneth Mason-SREB: For more of these webinars more conversations about how we can bring this these concepts to your classroom to your school to your district to your state before I move on to questions, I want to oh yeah let's do a

shameless advertising go for it Leslie.

296

00:54:04.500 --> 00:54:05.760

Kenneth Mason-SREB: Next, next week.

297

00:54:05.850 --> 00:54:11.790

SREB - Leslie Eaves: I didn't even think about advertising unless except for in the chat but yeah I will be introducing.

298

00:54:12.930 --> 00:54:26.100

SREB - Leslie Eaves: sharing our powerful project based learning practices next Tuesday the 16th at 330 so as same BAT time same BAT channel just different day of the week to so we'll sneak peek.

299

00:54:28.200 --> 00:54:40.770

Kenneth Mason-SREB: build that I missed a lot in the chat but if there's any of the team members that want to come off and and capture some thoughts that I may have missed before we get to.

300

00:54:41.640 --> 00:54:53.370

Kenneth Mason-SREB: Final questions and comments feel free to come off and share your ideas and participants that the chat is available as well to you.

301

00:54:57.930 --> 00:55:11.670

LaTonya Bolden- SREB: Well, Ken what I what I love about these practices, is that it allows students to make those connections and, as you said it, and it also addresses the relevancy piece, because you know a lot of times you know, students, as they, why are we doing this.

302

00:55:12.240 --> 00:55:20.790

LaTonya Bolden- SREB: And so it really helps students to really see see the why and and really address that in the class.

303

00:55:20.970 --> 00:55:23.070

Kenneth Mason-SREB: right they start answering that themselves.

304

00:55:23.100 --> 00:55:24.240

LaTonya Bolden- SREB: They start seeing right.

305

00:55:24.660 --> 00:55:34.440

Kenneth Mason-SREB: Now i'm gonna give it to the the the adult in the classroom for that if they're built in the classroom environment is built away there they're going to be.

306

00:55:34.680 --> 00:55:45.450

Kenneth Mason-SREB: Their curiosity, is going to have them can continue to find that answer was if there must be a reason why i'm learning this, let me find it and define it great point in time.

307

00:55:46.830 --> 00:55:47.370

Scott Warren: there.

308

00:55:48.690 --> 00:56:02.430

Scott Warren: Are any either science and leaders in the group or a system principles things that nature, we often get asked how can you use powerful as in search on practices.

309

00:56:03.060 --> 00:56:24.150

Scott Warren: And observations and things of that nature, I want to share too simple ideas, one being a commit have well one idea to possible ways that is that you can do a simple as walk into a classroom with a piece of paper that is folded into three columns.

310

00:56:25.620 --> 00:56:30.600

Scott Warren: I have ahead of time you decide we're going to focus on this particular practice.

311

00:56:31.500 --> 00:56:44.100

Scott Warren: And as a science leader or an ap you go in, or three columns one for teacher behaviors one for student behaviors one for artifacts and just start scripting what you see.

312

00:56:44.820 --> 00:57:03.990

Scott Warren: You can literally if you want just leave that for the teacher the teacher to reflect on if you're a PLC you might go and observe other science classes and use that that same framework agree on we're focusing on this powerful practice so we're going to go in and look for.

313

00:57:05.280 --> 00:57:15.630

Scott Warren: teacher behavior student behaviors and artifacts under that particular practice it's such a simple way of starting to engage in the discussion and move forward with it.

314

00:57:16.530 --> 00:57:24.720

Kenneth Mason-SREB: Great point Scott, it gives us that common language so if, when you walk in a classroom and engagements not happening.

315

00:57:26.040 --> 00:57:42.840

Kenneth Mason-SREB: or there's not there's not evidence of student work he this cycle gives you a common language to be able to point to a place to start several places to start and it's just a Scott saying you can isolate.

316

00:57:43.470 --> 00:58:00.390

Kenneth Mason-SREB: Those practices and start looking for that evidence and then pour in collaborate around those areas that need to be improved hey you can learn, you can learn where it's working well and then where it needs to be improved, just as, if you are in a science classroom.

317

00:58:00.870 --> 00:58:05.070

Kenneth Mason-SREB: administrators absolutely you can use this to improve instruction.

318

00:58:06.750 --> 00:58:09.630

Kenneth Mason-SREB: don are you about to say something look like you're about to come off.

319

00:58:11.820 --> 00:58:16.080

Donn Kirkwood: No, I was just excited to see if any of our participants have any questions.

320

00:58:17.460 --> 00:58:20.610

Donn Kirkwood: Definitely about the demonstration never know it might be curious.

321

00:58:23.520 --> 00:58:33.720

Kenneth Mason-SREB: yeah so yeah let's see who who, who has who can give us some now that you've thought about it anybody have.

322

00:58:35.580 --> 00:58:45.360

Kenneth Mason-SREB: Any ideas about the demonstration or or where where that may lead students or any other comments about the practices or how you may.

323

00:58:46.500 --> 00:58:50.490

Kenneth Mason-SREB: get involved or how it's connected to our school improvement efforts.

324

00:58:55.050 --> 00:58:56.250

Kenneth Mason-SREB: And we're good at wait time.

325

00:59:09.810 --> 00:59:10.500

Scott Warren: Okay.

326

00:59:11.250 --> 00:59:12.810

Kenneth Mason-SREB: Alright, thanks guys go ahead.

327

00:59:13.260 --> 00:59:18.390

Scott Warren: I was just gonna say if any of you want to stick around, we will stop the recording.

328

00:59:18.930 --> 00:59:34.110

Scott Warren: And if you ask individual questions will stick around for a while to be able to answer them, you can unmute yourself and ask for any questions you may have in chat but i'll go ahead and stop the recording now, so you don't have to worry about that aspect.