



5E-SESE Coaching Guide



Table of Contents

5E-SESE Coaching Guide	3
Introduction and Overview	3
Role of the Coach	4
5E Coaching Duties.....	4
Coaching Expectations	6
Effective 5E-SESE Coaching Strategies	6
Strategies for All Phases.....	6
Strategies at the Beginning of the Course	7
Strategies for the Fundamentals Modules	7
Monitor Completion and Provide Encouragement.....	7
Transition Phase (Coaching Conversation #1 of 8)	7
Strategies During the EE Modules	9
Plan (Lesson Cycle Conversation #1).....	10
Implement.....	12
Reflect (Lesson Cycle Conversation #2)	12
Flexibility and Standardization in the EE Module Lesson Cycles	14
Coaching Resources	16
5E-SESE PD Schedule.....	17
Appendix A – Coaching Worksheets	23
Lesson Cycle Conversation #1: Coach Preparation Worksheet	23
Lesson Cycle Conversation #2: Coach Preparation Worksheet	25
Appendix B – Teacher Worksheets	28



5E-SESE Coaching Guide

The following topics are not covered in this guide:

- Technology and/or platforms for accessing teacher and coach materials
- Technology for sharing recorded videos
- Virtual meeting platforms
- Research participation expectations (e.g., consent, data collection)

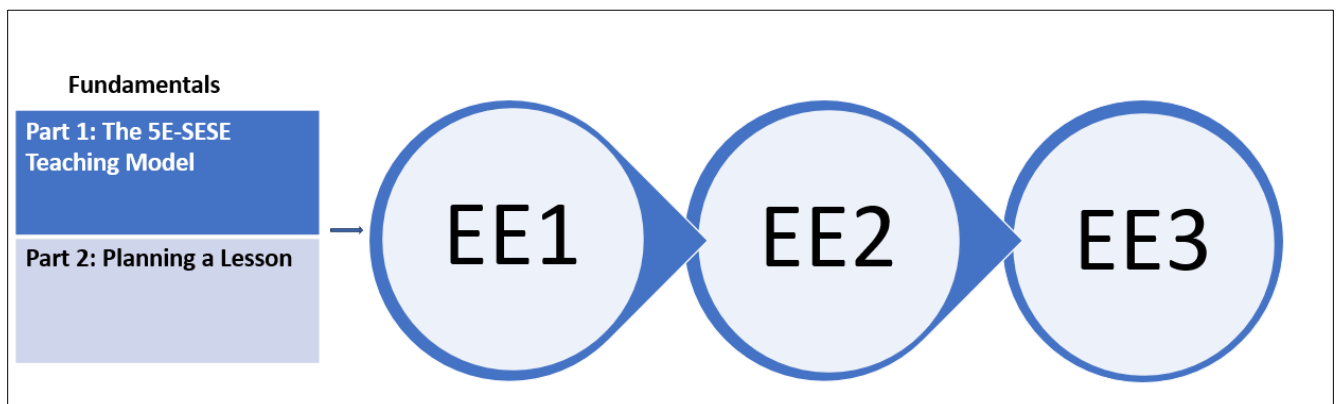
Introduction and Overview

5E-SESE is an online professional development system that includes self-directed modules and individualized coaching designed for teachers who teach science to students with significant cognitive disabilities (SCD). 5E-SESE develops teachers' capacity to provide effective science instruction for students with SCD. Teachers use features of Universal Design for Learning (UDL) to support inquiry-based science teaching in the design and instruction of 5E learning cycle science lessons.

Each teacher completes two fundamentals modules to develop some background knowledge on the 5E-SESE components. When finished with the fundamentals modules, teachers then work through a series of three content modules, one per Essential Element (EE) as shown in Figure 1. There are nine available EE modules for each grade band (e.g., nine for elementary, nine for middle school), and each teacher chooses which three to complete. The modules available cover EEs in all three domains—life science, Earth and space science, and physical science. Overall, 5E-SESE professional development spans 14 weeks.

Figure 1

Standard 5E-SESE Learning Model



Within each EE module, the teacher completes a **lesson cycle** that includes planning, implementation, and reflection. A **coaching cycle** supports the lesson cycle.



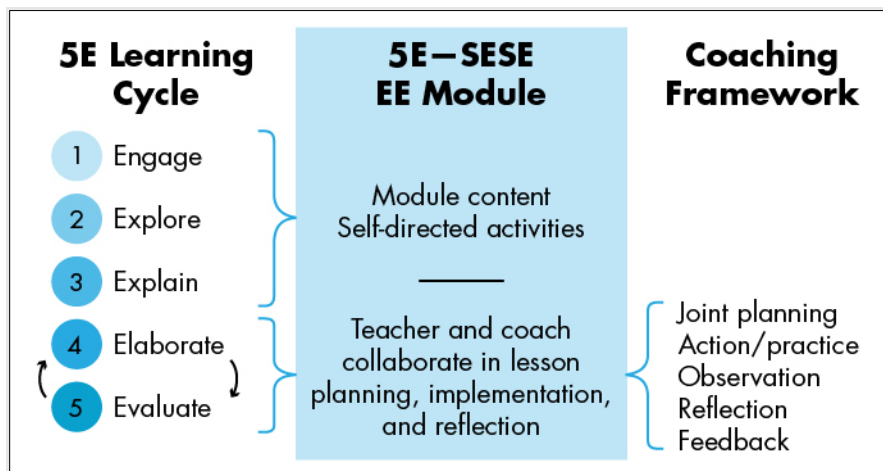
Role of the Coach

A 5E-SESE coach is an instructional coach whose work with teachers can have a significant impact on teacher development and, indirectly, student achievement and outcomes. The goal of an instructional coach is to facilitate teacher growth and development in their science teaching by supporting teachers' use of the 5E-SESE model with fidelity as they move from knowledge toward more proficient implementation over time. The 5E-SESE coach will collaborate with teachers as they use the 5E-SESE Professional Development (PD) system to increase their science content knowledge and pedagogical content knowledge. They will support teachers in completing required components of the 5E-SESE PD system (self-directed modules, coaching conversations, and lesson plan development and implementation); develop and implement inquiry-based science lesson plans based on the 5E-SESE model; and engage in problem-solving dialogue with teachers as they learn to plan, implement, and evaluate their instruction within the 5E-SESE system. Just as teachers use features of UDL to support inquiry-based science teaching in the design and instruction of 5E learning cycle science lessons, 5E-SESE coaching will also incorporate UDL in supporting teachers.

The 5E-SESE PD model is designed so teachers go through their own inquiry cycle in each EE module (see Figure 2). Coaches support that process.

Figure 2

5E-SESE Learning, Teaching, and Coaching Cycle



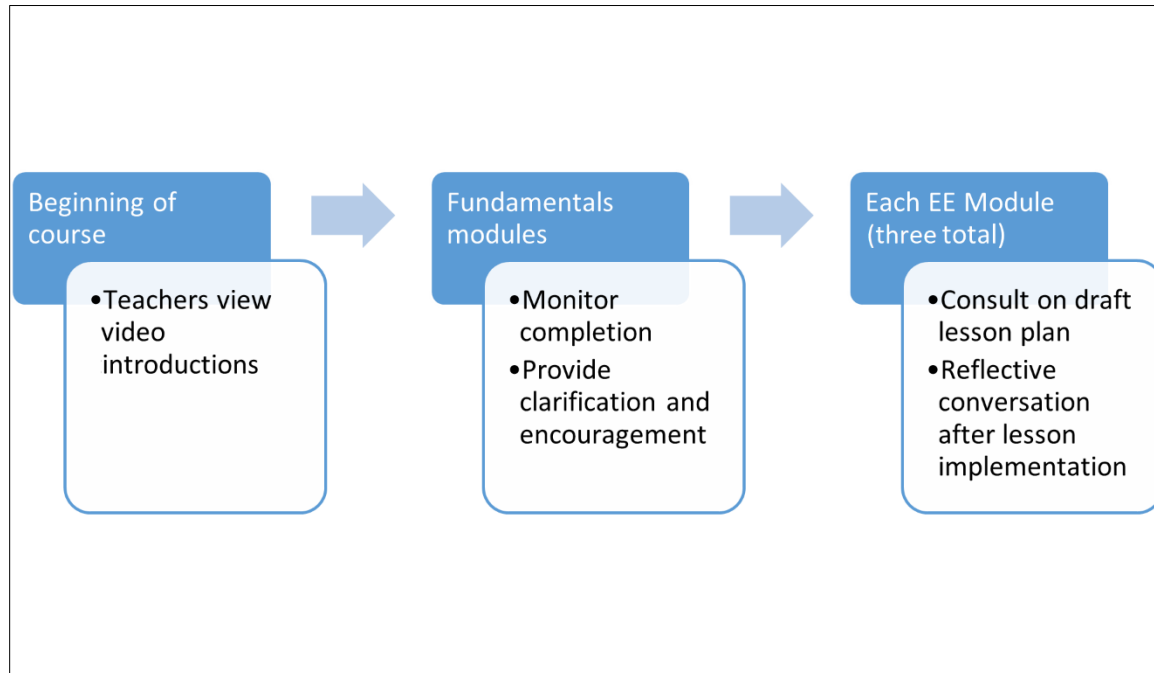
5E Coaching Duties

The role of a coach is to support every teacher with their continued instructional improvement in science instruction using the 5E-SESE PD system. The process begins early in the course, where the coach and teacher lay groundwork for rapport and trust. The coach checks in and provides limited support while the teacher completes self-directed modules. At the end of the self-directed portion of each EE module, the coach supports each teacher in planning and



implementing 5E-SESE science lessons with fidelity to the 5E-SESE model. Coaches support development of the lesson plan and reflection on the lesson after it is taught. The primary purposes of coaching at each phase of the 5E-SESE PD model are summarized in Figure 3.

Figure 3



Coaching Purposes at Each 5E Phase

Every teacher participating in 5E-SESE will have one-on-one coaching support, including nine one-hour coaching conversations at specific times in the 14 week intervention.

- 1) Transition phase conversation
- 2) EE #1, lesson cycle conversation #1
- 3) EE #1, lesson cycle conversation #2
- 4) EE #2, lesson cycle conversation #1
- 5) EE #2, lesson cycle conversation #2
- 6) EE #3, lesson cycle conversation #1
- 7) EE #3, lesson cycle conversation #2
- 8) Flexible session (timing varies; see Flexibility and Standardization in the EE Module Lesson Cycles section)

Additional details about the goals and strategies for each conversation are described in later sections of this guide.



Coaching Expectations

Coaches are expected to meet several general expectations that go beyond the specific coaching strategies and activities described in later sections of this guide.

- 1) Be prepared to answer teacher questions about the EE modules they select.
- 2) Be familiar with all written teacher guidance and coaching resources.
- 3) Be fluent with the technology needed to be a virtual coach.
 - a. Access PD modules, teacher lesson plans, recorded videos of teacher lessons, and other coaching resources; monitor course completion; and manage in-course communications with teachers.
 - b. Access recorded videos and make notes on elements of recorded lessons you would like to discuss during coaching conversations.
 - c. Conduct virtual coaching conversations to allow for recording of the coaching sessions.
- 4) Support each teacher in completing the 5E-SESE PD course as it is designed, using the coaching strategies described throughout this guide.
- 5) Communicate with project staff about any issues or concerns that emerge during the 14 week PD course.
- 6) Complete required coaching forms and save them.
- 7) Participate in data collection as needed for 5E-SESE study.

Effective 5E-SESE Coaching Strategies

Strategies for All Phases

An important aspect of impactful coaching is the use of effective listening and questioning skills (Knight, 2017). The following list describes ways coaches can facilitate meaningful coaching conversations with teachers:

- Make sure my conversation partner does most of the talking.
- Pause and affirm before I start talking.
- Don't interrupt (except when it is very helpful).
- Ask one question at a time.
- Ask for clarification when I'm not certain what is being said.
- Restate with "here's what I heard—let me restate to make sure I have clarity of your meaning."
- Assume people are doing their best.
- Avoid leading questions.
- Avoid giving advice disguised as a question.



Strategies at the Beginning of the Course

The coach begins with a review of the teacher's background survey information to get a sense of who they are, where they teach, and their potential learning needs based on their experience. The coach also reviews the fundamental modules to gain understanding of the key concepts covered in each learning module, to be able to respond to questions or point the teacher to a reference in a module that might be helpful. This preparation allows coaches to assist in activation of background knowledge when needed (UDL 3.1) or in helping teachers to optimize individual choice and autonomy (UDL 7.1).

Strategies for the Fundamentals Modules

Monitor Completion and Provide Encouragement

Teachers are expected to complete the fundamentals modules approximately on the schedule summarized in the 5E-SESE PD Schedule section. Project staff will be checking the module completion status for all of a coach's assigned teachers. Coaches will be notified via email when a teacher is ready to start the final fundamentals module, *Part 2: Planning a Lesson*.

Transition Phase (Coaching Conversation #1 of 8)

Coaches send each teacher an email message when that teacher has completed their first fundamentals module and is ready to start the final fundamentals module, *Part 2: Planning a Lesson*. Coaches introduce themselves to the teacher they are coaching and ask to set up the first conversation (the transition conversation) for when the teacher can commit to completing the module and transition conversation worksheet. The message should also provide guidance on how and when the teacher should seek the coach's help prior to their first meeting (UDL 8.3).

Dear (name),

My name is (name) and I am so excited to be your coach! It looks like you are starting the last fundamentals module, *Part 2: Planning a Lesson*, so I wanted to reach out about scheduling our first coaching conversation in the next week or so. If you consider your schedule and when you think you will be able to finish the module and worksheet, when would you like to meet? Do you have days and times that work best for you?

After the coach and teacher decide on a meeting time, the coach will send out a meeting invite.

The coach and teacher have their first conversation shortly after the teacher finishes the last required fundamentals module (5E-SESE Teaching Approach). This first conversation sets the stage for rapport, establishing norms and trust for coaching relationship, and emphasizing both roles in the research project (i.e., the coach is not reporting progress to school administration).



Goals:

- 1) Relationship-building and establishing rapport
- 2) Processing teacher reactions and questions to fundamentals modules (answering questions, responding to new ideas)
- 3) Preliminary brainstorming in preparation for the first EE module, including what to expect

Key UDL principles for this conversation (focusing on recruiting interest for teachers, sustaining their effort and persistence, teacher self-regulation, teacher's comprehension and executive function) include the following:

- Optimize choice and autonomy (7.1)
- Optimize relevance, value, authenticity (7.2)
- Heighten salience of goals and objectives (8.1)
- Promote expectations and beliefs that optimize motivation (9.1)
- Activate or supply background knowledge (3.1)
- Guide appropriate goal setting (6.1)
- Support planning and strategy development (6.2)
- Facilitate managing information and resources (6.3)

Materials and Preparation:

1. The coach refers to teacher background survey responses to learn more about the teacher's case load and prior experience with lesson planning.
2. The teacher completes and submits the Transition Conversation Worksheet at least two days before the conversation. Coaches will be able to access completed Transition Conversation Worksheets by clicking the Transition Conversation Worksheet link in the Fundamental Modules tab and selecting View All Responses.
3. The coach reviews the completed worksheet and considers how to facilitate the session based on the responses.
4. The coach sends a reminder about the scheduled conversation, including the date and time and a brief message about the purpose of the meeting and what to expect:

Dear (name),

I'm looking forward to meeting with you on (day) at (time). I reviewed your background survey responses as well as the Transition Conversation Worksheet—thank you for completing both! We will discuss any questions you have after finishing the fundamentals modules, think through a possible student you'll plan instruction for, and talk more about the first EE module.



Steps During the Conversation:

- 1) Do a general check-in on how the 5E-SESE PD is going for the teacher.
- 2) Assess teacher perception of 5E-SESE model, how it is similar or different to past practice.
- 3) Consider how the lesson plan was helpful for building background understanding.
- 4) Use the teacher's Transition Conversation Worksheet responses to identify topics that need discussion.
 - a. Outstanding questions or thoughts from fundamentals modules
 - b. Identifying a focal student
 - c. Selecting EE #1 (see additional guidance below)
 - d. Clarifying their likely personal goal for the first EE cycle
- 5) Preview what to expect in the EE module, and set expectations for how far the teacher should get with their draft lesson plan (i.e., attempt all parts, know it is a work in progress that you'll discuss next time).

Useful Prompts for the Transition Conversation

- How did the ideas in the fundamentals modules compare to the way you have taught science (or thought about teaching science) in the past? How did these ideas contrast with the way **you** learned science?
- What ideas about instruction did the modules prompt for you?
- Tell me a little bit about a student you would like to focus on for this project. What do you think might be challenging about designing or teaching a new science lesson for this student?
- You will take this module first (EE.EL.PS1-2 or EE.MS.PS1-2). This is the same EE from the fundamentals module. What kinds of ideas from Sherri do you think you could use in your lesson?

After the Transition Conversation:

- Teachers will see their first EE in Moodle. This will open the Elementary School EE Modules tab or Middle School EE Modules tab for them to access their module.
- Continue monitoring their course progress as described in the Monitor Completion and Progress section.
- Review the EE module summary page for EE module #1 to refresh your understanding of the key concepts covered in the learning module so you are ready to respond to questions or point the teacher to a reference in a module that might be helpful.

Strategies During the EE Modules

Through the EE modules, coaches collaborate with teachers on solutions for current students in real-life science teaching. Coaches are continuously **assessing teacher needs** and facilitating **dialogue and collaboration** around **new instructional strategies** for science instruction.

While coaching sessions may vary depending on the teacher's proficiency with the 5E-SESE system to create and implement inquiry-based lesson plans, specific elements will be



present in all conversations, including **rapport and reflection, collaboration on student progress, and discussion of next steps.**

When teachers and coaches set coaching goals, plan strategies to implement, and then evaluate their progress in continuous cycles, there is a deeper impact on teacher practice. Through a cycle of joint planning, implementing, and reflecting with a knowledgeable other, the teacher taps into deeper learning and growth. The coaching cycle supports elaboration and evaluation phases of teacher inquiry, and coaches use strategies based on UDL to support teachers in becoming expert learners as they develop proficiency with the 5E-SESE approach. Each phase of the lesson cycle is described in the table below.

Focus	Coach/Teacher Actions
Plan	<ul style="list-style-type: none"> • Coaching Conversation #1 in the lesson cycle (CC.LC1) • Identify a goal/area of focus for teacher growth • Collaborate to revise the lesson plan, answer outstanding questions before implementation
Implement	<ul style="list-style-type: none"> • Teacher provides instruction based on the lesson plan; records and uploads recorded lesson
Reflect	<ul style="list-style-type: none"> • Coaching Conversation #2 in the lesson cycle (CC.LC.2) • Analyze strengths of the lesson and aspects of lesson that did or did not go as intended; reflect on areas to target for improvement for next cycle

Plan (Lesson Cycle Conversation #1)

Goals:

- 1) Choose a goal/area of focus for teacher growth.
- 2) Collaborate on the lesson plan before implementation.
- 3) Help the teacher plan for lesson implementation.

Key UDL guidelines for this conversation are recruiting teacher interest; sustaining teacher effort and persistence; and promoting teacher self-regulation, comprehension, and executive function. Relevant guidelines include:

- Optimize choice and autonomy (7.1)
- Optimize relevance, value, and authenticity (7.2)
- Heighten salience of goals and objectives (8.1)
- Vary demands and resources to optimize challenge (8.2)
- Promote expectations and beliefs that optimize motivation (9.1)
- Guide appropriate goal setting (6.1)
- Support planning and strategy development (6.2)
- Facilitate managing information and resources (6.3)



Materials and Preparation:

- 1) Review notes from the previous coaching conversation to refresh understanding of the teacher's anticipated needs and goals. Remember that preliminary teacher needs may be known based on previous cycles or conversations, but unexpected changes may occur.
- 2) Review the draft lesson plan the teacher submitted. **For the first lesson cycle conversation, the coach and teacher will co-design the first lesson together.**
- 3) If completed, review the teacher's responses on the Lesson Cycle Coaching Conversation #1 Prep Worksheet. **However, teachers have the option to co-complete the worksheet with their coach as they iterate on the lesson plan.**

Complete the coach version of the Lesson Cycle Coaching Conversation #1 Prep Worksheet.

Steps During the Conversation:

- 1) The coach should be sure to grant permission for the teacher to share their screen so they can both collaborate.
- 2) General check-in—how is the teacher feeling?
- 3) Use the coach prep worksheet to guide the review of the lesson plan.
 - a. For the Evaluation column, use these values: "+" means *strength*; "0" means *acceptable*; "-" means *needs improvement before lesson is finalized*.
 - i. Note at least one "+" if possible. Use that as the basis of a strength to lead with during the conversation.
 - ii. Note any "-" as needed, to improve the lesson plan in meeting the criteria above.
 - iii. Use questions and suggestions for parts that need revision. Anchor those in reminders about key principles from the 5E-SESE approach that may need to be reinforced or explicitly applied.
 - b. For the Discuss column, add notes based on coach review of draft lesson plan based on the criteria listed above, and teacher questions submitted in the teacher version of the worksheet.
 - i. Add brief notes about decisions and anticipated changes to the written lesson plan before implementation.
 - ii. Discuss any of the other questions the teacher had on their prep worksheet.
- 4) Summarize any decisions about sections of the lesson plan that need revision before it is final (if applicable)
- 5) Check to see if the teacher feels prepared to translate the lesson plan into practice.
- 6) Review the teacher's initial goal from the transition prep worksheet and the updated goal on LCCC#1 worksheet. Discuss as needed to get a clear and common understanding of the goal and what it will look like if the teacher accomplishes that goal (i.e., setting the success criterion).
- 7) Set a time to implement the lesson plan, a deadline to upload the plan, and a date for the next coaching conversation.



- 8) Review next steps, set expectations to enhance motivation, encourage risk taking, and minimize potential performance concerns re: video contents.

Useful Prompts for the Plan Phase

- What did you learn in the module? What surprised you?
- What ideas about instruction did this module prompt for you?
- Which part of your drafted lesson plan are you most excited about? Confident about?
- Which part of your drafted lesson plan are you most unsure about?
 - Do you want that to be your goal for your own growth in this cycle?
 - What strategies do you need to help you reach that goal?
 - If you picture yourself teaching the lesson well, how will you know if you reached your goal?
- When you envision yourself teaching this lesson, do you feel ready? Is there anything else we can talk through?

Implement

- 1) The teacher implements the lesson and records the session.
- 2) The teacher uploads the video.
- 3) The coach and teacher watch the lesson independently prior to coaching conversation #2.
- 4) The teacher reviews the video and completes prep worksheet for lesson cycle coaching conversation #2.

Reflect (Lesson Cycle Conversation #2)

Goals:

- 1) Identify strengths of lesson implementation
- 2) Reflect on teacher's attainment of own goal for growth during the lesson cycle
- 3) Reflect on areas to target for improvement for future instruction on the same lesson
- 4) Discuss lessons learned that could apply to next module
- 5) Select next EE (or decide to use flexibility; see below)

Key UDL principles for this conversation (focusing on recruiting interest for teachers, sustaining their effort and persistence, teacher self-regulation, teacher's comprehension and executive function) include the following:

- Optimize relevance, value, and authenticity (7.2)
- Build fluencies with graduated levels of support for practice and performance (5.3)
- Promote expectations and beliefs that optimize motivation (9.1)
- Maximize transfer and generalization (3.4)
- Support planning and strategy development (6.2)
- Facilitate personal coping skills and strategies (9.2)
- Develop self-assessment and reflection (9.3)

Materials and Preparation:



- 1) Review notes from the previous coaching conversation to refresh understanding of the teacher's anticipated needs and goals. Remember that preliminary teacher needs may be known based on previous cycles or conversations, but unexpected changes may occur.
- 2) Review the submitted video.
 - a. Teachers have been instructed to name their video files with their last name and EE. If they have multiple video clips, they will number them in order.
- 3) Complete the Lesson Cycle Coaching Conversation #2 Prep Worksheet.

Steps During the Conversation:

- 1) General check-in—how is the teacher feeling?
- 2) Guided general reflection:
 - a. How was the lesson similar to or different from previous science lessons taught?
 - b. How did the lesson follow or deviate from the written lesson plan and why?
- 3) Use openings from the general reflection as a springboard or connection into aspects of the prep worksheet to guide review of the video. Key coaching strategies include reflective questioning, hypothesizing, modeling, and providing constructive, corrective feedback.
 - a. Fidelity with the intended lesson
 - b. Fidelity with the 5E-SESE model
 - c. Teacher and student actions that provide evidence of fidelity or areas for improvement
- 4) The teacher leads self-evaluation of progress toward identified goal for their own growth. (Coach may model using think-aloud on first EE.)
 - a. If the teacher had an inquiry-related goal, ask the teacher how they evaluated themselves and then share your own ratings. Use the descriptions of the anchor points and examples grounded in the recorded lesson to differentiate between levels.
- 5) The coach or teacher summarizes key points from the conversation.
 - a. Reflections from teacher self-evaluation
 - b. Relevant ideas to apply in the next EE module
- 6) A collaborative decision is made on whether to repeat the lesson or move to the next EE (see Flexibility and Standardization in the EE Module Lesson Cycles section).
 - a. **Choosing the next EE: after completing the first assigned EE1 module, teachers may choose their next module.**
 - i. Some teachers may prefer to focus on a science topic (EE) with which they are already very comfortable. **Their first goal is to learn new ideas about how to teach science concepts they already understand.**
 - ii. Some teachers may wish to focus on a science topic (EE) that is relatively new and not as familiar. Their goal is to **learn about new science content and how to teach it.**
 - iii. Other teachers may be somewhere in the middle. They prefer to start with an EE where they are already somewhat comfortable with the science



content. Their goal is to **learn more about the science topic *and* improve their approach to teaching it.**

- 7) Identify dates for planned completion of key steps for next module; note date and time of next coaching conversation.

Useful Prompts for the Reflect Phase

- What did you learn when you watched the lesson? What surprised you?
- Tell me more about why that surprised you. What did you think when you watched yourself (teach this concept) do this?
- Here's one way to think about reflecting on your teaching. When I was teaching (this concept), I thought my student was getting frustrated, and so I changed how I prompted them to interact with the object. But I now see in the video that not a lot of time passed, and the student was not as frustrated as I thought. In the future, I will stay the course in the Explore phase.
- On a scale of 1–10, with 10 being the best lesson you've ever taught and 1 being the worst, how would you rate this lesson? What change could you make that would make this lesson a 10?
- How would we measure that change? Do you want that to be your next goal?
- What strategies do you need to help you reach that goal?

Steps After the Conversation:

1. The coach ensures the conversation #2 prep worksheet is complete and includes notes from the conversation and action items.
2. The coach monitors teacher completion of the next EE module.

Flexibility and Standardization in the EE Module Lesson Cycles

By design, there are two coaching conversations per lesson cycle, as teachers and coaches collaborate to set goals, plan for lesson implementation, and reflect in continuous cycles. However, the 5E-SESE model allows for flexibility in certain key ways:

- 1) **Teacher goals within the coaching cycle.** Teacher and coach communicate together to identify a goal of focus for teacher growth within the 5E-SESE model (e.g., UDL implementation, planning an effective Engage phase, choosing an accessible science phenomenon to investigate, etc.). See the section on Plan (Lesson Cycle Conversation #1) within the lesson cycle for more detail.
- 2) **Degree to which the coach or teacher leads the conversation.** In most cases, the coach may take more leadership in the first cycle and gradually transfer responsibility for leading discussions to the teacher. See suggestions for differentiation in the Strategies During the EE Modules section.
- 3) **Use of the extra coaching conversation built into the model.** 5E-SESE includes a virtual introduction and eight coaching sessions, but only seven are described within the 5E-SESE



PD Schedule. Coach-teacher pairs can opt to use the eighth session in one of several ways. Conditions a coach notices during a conversation or lesson cycle might lead to certain decisions, as summarized in Table 1 below.

- 4) **Whether or when to shift focus to more than one student.** All teachers start by thinking about how to apply 5E-SESE in lessons designed with a single student in mind. Those who demonstrate they can adapt to this model and implement lessons with fidelity relatively early could shift to thinking about designing a lesson for multiple students in later EEs. In this case, the coach would end Lesson Conversation #2 for the previous module with a discussion of how the lesson plan would look different (e.g., entire plan may need to be filled out for multiple levels of complexity).

Table 1

Use of Eighth Coaching Conversation in 5E-SESE Coaching Cycles

Condition	Use of the extra session	Considerations
Teacher struggled with the first lesson plan draft in EE module #1	Repeat conversation #1 after teacher revises and resubmits lesson plan	<ul style="list-style-type: none"> • Use session here if teacher expresses lack of confidence about ability to revise, shows lack of understanding of core 5E-SESE concepts or what needs to be revised about the lesson plan and why • Realize the consequence of having this extra conversation early in the 14 week intervention (no flexibility to use later in the intervention)
Teacher would like to reteach a lesson with the benefit of another shared reflection	Repeat conversation #2 after teacher reteaches and uploads new lesson video	<ul style="list-style-type: none"> • Consider whether the teacher will benefit from shared reflection or is likely to be able to sustain growth and transfer learning to the new EE. • Might depend on teacher confidence, complexity of the teacher’s instructional goal, gap between intended lesson and what was actually done during instruction in the video



Condition	Use of the extra session	Considerations
Teacher plans and implements with basic fidelity, ready to go deeper	After teacher completes all three EE module cycles and standard coaching conversations, set a time near the end of the intervention for an “extensions” conversation	<ul style="list-style-type: none"> • Only an option if the teacher has worked through modules in a timely manner without extra explanations and there is still space in the schedule. • Likely the best choice for teachers who quickly show their understanding of and ability to apply the 5E-SESE model in lesson plans, who have good self-directed reflection skills, and who are able to immediately apply new ideas as a result of reflective conversations.

Coaching Resources

Resources have been developed to help you complete coaching activities and meet the goals of coaching in the 5E-SESE model. Resources are housed in Moodle as a shared workspace between coach and teacher and described below.

Resource	Purpose	When to use resource
Transition Conversation Worksheet	Prepare for start of coaching cycle; guide conversation #1	Before transition conversation
Lesson Cycle Conversation #1: Coach Preparation Worksheet	Guide review of teacher lesson plan	After lesson plan is submitted; before conversation #2 if conversation happens before implementation of the lesson plan
Lesson Cycle Conversation #2: Coach Preparation Worksheet	Guide review of recorded lesson plan implementation	Before coaching conversations around review of lesson plan implementation; draft before reviewing teacher’s prep worksheet and update as needed



5E-SESE PD Schedule

Listed below is a week-by-week guide of all activities for teachers, from starting the course to completing final surveys. The third column outlines coaching tasks per week. The schedule reflects a learning and coaching model that incorporates three total lesson cycles (one per EE module selected by the teacher) supported by two coaching conversations per lesson cycle. There is also an additional conversation with flexible timing determined jointly by the coach and teacher.

This schedule is 15 weeks long. Teachers will complete the fundamentals modules in about two weeks. Each EE module lesson cycle should run approximately three weeks. The schedule allows a little extra time for the first EE cycle and there are two extra weeks built in, in case of scheduling difficulties or delays.

If teachers have difficulty accessing modules or materials in the 5E-SESE website, have them contact us at 5esese@ku.edu.

Week	What teachers will do this week	Hints provided for teachers	Coach tasks
1	1) Review participant guide. 2) Complete first fundamentals module (Part 1: The 5E-SESE Teaching Model). Time estimate: 1.5 hours	Materials you will need: <ul style="list-style-type: none"> • Login information • Participant guide You can access the fundamentals modules after you access the guide.	<ul style="list-style-type: none"> • Reach out to your teacher to schedule transition conversation after they complete the first fundamentals module, Part 1: The 5E-SESE Teaching Model.
2	1) Respond to your coach's email to set up transition coaching conversation. 2) Complete 5E-SESE fundamentals modules (Part 2: Planning a Lesson). Time estimate: 1 hour	<ul style="list-style-type: none"> • Put one to two time blocks on your calendar to finish the remaining fundamentals module over a seven to 10 day period. • Monitor email for a message from your coach to schedule the first conversation. 	<ul style="list-style-type: none"> • Monitor teachers' completion through the last module.



Week	What teachers will do this week	Hints provided for teachers	Coach tasks
2–3	1) Complete Transition Conversation Worksheet . 2) Submit worksheet at least three business days before conversation. 3) Participate in transition conversation with your coach. Time estimate: 1.5–2 hours		<ul style="list-style-type: none"> • Review transition conversation worksheet before meeting. • Schedule EE1 completion and tentative conversation time after meeting.
3–4	Start self-directed EE module #1 (EE.5.PS1-2 or EE.MS.PS1-2). Time estimate: 1 hour		<ul style="list-style-type: none"> • Monitor progress through module. • Schedule EE1 lesson cycle conversation.
4–5	1) Complete EE module #1. 2) Take notes for any lesson plan ideas you have. You will complete the lesson plan with your coach. 3) Complete Lesson Cycle Conversation #1 worksheet . Time Estimate: 1 hour		<ul style="list-style-type: none"> • Monitor progress through module. • Schedule EE1 lesson cycle conversation, if not done previously. • Review teacher’s Lesson Cycle Conversation #1 worksheet.



Week	What teachers will do this week	Hints provided for teachers	Coach tasks
5	1) Meet with coach for Lesson Cycle Conversation #1 for EE#1. 2) Complete the lesson plan with your coach before teaching the lesson. 3) Record your teaching goal for this lesson cycle. Time estimate: 1 hour		<ul style="list-style-type: none"> • Complete lesson plan with your teacher. • Develop goal/area of growth for this lesson. • Finish coaches' version of Lesson Cycle Conversation #1 worksheet after completing lesson plan.
6	1) Teach and video record the lesson. 2) Upload video recording of lesson to Moodle. 3) Review recorded lesson. 4) Complete Lesson Cycle Conversation #2 worksheet and submit to coach three days before meeting. Time estimate: 2 hours	<ul style="list-style-type: none"> • When reflecting on your lesson, be kind to yourself but also candid about your strengths and opportunities to continue growing. Change happens over time! 	<ul style="list-style-type: none"> • View teacher's recorded lesson. • Complete coach's Lesson Cycle Conversation #2 worksheet while reviewing recorded lesson.
7	1) Meet with coach for Lesson Cycle Coaching Conversation #2 for EE#1. 2) Indicate your next EE selection in Moodle. Time estimate: 1 hour		<ul style="list-style-type: none"> • Review teacher's Lesson Cycle Conversation #2 Worksheet to prepare for coaching conversation. • Choose next EE during coaching conversation.



Week	What teachers will do this week	Hints provided for teachers	Coach tasks
8	1) Complete EE module #2. 2) Complete and submit draft lesson plan to Moodle. 3) Complete Lesson Cycle Conversation #1 Prep worksheet. Time estimate: 1 hour	<ul style="list-style-type: none"> Plan several interim deadlines for yourself so you stay on track with the schedule. 	<ul style="list-style-type: none"> Monitor progress through module. Review teacher's drafted lesson plan and Lesson Cycle #1 worksheet as they complete it.
9	1) Meet with coach for Lesson Cycle Conversation #1 for EE#2. 2) Make any adjustments to lesson plan before teaching the lesson. Time estimate: 1 hour		<ul style="list-style-type: none"> Review teacher's drafted lesson plan and Lesson Cycle #1 worksheet. Revise lesson plan during the conversation as needed.
9	1) Teach and video record the lesson. 2) Upload video recording of lesson to Moodle. 3) Review recorded lesson. 4) Complete Lesson Cycle Conversation #2 Prep worksheet (teacher version) and submit to coach two days before meeting. Time estimate: 2 hours	<ul style="list-style-type: none"> Continue to be kind to yourself as you reflect on your lesson and consider how you have improved from the first lesson, and also consider opportunities to continue growing. You are working hard! 	<ul style="list-style-type: none"> View teacher's recorded lesson. Complete coach's Lesson Cycle Conversation #2 worksheet while reviewing recorded lesson.



Week	What teachers will do this week	Hints provided for teachers	Coach tasks
10	1) Meet with coach for Lesson Cycle Coaching Conversation #2 for EE#2. 2) Record concepts to add to section 15 of lesson plan (for future instruction on EE#2). Time estimate: 1 hour		<ul style="list-style-type: none"> • Review teacher’s Lesson Cycle Conversation #2 worksheet to prepare for coaching conversation. • Choose next EE during coaching conversation.
11	1) Complete EE module #3 2) Complete and submit draft lesson plan to Moodle. 3) Complete Lesson Cycle Conversation #1 Prep worksheet. Time estimate: 1 hour	<ul style="list-style-type: none"> • This is your final lesson plan! Plan several interim deadlines for yourself so you stay on track with the schedule. 	<ul style="list-style-type: none"> • Monitor progress through module. • Review teacher’s drafted lesson plan and Lesson Cycle #1 worksheet as they complete it.
12	1) Meet with coach for Lesson Cycle Conversation #1 for EE#3. 2) Make any adjustments to lesson plan before teaching the lesson. Time estimate: 1 hour		<ul style="list-style-type: none"> • Review teacher’s drafted lesson plan and Lesson Cycle #1 worksheet. • Revise lesson plan during the conversation as needed.



Week	What teachers will do this week	Hints provided for teachers	Coach tasks
12	1) Teach and video record the lesson. 2) Upload video recording of lesson to Moodle. 3) Review recorded lesson. 4) Complete Lesson Cycle Conversation #2 Prep worksheet (teacher version) and submit to coach two days before meeting. Time estimate: 2 hours	<ul style="list-style-type: none"> As you reflect on your last lesson, you may want to consider how you started and how much you've learned. We hope you will find progress worth celebrating as well as opportunities to continue the hard work you've done. 	<ul style="list-style-type: none"> View teacher's recorded lesson. Complete coach's Lesson Cycle Conversation #2 worksheet while reviewing recorded lesson.
13	1) Meet with coach for Lesson Cycle Coaching Conversation #2 for EE#3. 2) Record concepts to add to section 15 of lesson plan (for future instruction on EE#3). Time estimate: 1 hour		<ul style="list-style-type: none"> Review teacher's Lesson Cycle Conversation #2 worksheet to prepare for coaching conversation. Reflect on the teacher's growth throughout three EE cycles. Celebrate!



Appendix A – Coaching Worksheets

Lesson Cycle Conversation #1: Coach Preparation Worksheet

***For coach use only – not shared with teacher
Complete the entire form prior to coaching session.***

Teacher:

EE:

Lesson Plan/Activity Title:

Date completed:

Instructions

Evaluate draft lesson plan for these criteria:

- 1) Fidelity to 5E-SESE components (3D science, UDL, 5E inquiry model), including accuracy of application of each concept
- 2) Alignment of elements within the lesson plan (e.g., across sections that address the same components)
- 3) Integration across sections and likelihood of supporting an effective 5E-SESE model lesson with fidelity

(See coaching guide for additional instructions)

Section	Eval (+/0/-)	To discuss	Notes during conversation
Content identifiers (1-5)			
6. Accessibility supports			
7. Prior knowledge			
8. Phenomenon			
9. Alt conceptions			



Section	Eval (+/0/-)	To discuss	Notes during conversation
10. UDL options/solutions			
11. Engage			
12. Explore			
13. Explain			
14. Elaborate/Evaluate			

Other notes:

Complete during/after the conversation

Notes about preparation to teach the lesson:

Assessing student change (ask and record their response):

- 1) Have you taught the student this concept before?
- 2) In your judgment, what level of mastery does the student have of this linkage level?

Teacher's final goal for self in the lesson cycle:

- Observable success criterion:
- What evidence will demonstrate that you are meeting your goal? (if we see this action then we know this happened)



Lesson Cycle Conversation #2: Coach Preparation Worksheet

Lesson Implementation Reflection

For coach use only. Draft before reviewing the teacher's prep worksheet, then update as needed.

Lesson date/time:

Lesson plan number and title:

Video file name:

Target student within video:

Teacher goal and success criterion:

Target student objective:

Complete before the conversation

Do you agree with the teacher's assessment of the degree to which they followed the lesson plan?

- Completely
- Mostly
- Somewhat
- Very little

Notes:

Complete the following table.

- 1) Indicate whether each phase of the 5E cycle was included in the video.
- 2) For phases in the video, describe what you saw. Note the time stamp where you saw it.
 - a. Teacher actions
 - b. Student actions, understandings, and outcomes
- 3) Briefly (in one to two sentences or phrases) reflect on strengths, potential areas for improvement, and other topics for the coaching discussion.



	Included in the video? (Y/N)		Observations (What did I see in the video?)	Evidence (Time stamp for where I saw it in the video)	My impressions (Strengths; areas for improvement in implementation of the 5E inquiry model, UDL implementation, 3D science; other coaching topics)
Engage		Teacher			
		Student			
Explore		Teacher			
		Student			
Explain		Teacher			
		Student			
Elaborate		Teacher			
		Student			
Evaluate		Teacher			
		Student			

Did the teacher demonstrate progress toward their teaching goal?

- Yes
- No

Notes:

EE2 and EE3: Transfer information from previous EE Conversation #2 teacher prep worksheet into column 1.



Areas for improvement/action steps from previous plan(s) or coaching sessions	Evidence of efforts/implementation of action steps (in lesson plan or video)	Notes or points for additional discussion

Other notes:

Complete during the conversation

Review how the teacher ranked the student’s mastery of the linkage level. Ask what evidence they saw of that level of mastery.

Ideas for future teaching using this lesson plan:

Key ideas to take forward into the next EE:

Planning for the next lesson:

Next EE selected:

Ideas for improvement/action steps for next EE:

Schedule:

- Anticipated date to submit lesson plan:
- Date and time for next coaching session:



Appendix B – Teacher Worksheets

Transition Conversation Worksheet

To be filled out by the teacher after completing the 5E-SESE Approach module. Submit three to four days before coaching conversation #1.

Reflection on the Modules

What ideas did the fundamentals modules spark for you about science instruction for your students?

What questions do you want to ask your coach about the fundamentals modules?

- Essential Elements
- 5E inquiry cycle
- UDL
- Lesson planning
- The 5E-SESE approach

What ideas do you have about a goal for your own professional growth in the first EE module and lesson cycle? (Pick one to two from the list, then briefly explain)

- Using the 5E inquiry cycle
- Designing a lesson using UDL to provide multiple means of engagement, representation, and/or action and expression
- Teaching science content that I have not taught before
- Other:

Explanation:

Which student do you want to plan a lesson for? What do you want to let your coach know about your student (e.g., strengths, support needs)?



How comfortable are you with developing written lesson plans?

- Very comfortable
- Somewhat comfortable
- Not very comfortable

What other topics/questions do you want to discuss with your coach?



Lesson Cycle Conversation #1: Teacher Preparation Worksheet

To be filled out by the teacher and submitted at least three business days before the coaching conversation.

EE:

Lesson plan/activity title:

The goals for your next coaching conversation are to:

- 1) Collaborate to refine your lesson plan (edits in the online version may be made after the session)
- 2) Choose your goal/area of focus for your own learning in this lesson cycle
- 3) Plan for teaching the lesson

What would you like to discuss with your coach about **your lesson plan**?

What would you like to discuss with your coach about **your teaching goal**?

What would you like to discuss with your coach about **teaching the lesson**?

What other topics/questions do you want to discuss?

After coaching: new questionnaire below the worksheet:

My goal for my own professional growth in this lesson cycle is:



Lesson Cycle Conversation #2: Teacher Preparation Worksheet
Lesson Implementation Reflection

*Teacher: Complete the worksheet after watching the video. Have a copy of the final lesson plan available as you review.
Submit the worksheet at least three business days before your coaching session.*

Date lesson taught:

Lesson plan number and title:

Video file name:

Target student within video:

Teacher goal and success criterion:

Target student learning objective:

How much did you follow the lesson plan?

- Completely
- Mostly
- Somewhat
- Very little

If you did something different from the lesson plan, what prompted you to make changes?

Answer the following for each 5E phase of the lesson you taught:

- 1) For phases in the video, describe what you saw.
 - a. Note the time stamp for anything you especially want to discuss with your coach.
 - b. If you do not have video footage for a phase, mark it as not applicable.
- 2) Briefly (in one to two sentences or phrases) reflect on strengths and potential areas for improvement, based on the 5E-SESE model and the lesson plan. Provide enough information so you and your coach can understand your key points. Save the details for your conversation.



	Observations (What did I see in the video? What did I do? What did my student do?)	My impressions (Strengths, areas for improvement in implementation, things to discuss with my coach)
Engage		
Explore		
Explain		
Elaborate		
Evaluate		

How would you rank the student's mastery of the linkage level?

- Full
- Partial
- None

How did you come to that ranking?

How did you do with your own goal for this lesson?

- Fully met
- Partially met
- Not yet met

Explain your evaluation:

What ideas do you have for your goal the next time you teach this lesson?

What ideas do you have for your next EE?

Anything else you would like to discuss with your coach?



After coaching: new questionnaire at the end of the coaching block:
I picked this as my next EE: