Carbon TIME Classroom Discourse Routine

The ***Carbon TIME* classroom discourse routine** is an intentional sequence of private and public talk and writing surrounding each Process Tool in a unit. The routine establishes consistent times and places for students to think and write individually, to share and edit ideas with others, and for the class to listen and comment together.

The classroom discourse routine serves several purposes.

1. It provides necessary opportunities for students to understand and clarify *their own* thinking and questions, which is requisite for conceptual learning.
2. The routine allows *the classroom community and the teacher* to know about and understand students' different and similar ideas, and for the teacher to make responsive instructional decisions.
3. Also, consistently foregrounding and returning to student ideas is important for providing students with *agency* in the classroom – to support their ownership, motivation, and curiosity aimed at *figuring it out*.

Engaging in classroom discourse guided by this discourse routine scaffolds students in developing scientific explanations that answer the driving question for each unit.

The *Carbon TIME* classroom discourse routine involves 5 steps.

1. Introduction: The teacher establishes the purpose for the Process Tool, making connections to the unit's driving question and supporting students in drawing on prior knowledge and experiences, as well as preceding activities and discussions.
2. Private thinking and writing: Students use the Process Tool individually to think about, draw, and write their ideas, questions, conclusions, and explanations.
3. Partner or small group work: Students share and compare ideas in pairs or small groups.
4. Sharing ideas in whole-class discussion: As a whole group, the class engages in discussions that elicit, clarify, and compare ideas and questions.
5. Consensus-seeking discussion accompanied by public writing: As a whole group, the class comes to consensus (agreement) about some things, documenting these publicly. The consensus-seeking purpose is *different*, depending on the Process Tool, as shown below.

Consensus-Seeking Purposes of Different Process Tools

Expressing Ideas Tool	***Predictions Tool***	***Evidence-Based Arguments Tool***	***Explanations Tool***
Students are…			
Questioners	*Investigators*	*Investigators*	*Explainers*
Class seeks to reach consensus regarding…			
• Similarities and differences among students' ideas • Points of disagreement • Wondering questions	• Similarities and differences among students' ideas • Points of disagreement • Wondering questions	• Relevant patterns in data • Warranted conclusions • Unanswered questions	• Coherent explanations that answer the *Three Questions* while following the rules in ways consistent with evidence

The *Carbon TIME* Instructional Model is a series of discourse routines.

The *Carbon TIME* Instructional Model is designed as a series of discourse routines, each around a separate Process Tool. As outlined above, using the classroom discourse routine around each Process Tool begins with differing (divergent) ideas and ends with consensus (convergence). This idea – moving from divergence to convergence – is represented with an icon ( ) in the Instructional Model image below.

There is also a general shift from divergent to convergent thinking across the unit as a whole, as classrooms move from varied student ideas and questions at the beginning of the unit toward more sophisticated scientific explanations at the end of the unit. Supporting divergent and convergent discourse is reflective of instruction that is both **responsive** (elicits, values, and clarifies students' diverse ideas) and **rigorous** (uses science practices to help students develop the capacity to construct accurate, canonically-aligned, model-based scientific explanations).