CORE's Math Lesson Planning and Preparation Form

Lesson Title: ***Standards*:**

Learning Objective(s), Assessment Target(s), & DOK Level(s):	**Materials:**
	Key Vocabulary:
Lesson Source (program, page, etc.):	
Key Background Knowledge:	**Standards for Mathematical Practice:**
Teacher Actions	**Student Actions**
Intro/Model *(___ minutes)* Introduction, purpose, explanations, think-alouds, visual or worked models, small steps working toward mastery, etc.:	
Guided Practice *(___ minutes)* Include checks for understanding/ misconceptions, questioning, and engagement strategies and feedback:	
Monitor Checks for understanding/formative assessment**:**	
Adjust instruction/reteach/additional guided practice *(___ minutes)* Support for students who are not mastering the concept or skill and/or English language learners or students needing intensification:	
Independent Practice/Extension/Connections *(___ minutes)* Practice, extend, and apply the skills/concepts (inclusive of work that requires higher-level thinking skills):	
Closure *(___ minutes)* Explicitly connect ideas, concepts, and skills together, and clearly connect to the lesson objective(s)*:*	

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Lesson Planning Directions Using Features of Universal Lesson Design (ULD)

Universal Lesson Design – Overarching Principles

1. Multiple means of presentation of information to students (e.g., audio, video, text, speech, Braille, still photos, or images)
2. Multiple means of expression by students (e.g., writing, speaking, drawing, video recording)
3. Multiple means of engagement for students (e.g., to meet differing needs for predictability, novelty, or group interaction)

Rose & Meyer (2002)

Effective Lesson Format

1. **Purpose or Learning Objective**: "Carefully formulated," "clearly stated"
2. **Introduction**: "Brief preview or explanation of why that objective is worth learning and—of particular importance—how it will be assessed"
3. **Modeling/Demonstrating**: "Teachers not only explain but explicitly show students, in very small, deliberately calibrated steps, how to do the working and thinking necessary to succeed on that day's assessment"
4. **Monitor**: "To ensure that every student is attentive and engaged"
5. **Guided Practice**: "Recursive cycle that starts with students applying or practicing each small step that the teacher has just modeled"
6. **Monitor**: Check for understanding/formative assessment
7. **Adjust Instruction**: "By reteaching or enlisting students' expertise by having them work in pairs to help each other"
8. **Repeat Steps 5–7**: "Until all or almost all students are ready to complete the day's assignment, project, or assessment by themselves"
9. **Independent Practice** and/or tutor students needing additional support

Schmoker (2013)

Common Core State Standards for Mathematical Practice

1 Make sense of problems and persevere in solving them. *Mathematically proficient students*

- Explain to themselves the meaning of a problem and look for entry points to its solution.
- Explain correspondences between equations, verbal descriptions, tables, and graphs, or draw diagrams of important features and relationships.
- Check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?"
- Understand the approaches of others to solving complex problems and identify correspondences between approaches.

2 Reason abstractly and quantitatively. *Mathematically proficient students*

- Make sense of quantities and their relationships in problem situations. Create a coherent representation of the problem at hand, consider the units involved, attend to the meaning of quantities, and flexibly use different properties of operations and objects.
- Decontextualize a given situation and represent it symbolically, and also contextualize to probe into the referents for the symbols involved.

3 Construct viable arguments and critique the reasoning of others. *Mathematically proficient students*

- Understand and use stated assumptions, definitions, and previously established results in constructing arguments.
- Compare the effectiveness of two arguments, distinguish correct from incorrect reasoning and, if there is a flaw in an argument, explain what it is.

4 Model with mathematics. *Mathematically proficient students*

- Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
- Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later.
- Identify important quantities and their relationships in a practical situation using such tools as diagrams, tables, graphs, flowcharts, and formulas.

5 Use appropriate tools strategically. *Mathematically proficient students*

- Use technology to visualize the results of varying assumptions, explore consequences, and compare predictions with data.
- Identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems.
- Use technological tools to explore and deepen their understanding of concepts.

6 Attend to precision. *Mathematically proficient students*

- Communicate precisely to others. They use clear definitions in discussion with others and in their own reasoning.
- State the meaning of the symbols they choose. They are careful about specifying units.
- Calculate accurately and efficiently, and express numerical answers with the appropriate degree of precision.

7 Look for and make use of structure. *Mathematically proficient students*

- Look closely to discern a pattern or structure.
- Step back for an overview and shift perspective.

8 Look for and express regularity in repeated reasoning. *Mathematically proficient students*

- Notice if calculations are repeated, and look both for general methods and for shortcuts.
- When solving problems, maintain oversight of the process while attending to the details, and continually evaluate the reasonableness of results.