Kentucky Department of EDUCATION

Math Unit Internalization Protocol

Unit internalization is a core process of intellectual preparation that provides a structure for developing understanding of how standards, tasks and assessments support the overall arc of learning within a unit from a high-quality instructional resource (HQIR). By starting with unit internalization, core teachers, special education teachers (co-teachers and resource teachers) and support specialists (e.g., interventionists, English learner) understand how lessons fit into the big picture prior to using the Math Lesson Internalization Protocol. **The emphasis for internalization should be on the rich instructional conversations** and the accompanying note-catcher may be helpful in capturing highpoints for later reference.

Set aside 60-90 minutes for core teachers and support specialists to collaboratively engage with this unit-level protocol. **This protocol includes more steps and questions than can be fully considered during that time; therefore, consider prioritizing those most aligned to district/school goals and professional learning focuses for the current stage of implementation (launch, early or ongoing).** For example, educators could choose to focus only on the "Understand" section of the protocol during launch and early implementation to build initial understanding of the resource.

While this protocol can be used with any high-quality instructional resource (HQIR), check with the vendor for specific protocols for use with your district- or school-selected instructional resource.

UNDERSTAND: Internalize Unit Structure and Do the Math

1. **Read any overview or narrative for the unit to understand the "big picture" of the learning.** Doing this as independent "prework" and then beginning with a calibrating conversation can help maximize collaborative time.

2. **Analyze how standards are embedded within the unit.**
   - **Structure:** Within the unit, identify how standards are bundled and which are targeted for assessment.
   - **Cluster Heading**: What is the broader understanding that the standards play a role in building?
   - **Standards for Mathematical Content:** Identify each standard formally assessed (e.g., end-of-unit assessments) and discuss what students should understand and be able to do. Is the target of the standard conceptual understanding, procedural skill/fluency and/or application?
   - **Standards for Mathematical Practice:** Identify each standard to determine how students will engage in mathematical thinking.
   - **Within-Grade Coherence:** How do the unit's standards fit within the course's scope and sequence? How do standards in this unit connect to each other?
   - **Vertical Coherence:** How do the standards build off previous grade level standards? How will they prepare students for work in future grades?

3. **Do the Math:** In preparation for the discussion questions below, complete the end-of-unit assessment by applying knowledge, understandings, skills, strategies and language students are expected to use. (*This can be completed prior to the PLC meeting.*)
   - How is mastery of the assessed standards being measured in this assessment (e.g., problem sets, multiple choice, constructed response, performance task)?

- Which embedded tasks/assessments will be used for student work analysis within PLCs.
- How will you collaboratively coordinate the flow of support students receive in Tier 1 and Tier 2 during the unit's embedded assessments/tasks?

4. **Skim the lessons to gain an overall sense of the unit's progression.**
   - How do standards progress within the unit (developing procedural skills and fluencies building from conceptual understanding to application) to prepare students for the end-of-unit assessment?
   - Which key lessons will be used for lesson internalization within PLCs for this unit (e.g., lessons featuring a complex task or instructional strategy/routine the PLC wants to practice or refine)?
5. **Connect instructional practices to student learning.**
   - What are the specific instructional strategies and routines that will be used to support mastery of the mathematical skills and understandings?
   - How are mathematical representations utilized to deepen understanding of the concepts and procedures and as tools for problem solving?
   - How will rubrics and models of exemplary work be used to support student learning?

TAKE STOCK: Analyze Student Learning Data

6. **Review relevant data (e.g., HQIR pre-assessment, student work samples) to determine student readiness levels and inform which students should receive additional support to access Tier 1 learning in the upcoming unit.**
   - What potential misconceptions and gaps in student learning do you see?
     - What guidance and resources do the HQIR provide to address those misconceptions and gaps?
     - How will Tier 2 be utilized to provide aligned support for upcoming learning in Tier 1? (*For support, consider the Aligning Tier 2 Intervention with Tier 1 Instruction resource.*)

TAKE ACTION: Make Adjustments to Unit

7. **Develop a plan for what you will need to do to set yourself and your students up for success in this unit.** (*When considering an adjustment, the Adjusting High-Quality Instructional Resources Tool offers guidance to support doing so effectively.)*
   - What student interests, strengths, and dispositions in your classroom do you want to build upon in this unit?
   - How will you plan for opportunities for students of all backgrounds and readiness levels to engage in productive struggle as they move toward achieving mastery? Which **HQIR-embedded supports** will you use to ensure **all** students can be successful (those needing additional supports and those ready for enrichment and/or extension)? What additional supports are available as needed?
   - Note lessons for which you anticipate increasing and/or reducing allotted time. How many instructional days will the unit now take? How will you utilize "buffer time," which often occurs between units, to address unmet student learning needs? How will you account for any adjustments necessary to stay within the locally determined pacing window?

- Referring to your district's instructional vision and curriculum document, which instructional priorities could further support/enhance learning and the student experience (elements of project-based learning, inquiry-based learning, portrait of a learner competencies, cooperative learning, cognitive strategies, standards-based grading, etc.)?
- How will you gather and analyze student feedback on their learning experience?

Unit Reflection: Upon completion of the unit, this Math Unit Reflection Protocol can be used to guide debriefing of successes, challenges and areas of possible improvement to inform how the unit is taught the following year.

*This resource is adapted from **The Achievement Network**.*