Remote Learning Lesson Plan Overview

The Remote Learning Lesson Plans (RLLPs) are adapted from the IQWST© Teacher Edition to support continuous learning everywhere. The RLLPs condense what is taught in each activity with specific teaching recommendations and identify the digital resources, print resources, and materials needed to teach and learn outside of the classroom.

We acknowledge that every situation is unique and have created plans that provide flexibility for teachers and students to support individual learning environments. Focus on fewer scientific principles. Use the readings. Share the videos. Have discussions. And be kind to yourself.

Remote Learning Lesson Plans can be found on the Louisiana Specific Website and IQWST Interactive Digital Edition in the Teacher Portal Section
The RLLPs can be downloaded as Word documents to allow teachers the flexibility to edit the lesson plans as needed for unique learning environments.

Also in Remote Resources, teachers will find:

> **Activity Videos:** Videos that show the equipment and model the activities that students would normally experience in the classroom.

> **Letters to Parents**: Editable letters with technical requirements and step-by-step instructions to send to parents and guardians.

Remote Learning Lesson Plan Color Key

COLOR	INDICATES
Underlined blue text	Hyperlink to another online resource, video, or website
Purple text	Key idea of the activity
Yellow highlighted section	Formative assessment Checkpoint
Red text	Resources or links to be added soon

Remote Learning Lesson Plans are being developed for every IQWST Unit.

The Remote Learning Lesson Plans are based on the following assumptions:

1. **Teachers will have access to a print and/or digital (IDE) version of the Teacher Edition (TE).**

   The RLLPs provide ideas for how to *alter* what is in the TE for remote learning contexts. However, the TE provides background information for the unit and lessons, preparation for demos or other activities, and the lesson flow including prompts to elicit prior knowledge, probe student thinking, and press student thinking to deeper levels. The TE describes how coherence is built from one lesson to the next throughout the unit, beginning with the launch of the unit's anchoring phenomenon. The TE also names the Performance Expectations that each activity builds toward, including the Disciplinary Core Ideas (DCIs), Science and Engineering Practices (SEPs), and Crosscutting Concepts (CCCs) addressed. The TE is the essential starting point for teaching IQWST whether in a classroom or remotely.

2. **Teachers will have access to a digital pdf of each unit's Storyline via the Teacher Portal.**

   The Storyline document functions as a comprehensive outline of an entire unit. It highlights the specific SEPs and CCCs that are focal to each lesson, and names the scientific principles (typically components of DCIs) at which students should arrive after a series of lessons. The Storyline also provides an at-a-glance view of ways to assess learning, of science vocabulary, and of how to bridge learning -- and build coherence -- by connecting one lesson to the next. Teachers find this to be their most important companion tool for preparing lesson plans and teaching units.

3. **Teachers will have access to a print and/or digital version of the IQWST Overview booklet.**

   This resource contains a wealth of information to orient teachers new to IQWST to the instructional design and layout, including supports for diverse learners (including ELLs, struggling readers, and students with a range of learning disabilities). It also provides detailed guidance for how to set up and use the Driving Question Board, approach claim-evidence-reasoning (CER) explanations, and assess learning. Teachers find this to be an important tool for getting started, and for reference for deeper supports, as needed.

Preparing to Teach with the Remote Learning Lesson Plans (RLLPs)

1. **Become familiar with the lesson in the TE and with the Storyline document.**
   a. Decide on the method by which students will experience the lesson. How much time to cut out of the unit will depend on many factors, including how much time teachers can meet with students virtually or in person. The RLLPs suggest cuts and suggest ways to combine activities for those who need to cut deeply. Do what works for your circumstances.
   b. If a teacher is able to engage in discussion with students -- in person or virtually -- choose prompts from the TE that will most encourage their thinking and their participation.
   c. If a teacher is unable to engage in discussion with students, choose prompts that will support and scaffold their thinking as they work independently.
   d. Consider providing sample answers, after students have had time to think on their own, as a way for students to check their understanding.
   e. Be prepared to cue students to any changes needed in their SEs given the plans for remote learning of individual lessons (e.g., which questions to answer and which to ignore).
   f. Given a scenario in which students will not have access to technology, consider a handout to accompany their print SEs that provides clear instructions for how they should proceed.
   g. Communicate clearly how written work, feedback, and grading will be addressed in the unique remote-learning environment.

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2. **View the Teaching Slides for each lesson.**
   a. There is one slide deck for each lesson, designed to support in-class teaching under normal circumstances. These decks may also be shown via video conference platforms.
   b. Projected Images (PIs) identified in the lessons are built into the slide decks. PIs may also be accessed via the Portal.
   c. The teacher will need to adapt the slides to address current remote learning plans (i.e., Will students gather as a virtual class and watch their teacher perform live demos, or will the teacher provide links for students to watch videos asynchronously? Will students have science daily or less often?).
   Note: Save the revised remote-learning slide deck for each lesson as a new, renamed slide deck so that the slides for "regular" in-class use are not affected by temporary changes.

3. **Watch the videos named in the Lesson Plans**
   a. Ideally, begin sessions by addressing, "What will we do?" to orient students to the lesson, as you would in class. Students should follow along in their SEs, making predictions and observations as called for. Introduce the video as if students were going to actually do the investigation in class.
   b. Show videos twice. First, so students can watch what happens and make observations--as they would if they were doing the investigation in groups. Second, show videos again, but stop, pause, or voice over action as it happens on the screen. Depending on the video, it may make more sense to voiceover what students are seeing on first viewing.
   c. Third viewings are often helpful after discussion to solidify understanding. This can be done as a group, or an already-watched video may be viewed asynchronously by providing students with the link. Watching videos may also be an activity that teachers recommend to parents and guardians.

4. **3D learning will look much different using the remote-learning plans.**
   a. Given that research and standards both make clear that 3D learning is the only way that ***all students*** are provided with the opportunity to learn science, it is imperative that teachers keep 3D learning at the forefront of remote teaching. Avoid the tendency to revert to a focus on students "getting the content" at the expense of interweaving crosscutting concepts and science and engineering practices to the extent possible.
   b. Look for opportunities to be explicit in discussions by purposefully using the language (and having students use the language) of the Crosscutting Concepts (cause and effect, energy and matter, etc.).
   c. Students can still engage in the Science and Engineering Practices, although their experiences will be significantly altered in the absence of hands-on investigation and engaging in daily collaborative discourse. All of the practices are do-able even in a remote-learning context.

5. **Look for understanding of Key Ideas.**
   a. In IQWST, Scientific Principles--core ideas that are foundational to DCIs--are developed with students after working through investigations, activities, modeling, discussion, and group collaboration.
   b. In a remote setting, if teachers are unable to facilitate such discussion, be sure that the "Key" ideas stated in the Lesson Plans for Remote Learning and the "Scientific Principles" stated in the TE and in the Storyline are stated explicitly. *If at all possible,* generate these ideas with students, so they do not become simply a list of facts to be memorized.

Consider How You will Support Students

1. **Consider creating an at-home guide for students (and parents)**. This is particularly important if students are unable to have access to reliable technology and are being given an SE without ongoing virtual instruction.
   a. Note that wording in the SE will often not align with adaptations made to activities, so advise students how to adapt in any instance where confusion might occur.
   b. Readings will indicate, "In class you did X," which students will not, of course, have done. Instead, they will have seen a video. SE questions will refer to activities as though students are doing them. Some students will struggle with the shift without explicit instruction that they are to "answer about what you saw in the video."
   c. Some questions will need to be omitted because they do not fit the remote experience. Be explicit about which questions students are (or are not) supposed to answer.
   d. Phone discussion with a partner may be an option to support learning.

2. The **audio readings** may be especially important for remote learning to help students process content. See the *IQWST Overview* for ideas for using the readings, including having the teacher read sections aloud *to* students, which research has shown to be a highly effective method for supporting students in sensemaking as well as in becoming better readers themselves.

3. Without the support of a **Word Wall** and pervasive use of the language of science, many students will be challenged to become fluent with science vocabulary. If possible, maintain a Word Wall and be cognizant of using words as frequently and consistently as possible in any virtual-learning contact with students. Students could also keep word walls or lists at home in the front or back of their SEs (or digitally).

4. The **Driving Question** needs to be kept at the forefront of learning. Ideally, teachers can maintain some version of a virtual **Driving Question Board** using tools such as padlet or jamboard. Otherwise, having a poster or wall space on which the Driving Question is posted for reference during virtual sessions will be helpful.
    a. Artifacts: Any artifacts that can be kept and shown when referenced in later lessons will be helpful for coherence, continuity, and visual memory.
    b. Student questions: At the very least, students should write questions as they arise, either posting them in the front of their print SEs (using sticky notes) or posting them in the My Questions section of the IDE.

5. **Encouraging and supporting discourse**
   Student questions, discussion prompts, and conversation via posts are manageable in most of the platforms used for remote teaching and learning: schoology, google classroom, microsoft teams, google meets, blackboard, canvas. Therefore, discourse can still take place remotely, allowing the teacher and students to respond to each other directly. Either can post new questions or ideas. Students are also able to respond to any item that can be posted, such as a Projected Image (PI), the Driving Question Board, images, and videos. Most platforms have a video feature as well, enabling teacher and students to share video such as the Activity Videos linked in the RLLPs, a video of an activity that the teacher demonstrates, or a video students take as they perform an at-home investigation.

In General:

1. **Be kind to yourself.** You are in uncharted territory and teaching science--content that is extremely difficult to address in a remote-learning context without hands-on materials. You are managing absent students, diverse learners, and a host of other challenges. Be kind to yourself.

2. **Slow down.** Focus on depth of understanding. You have an entire curriculum in front of you. The RLLPs suggest cuts that will lighten the load for you and will lighten the cognitive load for students. Depth--real understanding, retention, application--is far more important than superficial coverage of information. Information that is not remembered, is lost. It is not able to be applied to new contexts, where evidence of learning actually happens.

3. **Be aware of students' remote-learning challenges**. Learning with only visual experiences (simulations, video, slides, reading) will be more challenging for many students than when those are coupled with hands-on investigations of phenomena and the rich discourse that characterizes an IQWST classroom. Remote learning makes #2 especially important.

4. **Establish norms early.** Classroom norms are vital to your instruction. Now, your routines are also affected by everyone's outside-of-school routines, which are also in flux. How will students communicate with you? Collaborate? Submit work? How often will they do science at home? How often will you check-in? No advice will be ideal for you and your students. Adapt as you go.

Additional IQWST Resources and Support

Learn from and support other IQWST teachers around the country by sharing ideas and resources.
- Current users are invited to join and follow the Facebook Group: IQWST Educators.
- There are also many shared resources in the IQWST Teacher Portal that may be useful for teachers and parents/guardians.

Visit our Professional Learning Library
- Launching the Unit and Anchoring Phenomenon: Download PDF or Slides
- Using a Driving Question Board: Download PDF or Slides
- Developing and Using Models: Download PDF or Slides

If you are new to the Interactive Digital Edition (IDE)
- View this instructional video demonstrating the features and capabilities of the IDE.
- Please watch this video to log on and navigate the Interactive Digital Edition
- Additional tutorial videos can be found in the Activate Learning Support page.