Louisiana Believes

Distance Learning Support for OpenSciEd

DEPARTMENT of EDUCATION

NOTE:

This webinar is designed for teachers and school leaders who have already attended OpenSciEd training.

If you have not already attended OpenSciEd training, do not proceed as this webinar will not prepare you to implement the traditional OpenSciEd curriculum.

Distance Learning Support for OpenSciEd

To support school systems, schools, and teachers in ensuring continuous learning in science, the Department will release guidance for implementing high quality open-source science curricula in a hybrid or distance learning setting for every OpenSciEd Unit.

Prototype Unit (Grade 7 Weather Available Now)

Distance learning plans for OpenSciEd Grade 6-8 for each unit will contain the following:

- Links to OpenSciEd remote learning resources
- Unit guidance
- Detailed lesson-by-lesson guidance, including activities and slides for virtual classes
- Printable lesson documents to send home with students

Design Considerations

Premise:	Application:
All content is equally important	No lessons were omitted; local educators will have to make decisions around time constraints
The design of high quality curriculum is strategic and should be altered only to the extent required by the circumstances	The guidance is not backwards designed in the same way the original units were; pedagogical recommendations are based on the original unit design decisions
“School” will look different in different places and at different times of the year	The guidance was written for the most extreme case -- virtual learning only for all students; teachers can walk back and integrate in-person learning as opportunities arise
Synchronous learning is required for students to appropriate engage in high quality science curriculum	Students will be expected to have computers/internet access; schools must be creative to accommodate; resources provide scheduling guidance
Daily virtual classes will not be feasible for most students	Ideal number of virtual classes is three per week, planning documents for advanced notice of scheduled classes and suggestions for those without internet access is included
Not all districts and teachers will have access to or be familiar with the same platforms for remote learning	Specific examples are given, but the guidance design supports the broadest application with any digital platform
“Typical” OpenSciEd materials and trainings are vital for quality implementation	These are an added layer of guidance and do not take the place of the teacher’s manuals, initial implementation trainings, and the need for collaborative unit and lesson planning for optimal implementation

Deep Dive into Guidance

Distance Learning Support for OpenSciEd

Take the next 5 minutes to skim through and orient yourselves to the prototype unit. We will then walk you through some of the key components.

Guidance Overview

Distance Learning Support for OpenSciEd Grade 7 Science
Unit 6.3 - Weather, Climate, and Water Cycling: The Storms Unit

This resource is designed to support teachers in implementing distance learning for OpenSciEd Grade 7 Unit 6.3. It is intended as a supporting document and should be used in conjunction with the OpenSciEd Unit 6.3 Teacher Edition. The resources contained in this document have been adapted from OpenSciEd with permission under Creative Commons 4.0 licensing.

The OpenSciEd Remote Learning Resources linked below contain detailed information about adapting specific routines to a remote learning environment and a wide variety of options including those for students who do not have internet access:

- Leading an Anchor Phenomenon Routine
- Navigation Routine
- Discourse
- Problematizing Routine

Synchronous vs. Asynchronous Learning

The OpenSciEd remote learning resources use the terms synchronous and asynchronous to distinguish activities that occurs when teacher and students are interacting live (virtual class meetings) and activities that occur over time (independent assignments, teacher feedback).

Pedagogical Strategies to Support Navigation in Remote Learning Environments: Looking Back

	Synchronous	Asynchronous	Without Technology
Looking Back: Reviewing what we figured out last time	• If using Google Jamboard for the Anchoring Phenomenon Routine, copy or move questions and ideas for investigations into a new lesson space. Pinup.com is another alternative app. • Create a Padlet or	• Create a short video clip reminding students what they figured out last time. Using a tool like Flipgrid allows students to view and respond to each other. • Use Google Jamboard's "pen" features to add symbols for agreement/disagreement on what's already been done. • Show images from last time of what was	• In between sending out packets, send a summary of everyone's ideas to students, and ask students to write a reflection on how their ideas compare to other students'. • If students have phones they can use apps like Poll Everywhere to ask questions in a closed-ended format.

Norming Language

The first section of this document contains a table labeled “Norming Language”. These are terms used throughout the guidance documents to describe the tools used to adapt routines to a distance learning model.

Norming Language	
Term	**Description**
Virtual Class Pre-Work	Assignments that students should do prior to virtual class meetings in order to be prepared to engage in discussions, there may be multiple assignments throughout a given lesson
Virtual Class Post-Work	Assignments designed for students to apply learning from virtual class meetings, there may be multiple assignments throughout a given lesson
Virtual Class	Live sessions with students through any digital conferencing platform, teachers may choose to allow students without internet to call in during these sessions and record virtual class sessions to share with those who cannot join

Norming Language

Virtual Class Pre-Work: Asynchronous and Independent

- Examples of tasks in which students might engage include: noticings and wonderings, generating initial models, reflection around lesson navigation, brainstorming about investigations

Virtual Class: Synchronous and Collaborative

- Examples of tasks in which students might engage include: creating the DQB, designing consensus models, sharing findings and making sense of data through discussion

Virtual Class Post-Work: Asynchronous and Independent

- Examples of tasks in which students might engage include: revising models, using the close-reading strategy to annotate text, drawing conclusions and formulating claims

Norming Language

The following resources, described in the norming language are an essential elements to having students progress through the lesson with a combined asynchronous and synchronous model.

Thinking Deeper Documents	Progress trackers for students to use throughout each lesson to record and revise their thinking about science concepts related to the phenomenon; contain assignments for students to complete before, during, and after virtual classes, discussion boards, and home investigations
Lesson Slideshows	Lesson progression specific to each lesson used to guide student work; used during pre-work, post-work, virtual classes, home investigations, and discussion boards; can be shared with students in their entirety at the beginning of the lesson or broken into small portions and shared as needed

Lesson 1 Thinking Deeper Document

Norming Language

In adapting OpenSciEd to a remote learning setting, opportunities for asynchronous work around hands on science practice and discourse are built in outside of virtual class meetings.

Discussion Boards	Assignments designed for students to share ideas and engage in discussion with one another over time rather than a live environment, students will use their Thinking Deeper Documents to brainstorm prior to submitting; teachers may choose to allow students without internet to text in responses and may screenshot/download and share portions of or full discussions via text (ex. through apps like Remind)
Home Investigations	Investigations with readily available materials designed for students to perform at home; teachers may choose to substitute videos or photos of data collection for students who cannot complete investigations at home

Lesson Overview

Lesson 3 (1.5 days) - Investigation

In this **Lesson**, students will need the following materials to appropriately engage in learning:

- Lesson Slideshow
- Thinking Deeper Document

In this **Lesson**, students who don't have home internet need the following print-outs or files to best engage in learning:

- Lesson Slideshow
- Thinking Deeper Document
- Weather Balloon Video
- Virtual Class recording - *after completion*
- Consensus Model - *after completion*

In this **Lesson**, students should join virtual classes on the following days to engage in learning:

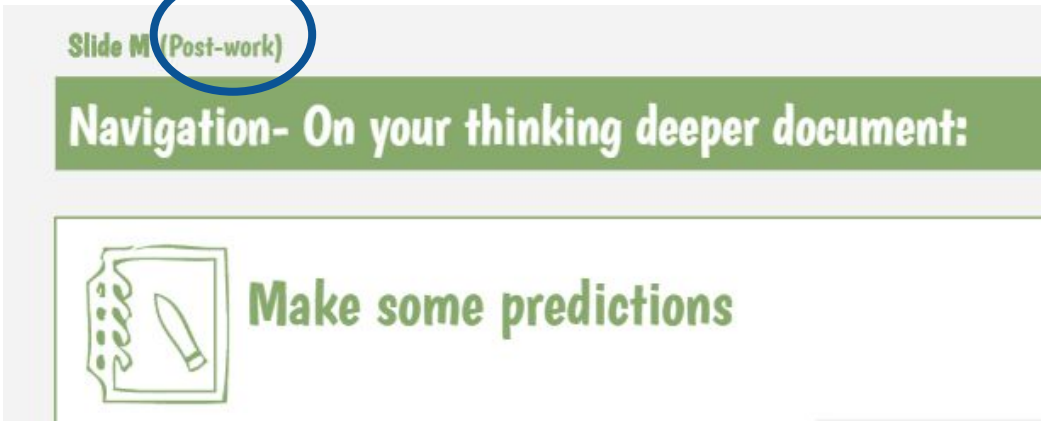
- Day 2

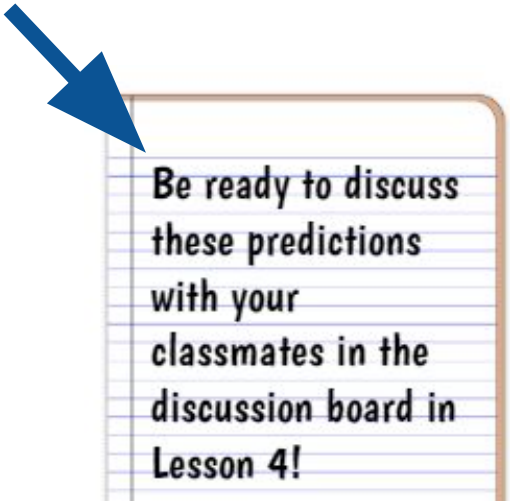
Lesson Guidance

Day 1		
Lesson Components	**Distance Learning Plan**	
	Teacher	**Student**
Part 1 (22 min) EXPLORE SOME STORM-RELATED PHENOMENA Slides A, B, C	1. Share Lesson Slideshow with students 2. Share Thinking Deeper Document with students 3. Create assignment for students to submit 1 notice and 1 wonder (example: Google Form) 4. Review Notice/Wonder responses from students in preparation to facilitate VIRTUAL CLASS discussions	VIRTUAL CLASS PRE-WORK: 1. Watch 3 videos and record noticings and wonderings on the chart on Thinking Deeper Document Video Clip 1, Video Clip 2, Video Clip 3 2. Turn in individual Notice/Wonder assignment to teacher
Parts 2 & 3 (15 min) CREATE INITIAL MODELS Slides D, E CONNECT TO PREVIOUS UNIT IDEAS Slide C	VIRTUAL CLASS: 1. Discuss models from Thermal Energy Unit - how we represented particle in solids, liquids, gases and how we showed energy transferred into and out of the system 2. Students create initial model of what happened in the sky before, during, and after hailstorms 3. Share and discuss 3-5 student created models	

Lesson Resources - Lesson Slideshows

Original slideshows have been adapted for a distance learning model. This includes labels from the Norming Language that link the slides to teacher and student actions in the guidance document as well as additional instructions for remote learning.

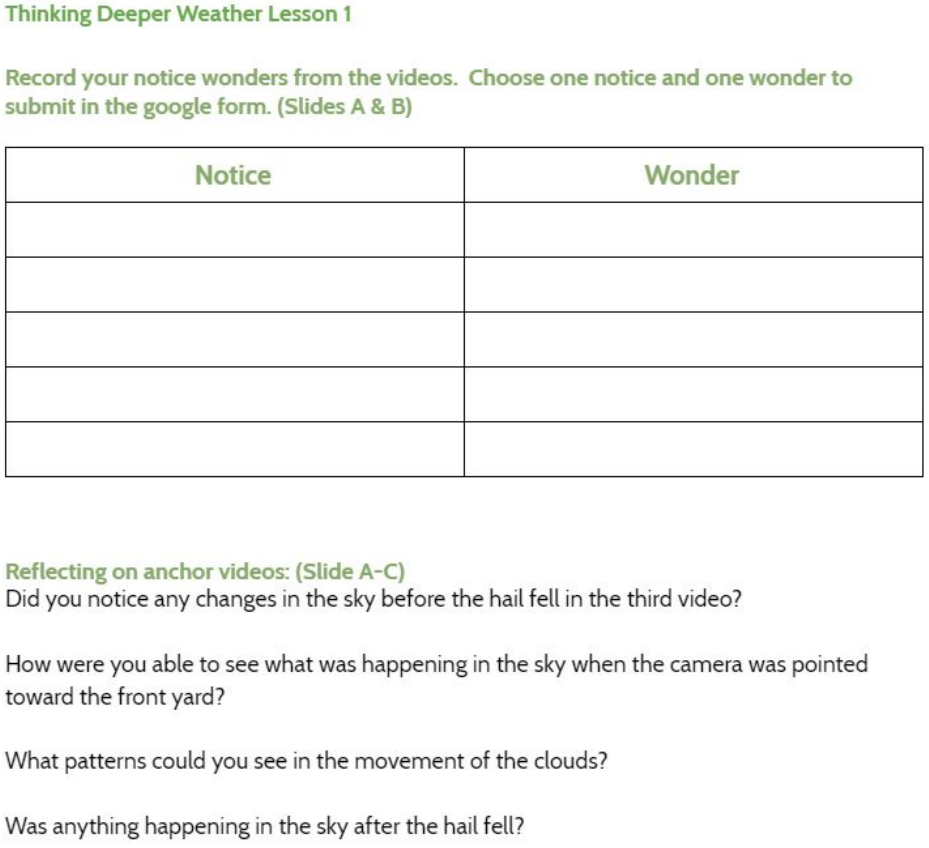




Lesson Resources - Thinking Deeper Documents

Thinking Deeper Documents

- serve as a digital science notebook
- include the resources students will need for the lesson in one place
- hold students accountable for the thinking in each part of the lesson
- designed based on lesson guidance



Thinking Deeper Weather Lesson 1

Record your notice wonders from the videos. Choose one notice and one wonder to submit in the google form. (Slides A & B)

Notice	Wonder

Reflecting on anchor videos: (Slide A-C)

Did you notice any changes in the sky before the hail fell in the third video?

How were you able to see what was happening in the sky when the camera was pointed toward the front yard?

What patterns could you see in the movement of the clouds?

Was anything happening in the sky after the hail fell?

Lesson Resources - Thinking Deeper Documents

3 · OBSERVE VIDEO OF CLOUDS FORMING

MATERIALS: *Tracking Air Movement in Cloud Formation*, science notebook, tape, computer and projector, https://youtu.be/Lf64E66odvc

Formation of a cumulonimbus cloud. Project **slide E**. Explain that you have a video that shows the growth of a few different clouds over the course of a day. Toward the end of the video, one of them develops into a cumulonimbus cloud. Distribute *Tracking Air Movement in Cloud Formation*. Say, *Let's watch the video once without recording anything.*

Show the time-lapse video: https://youtu.be/Lf64E66odvc . Read the directions on the slide (the same as on the handout), emphasizing that students will annotate the hail cloud images at six time points when you pause the video. Then play the video again, pausing it at the following times: 0:20, 0:32, 0:36, 0:41, 0:48, 0:58. At each pause, instruct students to make notes on the hail cloud of where they saw air moving up, where it stopped rising, and where it moved down. Tell them we can use our ideas and evidence from Lessons 1-5 to help explain these patterns.

Lesson Resources - Thinking Deeper Documents

Tracking Air Movement in Cloud Formation (Slide E)

Keep track of any patterns you see in the motion of the air as the hail (cumulonimbus) cloud forms at the six time points shown below.

- Use upward pointing arrows to label spots in the hail cloud where you see air moving upward.
- Use an "x" to label spots in the hail cloud where you see air that has been rising stop moving upward.
- Use downward pointing arrows to label spots in the hail cloud where you see air moving downward.

0:32 seconds

0:38 seconds

Unit Overview by Lesson Set

The Lesson Set Overview contains all of the information that each lesson guide contains for all of the lessons in that set with embedded links to all resources for teacher planning.

Lesson Set 2: Lessons 7-13		
Provided Resources Students Will Need	**Additional Resources Students Will Need**	**Additional Materials for Students Without Internet Access**
Lesson Slideshows for **each** lesson: L7, L8, L9, L10, L11, L12, L13 Thinking Deeper Documents for each lesson: Lesson 7 TDD, Lesson 8 TDD, Lesson 9 TDD, Lesson 10 TDD, Lesson 11 TDD, Lesson 12 TDD, Lesson 13 TDD Additional Documents: Hurricane Assessment Tasks	Home Investigation materials (Lesson 8) • plastic 2-L bottle • plastic bag with seal closure • ice • wax paper • pipette (or something to make water droplets) • straw	**Prior to Lesson**: Marble Investigation Videos - C1, C2, C3, C4 (Lesson 8) Frost Demonstration Video (Lesson 9) Homemade Barometer Video (Lesson 11) Convection Demonstration Video (Lesson 12) **After Lesson Completion:** Virtual Class recordings (Lessons 7, 8, 10, 11, 13)

Unit Overview by Lesson Set

The Lesson Set Overview includes a list of when Virtual Classes should Ideally occur to allow for long-term planning as well as an additional section that offers guidance about assessment opportunities in each lesson.

Students should ideally join VIRTUAL CLASS on the following days: Day 2 - Lesson 7 Day 4 - Lesson 8 Day 6 - Lesson 10 Day 8 - Lesson 11 Day 11 - Lesson 13
Formative and Summative Assessment Opportunities: Lesson 8: Navigation Questions *(end of Thinking Deeper Document)* Lesson 10: "What can we explain?" *(end of Thinking Deeper Document)* Lesson 12: Claim following Convection Investigation *(end of Thinking Deeper Document)* Lesson 13: Hurricane Assessment Tasks - *Summative Assessment*

Project Timeline

Project Timeline (DRAFT)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
6th Grade	1st Lesson Sets: August 1 Complete Unit: Mid-August	Early September	Mid-October	Early December	Early February	Contingent upon release of Field Test Unit	Early April
7th Grade		Complete (prototype Unit)	Early October	Mid November	January	March	Scope and Sequence Unit
8th Grade	Scope and Sequence Unit	1st Lesson Sets: August 1 Complete Unit: Mid-August	Late September	Early November	Contingent upon release of Field Test Unit	Early March	Contingent upon release of Field Test Unit

Questions or Feedback

Direct all follow-up questions to STEM@la.gov