

Louisiana Believes

Distance Learning Support for inquiryHub Biology

Unit 3 Bend 2: Ecosystems – Trees

This resource is designed to support teachers in implementing distance learning for iHub Biology Unit 3 Bend 1. It is intended as a supporting document and should be used in conjunction with the [Inquiry Hub High School Biology Curriculum Resources](#). The resources contained in this document have been adapted from [inquiryHub Biology](#) with permission under [Creative Commons 4.0 licensing](#).

The 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:

- [Fostering Productive Norms](#)
- [Anchor Phenomenon Routine](#)
- [Navigation Routine](#)
- [Supporting Discourse](#)
- [Problematizing Routine](#)

This guidance document is considered a “living” document as we believe that teachers and other educators will find ways to improve the document as they use it. Please send feedback to STEM@la.gov so that we may use your input when updating this guide.

Updated January 26, 2021



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. Sample Virtual Class Rules
Lesson Slideshows	Lesson progression specific to each lesson that can be shared with students in their entirety at the beginning of the lesson or broken into small portions and shared as needed. They will contain assignments for students to complete before, during, and after virtual classes, discussion boards, and home investigations. They are intended to replace the SAS documents from IHUB. These can be copied and delivered directly to students using google classroom or another platform, modified for use in your platform of choice, or printed and delivered to students without internet access
Assignment	An assignment should be posted on a virtual platform (Google Classroom, Schoology) that can be accessed and edited by students. Assignments should have the option to “make a copy” for each student so that students can individually complete work and turn in that individual work to the teacher for review, feedback, and assessment.
Discussion Boards	Assignments designed for students to share ideas and engage in discussion with one another over time rather than a live environment. Students should use documents from individual work to plan their public discussion. Usually students will post some original comments into a group discussion and respond to a specified number of others. Ensure that norms are established for appropriate posting behavior, just like you would set norms for your classroom discussion prior to submitting. Teachers may choose to allow students without internet access 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

**** NOTE:** All slideshows and links to readings (including the ones on slideshows) and will allow you to edit your own copy. You will need to be sure to share **your** copy with students once you have made any needed adjustments**

Unit 3 Bend 2	
Resources Students Will Need	Additional Materials for Students Without Internet Access
<p>Lesson Slideshows for each lesson:</p> <p>Lesson 11, Lesson 12, Lesson 13, Lesson 14</p> <p><i>Lessons 15-21 Coming Soon</i></p> <p>Additional Documents:</p> <p>IMT</p> <p><i>Linked within slideshows:</i></p> <p>Student Reading - Bell Jar (L12)</p> <p>Student Reading: Roots (L14)</p>	<p>Prior to Lessons (videos and documents):</p> <p>*Print Copies of All Slideshows and SEETs*</p> <p>Lesson 11:</p> <ul style="list-style-type: none"> • NASA Video: A Year in the Life of Earth's CO2 • Screenshot of CO2 Level for assigned date and graph • Trees Video <p>Lesson 12:</p> <ul style="list-style-type: none"> • Class model <p>Lesson 13:</p> <ul style="list-style-type: none"> • Access to the Computational Model – <i>teacher may consider providing a screencast of the investigations via flashdrive</i> <p>After the Lesson:</p> <p>Recordings of Virtual Classes</p>
<p>While all lessons contain materials to supplement virtual class, they could be modified for asynchronous delivery by requiring submission of work for feedback and converting any group discussion into discussion boards.</p>	

Formative and Summative Assessment Opportunities:

All Slides where students fill in answers and notes can be used for formative assessment. These are to be turned in to the teacher. Feedback can be delivered through comments and work revised if needed. Specific slide suggestions for formative assessment:

Lesson 11: Initial Model Slide 11 (pre-assessment); Lesson 12: Slides 6 & 9; Lesson 13: 4 & 6; Lesson 14: Slides 25, 26

All discussions (whether live or on an asynchronous Discussion Board) can be used for formative assessment

IMTs updates for each lesson

SEETs - focus quiz type assessments

Transfer Tasks (delivery via your assignment platform)

Lesson List

[Lesson 11](#)

[Lesson 12](#)

[Lesson 13](#)

[Lesson 14](#)

Lesson 15

Lesson 16

Lesson 17

Lesson 18

Lesson 19

Lesson 20

Lesson 21

Lesson 11 - How can we reduce the negative impacts of human activity on climate?

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

- [Lesson Slideshow](#)
- [IMT](#)

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

- [Lesson Slideshow](#)
- [IMT](#)
- NASA Video: [A Year in the Life of Earth's CO2](#)
- Screenshot of [CO2 Level](#) for assigned date and graph
- [Trees Video](#)
- Virtual Class recording - *after completion of virtual class, or prepare a video to support students in completing the slides independently*

Note The iHUB teacher guide includes a broken link. We substituted <https://climate.nasa.gov/vital-signs/carbon-dioxide/> for students to see recent changes in carbon dioxide levels.

[Teacher Key for IMT](#)

Lesson 11 - How can we reduce the negative impacts of human activity on climate?

Lesson Components	Distance Learning Plan	
	Teacher	Student
VIRTUAL CLASS PREWORK (Slides: 1-7) Part 1, 2	<ol style="list-style-type: none"> 1. Make any needed adjustments to Lesson Slideshow (video and graphs embedded) and assign your copy. 	<ol style="list-style-type: none"> 1. Complete slides 2-7.
VIRTUAL CLASS (Slides: 8-14) Part 3-6, 10	<ol style="list-style-type: none"> 1. Discuss Prework. 2. Watch new video. 3. Record/Discuss Claims from video. 4. Create initial model and share. 	
VIRTUAL CLASS POST-WORK Wrap Up/Exit Ticket (Slides: 16-17) Part 7-9	<ol style="list-style-type: none"> 1. Modify instructions on slides 14-15 if needed. 2. Collect student questions for DQB. 	<ol style="list-style-type: none"> 1. Contribute Qs to DQB. 2. Turn in slides. 3. Transfer IMT to IMT doc (if using).

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Lesson 12 - Do trees really change the composition of the atmosphere around us?

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

- [Lesson Slideshow](#)
- Individual copy of IMT

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

- [Lesson Slideshow](#)
- [Student Reading - Bell Jar](#)
- Individual copy of IMT

[Teacher Key for IMT](#)

Lesson 12 - Do trees really change the composition of the atmosphere around us?

Lesson Components	Distance Learning Plan	
	Teacher	Student
VIRTUAL CLASS PREWORK (Slides: 1-9) Parts 1-4	<ol style="list-style-type: none"> 1. Deliver DQB from L11 student Qs (add link or image to slide 4). 2. Assign your copy of Lesson Slideshow. 	<ol style="list-style-type: none"> 1. View DQB. 2. Complete slides 4-9 including the reading on slide 8 and the 4C analysis tool on slide 9.
VIRTUAL CLASS (Slides 10 -15 Parts 5-9)	<ol style="list-style-type: none"> 1. Share and discuss revised models. 2. Building Understandings Discussion of 4Cs. 3. Develop a class model of the experiment from the reading. 4. Discuss new questions and next steps. 	
VIRTUAL CLASS POST-WORK (Slides 16-18)	<ol style="list-style-type: none"> 1. Assess student work. 2. Optional - post IMT suggestions. 	<ol style="list-style-type: none"> 1. Add to IMT. 2. Turn in slides.

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Lesson 13 – How does carbon dioxide get into the tree and what does the tree do with it?

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

- [Lesson Slideshow](#)
- Individual copy of IMT

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

- [Lesson Slideshow](#)
- Individual copy of IMT
- Access to the [Computational Model](#) – *teacher may consider providing a screencast of the investigations via flashdrive*

[Teacher Key for IMT](#)

Lesson 13 – How does carbon dioxide get into the tree and what does the tree do with it?

Lesson Components	Distance Learning Plan	
	Teacher	Student
VIRTUAL CLASS PREWORK (Slides: 1-11) Parts 1-5	1. Deliver your copy of Lesson Slideshow .	1. Complete Investigation A.
VIRTUAL CLASS (Slides:11-22) Part 6-7	1. Discuss Investigation A. 2. Run Investigation B (teacher shares tab in virtual class or assigns each student to run then report in). 3. Plan and Run Investigation C. 4. Share/Discuss Findings.	
VIRTUAL CLASS POSTWORK (Slides 23-28) Parts 8 -12	1. Post IMT suggestions or have a mini class to discuss with whole group. 2. Assess student work. 3. Optional: Create and deliver Focus Quiz SEET.	1. Complete Investigation D. 2. Turn in Slideshow. 3. Add to IMT.

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Lesson 14 - How does a tree get the water it needs for photosynthesis?

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

- [Lesson Slideshow](#)

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

- [Lesson Slideshow](#)
- [Lesson 14 Reading: Roots](#)

[Teacher Key for IMT](#)

Lesson 14 - How does a tree get the water it needs for photosynthesis?

Lesson Components	Distance Learning Plan	
	Teacher	Student
VIRTUAL CLASS PREWORK (Slides 1-10) Parts 1, 2, 4	<ol style="list-style-type: none"> Edit slide with class specific links. Deliver your copy of Lesson Slideshow. 	<ol style="list-style-type: none"> Create initial model from images. Read and annotate (if required by teacher) Lesson 14 Reading: Roots. Revise model.
VIRTUAL CLASS (Slides 11-16) Part 5-7	<ol style="list-style-type: none"> Discuss reading. Share student models. Collaborate on class model. Update IMT. 	
VIRTUAL CLASS POST-WORK (Slides 17-18)	<ol style="list-style-type: none"> Assess student work. 	<ol style="list-style-type: none"> Turn in slides.

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