



Science Distance Learning, 6-12

A digital version of this document can be found at <https://sde.ok.gov/covid19-instruction-support>.

This document is designed to support Oklahoma teachers and districts as they provide distance learning opportunities for students. Distance learning aims to provide students with continuous learning opportunities at home and may or may not include technology.

Questions to Consider while Planning for Continued Learning

- 1. What are reasonable goals for student learning in your context? What experiences should be prioritized?** Plan with the following in mind:
 - District and school guidance and directives, including expectations for learning time at home (e.g., **6-12 Science 40-60 minutes, 2 times a week**)
 - Students' access to technology/internet/phones
 - Students' and your other responsibilities to family, work outside of school, etc.
 - Students' current understandings and background knowledge
- 2. How will students be introduced to the topic, investigation of phenomenon or project?** **Examples include:** video of the teacher or someone else, interesting article, asking an investigative question about a phenomenon they can easily view from their home or backyard, asking students to identify a specific occurrence or problem that is meaningful to them
- 3. In what ways can students collect data or information that pertains to the topic, investigation of phenomenon or project?** **Examples include:** close reading of text or an article, observational logs, developing and testing a simple model/prototype
- 4. In what ways can students be prompted to have productive discussions with their peers or family members about the topic, investigation or project?** **Examples include:** explaining the topic/investigation or project to family members and asking for their ideas, calling another student in the class to discuss, participating in a dashboard discussion or participating in a live chat with the teacher and/or other students through Zoom, Facebook Live, phone conference, Microsoft Teams or Skype
- 5. In what ways can students document their thinking and progress?** **Examples include:** note taking, responses to questions posed by the teacher or shared questions posed by the class, short written explanations or drawings explaining what may be causing the results they notice from an investigation of a phenomenon, maintaining a science notebook or video log throughout their investigations, taking pictures of important steps of the investigation, contributing to a shared classroom blog



6. **In what ways can students share artifacts of their learning? Examples include:** responses to questions submitted via email, a discussion board, or other methods like a phone call for students who lack technology
7. **How will students receive feedback on their learning? Examples include:** student and teacher responses to questions submitted via email or on a shared document, a discussion board or other methods like a phone call for students who lack technology
8. **How does some of the work connect to literacy or math skills and how might you collaborate with the students' English language arts or math teacher on some topics, investigations or projects? Examples include:** assigned articles serve as informational text readings and developing explanations supports technical writing, analysis of data collected during an investigation

For specific guidance related to **Special Education** and **English Language Learner** instruction, visit [Special Education](#) and [English Language Learners](#).

Considerations for Universal Design can be made to ensure all activities are accessible for all learners. Learn more about [Universal Design for Learning](#).

Practical Advice

- As you begin the new journey of assisting your students through distance learning, identify personal support structures at home and within your school family.
- When something doesn't work, give yourself permission to move on to the next idea.
- If you have multiple courses for which you have to plan, consider assigning similar assignments in structure and make adjustments to the topic.
- Focus on enrichment activities that reinforce concepts and practices learned earlier in the school year, rather than feeling that you have to only address new content.
- Take advantage of at home data collection opportunities. [STEM Teaching Tool #31](#) provides some suggestions including a strategy called self-documentation.
- Use Crosscutting Concept Prompts to ask students questions about the topics being introduced, investigations of phenomenon or projects. See [STEM Teaching Tool #41](#) for sample prompts and support.

Example Activities

The following examples are meant to provide a sample structure for activities designed with the guidance provided in this document in mind. For other examples check out these [Middle School and High School Example Activities](#). If you have additional ideas for investigations, please consider adding them to [this survey](#) that will then be used to update examples.



Middle School Example Activity	High School Example Activity
<p>Have students make observations and collect data regarding changes in the yard over a specific amount of time. Students can then:</p> <ul style="list-style-type: none">● Record what they notice and wonder.● Make a prediction based on the data collected.● Develop a written argument for why they think their prediction is accurate, supporting their claim with online articles or videos that provide information.	<p>Have students develop a question about something they are interested in (e.g., cooking, tinkering, nature, community-based problems) and design an investigation. Students can:</p> <ul style="list-style-type: none">● Describe the specific idea or problem they want to investigate, including why they are interested.● Develop an investigation plan for their interest.● In collaboration with you, determine whether they should move forward with the investigation (keeping safety in mind), or instead develop a written or video prediction of what they think will happen, why and how they would interpret unexpected results.

Instructional Resources

- [The National Science Teaching Association](#) contains resources to help teachers support learning in science at home and at school.
- [Discovery Education](#) is an online K-12 learning platform. It provides multimedia, virtual activities and hands-on labs with model lessons.
- [Bozeman Science](#) offers video instruction for Anatomy and Physiology, AP Biology, AP Chemistry, AP Environmental Science, AP Physics, Biology, Chemistry and Earth Science.
- For additional instructional resources, go to <https://bit.ly/oksciDLresources>.

Technology Resources

For technology resources that include platforms and ways to connect with students, stay organized and more, go to <https://bit.ly/okscitech>.

Stay Connected to Community

You aren't alone. There are tens of thousands of other teachers around the state and nation who are collaborating and sharing strategies, resources and ideas for distance learning for students while at home. Sign-up for the [Science Newsletter](#) and join some of the following communities and collaborate with others.



Social Media Connections	OSDE Hosted Virtual Meetings
<p>Join Twitter discussions happening at #oksci and #ngsschat #oklasta</p> <p>Join Facebook Groups:</p> <ul style="list-style-type: none">• All Grades #OKSci• Elementary• Middle School• High School• Biology• Grade 5	<p>Join OSDE staff and #oksci teachers around the state for weekly virtual meetings to gain resources, strategies and advice for distance learning.</p> <p>Science Virtual Meeting Every Friday 3:00 - 4:00 p.m. Connect via Zoom:</p> <ul style="list-style-type: none">• Link: https://zoom.us/j/679755193• Meeting ID: 679-755-193• Phone: (346) 248-7799

Contact Information for OSDE Science Staff

We are here to help in any way we can. Feel free to email any of the following people at OSDE if you have questions or need support.

- **Tiffany Neill**, Executive Director of Curriculum and Instruction and Director of Science and Engineering Education, Tiffany.Neill@sde.ok.gov Twitter - [@tiffanyneill](https://twitter.com/tiffanyneill)
- **Susan Wray**, Science Specialist, Susan.Wray@sde.ok.gov
- **Dawna Schweitzer**, Science Specialist, Dawna.Schweitzer@sde.ok.gov