

Unit 2: Cropping Systems & Sustainability

Unit Summary: The unit is designed to give students a broad overview of cropping systems utilized in the Pacific Northwest. It is not intended to be all encompassing, rather to introduce those practices which improve sustainability and reduce or mitigate negative environmental impacts. This unit is intended to give students some background knowledge on cultivation practices which will be augmented in future lessons. While this unit does not contain climate science information, the information here is essential in understanding future units' importance to agricultural production, and potential impacts of climate change on agriculture as well as agriculture on climate change.

Teaching Time: It is anticipated that this unit and its related activities will take three 50-minute class periods to complete. Depending on the number of readings utilized, this could be longer.

Audience: 9-12 Science & Agriculture Students

Unit's placement in the overall course: This unit is intended to follow the introduction to climate change and agriculture unit, however it can be utilized as a stand-alone unit. Principles introduced here are further examined in future units on soils, water and erosion, carbon, and precision agriculture.

Goals: To provide a broad overview of production practices in the Pacific Northwest and Land-grant institutions role in the production process.

Description of the unit: This unit contains a PowerPoint Presentation, two classroom lab activities meant to explore PNW crops and farms, and ten readings about agricultural production from which the teacher can select based on local need and interests.

Using this unit: Within the PowerPoint for this unit are hidden slides. On these slides are embedded Microsoft Word Documents. These documents provide the additional resources needed to deliver this unit. A standards document is provided which includes the relevant Next Generation Science Standards, Common Core State Standards for Math and ELA, and Agriculture, Food, & Natural Resources Standards. The standards included may be only introduced through this curriculum, and the teacher will need to decide the level at which they want to augment the provided instruction in relation to these standards. Readings associated with the unit are in a separate zipped PDF file. This document includes all the readings in one zipped file so teachers can select those readings most appropriate for their classrooms.

Related Readings for Meeting CCSS in ELA: These readings are not overly technical, however teachers reported some difficulty using them with students on IEP's. To accommodate these students it is recommended teachers choose a portion of the readings and run it through an application like <http://www.rewordify.com> which can adjust the reading levels as needed.

Required Supplies: The activities in this unit are research based and require only computer access. Recommended:

- Computers to research cropping practices and changes in crop production by state over the last 20 years. Ideally one per student.