

Barges, Trains and Trucks

Lesson 2: Calculations with commodities

Students learn about capacities of various carriers of freight and use conversions to compare the methods on several levels.

Sequence

Lesson 2 of the unit: *Barges, Trains, and Trucks*

Time

Two 30-40 minute sessions

Grade Level

9-12

Materials

Calculating Grain Movements - *included*

Transportation ppt. - *included*

Transportation of US Grains pdf - *included*

Transportation Conversions document - *included*

Transportation Conversions factors - *included*

Transportation Infographic - *included*

Objectives

Students will identify freight carriers and their use for agriculture.

Students will convert agricultural quantities using known conversion factors.

Students will analyze trends in commodity movements over a 16 year period.

Vocabulary

Infrastructure, Agriculture, Production, Yield, Waterway

Prior Knowledge

Students should have a basic understanding that certain foods are grown in some parts of the world and not others, and that countries barter and trade food resources in a global economy. Students should also understand that food and agricultural products are transported using infrastructure, and that many different types of infrastructure are used.

5E Plan:

Engage

Begin this lesson by opening the Transportation PPT and going through slides 1-14 with your students. Engage your students by asking them questions about the pictures in the slides, if they have any experience seeing them in real life, or if they've ever wondered how our food gets to us.

Pass out the Transportation Conversions document, the Transportation Conversions Factors, and the Transportation Infographic.

Remind students that they will need to record their information on the Transportation Conversions Document, though they will need the other two documents to complete the activity.

Explore

As students work through the conversions questions, either independently or with a partner, check their work to make sure they are using the infographic properly.

After students have completed the conversions on their document, go through the rest of the Transportation PPT so that the students can check their work to the answers.

Explain

Students will work through the second activity of this lesson. Pass out the Understanding Grain Movements Document and the Transportation of US Grains PDF. Using the report, students will answer questions on the

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document to completion. Allow students to work independently or in pairs. Allow students 20 minutes to complete the questions based on the report.

Extend

After students have completed the questions on the Understanding Grain Movements Document, go over the answers individually or as a class. As you are discussing the answers, be sure to incorporate student voice, especially for questions 2 & 9.

Evaluate

To evaluate students' understanding of the concepts being taught the teacher should be sure to check in with students frequently during the first and second part of this lesson. Check for accuracy while students complete the conversions document, and allow students to check their answers themselves with the PPT. Ensure that all students have the correct answers for the Understanding Grain Movements PDF.

Additional Resources

<https://vimeo.com/showcase/3808150/video/156015018>

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