Lesson 1.8: Visualizing and Interpreting Data

https://codehs.com/course/5655/lesson/1.8

Description	In this lesson, students will learn about the impact of visually representing data to make information easier to analyze and use.
Objective	Students will be able to: • Explain the importance of visually depicting data to make information easier to use and to understand trends and changes in information ## Enduring Understandings This lesson builds toward the following Enduring Understandings (EUs) and Learning Objectives (LOs). Students should understand that… • EU 3.1 People use computer programs to process information to gain insight and knowledge. (LO 3.1.1, 3.1.3) • EU 7.1 Computing enhances communication, interaction, and cognition. (LO 7.1.1)
Activities	1.8.1 Video: Visualizing Data 1.8.2 Quiz: Visualizing Data Quiz 1.8.3 Connection: Visualizing Property Prices 1.8.4 Connection: March Madness Stats 1.8.5 Connection: Mortality Rates 1.8.6 Free Response: Visualizations in the News 1.8.7 Connection: Using Visualizations 1.8.8 Free Response: Using Visualizations: Responses 1.8.9 Free Response: Choosing a Visualization 1.8.10 Free Response: Comparing Visualizations 1.8.11 Quiz: End of Lesson Quiz
Prior Knowledge	• Basic understanding of data and data representations
Planning Notes	• Review the slides and the exercises in the lesson. • There are a lot of different data visualizations in this lessons. Students can have different interpretations of the data. Determine if you'd like to pair or group students so that they can share views with each other. • Students will learn many different types of data charts. They could benefit from keeping track of these and related vocabulary words in their journal. • There is a handout that accompanies this lesson. It can be used as an in-class activity or a homework assignment. Determine how and if this handout will be used and make the appropriate number of printouts prior to the class period. • This is a longer lesson and can be split into two class periods.
Standards Addressed	
Teaching and Learning Strategies	**Lesson Opener:** • Have students brainstorm and write down answers to the discussion questions listed below. Students can work individually or in groups/pairs. Have them share their responses. [5 mins] **Activities:**

	- Watch the lesson video and complete the corresponding quiz. [8-12 mins] - Let students explore the different data visualizations provided in the lesson. Students can be split into groups to take a deeper look at specific visualizations and share their findings with the class. [15 mins] - Complete the *Visualizations in the News* free response activity. [10 mins] - Complete the *Choosing a Visualization* free response activity. [10 mins] - Complete the *Comparing Visualizations* free response activity. [10 mins] - Complete the *Visualizing Supply and Demand* handout. Students can work in pairs or small groups. [20 mins] - *Optional:* Complete the end of lesson quiz. [10 mins] **Lesson Closer:** - Have students reflect and discuss their responses to the end of class discussion questions. [5 mins]

Discussion Questions	**Beginning of Class:**
	
	- A line graph is an example of a data visualization. Name as many other data visualizations that you can.
	  - *Bar graph, pie chart, histogram, heat map, box and whisker plot, etc.*
	
	End of Class:
	
	- What kind of information does a line graph display?
	  - *Line graphs are great for showing trends over time.*
	- What kind of information does a bar graph display?
	  - *Bar graphs are great for measuring and comparing values across several categories.*
	- What kind of information does a heat map display?
	  - *Heat maps are great for seeing trends across geographic regions. It puts information in geographical context, so you can see what parts of an area are affected most.*

Resources/Handouts	[Visualizing Supply and Demand (teacher)](#) [Visualizing Supply and Demand (student version)](#)

Vocabulary

Term	Definition
[Data Visualization](#)	Using charts, graphs, or images to visualize complex data.

Modification: Advanced	Modification: Special Education	Modification: English Language Learners