**Student Activity Guide: Model Performance Task***®* Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 1 Lesson 17

Digital representation of data has dramatically changed our experiences with information. It has changed how we interact with, access, and distribute information. To focus your work on this assignment, you and a partner will choose a single digital artifact and investigate how the information it encodes is represented.

**General Requirements**

* You must work with a partner(s) on the collaborative portion of this task.
* The digital artifact you choose should require some form of digital compression in its creation.
* The artifact you choose should be widely used and recognized.
* You must include at least two references to readily available information about the compression scheme and the resulting file type for the artifact you explored.At least one reference must be recent (published within the last 12 months).
* You will submit two documents (see the specifics below):
  + A **Collaborative Summary** written with your partner.
  + An **Individual Summary** written by yourself.

**Collaborative Summary**

Working with your partner, respond to each of the following prompts. Your document should be a maximum of 600 words and it may include illustrations.

1. Explain why your group selected the digital artifact used in your investigation.
2. What type of data is compressed?
3. Describe the steps used in the compression. Be sure to include why it is used and what problem it is solving.
4. Describe the beneficial effects of the digital compression used in the creation of the digital artifact.
5. Describe the limitations of the digital compression.
6. Compare and contrast the digitally compressed version to an analog version of the same artifact. How does the compression impact our experience with this artifact?

**Individual Summary**

Respond to each of the following prompts.

Write a brief essay in which you reflect on the collaborative process your group used to research and report on the digital artifact selected. Answer the following questions in your essay, focusing on strategies and reasoning rather on operational details. For example, describe **how and why you divided the tasks** to accomplish the research and report, **NOT on your time and work schedule**. Your summary should be no more than 300 words. Include answers to the following questions:

a. How did you share or divide the work?

b. Why did you choose to divide the work in this way?

c. How did you coordinate your efforts?

d. What worked well, and what did not work well, in your collaboration?

e. How did you benefit from working with a partner (or partners)?

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