**Blue Waters Petascale Semester Curriculum v1.0**

**Unit 7: CUDA**

**Lesson 8: CUDA Memory Model**

**Sample Assessment**

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*Browse and search the full curriculum at*[*http://shodor.org/petascale/materials/semester-curriculum*](http://shodor.org/petascale/materials/semester-curriculum)

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*We want to hear from you! Please let us know your experiences using this material by sending email to* [*petascale@shodor.org*](mailto:petascale@shodor.org)

Evaluation of the Learning Objectives

•**Describe** Different Levels of Nvidia GPU Memory hierarchy

Possible questions:

1. Explain the difference between Shared and Global memory in an Nvidia GPU
2. How can you find how much Shared memory is available
3. What is shared memory used for

•**Use** Shared Memory

Possible questions:

1. Download and compile the provided code

Change the number of threads per block

Are the results produced correct? Can you explain why?

•**Examples** GPU programs

•Histogram

Possible questions

1. Change the histogram to:
   1. Histogram with number of buckets bigger than the max number of threads per block allowed
   2. Histogram of words