

High School Computer Science Course Guide



Introduce

QuantHub supports concepts assessed on Alabama Course of Study Data Literacy and Computer Science as well as STEM concepts found in all High School Computer Science courses. QuantHub supports interdisciplinary learning of data science concepts and is aligned with specific content-based standards such as those found in Cybersecurity, Data Analysis, Artificial Intelligence, Machine Learning, and Exploring CS. QuantHub skills correlate to ACT standards in the Evaluation of Models, Inferences, Experimental Results, Interpretation of Data, and Scientific Investigation clusters. QuantHub was originally designed as a workforce development tool utilized by large corporations undergoing digital transformation, so all skills develop students' understanding of these academic concepts through real-world scenarios and applications. QuantHub skills in Data Literacy, Data Analysis, and Statistics support students as they prepare for their next steps in becoming contributing members of an evolving workforce.

We encourage teachers to introduce students to QuantHub with a meaningful discussion and lesson correlated to the core content of their course. This lesson plan is designed to introduce a pertinent QuantHub skill for the Computer Science course: [Ethical, Social, and Economic Impacts of AI within the Workforce](#)

Educate

QuantHub's goal is to prepare our students for the future of work. Students can prepare for this future by gaining a credential that can be used for their resume. Here are the following [certificates](#) we suggest for clubs

Introduction to Data Literacy



Practical AI for the Digital Citizen



Exploratory Data Analysis



Machine Learning



Scavenger Hunts: A whole group discussion tool

QuantHub's adaptive instruction revolves around student's comprehension of rich non-fiction texts, videos, and infographics. Utilize these resources to inspire thoughtful discussions for your club. Students can study the resource within the "Assignment". They will be asked questions to ensure they retain the material. Preview the questions in the preview link. [Learn more about the QuantHub Scavenger Hunt.](#)

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“Data Ethics: A Super Power for your Data Projects!”

[Resource](#) [Assignment](#) [Preview](#)

“Defining the Goal, Problem, and Success Criteria for a Machine Learning Project”

[Resource](#) [Assignment](#) [Preview](#)

“Understanding Prompt Engineering”

[Resource](#) [Assignment](#) [Preview](#)

Inspire

After students have completed the statistics certificate, encourage students to utilize their new skills as they explore open data sets related to your subject.

Engage students through leaderboard competitions or skill mastery acknowledgment. Students are motivated by friendly competitions between students or between classes/groups. QuantHub awards “neurons” for correct or partially correct answers. Rewards can be as simple as gaining a spotlight in the newsletter or as profound as a leadership position. We recommend that students externalize their skill acquisition by ringing a bell, adding their name to a board, or earning a school-based or activity-based currency.

Connect

Continue to help students connect what they are learning to real-life and other subjects. For further resources specific to Computer Science, consider visiting [Alabama Public Television’s Crash Courses in Computer Science](#).

Your students are set up for success...now what? We encourage students to apply for our internship and/or STEM scholarship program. [Learn more and apply here.](#)