

Grades 10–11 Science, Project-Based Learning

Video 2 (Day 4)

Lesson Graph

This document accompanies a sample lesson scored using the UTeach Observation Protocol (UTOP). The video lesson is a shortened version of a 75-minute class period observed at Manor New Tech High School in Manor, Texas.

This document describes the objectives and agenda for the 75-minute class period and aligns the actual minutes of the class with the minutes of the video.

The project observed in this classroom was a multi-day project. The video, sample scores, and more for this and other days of the project are available on the UTOP website:
<http://utop.uteach.utexas.edu/?q=sample-utop-scoring>.

Objective

- We will research and analyze characteristics of stars that can support life.
- We will learn how to formulate equations for and graph circles.

Products

- I will attend a circle workshop, complete circle practice problems, and work with my team to earn at least 5 rubric stamps (total).

Agenda

1. Warm up (1 per team)
2. Work time and workshop time:
Complete at least 5 rubric items (total). See rubric chart.
Section 1 resources: See project resources in briefcase.
Workshop:
 - Circles (Mr. Banks)
 - Circle equation practice problems and answer form
 - Answer feedback form

Due Today

- Work that can earn at least 5 section 1 rubric stamps (total)

Coming Soon

- Section 1 due this Friday

Texas Essential Knowledge and Skills and Learning Outcomes

Algebra II TEKS

2A.b.5.A. Describe a conic section as the intersection of a plane and a cone.

Physics TEKS

PHY.c.2.J. Organize and evaluate data and make inferences from data, including the use of tables, charts, and graphs.

PHY.c.2.K. Communicate valid conclusions supported by the data through various methods such as lab reports, labeled drawings, graphic organizers, oral reports, and technology-based reports.

Video / Class Period Time Alignment

The actual class time is in black below. Video times are in blue and bracketed.

Time in minutes	Description of activity
0–9 [0:00–3:08]	Logistics and warm up Class begins and instructor takes attendance. Students begin working on a warm up, completing one per team. This warm up consists of questions about the format of their reports and presentations and a reminder to have instructors check the rubric. As students are working, instructors are circulating throughout the room and assisting students.
9–10.5 [not shown]	Transition Instructor announces workshop at the front of the room and students transition from their tables to the location of the projector with their notebooks and calculators.
10.5–44.5 [3:08–26:17]	Workshop Instructor conducts a workshop on circle equations using Geometer’s Sketchpad. During this time he works through example problems.
44.5–72.5 [26:17–31:56]	Student group work Students discuss expectations on the rubric and use it to assess their progress on the project. During this student work time, the instructor monitors student progress and double checks student work. The instructor also provides feedback about student work to each group during this time.
72.5–75.5 [31:56–34:10]	Mini workshop One instructor conducts an impromptu mini-workshop at the end of class to clarify a misconception about unit conversions.