

HIDDEN FIGURES (2016)

Presented by the American Film Institute’s Silver Theater and Cultural Center

Educational Screenings Program

*Previewing Information (Math and Computer Science focus)*

Because this film evokes the look of the 1960s so effectively—with its Kodachrome colors, fitted dresses and period cars—it may be easy to forget that some of the issues the women face in the film are still with us. Consider the following excerpt from a review:

Watching “Hidden Figures” I thought about how I would have felt had I seen this movie 30 years ago, when I made the decision to study math and computer science. I might have felt more secure in that decision, and certainly would have had better ideas on how to handle some of the thorny racial situations into which I found myself. The strange thing for me is that I saw more Black programmers in this movie than I’ve encountered in my entire career. I had few points of reference in this regard, and the I.T. world reflects that. Even today, some of my customers look at me funny when I show up to fix the problem.

Hopefully, “Hidden Figures” will inspire women and people of color (men too) with its gentle assertion that there’s nothing unusual nor odd about people besides White men being good at math. But my secret fantasy is that this feel-good film will be a huge hit at the box office. Under its great acting, bouncy Pharrell score and message is a film that’s as geeked out about math as a superhero film is about its comic book origins. So much so that it does my mathematician’s heart proud. It deserves to make as much money as any planet in the Marvel Universe does. This is one of the year's best films.

Odie Henderson, reviewing the film on [RogerEbert.com](https://www.rogerebert.com/reviews/hidden-figures-2016)

Why do you think these fields aren’t more diverse, even after the Civil Rights and feminist movements? At what points is this film most “geeked out about math”? How does the film add drama to the act of doing math, such as writing formulas on a blackboard? How does the film make Katherine Johnson a nerd icon for everyone?

*Additional Resources*

* For background on how consultants helped get the math and science right in the film, see [“Meet the People Behind the Film HIDDEN FIGURES”](https://www.sciencenewsforstudents.org/article/meet-people-behind-film-hidden-figures) .
* Also see [NASA’s page on the film](https://www.nasa.gov/modernfigures), including a tribute to Katherine Johnson on her 100th birthday.
* The Computer History Museum has a fun [online exhibition of computer history](https://www.computerhistory.org/revolution/).
* The [Journeys in Film Curriculum Guide on HIDDEN FIGURES](https://journeysinfilm.org/download/hidden-figures-curriculum-guide/) has detailed lesson plans in geography, physics and programming, as well as more general science, history and language arts.

*Cinematography and Film Terms*

Camera angles can be a subtle but powerful way to support the story. Cinematographer Mandy Walker explains, "When we shot the African American women talking to the white guys at the beginning of the film, we'd be a little bit underneath their eyeline so that Katherine, Dorothy and Mary would be looking up at these men all the time. But as the story develops, we shifted so that the eyeline becomes more similar between the women and the men. Even though the difference is quite subtle, I think it sort of works emotionally. Sometimes you need people to feel something rather than just see it." See if you can detect this when you watch the film. Also look for scenes in which one character is made to look larger than another, or is dwarfed by the scenery. (Also: Walker also noted that as only 3% of cinematographers are women, she really related to this film!) (from [The Credits](https://www.mpaa.org/2016/12/cinematographer-mandy-walker-frames-history-hidden-figures/))

Consider these kinds of shots and their effect within the film:

Close-up: a shot showing detail only (e.g. face or hands only)

Establishing shot: A shot, taken from a distance, establishing for the viewer where the action is to occur and the spatial relationship of the characters and their setting

Low-angle shot: a shot with the camera positioned below the eye-line, pointing upward

High-angle shot: the camera is positioned below the eye-line, looking down

*Post-viewing Discussion*

1. During the Cold War, a shortage of mathematicians led NASA to run ads in African-American newspapers for “human computers.” In some ways NASA might seem like a meritocracy, but in what ways does the film show its workplace continuous with the racial climate outside its doors?
2. Why does John Glenn want Katherine Johnson (“the girl”) to check the numbers before he goes into space? What are some of the differences between the human computers and the first mainframe computers?
3. How are different colors and light associated with different spaces? Consider the colors and light in the women’s homes vs NASA’s basement computing room vs the Space Task Force office.
4. How is music used in key scenes? Choose one scene to discuss in which you noticed the music. What style(s) of music is it? How does music relate to the action and/or shape your emotional reactions?
5. How do the three women deal with racism in different ways? Cite a specific example for each. What was your reaction when Dorothy took the FORTRAN manual from the public library?
6. Discuss the title of the film. What meanings does it have, in math and otherwise?
7. How is the coffee pot/coffee used as a symbol in the film? Do you notice any other recurring visual symbols?
8. “That’s just the way things are,” is a line that is repeated multiple. What is the implication of this statement, when and how is it used and what statement does the film make about it?
9. This film has two beginnings: one that shows Katherine Johnson as a girl, and another that shows her as an adult, with Dorothy Vaughn and Mary Jackson, on her way to work at NASA (see the scene analysis below). Why does the film begin with the flashback to Johnson’s childhood? What does this scene establish?

*Scene Analysis*

Rewatch [this scene](https://www.youtube.com/watch?v=h5C2-uRddec) from early in the film, when the women’s car breaks down (note: if this link no longer works, try searching for it on YouTube: it’s probably there somewhere).

* How does this scene establish the character of each of the three women? Cite specific things that each woman says or does.
* How does it establish the racial climate of the era?
* And now that you have seen the entire film: How does it set the tone for the film as a whole?

You may choose to break students into groups and have them each focus on a different aspect of the scene. Repeated watchings will help students notice more in the scene. After discussion, watch the scene again to verify your observations and to see what else you might have missed.