

The Dress

Discussion

Show the students this picture and ask what color the dress appears. Take a poll of the class to see who sees a blue and black dress and who sees a white and gold dress. Explain this is from a viral tweet in 2015 that was shared almost 5 million times and people still do not agree what color the dress appears in this photo.

Ask the student to brainstorm how a dress (or any object) could appear to be different colors. Possible answers include:

- Differences in the people looking at the dress
- Differences in the angle or distance from the dress
- Differences in the light used to see the dress.

The dress is an example of *observer metamerism* (me-TAM-er-ism), *failure* where two viewers see the same object in different colors. Metamerism is an important area of study for designers of anything that uses color such as clothing and paint.

Other types of metamerism are

- Illuminant metamerism where two objects are the same color under one type of light but different colors under another type of light.
- Geometric metamerism where the distance and angle at which an object is viewed can change what color it appears.

Ask if anyone has a piece of clothing that looks gray or green in one type of light (sunlight, florescent, incandescent) and brown in another type of light. The color an object appears depends on the light we use to see it.

Show students the picture of the dress in 3 different “lights”. The light was produced artificially using graphics software but shows how a blue and black dress (on the right) can appear white and gold (on the left) in the right kind of light. You can also show the students a photo of the original dress (below).

Activity

Direct students to visit [Metameric Matches](#) and see how well they can match the colors using the interactive application at the bottom of the page. They can check their work by choosing the “Show color under mouse” button and then placing the mouse over the circle to see if their values for red, blue

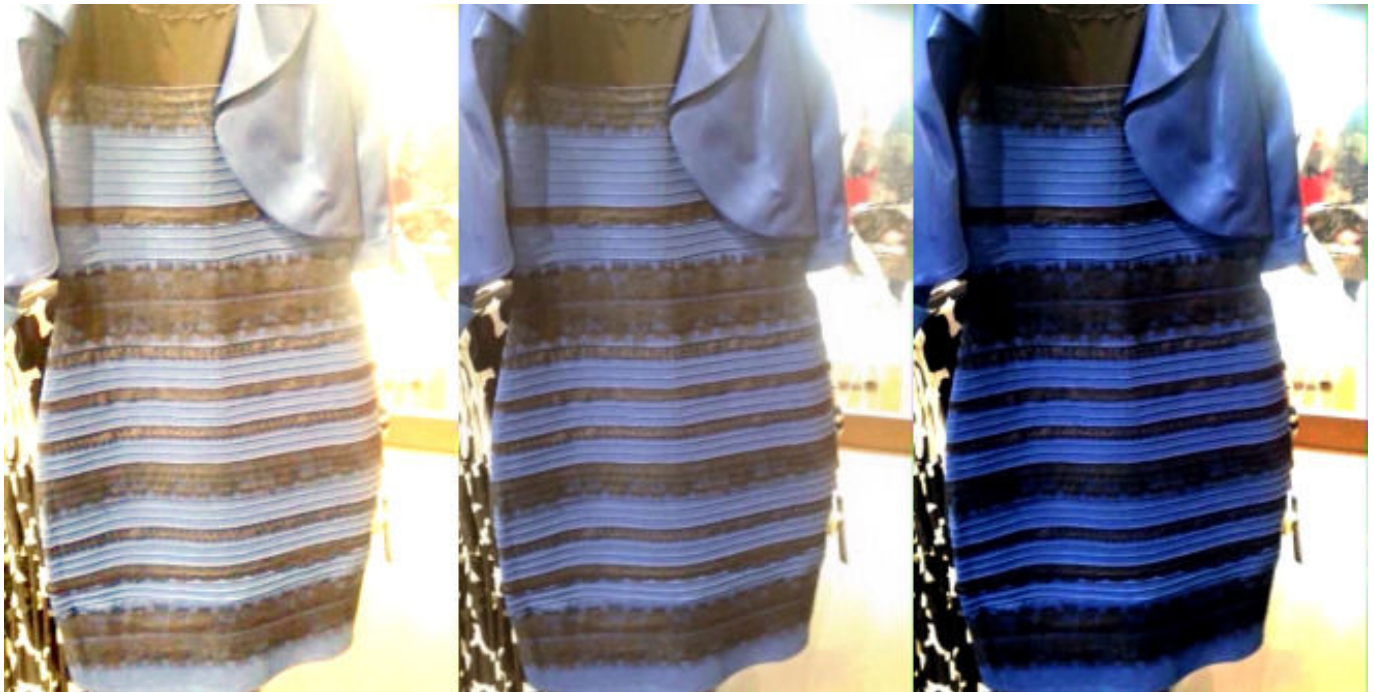


and green match the actual colors.

More on Metamerism

- [Color Matters](#)
- [Differentiating Metamerism and Illuminants](#)
- [Things that Go Weird in the Light](#)

Dress Photos



The center dress is the photo from the tweet. The other images have been manipulated.



The original dress (left) from the catalog and another version in black and white