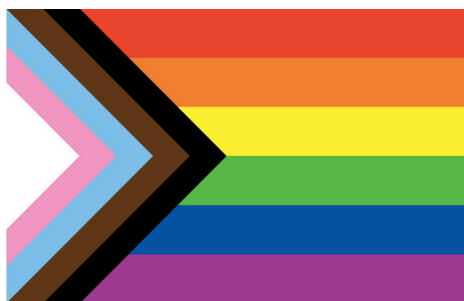




Image Source: <https://www.dezeen.com/2020/12/20/boudoir-babylon-adam-nathaniel-furman-sibling-architecture-ngv-triennial/>



*Suggested Strategy:*

I Notice, I Wonder

Possible Qs to Explore

1. What does this symbol represent?
2. What symmetry exists in this image? Do colors matter?
3. If you were to paint on the horizontal stripes first and go all the way across (without the triangular shapes), what would be the area of each horizontal stripe?
4. How might we create our own identity flag or symbol that has properties similar to this flag (e.g., symmetry, proportionality)?

- Students will need history of this flag. After an initial round of noticing and wondering the teacher should provide them some information about the flag and allow students to refine their original questions and pose additional questions. This document contains some useful information to aid teachers in introducing the history of the flag: <https://bit.ly/ProgressMQ>
- For Q2, students might be asked to consider color preserving symmetry vs symmetry of the outline ( see terminology page for definitions). A sample exploration of this Q might include the following (see NCTM illuminations LP cited at the bottom of this page for a more detailed implementation of this exploration):
  - Create two examples of images that have color preserving symmetry.
  - Create two examples of images that do not have color preserving symmetry.
  - Create two examples of images that have symmetry of the outline.
  - Create two examples of images that **do not** have symmetry of the outline.
  - What would the “Progress” flag need to look like to have color preserving symmetry?
  - What is the significance of the colors of the “Progress” flag?
  - How would changing the colors change the meaning of the flag?
  - Possible Extensions:
    - Have students consider if an image that has color-preserving symmetry always has symmetry of the outline and vice versa.
    - Introduce students to the concepts of rotational and reflective symmetry and have them discuss those concepts in the context of the “Progress” flag and their identity flags, as well as in other symbols and images.
- For Q3, elementary grades students will likely need information about dimensions of the flag. Depending on the teachers goals, they may have students measure various elements of the flag to come to a conclusion for Q3 or they may provide them with the length and width of a flag (the flags folx display at home are commonly 3 ft by 5 ft).

A more detailed guide to implement an exploration of Qs 1, 2, and 4 is available at <https://www.nctm.org/ProgressFlag.aspx>

## Terminology

Note: All terminology is directly quoted from Learning for Justice's (2018) *The Acronym and Beyond*, unless otherwise indicated.

**Color preserving symmetry:** Points that correspond under each symmetry are the same color.

- Definition Source: EscherMath. 2015. "Introduction to Symmetry." January 20, 2015. [https://mathstat.slu.edu/escher/index.php/Introduction\\_to\\_Symmetry](https://mathstat.slu.edu/escher/index.php/Introduction_to_Symmetry).

**Symmetry of the outline:** A symmetry you would get by completely ignoring the colors.

- Definition Source: EscherMath. 2015. "Introduction to Symmetry." January 20, 2015. [https://mathstat.slu.edu/escher/index.php/Introduction\\_to\\_Symmetry](https://mathstat.slu.edu/escher/index.php/Introduction_to_Symmetry).

**Asexual** (*adj.*): Used to describe people who do not experience sexual attraction or do not have a desire for sex. Many experience romantic or emotional attractions across the entire spectrum of sexual orientations. Asexuality differs from celibacy, which refers to abstaining from sex. **Also ace, or ace community.**

**Bisexual, Bi** (*adj.*): A person emotionally, romantically or sexually attracted to more than one sex, gender or gender identity though not necessarily simultaneously, in the same way or to the same degree.

**Cisgender** (*adj.*): Describes a person whose gender identity (defined below) aligns with the sex assigned to them at birth.

**Gay** (*adj.*): Used to describe people (often, but not exclusively, men) whose enduring physical, romantic and/or emotional attractions are to people of the same sex or gender identity.

**Gender** (*noun*): A set of social, physical, psychological and emotional traits, often influenced by societal expectations, that classify an individual as feminine, masculine, androgynous or other. Words and qualities ascribed to these traits vary across cultures.

**Gender identity** (*noun*): One's innermost feeling of maleness, femaleness, a blend of both or neither. One's gender identity can be the same or different from their sex assigned at birth.

**Intersex** (*adj.*): An umbrella term describing people born with reproductive or sexual anatomy and/or a chromosome pattern that can't be classified as typically male or female.

**Lesbian** (*adj.*): Used to describe a woman whose enduring physical, romantic and/or emotional attraction is to other women.

**LGBTQ** (*noun*): An acronym for "lesbian, gay, bisexual, transgender and queer." Less often, the Q stands for "questioning." Acronyms like LGBTQIA also include the intersex and asexual communities, while acronyms like LGBTQ attempt to envelop an entire community of people who hold identities that are not cisgender or heterosexual.

**Queer** (*adj.*): Once a pejorative term, a term reclaimed and used by some within academic circles and the LGBTQ community to describe sexual orientations and gender identities that are not exclusively heterosexual or cisgender.

- My addition: For more information on the word "queer," you can check out my blog post: **Why I use queer.**

**Sexual orientation** (*noun*): An inherent or immutable emotional, romantic or sexual attraction to other people; oftentimes used to signify the gender identity (or identities) to which a person is most attracted.

**Transgender** (*adj.*): An umbrella term for people whose gender identity differs from the sex they were assigned at birth. Not all trans people undergo transition. Being transgender does not imply any specific sexual orientation. Therefore, transgender people may identify as straight, gay, lesbian, bisexual or something else. **Also, trans.**